

Jarvis's  
Laboratory Manual for  
**PHYSICAL EXAMINATION  
& HEALTH ASSESSMENT**  
Australia and New Zealand **2e**

Carolyn Jarvis

Australian adapting  
editors

Kathleen Blair

Mel Dudson

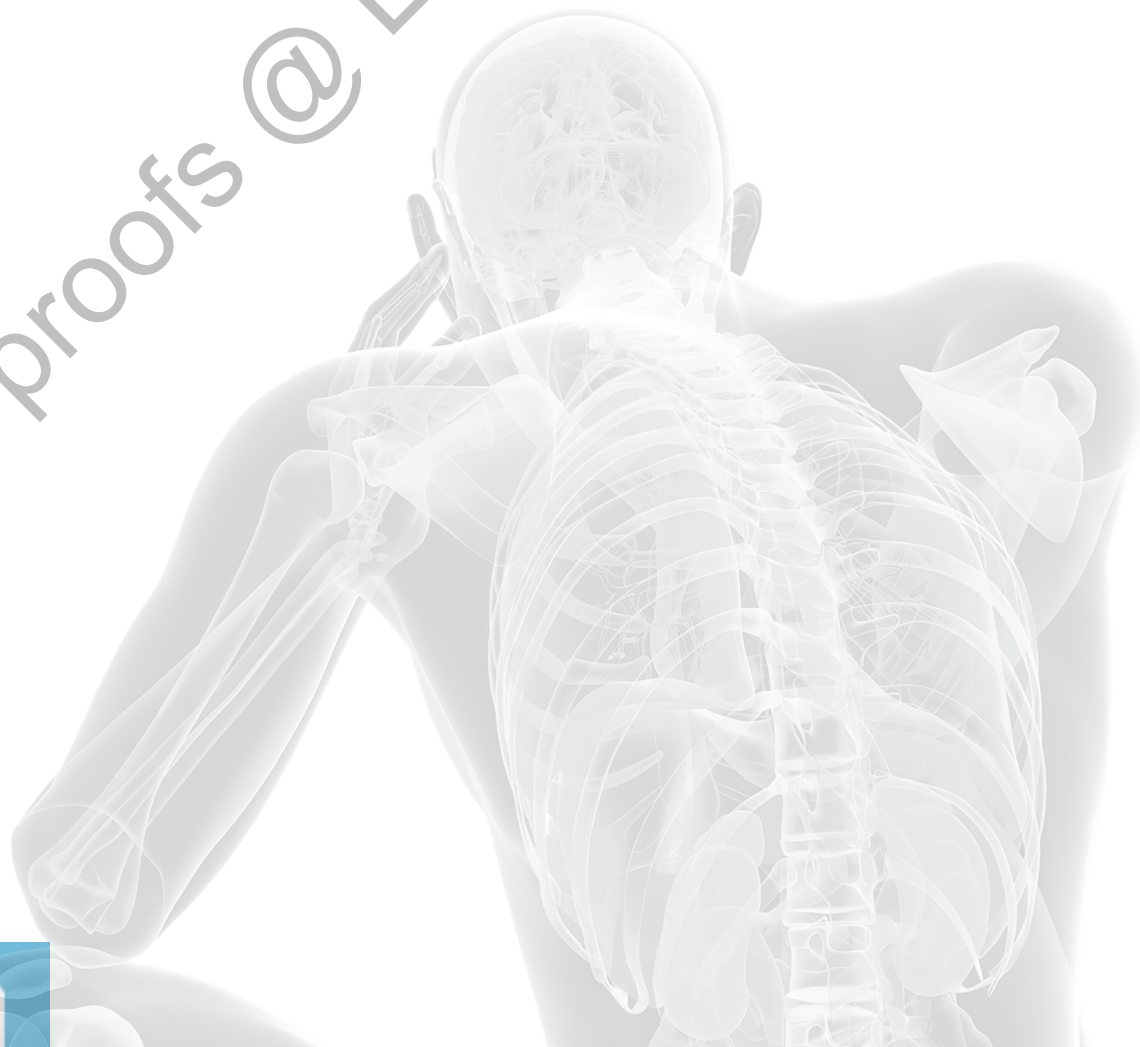
Andrea Miller

Nicole Norman



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**& HEALTH ASSESSMENT**  
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# Jarvis's

## Laboratory Manual for

# PHYSICAL EXAMINATION & HEALTH ASSESSMENT

Australia and New Zealand **2e**

### Carolyn Jarvis

PhD, APN, CNP  
Professor of Nursing  
School of Nursing

Illinois Wesleyan University, Bloomington, Illinois and  
Family Nurse Practitioner, Bloomington, Illinois

### Australian Adapting Editors

#### Kathleen Blair

BN, GCLegSt, GCED, GDipPsych, MPH,  
MSocSci-Cnslg, PhD(c)  
Director Clinical Education and Senior  
Lecturer, School of Health, Charles  
Darwin University, Casuarina Campus,  
Darwin, Northern Territory, Australia

#### Andrea Miller

BN (Hons), Grad Cert of Stomal Therapy,  
Grad Cert of Uni. Learning & Teaching,  
Grad Dip Health Science, MCN, MED  
Lecturer, School of Health Sciences,  
University of Tasmania, Launceston,  
Tasmania, Australia

#### Mel Dudson

MNurs, RN, GradCertNurs (ClinEd)  
Clinical Coordinator, School of Health, Charles Darwin  
University, Casuarina Campus, Northern Territory,  
Australia

#### Nicole Norman

RN, MNurs (Clinical), GCert Emergency Nursing, GCert  
Teaching and Learning (Higher Education)  
Lecturer in Nursing, School of Health, Charles Darwin  
University, Casuarina Campus, Northern Territory,  
Australia

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Blair, Kathleen, editor.  
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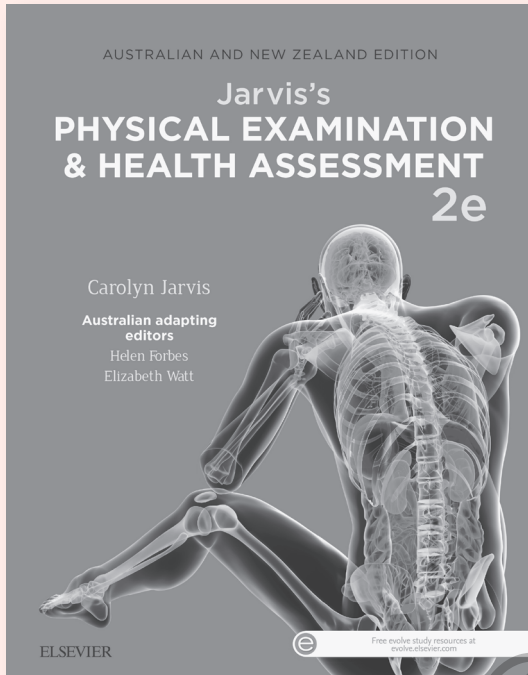
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Senior Content Strategist: Melinda McEvoy  
Content Development Specialist: Vanessa Ridehalgh  
Senior Project Manager: Rosemary McDonald  
Editor: Sybil Kesteven  
Proofreader: Tim Learner  
Permissions/Picture Researcher: Sarah Thomas  
Cover and internal design: Lisa Petroff  
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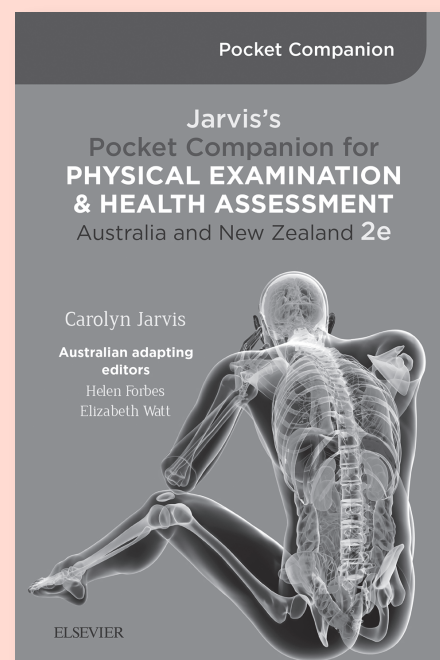
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**Carolyn Jarvis**  
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## Jarvis's Pocket Companion for PHYSICAL EXAMINATION & HEALTH ASSESSMENT

Australia and New Zealand 2e

**Carolyn Jarvis**  
Australian adapting editors  
**Helen Forbes & Elizabeth Watt**



# Reviewers

**Paul H Mahony BSc, PGDipEd, MSc, MHSc, MEDWK, RN, RICN**

Lecturer, School of Nursing, Midwifery and Indigenous Health  
Charles Sturt University  
Bathurst, NSW, Australia

**Sandra Oster RN, MSN (USA)**

Professional Teaching Fellow, School of Nursing  
Faculty of Medical and Health Science  
The University of Auckland  
Auckland, New Zealand

**Jennifer Rabach RN, OpThCert, BAppSc (Adv Nsg), MEd, FCNA**

Lecturer in Nursing, College of Health and Biomedicine  
Victoria University (St Albans)  
Melbourne, Victoria, Australia

**Philippa Rasmussen RN, BN, GradCert (CAMHN), GradDip (Psych Studies), MN, PhD**

Master of Nursing Science Program Coordinator  
Internationalisation Lead, School of Nursing  
The University of Adelaide  
Adelaide, South Australia, Australia

**Julia Slark PhD, RN**

Senior Lecturer, School of Nursing  
The University of Auckland  
Auckland, New Zealand

**Lisa Stewart MNurs(Hons), RN**

Management Director, Bachelor of Nursing,  
School of Nursing  
The University of Auckland  
Auckland, New Zealand

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# Preface

Throughout your career you will need to assess a variety of individuals who present for a wide range of reasons. Assessment will always be the key to nursing management and is a fundamental attribute to being a competent practitioner.

Before you can identify and select a course of action for the abnormal, you must be able to identify normal anatomy and physiology; therefore, learning the techniques of history taking and accurate physical examination is fundamental. The ability to gather information via a comprehensive health history is a key element in a comprehensive assessment and the importance of this skill is highlighted in this text.

This manual has been developed first as a study guide to accompany the information provided in *Jarvis's Physical Examination & Health Assessment*, ANZ 2nd edition and second as a guide to help you develop and practise a range of skills used to obtain a comprehensive health history and undertake examination accurately. These skills may be practised within in class on a peer or human patient simulator or within the clinical setting under supervision and with patient/client/resident consent.

Each chapter of this text aligns with the related chapter in *Jarvis's Physical Examination & Health Assessment*, ANZ 2nd edition. The manual is set out as a step-by-step workbook for you to complete. Completing the required material will reinforce lecture material, assist you to identify your learning needs and allow you to practise the skills required.

## Features

Each chapter in the laboratory manual is divided into two sections: First, the cognitive section which includes the purpose, glossary, reading assignment, study guide and review questions; and second, the clinical section containing practical skills to be used in the laboratory/clinical setting and the related documentation. Each chapter contains the following:

1. The **purpose** of the chapter, which is a brief summary of the material to be studied and learnt in the chapter.
2. **Key concepts** have been identified to assist in the identification of key areas for study.
3. The **reading assignment**. The page numbers of the chapter to be read have been identified. The reading may be done prior to answering the study guide questions, or you may prefer to answer the study guide questions as you are reading the chapter.
4. The **glossary of terms**. This includes terms that you may use during a health history interview or physical examination of the patient. The terms have been identified from within *Jarvis's Physical Examination & Health Assessment* ANZ 2nd edition. You should learn each of the terms as they will assist you to complete

the study guide questions; label any figures that have been included to aid your understanding and promote accurate communication with your peers and health team members.

5. **Preparation for the laboratory session**. As well as reading the chapter in *Jarvis's Physical Examination & Health Assessment* ANZ 2nd edition; completing the study guide and attempting the review questions; you may need to do additional work to enhance your skills-based learning.
6. The **study guide** provides step-by-step guidance through each chapter. The study guide includes a variety of exercises, short-answer and fill-in questions. The questions emphasise important issues to help you learn the content for that chapter. In addition to the questions, there are illustrations that relate directly to the chapter content. These illustrations (without labels) have been taken directly from the text, and require you to fill in the gaps or state the names of the structures. You may also be asked to sketch or draw and label pathways or structures in other questions. NOTE: Your facilitator may ask you to complete all or only some of the study guide questions. The answers to the study guide can be found on the Evolve website.
7. **Review questions** (multiple-choice questions, True/False and matching formats) have been included to enable you to test your knowledge acquisition in relation to the content you have studied. Attempt the test at the completion of your reading and study guide questions, when you feel ready. The answers are provided in Appendix A and are directly from your *Jarvis's Physical Examination & Health Assessment* ANZ 2nd edition text.

## Practical Skills in the Laboratory/Clinical Setting

8. **Clinical objectives** have been provided to inform you of the expected outcomes from the laboratory session.
9. **Instructions** provide a structure for the laboratory session and are a step-by-step guide for you to follow and develop these clinical skills.
10. **Regional write-up worksheets**. Each chapter contains a regional write-up worksheet. You will usually work in pairs to obtain both a health history and to perform the regional physical examinations. As you practise the health history interview and physical examination on your peer (or patient in the clinical setting), you can take notes on the worksheet.

The worksheets have been included to provide a guide to enable you to practise your skills in a safe environment

and obtain feedback on your techniques, before you put your newly acquired knowledge into clinical practice.

11. **Documentation.** After your laboratory session you should practise your documentation skills by completing the documentation sheet using the SOAP format. Record findings on an associated diagram if appropriate. The SOAP format headings are: **Subjective** (Reason for seeking care, health history); **Objective** (Physical exam findings); **Assessment** (Assessment of health state or problem, diagnosis); **Plan** (Diagnostic evaluation, follow-up care, and patient teaching).
12. **Patient education** if related to the chapter content.

Practise as much as you can in your clinical laboratory sessions and work closely with your peer to maximise your learning experience. Remember 'practice makes perfect' and your patients will appreciate your skills. Discuss your techniques with your peer and your facilitator, as they will be able to provide you with valuable feedback so you will be able to refine your skills.

We hope that using the *Laboratory Manual*, in partnership with the text, *Jarvis's Physical Examination & Health Assessment ANZ* 2nd edition and *Jarvis's Physical Examination & Health Assessment ANZ* 2nd edition and the related Evolve resources will provide you with the opportunity to develop your history taking and physical examination skills.

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## Chapter One

# The context of health assessment in nursing practice

### INTRODUCTION

Individuals require health assessment for a variety of reasons. Data concerning their health status is usually collected by the first health professional they meet. Often it is the admitting nurse who collects the person's health history and investigates their presenting complaint. Accurate data collection forms the basis of their management.

Physical examination and health assessment are skills that are used on a daily basis in the clinical setting. In order to be able to accurately perform these skills, you require an understanding of the structure and function of the system to be examined, signs and symptoms associated with that system, as well as extensive practice with the examination skill components, to develop a beginning proficiency.

By completing the readings, activities and review questions, then preparing and performing the clinical components identified throughout this laboratory manual you will begin to develop your skills in physical examination and health assessment. The manual will provide a guide to the development of these skills, but further reading, self-directed learning and ongoing practice will be required to actually develop proficiency and to feel comfortable when performing the examinations.

In order to be able to assess and examine your patients you must have a thorough understanding of what information/cues to collect, how to obtain the required data and factors that may influence the data.

### PURPOSE

Chapter 1 introduces concepts related to data collection, determinants of health, evolving definitions and models of health. As the purpose of the health assessment is to make a judgment or diagnosis, this chapter outlines how the data gathered during assessment vary with the physical condition of the person, their developmental stage, their place in the life span and their culture. This data will enable you to make informed decisions about the person's health status and their subsequent management. The chapter provides an overview of types of data, approaches to health assessment, and cultural and life span considerations that are required when performing examinations. Concepts of professional nursing are also introduced.

### KEY CONCEPTS

- Assessment
- Data types
- Data collection
- Definitions of health
- Determinants of health
- Models of health
- Health promotion and disease prevention
- The profession of nursing

While you are completing your reading assignment, ensure you understand each of the key concepts listed above.

## READING ASSIGNMENT

Jarvis, Forbes & Watt (JF&W): *Jarvis's Physical Examination & Health Assessment 2e*, Chapter 1, pp 1–4.

## GLOSSARY

<b>Assessment</b> .....	the collection of data about an individual's health state; the point of entry in an ongoing process
<b>Biomedical model</b> .....	Western tradition that views health as the absence of disease; health and disease are opposite extremes on a linear continuum
<b>Database</b> .....	subjective and objective data plus patient's record and laboratory studies
<b>Environment</b> .....	the total of all the conditions and elements that make up the surroundings and influence the development of a person
<b>Holistic health</b> .....	consideration of the whole person; views the mind, body and spirit as interdependent and functioning as a whole within the environment
<b>Health</b> .....	'... a state of complete physical, mental, and social well-being and not merely the absence of disease, or infirmity ...' (The World Health Organization (WHO), 2003); an emerging state and not merely the absence of disease; state of wellbeing influenced by social, economic, cultural and political factors
<b>Health prevention</b> .....	emphasises the link between health and personal behaviour; is achieved through counselling by primary care providers which is designed to change people's unhealthy behaviours related to smoking, alcohol and other drug use, lack of exercise, poor nutrition, injuries and sexually transmitted infections. Any action directed towards promoting health and preventing the occurrence of disease
<b>Health promotion</b> .....	WHO defined health promotion in the Ottawa Health Charter in 1986 as '... includes building public health policy, creating supportive environments for healthy living, strengthening community action, developing personal knowledge and skills, and reorienting the healthcare system' (Talbot and Verrinder, 2013)
<b>Nursing</b> .....	'... collaborative care of individuals of all ages, families, groups and communities, sick or well and in all settings. Nursing includes the promotion of health, prevention of illness, and the care of ill, disabled and dying people ...' (International Council of Nurses (ICN), 2014)
<b>Objective data</b> .....	what you as the health professional observe by inspecting, percussing, palpating and auscultating during the physical examination
<b>Social determinants of health</b> .....	'... are the conditions in which people are born, grow, live, work and age, including the health system.'(WHO, 2008)
<b>Subjective data</b> .....	what the person says about themselves during history-taking
<b>Wellness</b> .....	a dynamic process, a move towards optimal functioning

## STUDY GUIDE

After completing the reading assignment, you should be able to answer the following questions in the spaces provided.

1. State whether the following data type is objective (O) or subjective (S) by placing the letter after each of the following:

temperature (T) \_\_\_\_\_ pulse (P) \_\_\_\_\_ blood pressure (BP) \_\_\_\_\_  
pain \_\_\_\_\_ blood sugar level (BSL) \_\_\_\_\_ weight \_\_\_\_\_  
anxiety \_\_\_\_\_ lung sounds \_\_\_\_\_

2. A database includes the following 4 elements:

---

3. State the purpose of the health assessment.

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4. What factors must be considered when performing a health assessment?

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5. Consider your own definition of health, and then review the WHO definition of health. Do they differ? If so, how?

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6. Outline why the social determinants of health are responsible for health inequities.

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7. Outline the social and biomedical models of health. What are their aims, key focuses and limitations?

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8. What is the key premise of holistic health? How does holistic health differ from other models of health? Who may be involved in specific management of the patient?

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9. Discuss why health promotion and disease prevention are key concepts related to health.

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10. Relate each of the following concepts of health to the process of data collection:

biomedical model

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wellness

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holistic health

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health promotion and disease prevention

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11. Develop your own definition of what nursing is. Reflect on this in light of the ICN (2014) definition.

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12. Explain why it is important to assess a patient thoroughly prior to planning a course of action.

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13. What influence will a patient's age have on their nursing management?

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## REVIEW QUESTIONS

This test is for you to check your own mastery of the content. Answers are provided in Appendix A.

1. The concept of health has expanded in the past 40 years. Select the phrase that reflects the **narrowest** description of health.
  - a. the absence of disease
  - b. a dynamic process towards optimal functioning
  - c. depends on an interaction of mind, body, and spirit within the environment
  - d. prevention of disease
2. Select the **most complete** description of a database.
  - a. subjective and objective data gathered from a patient
  - b. objective data obtained from a patient through inspection, percussion, palpation and auscultation
  - c. a summary of a patient's record, including laboratory studies
  - d. subjective and objective data gathered from a patient plus the results of any diagnostic studies completed
3. Which of the following statements is **incorrect** concerning the development of the professional code of conduct, code of ethics and competency standards?
  - a. They provide regulatory bodies with a basis for evaluation of conduct.
  - b. They were developed to restrict nursing practice.
  - c. They outline minimum standards for nurses to uphold.
  - d. They inform the public of standards of professional conduct.
4. When assessing a child aged four who presents with a rash, *in order of priority*, which of the following are important considerations:
  - a. history from the mother of the condition's development
  - b. developmental stage of the child
  - c. communication skills that are age-appropriate
  - d. age-related normal findingsSelect your priorities from the list below:
  - i a, b, c, d
  - ii d, b, a, c
  - iii a, d, c, a
  - iv d, a, c, b
5. The concept of health incorporates all of the following **except**?
  - a. health promotion
  - b. environmental context
  - c. healthcare system
  - d. disease prevention
  - e. social context
6. When a person accesses the healthcare system for treatment of illness, a number of factors pose potential risk for harm. These factors include all of the following **except**:
  - a. increasing age and comorbidities
  - b. the increasing use of complex technology
  - c. the use of numerous and complex interventions during an episode of illness
  - d. being cared for at home
  - e. movement between community and hospital health sectors

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## Chapter Two

# Critical thinking in health assessment

### PURPOSE

Critical thinking is an essential component in clinical decision making. The clinical reasoning employed in the decision making process is dependent on a critical thinking 'disposition' (Scheffer & Rubinfeld, 2000). As you progress from student to registered nurse you will develop critical thinking skills and the ability to engage in clinical reasoning which will enable competent nursing practice. This chapter focuses on the characteristics of clinical reasoning, the nursing process and critical thinking in health assessment.

### KEY CONCEPTS

- Processes in critical thinking and clinical decision-making
- Process of clinical reasoning in making clinical decisions
- Conceptual frameworks in nursing practice
- Assessment approaches and the context of care

While you are completing your reading assignment, ensure you understand each of the key concepts listed above.

### READING ASSIGNMENT

Jarvis, Forbes & Watt (JF&W): *Jarvis's Physical Examination & Health Assessment* 2e, Chapter 2, pp 5–13.

### GLOSSARY

<b>Complete database</b> .....	includes screening for pathology and determining the response to that pathology or to any health problem; gathered following admission; includes additional information on the patient's perception of illness, functional ability or patterns of living, activities of daily living, health maintenance behaviours, response to health problems, coping patterns, interaction patterns and health goals; includes a complete health history and full physical examination
<b>Clinical reasoning</b> .....	a method of collecting and analysing clinical information (synonymous with: critical thinking, diagnostic reasoning, problem solving, clinical judgment and clinical decision making)
<b>Critical thinking</b> .....	the means by which nurses learn to assess and modify judgments before acting; is required for sound clinical reasoning and clinical judgment
<b>Emergency assessment/primary survey</b> .....	rapid collection of the database, often compiled concurrently with lifesaving measures
<b>Focused or episodic assessment</b> .....	assessment used for a limited or short-term problem; concerns mainly one problem, one cue complex or one body system; also called 'person centred'
<b>Follow-up assessment/ongoing assessment</b> ...	used in all settings to monitor and evaluate progress on short-term or chronic health problems
<b>Medical diagnosis</b> .....	used to evaluate the cause and aetiology of disease; focus is on the function or malfunction of a specific organ system
<b>Nursing diagnosis/problem statements</b> .....	the response or the symptoms experienced by the person/family or community to actual or potential health problems

## STUDY GUIDE

After completing the reading assignment, you should be able to answer each of the following questions in the spaces provided.

1. The aim of nursing care is to promote and maintain health and prevent illness; how is this evaluated?

\_\_\_\_\_

2. Clinical decision making decides which data should be collected. Which 2 factors underpin this process?

i. \_\_\_\_\_

ii. \_\_\_\_\_

3. Identify 4 resources that are available to support nurses in their clinical decision making.

i. \_\_\_\_\_

ii. \_\_\_\_\_

iii. \_\_\_\_\_

iv. \_\_\_\_\_

4. List 5 indicators of quality and safe patient care.

i. \_\_\_\_\_

ii. \_\_\_\_\_

iii. \_\_\_\_\_

iv. \_\_\_\_\_

v. \_\_\_\_\_

5. Differentiate between the novice, the proficient and the expert nurse with respect to clinical decision making.

Novice \_\_\_\_\_

\_\_\_\_\_

Proficient \_\_\_\_\_

\_\_\_\_\_

Expert \_\_\_\_\_

\_\_\_\_\_

6. What does critical thinking enable the nurse to perform?

- i. \_\_\_\_\_
- ii. \_\_\_\_\_
- iii. \_\_\_\_\_
- iv. \_\_\_\_\_

7. Identify the 3 overlapping dimensions that enable the development of critical thinking ability.

- i. \_\_\_\_\_
- ii. \_\_\_\_\_
- iii. \_\_\_\_\_

8. One of the critical thinking skills identified by Alfaro-LeFevre (2009) is identifying assumptions. Explain how the following statement contains an assumption. How would you get the facts in this situation?

‘Mrs Williams, you have to eat better. Your food choices are poor. You are overweight because of this, which is not good for you.’

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9. Another critical thinking skill involves validation, or checking the accuracy and reliability of data. Describe how you would validate each of the following data.

Mrs Williams tells you her weight this morning on the clinic scale was 87 kg.

---

---

---

The admitting nurse tells you Mrs Sarah Williams is experiencing fear and anxiety about having an ileostomy and managing her stoma.

---

---

---

When auscultating the lungs, you hear reduced sounds over the left lower lobe.

---

---

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10. Another critical thinking skill involves clustering related cues that will help to see relationships between data. Cluster each of the following cues:

Obesity, diabetic, poor nutritional state, GORD, smoker, fast heart rate, fear and anxiety, divorced, lives with daughter and her family.

Use the following headings:

Social \_\_\_\_\_

\_\_\_\_\_

Physiological \_\_\_\_\_

\_\_\_\_\_

Psychological \_\_\_\_\_

\_\_\_\_\_

11. As acuity determines the order of priority when there are multiple problems, explain each of the following levels in your own words.

first-level problems

\_\_\_\_\_

\_\_\_\_\_

second-level problems

\_\_\_\_\_

\_\_\_\_\_

third-level problems

\_\_\_\_\_

\_\_\_\_\_

collaborative problems

\_\_\_\_\_

\_\_\_\_\_

12. Explain why problem statements are determined early in the clinical reasoning process.

\_\_\_\_\_

\_\_\_\_\_

13. Explain why conceptual models or a combination of models are used in nursing practice. What concepts do they have in common?

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14. How are medical diagnosis and nursing diagnosis/problem statements similar? How are they different?

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15. For each of the following situations, state the type of data collection you would perform (i.e. *comprehensive* database, *episodic* or *problem-centred* database, *ongoing assessment/follow-up* database, *emergency* database) and give reasons for your choices.

blood in stool and rectal pain

---

presentation with rapid heart rate

---

first visit to stomal therapist for ileostomy/stoma care review

---

hypovolaemia secondary to dehydration

---

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## REVIEW QUESTIONS

This test is for you to check your own mastery of the content. Answers are provided in Appendix A.

- Nursing diagnoses/problem statements, based on assessment of a number of factors, give nurses a common language with which to communicate nursing findings. The best description of a nursing diagnosis/problem statement is that it is:
  - used to evaluate the aetiology of a disease
  - a pattern of coping
  - a concise description of actual or potential health problems or of wellness strengths
  - the patient's perception of and satisfaction with their own health status
- Depending on the clinical situation, the nurse may establish one of four kinds of database. An episodic database is described as:
  - including a complete health history and full physical examination
  - concerning mainly one problem
  - evaluation of a previously identified problem
  - rapid collection of data in conjunction with lifesaving measures
- Individuals should be seen at regular intervals for healthcare. With regard to the frequency of these visits:
  - they are most efficient if performed on an annual basis
  - timing is not important; it should be as health issues arise
  - there is no recommendation for the frequency of healthcare
  - it varies, depending upon the age of the person
- Clinical reasoning involves the following processes:
  - formulation of a clinical impression
  - planning appropriate interventions
  - gathering further data
  - evaluation of interventions
  - data collection
  - implementing interventions

Place them in order from commencement to completion.

  - a, f, c, b, e, d
  - e, b, a, c, d, f
  - a, b, c, e, f, d
  - e, a, c, b, f, d
- Circle True or False to answer the following statements. If the answer is false, state the correct answer. When validating data it is important to:

a. ensure accuracy of information	True	False
b. include extraneous information	True	False
c. identify missing cues or elements	True	False
d. ignore gaps in the data	True	False

## REFERENCE

Scheffer BK, Rubenfeld MG: A consensus statement on critical thinking in nursing, *Journal of Nursing Education*, 39(8):352–359, 2000.

## Chapter Three

# Developmental tasks and health promotion across the life span

### PURPOSE

To enable you, as the nurse, to collect accurate and appropriate data from a comprehensive health history and physical assessment, you will need to take the patient's developmental stage into account.

This chapter provides you with an overview of individuals in each stage of the life cycle, considering their physical, psychosocial, cognitive and behavioural development. Information collected, both subjective and objective, is important to construct a comprehensive database that will guide nursing management.

Inherent to this database are considerations given to changes across the life span. Tables summarising growth and development milestones for infancy through to adolescence may be found in Appendices B to G of this manual.

### KEY CONCEPTS

- Infancy (birth to 1 year)
- Early childhood, toddler (1 to 3 years)
- Early childhood, preschool (3 to 5 or 6 years)
- Middle childhood, school-age child (5 or 6 to 10 to 12 years)
- Preadolescence (10 to 12 or 13 years)
- Adolescence (12 or 13 to 19 years)
- Early adulthood (20 to 40 years)
- Middle adulthood (40 to 64 years)
- Late adulthood (65+ years)
- Developmental screening tests

While you are completing your reading assignment, ensure you understand each of the key concepts listed above.

### READING ASSIGNMENT

Jarvis, Forbes & Watt (JF&W): *Jarvis's Physical Examination & Health Assessment* 2e, Chapter 3, pp14–37.

### GLOSSARY

<b>Centration</b> .....	focusing on only one aspect of a situation at a time and ignoring other aspects
<b>Cooperative play</b> .....	playing the same game and interacting while doing it
<b>Delayed imitation</b> .....	the process of a child witnessing an event, forming a mental representation of it, and imitating it later in the absence of the model
<b>Egocentric</b> .....	focusing on one's own interests, needs and point of view
<b>Generativity</b> .....	the need to contribute to the next generation
<b>Hassles</b> .....	relatively minor but frequently experienced stresses
<b>Mental representation</b> .....	Piaget's term for the concept acquired by age 2 that an infant can think of an external event without actually experiencing it
<b>Object permanence</b> .....	Piaget's term for the concept acquired during infancy that objects and people continue to exist even when they are no longer in sight
<b>Prehension</b> .....	fine motor skill of using the hand and fingers for the act of grasping
<b>Stress</b> .....	biological reactions to an adverse stimulus (physical, mental or emotional, internal or external) that tends to disturb the homeostasis of the body



**Symbolic function** ..... Piaget's term for the concept acquired during childhood in which the child uses symbols to represent people, objects and events

**Telegraphic speech** ..... speech used by children: aged 2 in which words are combined into simple two-word phrases and aged 3 or 4 in which three- or four-word sentences contain only the essential words

### STUDY GUIDE

After completing the reading assignment, you should be able to answer each of the following questions in the spaces provided.

1. List the 9 developmental stages, from infancy through to late adulthood, and state the general age ranges for each stage.

- i. \_\_\_\_\_
- ii. \_\_\_\_\_
- iii. \_\_\_\_\_
- iv. \_\_\_\_\_
- v. \_\_\_\_\_
- vi. \_\_\_\_\_
- vii. \_\_\_\_\_
- viii. \_\_\_\_\_
- ix. \_\_\_\_\_

2. List Erikson's 8 stages of ego development that encompass the life span, and identify the associated psychological conflict that characterises each stage of physiological maturity.

- i. \_\_\_\_\_
- ii. \_\_\_\_\_
- iii. \_\_\_\_\_
- iv. \_\_\_\_\_
- v. \_\_\_\_\_
- vi. \_\_\_\_\_
- vii. \_\_\_\_\_
- viii. \_\_\_\_\_

3. List Piaget's stages of cognitive development in the growing child and state the way of thinking that characterises each stage.

- i. \_\_\_\_\_
- ii. \_\_\_\_\_
- iii. \_\_\_\_\_
- iv. \_\_\_\_\_
- v. \_\_\_\_\_



4. Explain why the development of gross motor skills is predictable in the infant.

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5. Place the gross motor posture that should have developed next to the appropriate age (in months) of an infant.

Birth: when prone, *can turn head to side* \_\_\_\_\_

3 months: \_\_\_\_\_

4 months: \_\_\_\_\_

6–7 months: *sitting alone, unaided*

7 months: \_\_\_\_\_

8 months: \_\_\_\_\_

9–11 months: \_\_\_\_\_

11 months: \_\_\_\_\_

12 months: \_\_\_\_\_

6. List at least 4 points of parent counselling that you should include in a periodic health examination for an infant at birth and aged up to 18 months. (Refer to JF&W 2e, Chapter 3, Table 3.1 and Table 3.2, pp 18 and 19.)

i. \_\_\_\_\_

ii. \_\_\_\_\_

iii. \_\_\_\_\_

iv. \_\_\_\_\_

7. Explain why most language development occurs in the first 2 years. How does this parallel the motor development of the child?

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8. Why are some children labelled as being in the 'terrible twos'?

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9. Why is mental representation a major achievement for the toddler?

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10. Explain the behaviours related to the term 'ritualism' in the toddler.

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11. State 4 points of physical examination screening you should perform during a young child's periodic health examination, ages 2 to 4. (Refer to JF&W 2e, Chapter 3, Table 3.3, p 23.)

- i. \_\_\_\_\_
- ii. \_\_\_\_\_
- iii. \_\_\_\_\_
- iv. \_\_\_\_\_

12. Complete the following sentences regarding differences between boys and girls, by filling in the gaps:

\_\_\_\_\_ often achieve fine motor milestones ahead of \_\_\_\_\_.

The preadolescent growth spurt occurs at about age \_\_\_\_\_ in girls and about age \_\_\_\_\_ in boys.

13. From ages 7–11 the child develops concrete operational skills. Identify 5 actions they are now able to perform.

- i. \_\_\_\_\_
- ii. \_\_\_\_\_
- iii. \_\_\_\_\_
- iv. \_\_\_\_\_
- v. \_\_\_\_\_

14. State at least 6 items of patient and parent counselling you should discuss during the periodic health examination for the middle childhood years, ages 7 to 10. (Refer to JF&W 2e, Chapter 3, Table 3.4, p 25.)

- i. \_\_\_\_\_
- ii. \_\_\_\_\_
- iii. \_\_\_\_\_
- iv. \_\_\_\_\_
- v. \_\_\_\_\_
- vi. \_\_\_\_\_

15. List at least 4 developmental tasks that characterise the stage of adolescence.

- i. \_\_\_\_\_
- ii. \_\_\_\_\_
- iii. \_\_\_\_\_
- iv. \_\_\_\_\_

16. List the key points of discussion that you would raise during counselling and patient education in the periodic health examination of an adolescent, ages 12 or 13 to 19. (Refer to JF&W 2e, Chapter 3, Table 3.5, p 27.)

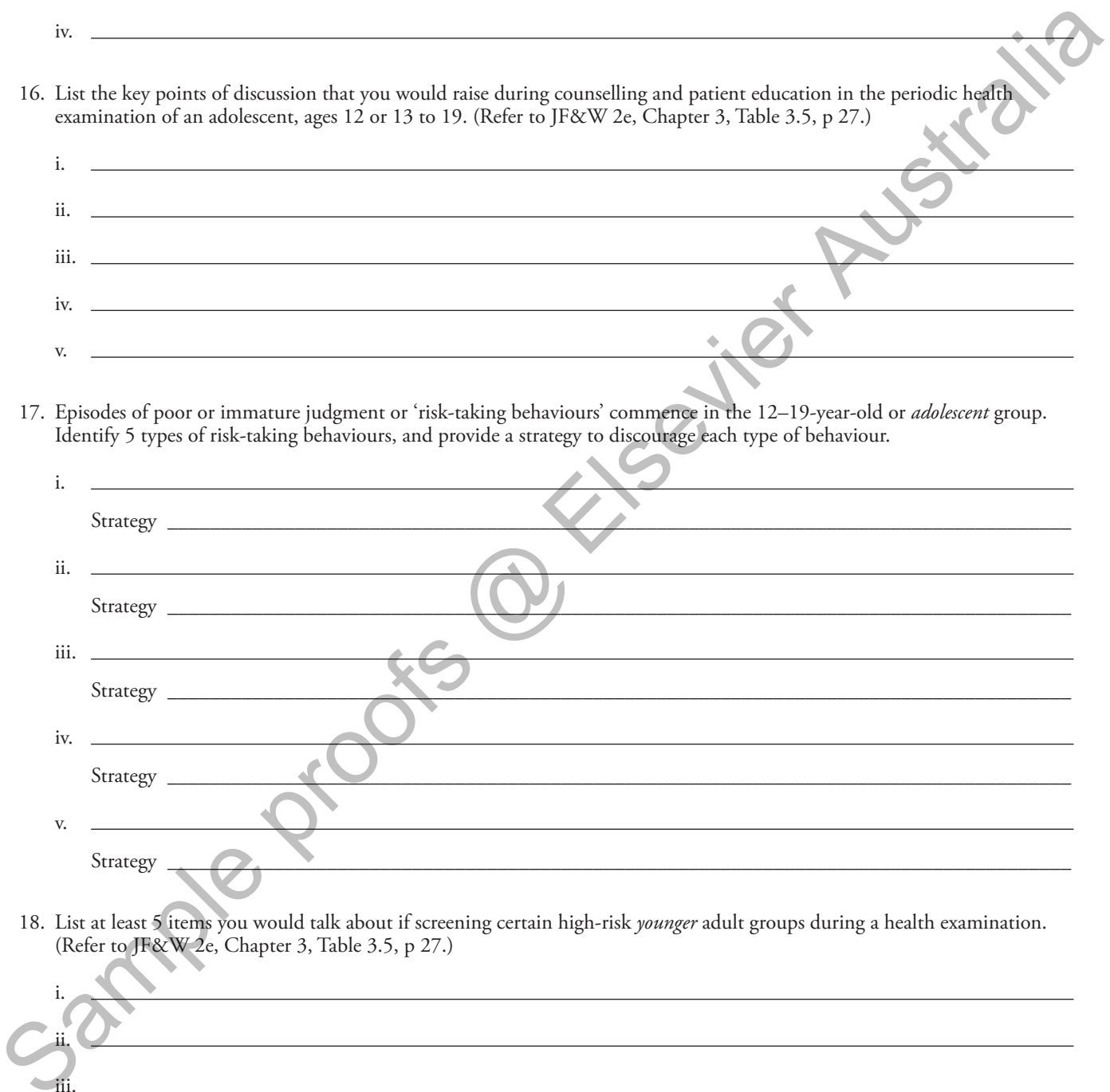
- i. \_\_\_\_\_
- ii. \_\_\_\_\_
- iii. \_\_\_\_\_
- iv. \_\_\_\_\_
- v. \_\_\_\_\_

17. Episodes of poor or immature judgment or 'risk-taking behaviours' commence in the 12–19-year-old or *adolescent* group. Identify 5 types of risk-taking behaviours, and provide a strategy to discourage each type of behaviour.

- i. \_\_\_\_\_  
Strategy \_\_\_\_\_
- ii. \_\_\_\_\_  
Strategy \_\_\_\_\_
- iii. \_\_\_\_\_  
Strategy \_\_\_\_\_
- iv. \_\_\_\_\_  
Strategy \_\_\_\_\_
- v. \_\_\_\_\_  
Strategy \_\_\_\_\_

18. List at least 5 items you would talk about if screening certain high-risk *younger* adult groups during a health examination. (Refer to JF&W 2e, Chapter 3, Table 3.5, p 27.)

- i. \_\_\_\_\_
- ii. \_\_\_\_\_
- iii. \_\_\_\_\_
- iv. \_\_\_\_\_
- v. \_\_\_\_\_



19. In relation to development, why are *early adults* (20–40-year-olds) more at risk of obesity? What dietary principles should they follow to minimise the risk of its development?

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20. When screening the general *middle-aged* adult population during a health examination list 5 items you would discuss. (Refer to JF&W 2e, Chapter 3, Table 3.6, p 30.)

- i. \_\_\_\_\_
- ii. \_\_\_\_\_
- iii. \_\_\_\_\_
- iv. \_\_\_\_\_
- v. \_\_\_\_\_

21. Identify the 5 leading causes of death in middle adulthood. (NB. This can be influenced by social and cultural group.) (Refer to JF&W 2e, Chapter 3, Table 3.6, p 30.)

- i. \_\_\_\_\_
- ii. \_\_\_\_\_
- iii. \_\_\_\_\_
- iv. \_\_\_\_\_
- v. \_\_\_\_\_

22. Identify the 5 leading causes of death in age 65 and older. (Refer to JF&W 2e, Chapter 3, Table 3.7, p 32.)

- i. \_\_\_\_\_
- ii. \_\_\_\_\_
- iii. \_\_\_\_\_
- iv. \_\_\_\_\_
- v. \_\_\_\_\_

23. Discuss the implications of conducting a life review, which is one of the developmental tasks confronting older adults.

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## REVIEW QUESTIONS

This test is for you to check your own mastery of the content. Answers are provided in Appendix A.

1. Select the best description of the physical growth of an average term infant during the first year of life.
  - a. between 2.3 and 3.2 kilograms (kg) at birth; weight and height double by 1 year
  - b. between 2.5 and 4.5 kg at birth; weight and height triple by 1 year
  - c. between 2.5 and 4.5 kg at birth; weight triples and height increases 50% by 1 year
  - d. 3.4 kg at birth; weight and height double by 1 year
2. Human development has been studied by a number of theorists. The best description of Erik Erikson's theory is that it is:
  - a. concerned with biological determinants of behaviour
  - b. concerned with the growth of the ego
  - c. concerned with cognitive development in the growing child
  - d. concerned with physiological development from infancy to 1 year
3. A game of hide and seek is an example of:
  - a. Piaget's object permanence
  - b. Levinson's settling down
  - c. failure to inhibit primitive reflexes
  - d. Erikson's theory of trust versus mistrust
4. Beth D, age 15 months, has come to the clinic for a well-baby visit. This is the first visit for this child since the family recently relocated. When a developmental history is taken from the mother, she states, 'Beth just started to pull herself up to a standing position'. The best action on the part of the practitioner is to:
  - a. proceed with the exam. The child is progressing at the expected rate
  - b. proceed with the exam. Although the child is behind the anticipated developmental stage, the child is clearly progressing in a cephalocaudal direction
  - c. perform a complete examination, focusing on the musculoskeletal system. Then discuss the findings with the mother
  - d. obtain a more detailed physical development history, then perform the examination. This represents a developmental delay for this child
5. The use of two-word phrases by a 2-year-old is an example of:
  - a. biphrase
  - b. holophrase
  - c. telegraphic speech
  - d. ritualism
6. A group of children are observed interacting while playing the same game. The observer would recognise this as:
  - a. parallel play
  - b. language development
  - c. decentration
  - d. cooperative play
7. Circle True or False to answer the following statements. If the answer is false, state the correct answer.
  - a. By nurturing successes and promoting a healthy self-image, the parents help the preschooler develop self-esteem. True False
  - b. Self-esteem does not contribute to competency. True False
  - c. Self-esteem affects our emotional experiences as adults. True False
  - d. Children develop a conscience when they are 3 to 5 years old. True False
  - e. Preschoolers need less nutritious food. True False
  - f. Positive self-concept and self-esteem are further developed as adolescents. True False
8. The description of alternative periods of structure building and transition in an adult's life are the results of the work of:
  - a. Erik Erikson
  - b. National Health and Medical Research Council
  - c. Department of Health and Ageing
  - d. Daniel Levinson
9. A life review or a cataloguing of life events is usually associated with the developmental period of:
  - a. early adulthood
  - b. middle adulthood
  - c. late adulthood
  - d. grieving for the lost loved one
10. Ellie is a 17-year-old high school student who arrives for her sports physical. Which of these questions is it most appropriate to ask for counselling in prevention?
  - a. How about cigarettes—do you smoke?
  - b. How much milk do you drink?
  - c. Have you had a 'flu shot this year?
  - d. When was your last vision check?

- |   |   |
|---|---|
| 11. The purpose of the PEDS screening instrument is to:<br>a. provide epidemiological data<br>b. form an intelligence test<br>c. elicit parents' concerns about their child's development<br>d. reduce risk factors | 12. Disease morbidity is increased in middle adulthood, probably caused most often by:<br>a. drinking two alcoholic drinks per day<br>b. obesity<br>c. physical exertion<br>d. stress |
|---|---|

## PRACTICAL SKILLS IN THE LABORATORY/CLINICAL SETTING

To consolidate the information that you have read in Chapter 3 and supplied when answering the questions related to the content, you should now be ready for the clinical component of this chapter.

The purpose of this laboratory session is to gain practice administering a screening test (the Hassles and Uplift Scale) and develop skills with the tool before administering it to patients in the clinical setting.

### Introduction

You were introduced to the Hassles and Uplifts Scale (Table 3.8, p 34 in JF&W 2e and Table 3.1 below), a tool that attempts to quantify the impact of daily life stress on an adult's health. It is a way of looking at positive and negative events in daily life. Once negative events are identified the person can develop strategies to manage or minimise these events, similarly, once uplifts are identified, they can develop strategies to enhance these or increase their frequency.

Uses of the Hassles and Uplift Scale include:

- analysing sources of stress and developing effective coping strategies
- identifying positive aspects of daily living that may help counteract or mediate the damaging effects of stress
- utilising results to create stimulus material in clinical or workshop settings focused on stress management.

Researchers, clinicians and counsellors as well as graduate students use the tool.

The scale you will be using is the Combined Hassles and Uplift Scale, a fifty-three item questionnaire that is worded so that you can indicate whether a given event is a hassle, an uplift or both. The scoring scale is:

0	1	2	3
None or not applicable	Somewhat	Quite a bit	A great deal

Circle the number that is the best descriptor of your feeling (hassle or uplift) for that statement. You will score the hassles on the left and the uplifts on the right.

It is best that you undertake this questionnaire in private, then discuss the results later in class.

### PROFESSIONAL PRACTICE NOTE

*With all information obtained, whether it is self-disclosed, from your peer in the laboratory or a patient in the clinical setting, you need to ensure the confidentiality of the information. You should inform your peer or patient in the clinical setting of the purpose for gathering the information/data and how you will be using the information. Start to think about this aspect of nursing every time you collect information/data.*

### Instructions

1. You will need to consider each item on the list and circle the appropriate numbers on both the left and right.
2. You should take this questionnaire yourself before administering it to someone else.  
Note: PLEASE FILL OUT THE QUESTIONNAIRE JUST BEFORE YOU GO TO BED.
3. Be aware that many people consider some of the questions personal.
4. You should also be aware of the sensitive nature of some questions when considering whether or not to discuss your own questionnaire with your peers or the whole class.

5. You will gain considerable insight in taking the test, both on the impact of daily stress on adults in general and on the amount of daily stress occurring in your own life.
6. Discuss the results you have obtained with a peer or your whole class as directed by your instructor.
7. Don't forget that you may choose not to reveal the answers to some of the more sensitive questions to your peers. This is your choice.
8. Examples of possible discussion topics may include:
  - Common stressors and what can be done about them.
  - Strategies to increase the number of 'uplifts'
  - What affects you most: home vs work; hassles vs uplifts?
  - How can I manage my stress more effectively?

**Table 3.1** The Hassles and uplifts scale

HASSLES are irritants—things that annoy or bother you; they can make you upset or angry. UPLIFTS are events that make you feel good; they can make you joyful, glad, or satisfied. Some hassles and uplifts occur on a fairly regular basis and others are relatively rare. Some have only a slight effect, others have a strong effect.

This questionnaire lists things that can be hassles and uplifts in day-to-day life. You will find that during the course of a day some of these things will have been only a hassle for you and some will have been only an uplift. Others will have been both a hassle AND an uplift.

DIRECTIONS: Please think about how much of a hassle and how much of an uplift each item was for you today. Please indicate on the left-hand side of the page (under 'HASSLES') how much of a hassle the item was by circling the appropriate number. Then indicate on the right-hand side of the page (under 'UPLIFTS') how much of an uplift it was for you by circling the appropriate number.

Remember, circle one number on the left-hand side of the page and one number on the right-hand side of the page for each item.

PLEASE FILL OUT THIS QUESTIONNAIRE JUST BEFORE YOU GO TO BED.

**HASSLES AND UPLIFTS SCALE**

How much of a **hassle** was this item for you today?

How much of an **uplift** was this item for you today?

**HASSLES**

**UPLIFTS**

0 None or not applicable

0 None or not applicable

1 Somewhat

1 Somewhat

2 Quite a bit

2 Quite a bit

3 A great deal

3 A great deal

DIRECTIONS: Please circle one number on the left-hand side and one number on the right-hand side for each item.

**HASSLES**

**UPLIFTS**

0 1 2 3

1. Your child(ren)

0 1 2 3

0 1 2 3

2. Your parents or parents-in-law

0 1 2 3

0 1 2 3

3. Other relative(s)

0 1 2 3

0 1 2 3

4. Your spouse

0 1 2 3

0 1 2 3

5. Time spent with family

0 1 2 3



0 1 2 3	6. Health or wellbeing of a family member	0 1 2 3
0 1 2 3	7. Sex	0 1 2 3
0 1 2 3	8. Intimacy	0 1 2 3
0 1 2 3	9. Family-related obligations	0 1 2 3
0 1 2 3	10. Your friend(s)	0 1 2 3
0 1 2 3	11. Fellow workers	0 1 2 3
0 1 2 3	12. Clients, customers, patients, etc	0 1 2 3
0 1 2 3	13. Your supervisor or employer	0 1 2 3
0 1 2 3	14. The nature of your work	0 1 2 3
0 1 2 3	15. Your workload	0 1 2 3
0 1 2 3	16. Your job security	0 1 2 3
0 1 2 3	17. Meeting deadlines or goals on the job	0 1 2 3
0 1 2 3	18. Enough money for necessities (e.g. food, clothing, housing, healthcare, taxes, insurance)	0 1 2 3
0 1 2 3	19. Enough money for education	0 1 2 3
0 1 2 3	20. Enough money for emergencies	0 1 2 3
0 1 2 3	21. Enough money for extras (e.g. entertainment, recreation, holidays)	0 1 2 3
0 1 2 3	22. Financial care for someone who doesn't live with you	0 1 2 3
0 1 2 3	23. Investments	0 1 2 3
0 1 2 3	24. Your smoking	0 1 2 3
0 1 2 3	25. Your drinking	0 1 2 3
0 1 2 3	26. Mood-altering drugs	0 1 2 3
0 1 2 3	27. Your physical appearance	0 1 2 3
0 1 2 3	28. Contraception	0 1 2 3
0 1 2 3	29. Exercise(s)	0 1 2 3
0 1 2 3	30. Your medical care	0 1 2 3
0 1 2 3	31. Your health	0 1 2 3
0 1 2 3	32. Your physical abilities	0 1 2 3
0 1 2 3	33. The weather	0 1 2 3
0 1 2 3	34. News events	0 1 2 3
0 1 2 3	35. Your environment (e.g. quality of air, noise level, greenery)	0 1 2 3
0 1 2 3	36. Political or social issues	0 1 2 3
0 1 2 3	37. Your neighbourhood (e.g. neighbours, setting)	0 1 2 3
0 1 2 3	38. Conserving (gas, electricity, water, petrol, etc)	0 1 2 3
0 1 2 3	39. Pets	0 1 2 3

0 1 2 3	40. Cooking	0 1 2 3
0 1 2 3	41. Housework	0 1 2 3
0 1 2 3	42. Home repairs	0 1 2 3
0 1 2 3	43. Garden work	0 1 2 3
0 1 2 3	44. Car maintenance	0 1 2 3
0 1 2 3	45. Taking care of paperwork (e.g. paying bills, filling out forms)	0 1 2 3
0 1 2 3	46. Home entertainment (e.g. TV, music, reading)	0 1 2 3
0 1 2 3	47. Amount of free time	0 1 2 3
0 1 2 3	48. Recreation and entertainment outside the home (e.g. movies, sport, eating out, walking)	0 1 2 3
0 1 2 3	49. Eating (at home)	0 1 2 3
0 1 2 3	50. Religious or community organisations	0 1 2 3
0 1 2 3	51. Legal matters	0 1 2 3
0 1 2 3	52. Being organised	0 1 2 3
0 1 2 3	53. Social commitments	0 1 2 3

From De Longis A, Folkman S, Lazarus RS: The impact of daily stress on health and mood: Psychological and social resources as mediators, *Journal of Personality and Social Psychology*, 54(3): 486-495, 1988. Copyright © 1988 by the American Psychological Association. NO further reproduction or distribution is permitted without written permission of the American Psychological Association.

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## Chapter Four

# Cultural safety: cultural considerations

### PURPOSE

Throughout your study on health assessment you will learn to conduct numerous assessments: a complete health history, a psychosocial history, a mental health assessment, a nutritional assessment, a pain assessment, a suicide risk assessment and a physical examination of a patient. Underpinning these assessments are many factors that need to be taken into consideration (gender, age, social circumstances) including the person's culture. Living in a multicultural society necessitates a sound understanding of how culture influences health, health behaviours, healthcare and nursing management.

Chapter 4 introduces and explains the concept of cultural safety (as developed by Ramsden in 1990 in New Zealand), which is centred on self-awareness and the idea of cultural competence. Many questions such as who you are, where you come from and what your beliefs and values are will help you to develop that self-awareness which you may then incorporate into your nursing practice to become culturally competent. The chapter provides an overview of the populations of Australia and New Zealand, examines the demographic relationship between health and culture in these countries, provides definitions for culture, race, ethnicity and health and describes the positions on Indigenous issues and cultural assessment of the Australian Nursing and Midwifery Council and the New Zealand Council of Nursing. This chapter also identifies the steps to cultural safety and the cultural considerations to be incorporated into the assessment process.

### KEY CONCEPTS

- Colonisation of Australia and New Zealand and associated issues
- Concepts of culture, ethnicity, race and health
- Development and definition of cultural safety
- Cultural awareness
- Cultural competence
- Culturally competent nursing practice

While you are completing your reading assignment, ensure you understand each of the key concepts listed above.

### READING ASSIGNMENT

Jarvis, Forbes & Watt (JF&W): *Jarvis's Physical Examination & Health Assessment* 2e, Chapter 4, pp 38–59.

### GLOSSARY

<b>Biculturalism</b> .....	asserts that all encounters are bicultural as they involve the culture of the nurse and the culture of the client
<b>Cultural competence</b> .....	the ability to identify and challenge one's cultural assumptions
<b>Culture</b> .....	'By culture we mean all those historically created designs for living, explicit and implicit, rational, irrational, and non-rational, which exist at any given time as potential guides for the behaviour of men . . . culture is constantly being created and lost' (Kluckhohn & Kelly 1945, p 97); is always learned, dynamic, changing and strategic
<b>Cultural identity</b> .....	being born into a particular cultural milieu; strongly related to life experiences; influenced by ethnicity, gender, ability or disability, religion or spirituality, education and status within society as members of either dominant or minority groups
<b>Cultural safety</b> .....	relates to the experience of the recipient of a healthcare service. It provides the recipient with the power to comment on practices and contribute to the achievement of positive health outcomes and experiences, so the meaning and experience of their illness is validated

<b>Culture shock</b> .....	a state of disorientation or an inability to respond to the behaviour of a different cultural group because of its sudden strangeness, unfamiliarity and incompatibility with the person's own perceptions and expectations
<b>Ethnicity</b> .....	a socially constructed group identification or belonging based on familial descent (kinship) and history and traditions in language, food, dress
<b>Family</b> .....	often, but not always, a group of people who form a household and think of themselves as having familial ties. The concept of family and who is important and who can make decisions within a family can be decided only by individuals in the context of their particular family or in the face of their inability to do so by members of the family itself
<b>Health</b> .....	not just the absence of disease but the whole person within their life context
<b>Race</b> .....	a social construct; there are no significant genetic variations within the human species to justify some kind of grouping of 'races'. Historically the concept of 'race' was used to say some people were inferior to others
<b>Racism</b> .....	treating people not on the basis of their humanity but on the basis of 'race'
<b>Self-reflexivity or self-awareness</b> ...	the ability to locate oneself in terms of culture of origin and culture of choice and one's own biases and beliefs
<b>Significant other</b> .....	a person who is important to one's wellbeing; especially a spouse or one in a similar relationship (Merriam-Webster, 2015)

**STUDY GUIDE**

After completing the reading assignment, you should be able to answer the following questions in the spaces provided.

1. Define the meaning of 'mainstream'.

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2. Explain why Indigenous people in Australia consider themselves to be First Nations or Status People.

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3. What impact did the assumption of terra nullius have on Indigenous Australians?

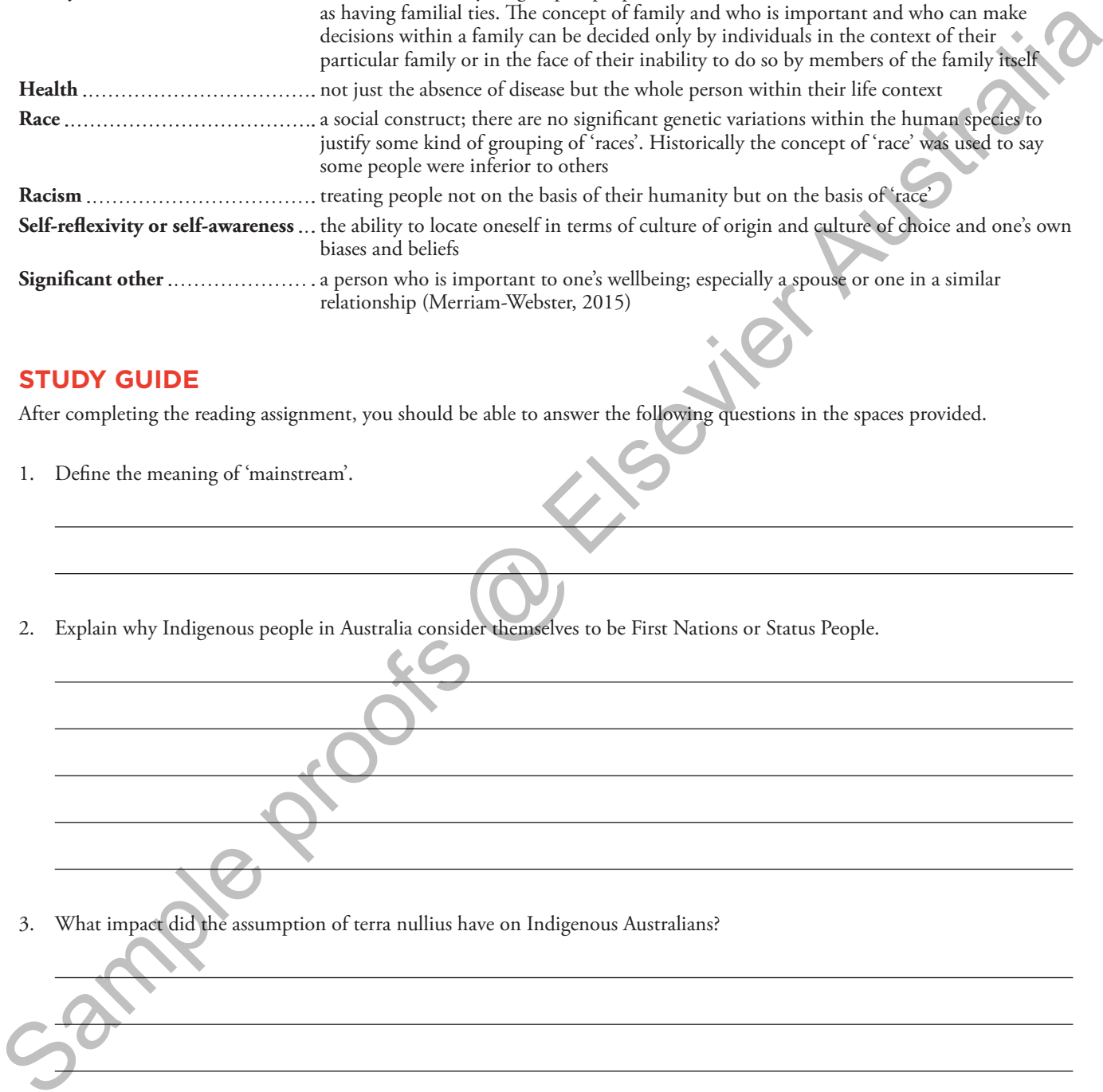
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4. Explain the differences in understanding between the colonisers and Indigenous people in Australia of their world and the place of human beings in it. Why were these differences an issue? Do these issues persist today? If so, how?

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5. Who were the stolen generations? What happened to these people?

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6. What was one of the positive outcomes of the 'distrust' of the mainstream health services by Indigenous Australians?

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7. According to National Aboriginal Community Controlled Health Organisation (NACCHO) what 3 parts are needed for Aboriginality to be determined and recognised in Australia?

- i. \_\_\_\_\_
- ii. \_\_\_\_\_
- iii. \_\_\_\_\_

8. Which of the following states has the largest population of Indigenous Australians? (Please circle number.)

- i. Western Australia
- ii. Northern Territory
- iii. Queensland
- iv. New South Wales

9. What values or beliefs was Māori society based on before European contact?

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10. On 6 February 1840 the Treaty of Waitangi was drafted and signed by the English and approximately 45 Māori Rangatira (chiefs). Why did this treaty come about? In your response consider what was the purpose of the treaty from the Māori and the Crown perspectives?

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11. List 3 factors contributing to the decrease in the Māori population.

- i. \_\_\_\_\_
- ii. \_\_\_\_\_
- iii. \_\_\_\_\_

12. What is the significance of the Waitangi Tribunal?

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13. List the 5 key groups that have contributed to the population of New Zealand and state when each group predominantly arrived.

- i. \_\_\_\_\_
- ii. \_\_\_\_\_
- iii. \_\_\_\_\_
- iv. \_\_\_\_\_
- v. \_\_\_\_\_

14. Discuss the differences between ethnicity and culture.

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15. What does the acronym CALD stand for? Is it an appropriate term? Why or why not?

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16. Define 'race'. Why has the concept of 'race' changed?

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17. State the National Aboriginal Health Strategy Working party definition of health. How does it differ from the World Health Organization definition?

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18. Explain the Te Whare Tapa Wha model of health (the 'four cornerstones of health').

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19. Explain the meaning of the statement: 'Cultural safety relates to the experience of the recipient of a healthcare service'.

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20. Using Box 4.3 *Strategies for self-awareness* in Chapter 4, p 48 of JF&W 2e, reflect upon and answer each of the questions. Have you learnt anything about yourself?

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21. Explain how we as nurses can minimise the impact of cultural dominance in healthcare.

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22. Describe the 3 main steps in the process towards achieving cultural safety in nursing practice.

- i. 

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- ii. 

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- iii. 

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23. List 5 aspects that may influence cultural identity.

- i. 

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- ii. 

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- iii. 

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- iv. 

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- v. 

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24. List 5 factors that contribute to the disparity in illness (morbidity) and death (mortality) in Indigenous and minority groups.

- i. 

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- ii. 

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- iii. 

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- iv. 

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- v. 

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## REVIEW QUESTIONS

This test is for you to check your own mastery of the content. Answers are provided in Appendix A.

- From the 2011 Australian census, 27% of the total population was born overseas. The Anglo-Australian population is the largest group making up 36% of the population. The Indigenous population is what percentage of the Australian population?
  - 11%
  - 5%
  - 3%
  - 4.2%
- The New Zealand census of 2013 revealed a population of almost 4.2 million. The percentages were: European (74%), Māori (14.9%), with the remainder being Asian (11.8%), Pacific (7.4%) and other (1.7%) respectively. Why was there an anomaly in the total number of responses?
  - People could not understand the questions.
  - People can identify with more than one ethnic group.
  - People who should not have completed the census did complete it.
  - Statisticians miscalculated the results.
- Circle True or False to answer the following statements. If the answer is false, state the correct answer.
 

a. Culture is static.	True	False
b. One is born into a culture not born with culture.	True	False
c. Culture includes only ethnicity, customs, dress and religion.	True	False
d. Culture is learned, dynamic, changing and strategic.	True	False
e. Culture is about everyday ways of doing things.	True	False
- Which of the following statements about cultural safety is **incorrect**?  
Cultural safety:
  - is the effective nursing of a person from another culture and is determined by that person
  - incorporates cultural awareness and cultural sensitivity
  - is underpinned by respect and communication skills
  - occurs when you know a lot of information about a number of different cultures and use a checklist of things to do or not do
- Unsafe cultural practices include all of the following **except**:
  - valuing clients
  - superior attitude
  - discrimination
  - demeaning comments
- When becoming culturally safe, knowledge is required in all of the following areas **except**:
  - your own personal cultural identity
  - the culture of the nursing profession
  - the healthcare system hierarchy
  - the cultural identity of the client as they describe it to you
- The family may be defined as any of the following **except**:
  - designated next of kin or relative
  - the birth family
  - the family who raised the person
  - staff who care for the disabled client
  - all of the above
- Circle True or False to answer the following statements. If the answer is false, state the correct answer.
 

a. Religion or spirituality may influence the client's perception of their illness.	True	False
b. Religious or spiritual healers do not influence the client's decision-making processes regarding their treatment.	True	False
c. Health-related behaviours are promoted by most religions or spiritualities.	True	False
d. Religion or spirituality provides a framework for the client's spiritual harmony and health.	True	False
- In relation to perceptions of time, circle True or False to answer the following statements. If the answer is false, state the correct answer.
 

a. Conflicts may occur due to misunderstanding between the nurse's and the client's perceptions of time.	True	False
b. Where traditions and ancestors play an important role the client's focus may be on the present.	True	False
c. Where progress and change are highly valued, the client's focus is on the future.	True	False
d. Nurses have a primary focus on the past or what has happened.	True	False

10. Match the following theories of illness with the associated definitions
- biomedical
  - naturalistic
  - magico-religious
    - the world is seen as an arena in which supernatural forces dominate
    - all events in life have a cause and an effect; the human body functions more or less mechanically
    - the belief that human life is only one aspect of nature and is a part of the general order of the cosmos

11. Steps in understanding the healthcare needs of your clients include all of the following **except**:
- understanding yourself and your cultural values, beliefs, attitudes and practices relevant to health and illness
  - the meaning of health to the client
  - having knowledge of the social background of the client
  - communicating with all clients in the same way whether they speak English or not

## PRACTICAL SKILLS IN THE LABORATORY/CLINICAL SETTING

Having completed the readings, study guide and review questions and reflected on your own cultural awareness and practices you should now be ready for the clinical component related to this chapter.

The purpose of the clinical component is to collect data for a cultural assessment on a peer in the skills laboratory or on a patient in the clinical setting. The questions in the cultural assessment that follows are clearly stated and should pose no problem, even though you may not have completed the health history and assessment chapters.

### Clinical Objectives

At the completion of the clinical laboratory session, with further practice and self-directed learning you should be able to:

- obtain an accurate cultural assessment demonstrating appropriate culturally safe practice
- demonstrate beginning interview skills
- document your findings.

### Instructions

- To ensure the best experience, if possible, pair up with a peer from a cultural background different to your own. If this is not possible, you will still gain insight and sensitivity into the cultural dimensions of health, and will develop skills in the use of the assessment tool.
- Using the tool provided on the next page, individually complete the Health and Illness Beliefs and Practices Determination tool.
- Interview your peer using the Cultural and Family Assessment tool, which follows the Health and Illness Beliefs and Practices Determination tool.
- Throughout the interview with your peer, keep in mind Box 4.10, *Cultural safety summary*, p 57 in JF&W 2e.
- Swap roles and repeat the interview.
- Discuss findings with your peer and/or class (as directed).
- Reflect on the interview process.

### PROFESSIONAL PRACTICE NOTE

*To maintain confidentiality of the information/data provided in these assessments, rather than using a person's real name, use a pseudonym (false name). Do this for all information/data gathered in the clinical laboratory or clinical setting when you are completing assessment from this laboratory manual.*

## HEALTH AND ILLNESS BELIEFS AND PRACTICES DETERMINATION

The set of questions below relate to your own personal health and illness beliefs and practices. Complete these prior to performing the Cultural and Family Assessment (see below) on your peer.

1. How do you define health?

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2. How do you rate your health? (circle one)

a. Excellent

c. Fair

b. Good

d. Poor

3. How do you describe illness?

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4. What do you believe causes illness?

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5. What did your parent/s do to maintain and protect your health?

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6. How do you maintain and protect your own health?

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7. What home or traditional remedies did your parents use to restore your health?

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### HEALTH AND ILLNESS BELIEFS AND PRACTICES DETERMINATION (continued)

8. What home remedies do you use?

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9. Healing and curing are the same. Yes No (circle one)

10. What do you believe brings healing?

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### CULTURAL AND FAMILY ASSESSMENT

1. Where were you born?

2. Where were your parents/grandparents born?

- a. Mother: \_\_\_\_\_
- b. Father: \_\_\_\_\_
- c. Mother's mother: \_\_\_\_\_
- d. Mother's father: \_\_\_\_\_
- e. Father's mother: \_\_\_\_\_
- f. Father's father: \_\_\_\_\_

3. How many brothers \_\_\_\_\_ and sisters \_\_\_\_\_ do you have?

4. In what setting did you grow up? Urban \_\_\_\_\_ Rural \_\_\_\_\_ City \_\_\_\_\_  
Where? \_\_\_\_\_

5. In what country did your parents/grandparents grow up?

- a. Mother: \_\_\_\_\_
- b. Father: \_\_\_\_\_
- c. Mother's mother: \_\_\_\_\_
- d. Mother's father: \_\_\_\_\_
- e. Father's mother: \_\_\_\_\_
- f. Father's father: \_\_\_\_\_

### CULTURAL AND FAMILY ASSESSMENT (continued)

6. How old were you when you came here?
7. How old were your parents/grandparents when they came here?
  - a. Mother: \_\_\_\_\_
  - b. Father: \_\_\_\_\_
  - c. Mother's mother: \_\_\_\_\_
  - d. Mother's father: \_\_\_\_\_
  - e. Father's mother: \_\_\_\_\_
  - f. Father's father: \_\_\_\_\_
8. When you were growing up, who lived with you?
9. Have you maintained contact with:
  - a. Aunts, uncles, cousins? Yes \_\_\_\_\_ No \_\_\_\_\_
  - b. Brothers and sisters? Yes \_\_\_\_\_ No \_\_\_\_\_
  - c. Parents? Yes \_\_\_\_\_ No \_\_\_\_\_
  - d. Grandparents? Yes \_\_\_\_\_ No \_\_\_\_\_
10. Does most of your family live near you?
11. Approximately how often did you visit your family members who lived outside your home?  
Daily \_\_\_\_\_ Weekly \_\_\_\_\_ Monthly \_\_\_\_\_ Less than once a year \_\_\_\_\_ Never \_\_\_\_\_
12. Was your original family name changed? Yes \_\_\_\_\_ No \_\_\_\_\_
13. Do you have a religious or spiritual belief system? Yes \_\_\_\_\_ No \_\_\_\_\_
14. Does your partner have a similar religious or spiritual belief system? Yes \_\_\_\_\_ No \_\_\_\_\_
15. Is your partner/significant other of the same ethnic background as you? Yes \_\_\_\_\_ No \_\_\_\_\_
16. What kind of school did you attend? Public \_\_\_\_\_ Private \_\_\_\_\_
17. As an adult, do you live in a neighbourhood where your neighbours have the same beliefs and ethnic background as yourself? Yes \_\_\_\_\_ No \_\_\_\_\_
18. Do you prepare foods of your ethnic background? Yes \_\_\_\_\_ No \_\_\_\_\_
19. Do you participate in ethnic activities? Yes \_\_\_\_\_ No \_\_\_\_\_  
If yes, specify: \_\_\_\_\_ Singing \_\_\_\_\_ Holiday celebrations \_\_\_\_\_ Dancing \_\_\_\_\_  
Costumes \_\_\_\_\_ Festivals \_\_\_\_\_ Other \_\_\_\_\_
20. Do your friends have the same belief system as you? Yes \_\_\_\_\_ No \_\_\_\_\_
21. Are your friends of the same ethnic background as you? Yes \_\_\_\_\_ No \_\_\_\_\_

## CULTURAL AND FAMILY ASSESSMENT (continued)

22. What is your native (non-English) language? \_\_\_\_\_

Do you speak this language? \_\_\_\_\_ Occasionally \_\_\_\_\_ Rarely \_\_\_\_\_

23. Do you read in your native language? Occasionally \_\_\_\_\_ Rarely \_\_\_\_\_

Based on Spector, RE: *Cultural diversity in health and illness*, 6th edn. Upper Saddle River, NJ, 2004, Prentice Hall, pp 321–323.

### Additional resources

If you are interested in culturally competent nursing the following websites and articles provide other examples of cultural assessment tools that may be used in clinical practice.

**Leininger MM, McFarland MR:** *Culture care diversity and universality: a worldwide nursing theory*, 2nd edn. Sudbury, USA, 2006, Jones and Bartlett Publishers.

**Queensland Health, Multicultural Health:** Checklists for Cultural Assessment. [www.health.qld.gov.au/multicultural/health\\_workers/assess.pdf](http://www.health.qld.gov.au/multicultural/health_workers/assess.pdf)

**Williamson M, Harrison L:** Providing culturally appropriate care: a literature review. *International Journal of Nursing Studies*, 47(6): 761–769, 2010.

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**Kluckhohn C, Kelly H:** The concept of culture. In Linton R, editor: *The science of man in the world culture*, New York, 1945, Columbia University Press, pp 78–105.

**Merriam-Webster Inc., 2015:** Dictionary. [www.merriam-webster.com/](http://www.merriam-webster.com/)

## Chapter Five

## The health assessment interview

**PURPOSE**

Communication is a skill used in every facet of nursing. In this chapter we examine communication processes both verbal and nonverbal and techniques involved in interviewing patients including open-ended and closed questions. The nine response types that may be used during an interview and the 10 'traps' of interviewing are discussed. Nonverbal communication skills including technique variations necessary for individuals of different ages, those with special needs and culturally diverse people are examined. Interpreters and related considerations are also discussed.

**KEY CONCEPTS**

- Communication skills — verbal and nonverbal
- Questioning and interviewing techniques
- Pitfalls in interviewing and subsequent consequences
- Developmental and cultural considerations
- Interpreter use and considerations
- Barriers to communicating effectively

While you are completing your reading assignment, ensure you understand each of the key concepts listed above.

**READING ASSIGNMENT**

Jarvis, Forbes & Watt (JF&W): *Jarvis's Physical Examination & Health Assessment* 2e, Chapter 5, pp 60–78.

**GLOSSARY**

After reading the corresponding chapter in the text, learn the following terms. You should be able to cover the definition on the right and state the associated definition.

<b>Avoidance language</b> .....	the use of euphemisms to avoid reality or to hide feelings
<b>Clarification</b> .....	response used when the patient's word choice is ambiguous or confusing
<b>Closed or direct question</b> .....	direct question that asks for specific information; elicits a short, one- or two-word answer, a yes or no, or a forced choice; used after open-ended questions to clarify specific facts
<b>Confrontation</b> .....	response in which you provide honest feedback about an observed action, feeling or statement; your response focuses the person's attention on the discrepancy, affect or inconsistency
<b>Cross-cultural or intercultural communication</b> .....	the communication process occurring between a healthcare professional and a patient with different cultural backgrounds, in which both attempt to understand the other's point of view from a cultural perspective
<b>Cultural code</b> .....	set of rules or norms of behaviour used by members of a cultural group to guide their behaviour and interpret situations
<b>Distancing</b> .....	the use of impersonal speech to put space between the self and a threat

<b>Empathy</b> .....	viewing the world from the other person's inner frame of reference while remaining yourself; recognising and accepting the other person's feelings without criticism
<b>Explanation</b> .....	statements that inform the patient; sharing of factual and objective information
<b>Facilitation</b> .....	response that encourages the patient to say more, to continue with the story; also called 'general leads' as they show the person you are interested and will listen further
<b>Geographic privacy</b> .....	private room or space with only you and the patient present
<b>Interpretation</b> .....	based on inference or conclusion; links events, makes associations or implies cause; helps the person understand their own feelings
<b>Interview</b> .....	a meeting between you and your patient with the goal of gathering a complete health history and beginning to identify health strengths and problems
<b>Jargon</b> .....	using medical vocabulary with the patient in an exclusionary and paternalistic way
<b>Leading question</b> .....	a question that implies that one answer is 'better' than another
<b>Nonverbal communication</b> .....	message conveyed through body language — physical appearance, posture, gestures, facial expression, eye contact, voice, touch, and even where one places the chairs; tends to be subconscious in nature
<b>Open question</b> .....	asks for narrative information; unbiased; leaves the person free to answer in any way; used to begin interview and introduce new topics
<b>Reflection</b> .....	response echoes the patient's words; repeats part of what patient has just said; focuses further attention on a specific phrase
<b>Summary</b> .....	final review of what you understand the patient has said; condenses facts and presents a summation of how you perceive the health problem or need; provides opportunity for correction of perception if necessary
<b>Verbal communication</b> .....	messages sent through spoken words, vocalisations and tone of voice
<b>'Why' question</b> .....	when used with adults, a 'why' question asks for further information or qualification of information already given; may imply blame, condemnation and judgment and put the patient on the defensive

## STUDY GUIDE

After completing the reading assignment, you should be able to answer the following questions in the spaces provided.

1. Recall the difference between subjective and objective data and describe each term:

Subjective data is: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Objective data is: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

2. Explain why the interview is so important in eliciting information.

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_



3. Identify 5 key outcomes of a successful interview.

- i. \_\_\_\_\_
- ii. \_\_\_\_\_
- iii. \_\_\_\_\_
- iv. \_\_\_\_\_
- v. \_\_\_\_\_

4. List 7 items of information that you should communicate to the patient concerning the terms or expectations of the interview.

- i. \_\_\_\_\_
- ii. \_\_\_\_\_
- iii. \_\_\_\_\_
- iv. \_\_\_\_\_
- v. \_\_\_\_\_
- vi. \_\_\_\_\_
- vii. \_\_\_\_\_

5. Explain the difference between verbal and nonverbal communication. Provide 3 examples of each.

- i. Verbal communication is: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_
- ii. Nonverbal communication is: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

6. Listening is an important component of the interview process and an essential communication skill. Explain 2 components of active listening that will assist in interpreting what the patient says.

- i. \_\_\_\_\_
- ii. \_\_\_\_\_

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7. List 6 important elements to consider when preparing the physical setting for the patient interview.

- i. \_\_\_\_\_
- ii. \_\_\_\_\_
- iii. \_\_\_\_\_
- iv. \_\_\_\_\_
- v. \_\_\_\_\_
- vi. \_\_\_\_\_

8. Identify the advantages and disadvantages of note-taking during an interview.

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9. Contrast open versus closed or direct questions, explain the purpose of each and provide 2 examples of each that you would use during the interview. Refer to Table 5.1 in JF&W 2e *Comparison of open-ended and closed questions*.

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10. There are 9 types of verbal responses (5 involving your reactions to fact or feelings and 4 that assist in expression of your thoughts and feelings) that assist in eliciting information during an interview. List the 9 responses then briefly describe each.

- i. \_\_\_\_\_  
\_\_\_\_\_
- ii. \_\_\_\_\_  
\_\_\_\_\_
- iii. \_\_\_\_\_  
\_\_\_\_\_

- iv. \_\_\_\_\_  
\_\_\_\_\_
- v. \_\_\_\_\_  
\_\_\_\_\_
- vi. \_\_\_\_\_  
\_\_\_\_\_
- vii. \_\_\_\_\_  
\_\_\_\_\_
- viii. \_\_\_\_\_  
\_\_\_\_\_
- ix. \_\_\_\_\_  
\_\_\_\_\_

11. Communication during an interview may be non-productive due to restriction of the patient's responses. List the 10 traps that may impede your communication. Provide one example for each.

- i. \_\_\_\_\_  
\_\_\_\_\_
- ii. \_\_\_\_\_  
\_\_\_\_\_
- iii. \_\_\_\_\_  
\_\_\_\_\_
- iv. \_\_\_\_\_  
\_\_\_\_\_
- v. \_\_\_\_\_  
\_\_\_\_\_
- vi. \_\_\_\_\_  
\_\_\_\_\_
- vii. \_\_\_\_\_  
\_\_\_\_\_
- viii. \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_



- ix. \_\_\_\_\_  
\_\_\_\_\_
- x. \_\_\_\_\_  
\_\_\_\_\_

12. Regarding nonverbal behaviours, circle True or False to answer the following statements. If the answer is false, state the correct answer.

- a. Professional uniform may create a positive or a negative stereotype. True False
- b. Open position with extension of large muscle groups does not show relaxation, physical comfort or a willingness to share information. True False
- c. Relaxed posture creates a feeling of warmth and trust and conveys an interest. True False
- d. Nodding or an open turning out of the hand shows acceptance, attention or agreement. True False
- e. Expressions of boredom, distraction, disgust or disbelief are not picked up by the other person. True False
- f. The meaning of physical touch is not influenced by the person's age, gender, cultural background, past experience and current setting. True False

13. Discuss how you would commence an interview and build rapport.

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14. Explain how you should conclude the interview. Identify 3 useful phrases you could use to close the interview.

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15. Briefly discuss special considerations for interviewing:

adolescents \_\_\_\_\_

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older persons \_\_\_\_\_

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hearing-impaired persons \_\_\_\_\_

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16. Describe how you would communicate with a patient who is under the influence of drugs or alcohol.

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17. Outline issues that need to be documented at the completion of an interview with a patient who has limited English proficiency and their interpreter.

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18. Explain the most appropriate way to ensure that cultural variables are taken into account prior to beginning the interview.

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19. Explain why it is undesirable to use a family member or friend to act in the role of interpreter for a patient.

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20. Differentiate between line-by-line and summarising styles of interpreting, explaining similarities and differences.

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21. List and provide an explanation of each of the 5 types of nonverbal cues.

- i. 

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- ii. 

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- iii. 

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- iv. 

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- v. 

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22. Discuss the wide cultural variations related to interpreting 'silence' and pauses within conversations.

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**NOTES**

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## REVIEW QUESTIONS

This test is for you to check your own mastery of the content. Answers are provided in Appendix A.

1. The registered nurse (RN), entering the examining room to meet a patient for the first time, says: 'Hello, I'm Sally Jones, the Registered Nurse looking after you today, and I'm here to gather some information from you, to perform your nursing admission and take your health history. This will take about 30–45 minutes. Anne Archer is a student nurse working with me. Would it be all right with you if she remains throughout the interview?'  
Which of the following must be added in order to cover all aspects of the interview contract?
  - a. a statement regarding confidentiality of both nurses, and the requirements of the patient
  - b. the purpose of the interview and the role of the RN
  - c. time and place of the interview and a confidentiality statement
  - d. an explicit purpose of the interview and a description of the physical examination, including diagnostic studies
2. Recognising and accepting the other person's feelings without criticism within a communication context is an example of:
  - a. empathy
  - b. liking others
  - c. facilitation
  - d. a nonverbal listening technique
3. You have come into a patient's room to conduct an admission interview. Because you are expecting a phone call, you stand near the door during the interview. A more appropriate approach would be to:
  - a. arrange to have someone page you so you can sit on the side of the bed
  - b. have someone else answer the phone so you can sit facing the patient
  - c. use this approach given the circumstances; it is correct
  - d. arrange for a time free of interruptions until the initial physical examination is complete
4. Students frequently ask teachers, 'May I ask you a question?' This is an example of:
  - a. an open-ended question
  - b. a reflective question
  - c. a closed question
  - d. a double-barrelled question
5. During a patient interview, you recognise the need to use interpretation. This verbal response is:
  - a. the same as clarification
  - b. a summary of a statement made by a patient
  - c. used to focus on a particular aspect of what the patient has just said
  - d. based on inferences from the data that have been presented
6. During an interview a good rule to follow is to:
  - a. stop the patient each time something is said that is not understood
  - b. spend more time listening to the patient than talking
  - c. consistently think of your next response so the patient will know you understand them
  - d. use 'why' questions to seek clarification of unusual symptoms or behaviour
7. During an interview, a patient denies having any anxiety. The patient frequently changes position in the chair, holds his arms folded tight against his chest and has little eye contact with you. You should:
  - a. use confrontation to bring the discrepancy between verbal and nonverbal behaviour to the patient's attention
  - b. proceed with the interview. Patients usually are truthful with a healthcare practitioner
  - c. make a mental note to discuss the behaviour after the physical examination is completed
  - d. proceed with the interview and examination as outlined on the assessment form. The patient's behaviour is appropriate for the circumstances
8. Indicate the *correct* response(s) in relation to the use of touch during the interview:
  - a. only with consideration of age, gender and cultural background
  - b. only with individuals as an appropriate greeting, e.g. hand shake
  - c. to convey empathy touch a hand or arm
  - d. only with patients of the same sex
  - e. only if you know the patient well and you know how it will be interpreted
    1. all
    2. a, b, c and e
    3. a, b, c and d

9. Children are usually brought for healthcare by a parent. Children in what age group can begin to add useful information to the interview?
  - a. 2–5
  - b. 5–12
  - c. 12–19
10. Because of adolescents' developmental level, not all interviewing techniques can be used with them. The two to be avoided are:
  - a. facilitation and clarification
  - b. confrontation and explanation
  - c. empathy and interpretations
  - d. silence and reflection
11. Your patient tells you, 'Everyone here ignores me'. You respond, 'Ignores you?' This technique is best described as:
  - a. clarification
  - b. selective listening
  - c. reflecting
  - d. validation
12. Active listening skills include all of the following **except**:
  - a. taking detailed notes during the interview
  - b. watching for cues in body language
  - c. repeating statements back to the person to make sure you have understood
  - d. asking open-ended questions to explore the person's perspective
  - e. exploring the person's fears about their illness
13. When closing the interview you should make a statement that includes all of the following **except**:
  - a. what you and the patient agree their health status is
  - b. what you will be doing next
  - c. positive health aspects and any health problems identified
  - d. plans for action

## PRACTICAL SKILLS IN THE LABORATORY/CLINICAL SETTING

The clinical component that relates to this chapter is the gathering of the complete health history, which will be covered at the end of Chapter 6.



## Chapter Six

# The health history

### PURPOSE

The health history is an essential component of every physical assessment. It is important to gain as much information as you can from your patients about their health and presentation. The health history is what the patient says about themselves (subjective data). Combine the health history with what you as the nurse will collect from the physical examination and laboratory studies (objective data) to form the database of information about the patient. The database forms a complete picture of the patient's past and present health status from a holistic point of view, a detailed chronological record of previous and current health problems and is a record of their strengths, coping skills, lifestyle and health promotion behaviours.

The information collected in the database enables identification and diagnosis of problems and the development of a patient-centred plan of management.

In this chapter you will be introduced to the elements of a complete health history, how to interview a patient to gather the data for a complete health history, how to analyse the patient data and how to accurately record the complete health history using a generic format.

### KEY CONCEPTS

- Accurate collection of subjective data
- Screening for abnormalities and health problems
- Health history components
- Health education and health promotion
- Developmental considerations for:
  - Children
  - Adolescents

While you are completing your reading assignment ensure you understand each of the key concepts listed above.

### PREPARATION FOR YOUR LABORATORY SESSION

Photocopy the health history worksheet (on pp 52–62). Use the copy to write down questions that you think of while reading, and could ask during the health history to elicit the maximum amount of patient information. Do this prior to your laboratory session so you will be well prepared to conduct a smooth interview and practise your communication skills rather than thinking up the next question. Remember, with use, these skills will develop and you will no longer need to use prompts.

### READING ASSIGNMENT

Jarvis, Forbes & Watt (JF&W): *Jarvis's Physical Examination & Health Assessment* 2e, Chapter 6, pp 79–88.

### GLOSSARY

**Objective data** ..... the information obtained from physical examination and laboratory results

**Subjective data** ..... the information the person provides about themselves

**Sign** ..... objective abnormality that you detect on physical examination or in laboratory reports

**Symptom** ..... a subjective sensation that the person feels from the disorder

## STUDY GUIDE

After completing the reading assignment, you should be able to answer the following questions in the spaces provided.

1. State the purpose of the complete health history.

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2. Explain the terminology you would use to document the reason for seeking care and other components of the health history.

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3. Identify and describe the 8 critical characteristics used to explore each symptom the patient identifies.

- i. \_\_\_\_\_
- ii. \_\_\_\_\_
- iii. \_\_\_\_\_
- iv. \_\_\_\_\_
- v. \_\_\_\_\_
- vi. \_\_\_\_\_
- vii. \_\_\_\_\_
- viii. \_\_\_\_\_

4. The PQRSTU mnemonic may be used for the same purpose, that is, to describe the patient's symptoms. Identify and describe what each of the letters in the mnemonic stands for:

P \_\_\_\_\_

Q \_\_\_\_\_

R \_\_\_\_\_

S \_\_\_\_\_

T \_\_\_\_\_

U \_\_\_\_\_

**Unit 2** Health assessment tools and techniques

5. The COLDSPA mnemonic may be used for analysing other symptoms such as nausea, constipation, incontinence etc. Identify and describe what each of the letters in the mnemonic stands for:

C \_\_\_\_\_  
\_\_\_\_\_  
O \_\_\_\_\_  
\_\_\_\_\_  
L \_\_\_\_\_  
\_\_\_\_\_  
D \_\_\_\_\_  
\_\_\_\_\_  
S \_\_\_\_\_  
\_\_\_\_\_  
P \_\_\_\_\_  
\_\_\_\_\_  
A \_\_\_\_\_  
\_\_\_\_\_

6. State why it is important to ask about past health events. What should be recorded?

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

7. Rationalise obtaining a family history.

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

8. Discuss why a patient may need a specific functional assessment using a standardised instrument.

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9. List terminology that should be avoided when documenting a health history and state why.

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10. Circle True or False to answer the following statements concerning health history interviews with parent and children. If the answer is false, state the correct answer.

- |  |      |       |
|--|------|-------|
| a. The health history is not adapted to include information specific for the age and developmental stage of the child.   | True | False |
| b. The child's name, nickname, address and phone number, parents' names and work numbers, child's age and birth date, birthplace, gender and information on other children and family members at home should be included in the biographical data. | True | False |
| c. As the constant caregiver, the parent's intuitive sense of a problem is often very accurate.  | True | False |
| d. Questions concerning the mother's pregnancy and obstetric history with the presenting child and her other children are important to gain a complete picture of the child's health.  | True | False |
| e. Developmental history does not need to be included in the health history.   | True | False |

11. Explain the **HEEADSSS** method of interviewing adolescents.

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Before moving on to the review questions and the clinical laboratory, ensure you are familiar with the questions that you may ask in a health history. (Revisit the questions in the text, and those you have thought up.)

## REVIEW QUESTIONS

This test is for you to check your own mastery of the content. Answers are provided in Appendix A.

1. When reading a medical record you see the following notation: Patient states, 'I have had a cold for about a week, and now I am having difficulty breathing'. This is an example of:
  - a. past history
  - b. a review of systems
  - c. a functional assessment
  - d. a reason for seeking care
2. You have reason to question the reliability of the information being provided by a patient. One way to verify the reliability within the context of the interview is to:
  - a. rephrase the same questions later in the interview
  - b. review the patient's previous medical records
  - c. call the person identified as emergency contact to verify data provided
  - d. provide the patient with a printed history to complete and then compare the data provided
3. During an initial interview, the nurse says, 'Mrs James, tell me what you do when your headaches occur'. With this question, the nurse is seeking information about:
  - a. the patient's perception of the problem
  - b. aggravating or relieving factors
  - c. the frequency of the problem
  - d. the severity of the problem
4. Which of the following is an appropriate recording of a patient's reason for seeking healthcare?
  - a. angina pectoris, duration 2 hours
  - b. substernal pain radiating to left axilla, 1 hour duration
  - c. 'grabbing' chest pain for 2 hours
  - d. pleurisy, 2 days duration
5. A genogram is useful in showing information concisely. It is used specifically for:
  - a. past history
  - b. past health history, specifically hospitalisations
  - c. family history
  - d. the eight characteristics of presenting symptoms
6. Select the best description of 'review of systems' as part of the health history.
  - a. the evaluation of the past and present health state of each body system
  - b. a documentation of the problem as described by the patient
  - c. the recording of the objective findings of the practitioner
  - d. a statement that describes the overall health state of the patient
7. Which of the following is considered to be subjective?
  - a. temperature of 38.5°C
  - b. pulse rate of 96
  - c. measured weight loss of 9 kg since the previous measurement
  - d. pain lasting 2 hours
8. When taking a health history for a child, what information, in addition to that for an adult, is usually obtained?
  - a. coping and stress management
  - b. a review of immunisations received
  - c. environmental hazards
  - d. hospitalisation history

## PRACTICAL SKILLS IN THE LABORATORY/CLINICAL SETTING

Remember that the health history is a contemporary collection of information unique to the patient, from the patient. It is NOT the physical assessment of the patient, although it often precedes it. (Physical assessment skills and regional assessment will be covered in the following chapters.)

Relevant components of the history encompass biographical, demographic, physical, mental, emotional, sociocultural, sexual and spiritual data.

The health history helps the patient and healthcare team by supplying information/data that will assist with diagnosis, planning, goal setting and treatment decisions. The health history interview also provides an opportunity to build rapport and establish trust between the patient and yourself, the nurse. The information/data gathered also aids in the determination of the patient's baseline.

Now that you have completed the readings, study guides and review questions from Chapters 5 and 6 you should be prepared for the clinical component: to obtain a comprehensive health history interview on a peer in the skills laboratory.

**PROFESSIONAL PRACTICE NOTE**

*Even though you are interviewing your peer, you still need to be aware of the need for complete confidentiality of information obtained throughout the interview.*

**Clinical Objectives**

At the completion of the clinical laboratory session, with further practice and self-directed learning you should be able to:

1. Demonstrate interviewing skills by conducting a health history
2. Demonstrate knowledge of the components of a health history
3. Record the history data accurately and as a reflection of what the patient believes their true health state to be.

**Instructions**

1. Form pairs.
2. You may want to role play using a health complaint from a previous patient you have cared for or a relative with a health complaint that you understand. Identify these roles prior to commencing the interview.
3. Interview your peer and obtain a complete health history. (Although you already know each other as student colleagues, perform accurately in your role as the nurse or the patient for the best learning experience.)
  - a. Be aware that some of the history questions cover personal content. When you are role playing the patient, you have the right to modify an answer if you do not feel comfortable with the amount of material you will be asked to divulge. Your own rights to privacy must coexist with the goals of the learning experience.
  - b. As a beginning practitioner you will need to use the form as a worksheet during the actual interview.
4. At the completion of the interview, swap roles and repeat step 3.
5. When both interviews are complete, document the summary statement and patient health goals.
6. Discuss the health history process with both your peer and the class.
7. Reflect on your performance and identify areas for improvement.

**NOTES**


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## REGIONAL WRITE-UP WORKSHEET—HEALTH HISTORY

Date \_\_\_\_\_

Interview conducted by \_\_\_\_\_

Designation \_\_\_\_\_

Medical Record Number \_\_\_\_\_

### 1. Biographical data

Name \_\_\_\_\_

Address \_\_\_\_\_

Contact phone \_\_\_\_\_ Mobile phone \_\_\_\_\_

Date of birth \_\_\_\_\_ Birthplace \_\_\_\_\_

Age \_\_\_\_\_ Gender \_\_\_\_\_ Marital status \_\_\_\_\_

Occupation \_\_\_\_\_ Employer \_\_\_\_\_

Nationality \_\_\_\_\_ Interpreter required? \_\_\_\_\_

Medicare number \_\_\_\_\_

Private health fund Yes No (circle) \_\_\_\_\_

Advanced care directive? Yes No (circle) Details: \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

2. History obtained from \_\_\_\_\_

3. Reason/s for seeking care \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

4. Present health or history of present illness \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

## REGIONAL WRITE-UP WORKSHEET—HEALTH HISTORY (continued)

### 5. Past health

General health \_\_\_\_\_

\_\_\_\_\_

Childhood illnesses \_\_\_\_\_

\_\_\_\_\_

Accidents or injuries \_\_\_\_\_

\_\_\_\_\_

Serious or chronic illnesses \_\_\_\_\_

\_\_\_\_\_

Hospitalisations \_\_\_\_\_

\_\_\_\_\_

Operations \_\_\_\_\_

\_\_\_\_\_

Obstetric history \_\_\_\_\_

Gravida \_\_\_\_\_ Term \_\_\_\_\_ Preterm \_\_\_\_\_  
 (# Pregnancies) (# Term pregnancies) (# Preterm pregnancies)

Term/incomplete \_\_\_\_\_ Children living \_\_\_\_\_  
 (# Terminations/Miscarriages)

Course of pregnancy \_\_\_\_\_  
 (Date delivery, length of pregnancy, length of labour, baby's weight and sex, vaginal delivery/caesarean section, complications, baby's condition)

#### Immunisations

Tetanus	Current	Yes	No
Influenza	Current	Yes	No
Pneumococcus	Current	Yes	No
HPV Vaccine	Current	Yes	No
Pap smear	Current	Yes	No

Other: \_\_\_\_\_

\_\_\_\_\_

Last GP visit date \_\_\_\_\_

#### Health screening

Dentist \_\_\_\_\_ Vision \_\_\_\_\_

Hearing \_\_\_\_\_ ECG \_\_\_\_\_

CXR \_\_\_\_\_ Other \_\_\_\_\_



## REGIONAL WRITE-UP WORKSHEET—HEALTH HISTORY (continued)

Allergies: Allergens and reaction — allergy bracelet applied Yes No (circle)

Drugs/medications \_\_\_\_\_

Food \_\_\_\_\_

Latex/other \_\_\_\_\_

Comments \_\_\_\_\_

Infection control

Transmission-based precautions \_\_\_\_\_

Notifiable disease \_\_\_\_\_

### 6. Family history

Heart disease \_\_\_\_\_

High blood pressure \_\_\_\_\_

Stroke \_\_\_\_\_

Diabetes \_\_\_\_\_

Blood disorders \_\_\_\_\_

Breast cancer \_\_\_\_\_

Cancer (other) \_\_\_\_\_

Arthritis \_\_\_\_\_

Allergies \_\_\_\_\_

Asthma \_\_\_\_\_

Obesity \_\_\_\_\_

Alcoholism \_\_\_\_\_

Mental illness \_\_\_\_\_

Seizure disorder \_\_\_\_\_






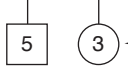



Kidney disease \_\_\_\_\_

Tuberculosis \_\_\_\_\_

Other \_\_\_\_\_

## REGIONAL WRITE-UP WORKSHEET—HEALTH HISTORY (continued)

Construct family genogram below.

 Male/boy	
 Female/girl	↑ This line is used to show parents who are divorced/not together.
 Adopted	What if there is limited information about family members? ➤ If you do not know the names and ages of family members but do know the number of boys and the number of girls, you can do this:
 The diagonal line is used to show that the person has died.	 ← Example: This shows that there are 5 boys and 3 girls.
 Pregnancy loss. Include number of weeks, if known.	➤ If you do not know the number of boys and the number of girls, use a diamond with the number inside it (if total is known) or “?”
 SB stands for stillbirth. Include number of weeks, if known. <b>SB</b>	 ← Example: This shows that there are 8 children.

## REGIONAL WRITE-UP WORKSHEET—HEALTH HISTORY (continued)

### Review of symptoms, function and risks

Include both past health problems that have been resolved and current problems, including date of onset.

#### 7. General overall health and wellbeing \_\_\_\_\_

Perception of health \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Interpersonal relationships/resources \_\_\_\_\_

Education (last level achieved) \_\_\_\_\_

Current employment \_\_\_\_\_

Family role? \_\_\_\_\_

Support systems? \_\_\_\_\_

Values and beliefs/spiritual resources \_\_\_\_\_

Cultural background \_\_\_\_\_

Cultural health practices \_\_\_\_\_

Religious/spiritual beliefs \_\_\_\_\_

Coping and stress management \_\_\_\_\_

Stressors in life? \_\_\_\_\_

Methods to relieve stress \_\_\_\_\_

Self-concept \_\_\_\_\_

Personal strengths? \_\_\_\_\_

Life values and belief \_\_\_\_\_

Sleep/rest \_\_\_\_\_

Sleep pattern? \_\_\_\_\_

Aids used? \_\_\_\_\_

#### 8. Health and lifestyle management \_\_\_\_\_

Current medications: (prescribed and over-the-counter). Note name, purpose, dose and daily schedule

Ask specifically about vitamins, oral contraceptives, aspirin, sedatives and antacids

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

## REGIONAL WRITE-UP WORKSHEET—HEALTH HISTORY (continued)

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Tobacco, alcohol and recreational/street drugs

Smoke cigarettes? \_\_\_\_\_ Number packs per day \_\_\_\_\_

Daily use for how many years \_\_\_\_\_ Age started \_\_\_\_\_

Ever tried to quit? \_\_\_\_\_ Succeed? \_\_\_\_\_

Comment? \_\_\_\_\_

Drink alcohol? \_\_\_\_\_ Date last alcohol use \_\_\_\_\_

Amount of alcohol that episode \_\_\_\_\_

Out of last 30 days, on how many days had alcohol? \_\_\_\_\_

Ever had a drinking problem? \_\_\_\_\_

Comments \_\_\_\_\_

Any use of recreational drugs? (reinforce confidentiality of information disclosed)

Which ones \_\_\_\_\_

Marijuana \_\_\_\_\_ Cocaine? \_\_\_\_\_

Crack cocaine? \_\_\_\_\_ Amphetamines? \_\_\_\_\_

Barbiturates? \_\_\_\_\_ Methamphetamines? \_\_\_\_\_

Heroin? \_\_\_\_\_ Other? \_\_\_\_\_

Ever had treatment for drugs or alcohol, overdose, intoxication and addiction? \_\_\_\_\_

\_\_\_\_\_

Other comments? \_\_\_\_\_

\_\_\_\_\_

Environmental hazards \_\_\_\_\_

Live alone? With family? \_\_\_\_\_

Neighbourhood? \_\_\_\_\_

Transportation? \_\_\_\_\_

Occupational health \_\_\_\_\_

Worked with health hazard? \_\_\_\_\_

Health problems related to work? \_\_\_\_\_

## REGIONAL WRITE-UP WORKSHEET—HEALTH HISTORY (continued)

### 9. Assessing activity and exercise \_\_\_\_\_

Daily activities and effect of symptoms? \_\_\_\_\_

Usual pattern of a typical day \_\_\_\_\_

Ability to perform ADLs? \_\_\_\_\_

Independent or needs assistance with ADLs (circle if needs assistance) \_\_\_\_\_

feeding, bathing, hygiene, dressing, toileting

bed-to-chair transfer, walking, standing, climbing stairs

Use of wheelchair, prosthesis, mobility aid? \_\_\_\_\_

Leisure activities? \_\_\_\_\_

Exercise pattern (type, amount per day or week, method of warm-up session, method of monitoring the body's response to exercise) \_\_\_\_\_

\_\_\_\_\_

Any other self-care behaviours: \_\_\_\_\_

\_\_\_\_\_

Cardiovascular function: (praecordial or retrosternal pain, palpitation, cyanosis, dyspnoea on exertion (specify amount of exertion, e.g. walking one flight of stairs, walking from chair to bath, or just talking), orthopnoea, paroxysmal nocturnal dyspnoea, nocturia, oedema, history of heart murmur, hypertension, coronary artery disease, anaemia. Bleeding tendency, excessive bruising, lymph node swelling, exposure to toxic agents or radiation, blood transfusion and reactions. Coldness, numbness and tingling, swelling of legs (time of day, activity), discolouration in hands or feet (bluish red, pallor, mottling, associated with position, especially around feet and ankles), varicose veins or complications, intermittent claudication, thrombophlebitis, ulcers.) Circle applicable.

Comments: \_\_\_\_\_

\_\_\_\_\_

Respiratory function: (nasal discharge and its characteristics, any unusually frequent or severe colds, sinus pain, nasal obstruction, nosebleeds, allergies or hay fever, or change in sense of smell. History of lung diseases (asthma, emphysema, bronchitis, pneumonia, tuberculosis), chest pain with breathing, wheezing or noisy breathing, shortness of breath, how much activity produces shortness of breath, cough, sputum (colour, amount), haemoptysis, toxin or pollution exposure.) Circle applicable.

Comments: \_\_\_\_\_

\_\_\_\_\_

Musculoskeletal function: (history of arthritis or gout. In the joints: pain, stiffness, swelling (location, migratory nature), deformity, limitation of motion, noise with joint motion? In the muscles: any pain, cramps, weakness, gait problems or problems with coordinated activities? Back pain? (location and radiation to extremities), stiffness, limitation of motion, or history of back pain or disc disease?) Circle applicable.

Comments: \_\_\_\_\_

\_\_\_\_\_

**REGIONAL WRITE-UP WORKSHEET—HEALTH HISTORY (continued)****10. Assessing nutrition and metabolism (including skin, hair and nails)** \_\_\_\_\_

Skin: (eczema, psoriasis, hives) \_\_\_\_\_

Sun exposure? \_\_\_\_\_

Hair: (loss of hair, change in texture, distribution) \_\_\_\_\_

Nails: (shape and colour) \_\_\_\_\_

Mouth, teeth and throat: \_\_\_\_\_

Dental routine \_\_\_\_\_

Weight: \_\_\_\_\_ kg Recent weight loss or gain? \_\_\_\_\_

Food and fluids in last 24 hrs \_\_\_\_\_

Current diet/eating habits? \_\_\_\_\_

Daily intake caffeine (coffee, tea, colas) \_\_\_\_\_

Heartburn? \_\_\_\_\_

Nausea or vomiting \_\_\_\_\_

Liver or gallbladder disease? \_\_\_\_\_

Abdominal pain? \_\_\_\_\_

Endocrine dysfunction? \_\_\_\_\_

Diabetes? \_\_\_\_\_

Any other comments? \_\_\_\_\_

**11. Assessing renal, bladder and bowel function** \_\_\_\_\_

Voiding pattern \_\_\_\_\_

Frequency, urgency? \_\_\_\_\_

Nocturia \_\_\_\_\_

Incontinence? \_\_\_\_\_

Fluid intake for 24 hrs \_\_\_\_\_

Mobility to toilet? \_\_\_\_\_

### REGIONAL WRITE-UP WORKSHEET—HEALTH HISTORY (continued)

History of urinary system disease: (kidney disease, kidney stones, urinary tract infections, prostate, pain in flank, groin, suprapubic region, or low back). Circle applicable.

Comments: \_\_\_\_\_

\_\_\_\_\_

Bowel function \_\_\_\_\_

Pattern of elimination, frequency \_\_\_\_\_

Stool characteristics? \_\_\_\_\_

Other comments? \_\_\_\_\_

\_\_\_\_\_

#### 12. Assessing mental status, neurological and sensory function \_\_\_\_\_

Mental status: (nervousness, mood change, depression) \_\_\_\_\_

Mental health dysfunction or hallucinations? \_\_\_\_\_

Neurological function: (any head injury, dizziness (syncope) or vertigo, fainting, blackouts; motor function: tic or tremor, paralysis, or coordination problems. In sensory function: numbness and tingling (paraesthesia)). Circle applicable.

Seizures? \_\_\_\_\_

Stroke? \_\_\_\_\_

Weaknesses? \_\_\_\_\_

Memory disorders? \_\_\_\_\_

Headaches? \_\_\_\_\_

Eyes: ((decreased acuity, blurring, blind spots), eye pain, diplopia (double vision), redness or swelling, watering or discharge, glaucoma or cataracts). Circle applicable.

Visual problems? Glasses? \_\_\_\_\_

\_\_\_\_\_

Ears: (earaches, infections, discharge and its characteristics, tinnitus or vertigo. Hearing loss, hearing aid use, how loss affects the daily life, any exposure to environmental noise and method of cleaning ears).

Hearing difficulties? Loss? \_\_\_\_\_

\_\_\_\_\_

Sensory function (feet, hands) \_\_\_\_\_

Other comments? \_\_\_\_\_

\_\_\_\_\_

**REGIONAL WRITE-UP WORKSHEET—HEALTH HISTORY (continued)****13. Assessing sexuality and reproductive function** \_\_\_\_\_

Breast and regional lymphatics \_\_\_\_\_

Pain? Lumps? Discharge? \_\_\_\_\_

Axillary tenderness? \_\_\_\_\_

Breast Awareness practices \_\_\_\_\_

Last mammogram? \_\_\_\_\_

Male reproductive system: \_\_\_\_\_

Penis or testicular pain, lumps, discharge? \_\_\_\_\_

Problems? \_\_\_\_\_

STI precautions? \_\_\_\_\_

Testicular self-examination? \_\_\_\_\_

Female reproductive system: \_\_\_\_\_

Menstrual history? \_\_\_\_\_

Vaginal itching, discharge? \_\_\_\_\_

Contraception? \_\_\_\_\_

STI precautions? \_\_\_\_\_

Pap smear? \_\_\_\_\_

Sexual health: \_\_\_\_\_

Any comments? \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_**14. Intimate partner violence: (Ask if required or if IPV suspected)** \_\_\_\_\_

How are things at home? \_\_\_\_\_

Do you feel safe? \_\_\_\_\_

Have you ever been emotionally or physically abused by your partner or someone important to you? \_\_\_\_\_

Have you ever been hit, slapped, kicked, pushed or shoved, or otherwise physically hurt by your partner or ex-partner? \_\_\_\_\_

Has your partner ever forced you to have sex? \_\_\_\_\_

Are you afraid of your partner or ex-partner? \_\_\_\_\_

\_\_\_\_\_



**REGIONAL WRITE-UP WORKSHEET—HEALTH HISTORY (continued)**

Any comments? \_\_\_\_\_

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Summary statement \_\_\_\_\_

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Patient's health goals \_\_\_\_\_

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## Chapter Seven

# Physical assessment techniques

### PURPOSE

In Chapter 6 we introduced the health history, which helps to gather subjective information from the patient concerning their health status. In this chapter we focus on how to collect the objective data through performing a physical assessment on the patient.

This chapter introduces you to the assessment techniques of inspection palpation, percussion and auscultation; and to the structure and use of the stethoscope. You will also be made aware of age-specific modifications to consider for the examination of individuals throughout the life span.

You will also review the two-tier approach to infection control in the clinical setting and the applications to nursing practice and physical examination.

Specific equipment related to each component of the complete physical assessment is described in the associated chapters.

### KEY CONCEPTS

The skills of:

- Inspection
- Palpation
- Percussion
- Auscultation
- Assessment environment
- Infection control procedures and considerations
- Life span considerations

While you are completing your reading assignment ensure you understand each of the key concepts listed above.

### READING ASSIGNMENT

Jarvis, Forbes & Watt (JF&W): *Jarvis's Physical Examination & Health Assessment 2e*, Chapter 7, pp 89–100.

### GLOSSARY

**Amplitude** ..... (or intensity); how loud or soft a sound is

**Duration** ..... the length of time a note lingers

**Nosocomial infection** ..... also called hospital-acquired infection (HAI); an infection acquired during hospitalisation

**Pitch** ..... (or frequency); the number of vibrations (or cycles) per second of a note

**Quality** ..... (or timbre); a subjective difference in a sound due to the sound's distinctive overtones

**Standard precautions** ..... routine application of basic infection control strategies to minimise risk to patients and healthcare workers, such as hand hygiene, personal protective equipment, cleaning and appropriate handling of equipment and disposal of sharps

**Transmission-based precautions** ... additional work practices where standard precautions alone are insufficient to prevent transmission; involve interventions that interrupt the mode of transmission of infections — droplet precautions, airborne precautions or contact precautions depending on the infective agent

## STUDY GUIDE

After completing the reading assignment, you should be able to answer the following questions in the spaces provided.

1. Define and describe the technique of the 4 physical examination skills:

i. inspection \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

ii. palpation \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

iii. percussion \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

iv. auscultation \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

2. Different parts of the hands are used when palpating. State what may be felt with each of the following:

fingertips: \_\_\_\_\_  
\_\_\_\_\_

a grasping action of the fingers and thumb: \_\_\_\_\_  
\_\_\_\_\_

the dorsa (backs) of hands and fingers: \_\_\_\_\_  
\_\_\_\_\_

the base of the fingers (metacarpophalangeal joints) or ulnar surface of the hand: \_\_\_\_\_  
\_\_\_\_\_

3. Differentiate between the 3 techniques used in palpation: surface, light and bimanual palpation. State how deep you would palpate, what you are assessing for and when you might use the technique.

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

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4. State the primary uses of percussion and what you are assessing for.

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5. Differentiate direct percussion from indirect percussion.

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6. Refer to JF&W 2e, Table 7.2, p 95 and define the characteristics of each of the following percussion notes and state where they may be heard:

resonance: \_\_\_\_\_

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hyperresonance: \_\_\_\_\_

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tympany: \_\_\_\_\_

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dull: \_\_\_\_\_

---

---

flat: \_\_\_\_\_

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7. The stethoscope has 2 surfaces that are used for listening: the bell and the diaphragm. State what sounds will be heard and the conditions for which each is best suited.

bell .

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diaphragm \_\_\_\_\_

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8. Describe the environmental conditions to consider when preparing the examination setting for your patient.

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9. List 10 occasions you should perform hand hygiene.

i. \_\_\_\_\_

ii. \_\_\_\_\_

iii. \_\_\_\_\_

iv. \_\_\_\_\_

v. \_\_\_\_\_

vi. \_\_\_\_\_

vii. \_\_\_\_\_

viii. \_\_\_\_\_

ix. \_\_\_\_\_

x. \_\_\_\_\_

10. When should the following be worn and what considerations must be made with the use of each:

nonsterile gloves: \_\_\_\_\_

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sterile gloves: \_\_\_\_\_

---

gown, mask and protective eyewear: \_\_\_\_\_

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preschooler: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

school-aged child: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

adolescent: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

adult: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

## REVIEW QUESTIONS

This test is for you to check your own mastery of the content. Answers are provided in Appendix A.

- Relating to physical assessment techniques, answer True or False to each of the following statements.
  - Inspection begins when you first meet the person. True False
  - Always compare the right and left sides of the body. True False
  - Inspection may be performed in any lighting as long as there is adequate exposure of the body part being assessed. True False
  - You should progress from light to deep palpation when the person complains of pain. True False
  - Bimanual palpation is the most utilised palpation technique for most nurses. True False
  - The force of the blow during percussion determines the loudness of the note. True False
  - The quality of the percussion is not affected by the thickness of the body wall. True False
  - The stethoscope amplifies sounds. True False
  - The extent and focus of the physical examination is directed by the person's presenting signs and symptoms. True False
- Various parts of the hands are used during palpation. The part(s) of the hand used for the assessment of vibration is (are) the:
  - fingertips
  - index finger and thumb in opposition
  - dorsa of the hand
  - ulnar surface of the hand
- When performing indirect percussion, the stationary finger is struck:
  - at the ulnar surface
  - at the middle joint
  - at the distal interphalangeal joint
  - wherever it is in contact with the skin
- The best description of the pitch of a sound wave obtained by percussion is:
  - the intensity of the sound
  - the number of vibrations per second
  - the length of time the note lingers
  - the overtones of the note
- The bell of the stethoscope:
  - is used for soft, low-pitched sounds
  - is used for high-pitched sounds
  - is held firmly against the skin
  - magnifies sound

6. At the conclusion of the examination, the nurse should:
  - a. document findings before leaving the examining room
  - b. have findings confirmed by another practitioner
  - c. relate objective findings to the subjective findings for accuracy
  - d. summarise findings to the patient
7. When the nurse enters the examining room the infant patient is asleep. The nurse would best start the exam with:
  - a. height and weight
  - b. blood pressure
  - c. heart, lung and abdomen
  - d. temperature
8. All of the following are correct statements about examination of the infant **except**:
  - a. the Moro or 'startle' reflex should be performed at the beginning of the assessment
  - b. a cooing voice will soothe the infant during the assessment
  - c. the infant should be seated in the parent's lap during the assessment
  - d. maintain eye contact with the infant throughout the assessment
9. Games, playing with equipment and enabling the child to help are suitable approaches for what age child?
  - a. the infant
  - b. the preschool child
  - c. the school-aged child
  - d. the adolescent
10. The sequence of an examination changes from beginning with the thorax to that of head to toe with what age child?
  - a. the infant
  - b. the preschool child
  - c. the school-aged child
  - d. the adolescent

## PRACTICAL SKILLS IN THE LABORATORY/CLINICAL SETTING

Please note that the clinical component of this chapter is combined with Chapter 8. Instructions and regional write-up forms are included at the end of Chapter 8.



## Chapter Eight

# General survey, measurement and vital signs

### PURPOSE

The general survey is a study of the whole person, covering the general health state and any obvious physical characteristics and usually forms the first part of a comprehensive physical assessment. It begins from the moment you first meet the person — your initial impression — and provides an overall impression of that person with a focus on their physical appearance, body structure, mobility and behaviour.

This chapter introduces you to the methods of gathering the data in a general survey of a patient and the techniques for measuring height, weight and vital signs.

### KEY CONCEPTS

- Objective data
- The general survey to determine the general state of health
- Accurate measurement techniques of vital signs
- Factors influencing blood pressure
- Developmental considerations for vital sign measurement
- Measurement of oxygen saturation
- Doppler techniques
- Promoting healthy lifestyles
- Abnormalities in blood pressure

While you are completing your reading assignment, ensure you understand each of the key concepts listed above.

### READING ASSIGNMENT

Jarvis, Forbes & Watt (JF&W): *Jarvis's Physical Examination & Health Assessment 2e*, Chapter 8, pp 101–132.

### GLOSSARY

<b>Afebrile</b> .....	core body temperature is within the normal range (35.8°C to 37.5°C)
<b>Atrophy</b> .....	wasting of muscle(s)
<b>Auscultatory gap</b> .....	a brief time period when Korotkoff's sounds disappear during auscultation of blood pressure; common with hypertension
<b>Body mass index (BMI)</b> .....	a standard measure of weight for height and an indicator of overweight, obesity or protein-calorie malnutrition
<b>Bradycardia</b> .....	heart rate <60 beats per minute in the adult
<b>Cachectic</b> .....	profoundly malnourished and emaciated; usually associated with chronic illness, e.g. cancer
<b>Cardiac output</b> .....	the stroke volume multiplied by the heart rate
<b>Centripetal (truncal) obesity</b> .....	fat concentrated in face, neck, trunk, with thin extremities, as seen in Cushing's syndrome (hyperadrenalism)
<b>Cyanosis</b> .....	bluish discolouration
<b>Diastolic</b> .....	elastic recoil, or resting pressure that the blood exerts constantly between contraction
<b>Dyspnoea</b> .....	shortness of breath
<b>Erythema</b> .....	redness of the skin

<b>Febrile</b> .....	core body temperature is elevated, e.g. >37.5°C
<b>Hyperthermia or hyperpyrexia</b> .....	an excessively high temperature (exceeding 39°C); caused by pyrogens secreted by toxic bacteria during infections or from tissue breakdown such as that following myocardial infarction, trauma, surgery or malignancy
<b>Hypertrophy</b> .....	increased size of a body part
<b>Hypothermia</b> .....	occurs when the body temperature registers between 25°C and 35°C; is usually due to accidental, prolonged exposure to cold; may be purposefully induced to lower the body's oxygen requirements during heart or peripheral vascular surgery, neurosurgery, amputation or gastrointestinal haemorrhage
<b>Jaundice</b> .....	yellow discolouration
<b>Korotkoff sounds</b> .....	sounds heard during the taking of a blood pressure reading using a sphygmomanometer and stethoscope
<b>Kyphosis</b> .....	a permanent curvature of the spine, as can be seen in the older person, gives a stooped or hunched-over appearance
<b>Lordosis</b> .....	inward curving of the spine in the lower part of the back
<b>Orthostatic hypotension</b> .....	a drop in systolic pressure of more than 20 mmHg or an increase of orthostatic pulse by 20 bpm or more; occurs with a quick change to a standing position; changes are due to abrupt peripheral vasodilatation without a compensatory increase in cardiac output; orthostatic changes occur with prolonged bedrest, older age, hypovolaemia and some drugs
<b>Pallor</b> .....	unnaturally pale skin
<b>Paralysis</b> .....	absence of movement
<b>Pulse oximeter</b> .....	a non-invasive method to assess arterial oxygen saturation (SpO <sub>2</sub> ).
<b>Scoliosis</b> .....	an excessive sideways curvature of the spine; shoulders look slumped
<b>Simple obesity</b> .....	even fat distribution
<b>Sphygmomanometer</b> .....	instrument for measuring arterial blood pressure
<b>Stridor</b> .....	harsh high-pitched wheezing sound made on inspiration or expiration
<b>Stroke volume</b> .....	amount of blood pumped out of the heart with each heartbeat
<b>Systolic</b> .....	maximum pressure felt on the artery during left ventricular contraction
<b>Tachycardia</b> .....	heart rate of >100 bpm in the adult
<b>Tachypnoea</b> .....	rapid breathing

**Table 8.1** Formulae that may be used in the general survey

Body mass index (BMI): $\text{Body mass index} = \frac{\text{Weight (in kilograms)}}{\text{Height (in metres)}^2}$	BMI interpretation for adults (WHO, 2015a): ≤18.5 Underweight 18.5–24.99 Normal weight >25.0 Overweight >30.0 Obesity ≥40 Obesity class III
Waist-to-hip ratio: $\text{Waist-to-hip} = \frac{\text{Waist circumference}}{\text{Hip circumference}}$	A waist-to-hip ratio of >1.0 in men or >0.8 in women is indicative of android (upper body obesity) and increasing risk for obesity-related diseases and early mortality.
Waist circumference (WC) is measured in centimetres with a measuring tape around the waist level with the iliac crest.	A WC >89 cm in women and >102 cm in men increases risk of type 2 diabetes and cardiovascular disease in people with a BMI between 24 and 35 kg/m <sup>2</sup> .

(These and additional equations are covered further in Chapter 19, Nutritional and metabolic assessment.)

## STUDY GUIDE

After completing the reading assignment, you should be able to answer the following questions in the spaces provided.

1. List the 4 areas which need to be given attention when conducting a general survey:

- i. \_\_\_\_\_
- ii. \_\_\_\_\_
- iii. \_\_\_\_\_
- iv. \_\_\_\_\_

2. List signs of acute distress that may be evident in a patient on admission and state what action should be taken.

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3. Describe the normal posture and body build.

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4. Describe what is considered as normal gait.

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5. Explain what an unexplained short-term weight loss might indicate.

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6. For serial weight measurements, what time of day would you instruct the person to have the weight measured?

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7. Explain the measurement of height in a bed-bound patient.

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8. State the body mass index for the following weight types:

underweight \_\_\_\_\_

normal weight \_\_\_\_\_

overweight \_\_\_\_\_

obesity \_\_\_\_\_

obesity class III \_\_\_\_\_

9. Explain waist-to-hip ratio assessment, its significance and the desired ratio for both men and women.

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10. Which population groups may have an over- or under-estimated BMI and why would this occur?

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11. State what are considered the 'vital signs' and what they are used for.

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12. What determines the frequency of measuring vital signs?

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13. How is temperature controlled and maintained?

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14. Identify the differences between core temperature and axilla, sublingual and tympanic temperatures.

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15. Explain the diurnal cycle in fluctuating body temperature.

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16. Outline each of the following types of thermometers, their advantages, disadvantages and when and where they are used.

electronic \_\_\_\_\_

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---

tympanic (TMT) \_\_\_\_\_

---

---

rectal \_\_\_\_\_

---

---

temporal artery (TAT) \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

17. Describe each of the 4 qualities to consider when assessing the pulse.

rate: \_\_\_\_\_  
\_\_\_\_\_

rhythm: \_\_\_\_\_  
\_\_\_\_\_

force: \_\_\_\_\_  
\_\_\_\_\_

elasticity: \_\_\_\_\_  
\_\_\_\_\_

18. Explain the condition of sinus arrhythmia.

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

19. State the qualities of normal respirations and identify the method used to count the rate.

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

20. Define the following terms:

blood pressure: \_\_\_\_\_  
\_\_\_\_\_

systolic pressure: \_\_\_\_\_  
\_\_\_\_\_

diastolic pressure: \_\_\_\_\_  
\_\_\_\_\_

pulse pressure: \_\_\_\_\_  
\_\_\_\_\_

mean arterial pressure (MAP): \_\_\_\_\_  
\_\_\_\_\_

21. List 7 factors that affect blood pressure (BP) and the normal variations.

- i. \_\_\_\_\_  
\_\_\_\_\_
- ii. \_\_\_\_\_  
\_\_\_\_\_
- iii. \_\_\_\_\_  
\_\_\_\_\_
- iv. \_\_\_\_\_  
\_\_\_\_\_
- v. \_\_\_\_\_  
\_\_\_\_\_
- vi. \_\_\_\_\_  
\_\_\_\_\_
- vii. \_\_\_\_\_  
\_\_\_\_\_

22. The level of a person's BP is determined by 5 factors. Explain each factor.

- i. \_\_\_\_\_  
\_\_\_\_\_
- ii. \_\_\_\_\_  
\_\_\_\_\_
- iii. \_\_\_\_\_  
\_\_\_\_\_
- iv. \_\_\_\_\_  
\_\_\_\_\_
- v. \_\_\_\_\_  
\_\_\_\_\_

23. Relate the use of an improperly sized blood pressure cuff to the possible findings that may be obtained.

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

24. Explain the significance of Phase I, Auscultatory gap, Phase IV, and Phase V Korotkoff's sounds during blood pressure measurement.

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25. When would a thigh BP be taken?

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26. Given an apparently healthy 20-year-old adult, state the expected range for oral temperature, pulse, respirations and blood pressure.

Temp \_\_\_\_\_ Pulse \_\_\_\_\_  
Resps \_\_\_\_\_ BP \_\_\_\_\_

27. Why is head circumference measured on an infant?

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28. What changes in gait and height and in weight distribution would you expect for an older adult?

gait: \_\_\_\_\_  
\_\_\_\_\_

height: \_\_\_\_\_  
\_\_\_\_\_

weight: \_\_\_\_\_  
\_\_\_\_\_

29. List the 7 lifestyle modifications identified to be the foundation of hypertension control by the Australian Government Healthy Weight program (Australian Government Department of Health, 2013) and the Heart Foundation.

i. \_\_\_\_\_  
\_\_\_\_\_

ii. \_\_\_\_\_  
\_\_\_\_\_

iii. \_\_\_\_\_  
\_\_\_\_\_



- iv. \_\_\_\_\_  
\_\_\_\_\_
- v. \_\_\_\_\_  
\_\_\_\_\_
- vi. \_\_\_\_\_  
\_\_\_\_\_
- vii. \_\_\_\_\_  
\_\_\_\_\_

30. Outline the clinical appearance of the following variations in stature:

- hypopituitary dwarfism \_\_\_\_\_  
\_\_\_\_\_
- gigantism \_\_\_\_\_  
\_\_\_\_\_
- acromegaly \_\_\_\_\_  
\_\_\_\_\_
- achondroplastic dwarfism \_\_\_\_\_  
\_\_\_\_\_
- Marfan's syndrome \_\_\_\_\_  
\_\_\_\_\_
- endogenous obesity (Cushing's syndrome) \_\_\_\_\_  
\_\_\_\_\_
- anorexia nervosa \_\_\_\_\_  
\_\_\_\_\_

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## REVIEW QUESTIONS

This test is for you and is intended to check your own mastery of the content. Answers are provided in Appendix A.

- The 4 areas to consider during the general survey are:
  - ethnicity, sex, age and socioeconomic status
  - physical appearance, sex, ethnicity and affect
  - dress, affect, nonverbal behaviour and mobility
  - physical appearance, body structure, mobility and behaviour
- During the general survey part of the examination, gait is assessed. When walking, the base is usually:
  - varied, depending upon the height of the person
  - equal to the length of the arm
  - as wide as the shoulder width
  - half of the height of the person
- A child, 18 months of age, is brought in for a health screening visit. To assess the height of the child:
  - use a tape measure
  - use a horizontal measuring board
  - have the child stand on the upright scale
  - measure arm span to estimate height
- With the small-for-age child you should explore any growth measure that is all of the following **except**:
  - falls below the 5th or above the 95th percentile
  - shows a wide percentile difference between height and weight — e.g. a 10th percentile height with a 95th percentile weight
  - falls above the 5th or below the 95th percentile
  - shows that growth has suddenly stopped when it had been steady
  - fails to show normal growth spurts during infancy and adolescence
- What changes to height and weight occur in adults in their 80s and 90s?
  - both decrease
  - both increase
  - weight increases, height decreases
  - both remain the same as during the 70s
- Physical changes that accompany hypothermia include skin and cardiovascular changes. Which one of the following is **incorrect**?
  - The skin is cool to touch.
  - Only the peripheries are affected by the vascular changes.
  - Capillary endothelium, damaged by prolonged exposure to the cold, becomes 'leaky'.
  - Oedema may result when the patient is rewarmed as plasma moves into the interstitial space from the capillaries.
- During an initial home visit, the patient's temperature is noted to be 36.3°C. This temperature:
  - cannot be evaluated accurately without a knowledge of the person's age
  - is below normal. The person should be assessed for possible hypothermia
  - should be retaken by the rectal route, since this best reflects core body temperature
  - should be reevaluated at the next visit before a decision is made
- Select the best description of how to acquire an accurate assessment of a patient's pulse.
  - Count for 15 seconds if pulse is regular.
  - Begin counting with zero; count for 30 seconds.
  - Count for 30 seconds and multiply by 2 for all cases.
  - Count for 1 full minute; begin counting with zero.
- After assessing the patient's pulse, the practitioner determines the force to be 'normal'. This would be recorded as:
  - 3+
  - 2+
  - 1+
  - 0.
- Select the best description of an accurate assessment of a patient's respirations.
  - Count for a full minute before taking the pulse.
  - Count for 15 seconds and multiply by 4.
  - Count after informing the patient where you are in the assessment process.
  - Count for 30 seconds following pulse assessment.
- Pulse pressure is:
  - The difference between the systolic and diastolic pressure
  - a reflection of the viscosity of the blood
  - another way to express the systolic pressure
  - a measure of vasoconstriction
- When assessing for coarctation of the aorta, the thigh pressure in an individual with coarctation would be:
  - higher than in the arm
  - equal to that in the arm
  - there is no constant relationship as findings are highly individual
  - lower than in the arm

13. Mean arterial pressure is:
- the arithmetic average of systolic and diastolic pressures
  - the driving force of blood during systole
  - diastolic pressure plus one-third pulse pressure
  - corresponding to Phase III Korotkoff's
14. Answer the following statements as either True or False referring to vital signs in persons over 65.
- Temperature** is a reliable index of the older person's true health state. Sweat gland activity is not diminished. True False
  - Pulse.** The normal range of heart rate is 60 to 100 bpm, but the rhythm may be slightly irregular. True False
  - Respirations.** Ageing causes an increase in vital capacity and a decreased inspiratory reserve volume. True False
  - Blood pressure.** The aorta and major arteries tend to harden with age causing an increase in the systolic pressure, a widened pulse pressure and an increase in diastolic pressures, making it difficult to distinguish normal ageing values from abnormal hypertension. True False

## PRACTICAL SKILLS IN THE LABORATORY/CLINICAL SETTING

You have now completed both physical assessment techniques and measurement by completing the study guide, doing the associated readings and testing your knowledge with the review questions. You should now be prepared for the clinical component of Chapters 7 and 8. The purpose of the clinical component is to observe and describe the general survey on a peer in the skills laboratory.

### Clinical Objectives

At the completion of the clinical laboratory session, with further practice and self-directed learning you should be able to:

- observe and describe each of the significant characteristics of a general survey
- measure height, weight and waist circumference and determine if findings are within normal range
- gather vital signs data and document as baseline data
- record the physical examination findings accurately.

### Instructions

- Prepare your section of the skills laboratory, attending to proper lighting, tables and linen. Gather the equipment you will need. Make sure you are familiar with any equipment you gather and its mechanical operation.
- Perform hand hygiene.
- Practise the steps of gathering data for a general survey, for height and weight, and vital signs on a peer in the skills laboratory, providing appropriate instructions as you proceed.
- Record your findings using the regional write-up worksheet. (The worksheet includes topics for you to note, which will form the general survey.)
- Swap roles and repeat steps 1 to 5.
- Discuss your findings and performance with your peer.
- Document your findings first as a general survey statement and second on your facility's general observation chart. Note that you will use the general survey statement as an introduction for the complete physical examination write-up.

### PROFESSIONAL PRACTICE NOTE

*Maintain confidentiality of all the information you obtain from your peer. You should document their findings under a pseudonym on the regional write-up worksheet.*

*Don't forget to wash your hands and clean your equipment to maintain infection control standards.*



## REGIONAL WRITE-UP WORKSHEET — GENERAL SURVEY AND VITAL SIGNS

Date \_\_\_\_\_

Interview conducted by \_\_\_\_\_

Designation \_\_\_\_\_

Patient \_\_\_\_\_ Age \_\_\_\_\_ Gender \_\_\_\_\_

Medical Record Number \_\_\_\_\_

Occupation \_\_\_\_\_ Medical Record Number \_\_\_\_\_

### A. General survey

#### 1. Physical appearance

Age \_\_\_\_\_

Sex \_\_\_\_\_

Level of consciousness \_\_\_\_\_

Skin \_\_\_\_\_

Facial features \_\_\_\_\_

Signs of acute distress? \_\_\_\_\_

#### 2. Body structure

Stature \_\_\_\_\_

Nutrition \_\_\_\_\_

Symmetry \_\_\_\_\_

Posture \_\_\_\_\_

Position \_\_\_\_\_

Body build, contour \_\_\_\_\_

Any physical deformity? \_\_\_\_\_

#### 3. Mobility

Gait \_\_\_\_\_

Range of motion \_\_\_\_\_

Any involuntary movements? \_\_\_\_\_

#### 4. Behaviour

Facial expression \_\_\_\_\_

Mood and affect \_\_\_\_\_

Speech \_\_\_\_\_

Dress \_\_\_\_\_

Personal hygiene \_\_\_\_\_

**REGIONAL WRITE-UP WORKSHEET — GENERAL SURVEY AND VITAL SIGNS  
(continued)****B. Measurement**

1. Height \_\_\_\_\_ cm
2. Weight \_\_\_\_\_ kg
3. Body mass index \_\_\_\_\_
4. Waist circumference \_\_\_\_\_

**C. Vital signs**

1. Temperature \_\_\_\_\_
2. Pulse \_\_\_\_\_  
Rate \_\_\_\_\_  
Rhythm \_\_\_\_\_
3. Respirations \_\_\_\_\_
4. Blood pressure \_\_\_\_\_ R arm \_\_\_\_\_ L arm  
Lying \_\_\_\_\_ Standing \_\_\_\_\_
5. Pain? \_\_\_\_\_
6. Oxygen saturation \_\_\_\_\_

**Summary**

Write a summary of the general survey findings you have obtained. Usually this statement will serve as a component of the introduction for the complete physical examination write-up.

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## Chapter Nine

## Mental health assessment

**PURPOSE**

Mental status examination is a commonly performed nursing procedure. In this chapter you will be introduced to the terminology used, the components of the mental status examination including assessing a person's mental health, the rationale and methods of examination of mental status and how to record the assessment accurately.

**KEY CONCEPTS**

- Definitions of mental status
- Mental status health history
- Components of the mental status examination
  - Appearance
  - Behaviour
  - Cognitive functions
  - Thought processes and perceptions
- Abnormalities related to:
  - Mood and affect
  - Thought processes
  - Thought content
  - Perceptions
- Screening for suicide risk
- Supplemental Mini-Mental Status Examination
- Complete mental status assessment

While you are completing your reading assignment, ensure you understand each of the key concepts listed above.

**READING ASSIGNMENT**

Jarvis, Forbes & Watt (JF&W): *Jarvis's Physical Examination & Health Assessment*, Chapter 9, pp.133–157.

**GLOSSARY**

<b>Abstract reasoning</b> .....	pondering a deeper meaning beyond the concrete and literal
<b>Affect</b> .....	temporary expression of feelings and state of mind
<b>Aphasia</b> .....	true language disturbance, defect in word choice and grammar or defect in comprehension; defect is in higher integrative language processing; is the loss of the ability to speak or write coherently, or to understand speech or writing
<b>Attention</b> .....	concentration, ability to focus on one specific thing without being distracted

<b>Consciousness</b> .....	being aware of one's own existence, feelings and thoughts and being aware of the environment
<b>Dysarthria</b> .....	distorted speech sounds; speech may sound unintelligible; basic language (word choice, grammar, comprehension) are intact
<b>Dysphonia</b> .....	difficulty or discomfort in talking, with abnormal pitch or volume, due to laryngeal disease. Voice sounds hoarse or whispered, but articulation and language are intact
<b>Language</b> .....	using the voice to communicate one's thoughts and feelings
<b>Memory</b> .....	ability to lay down and store experiences and perceptions for later recall
<b>Mental disorder</b> .....	a significant behavioural or psychological pattern that is associated with distress (a painful symptom) or disability (impaired functioning) and has a significant risk of pain, disability or death or a loss of freedom (American Psychiatric Association, 2000)
<b>Mental status</b> .....	a person's emotional and cognitive functioning
<b>Mood</b> .....	prolonged display of a person's feelings affecting their whole emotional life
<b>Orientation</b> .....	awareness of the objective world in relation to the self
<b>Perceptions</b> .....	awareness of objects through any of the five senses
<b>Thought content</b> .....	<i>what</i> the person thinks — specific ideas, beliefs, the use of words
<b>Thought process</b> .....	the <i>way</i> a person thinks — the logical train of thought

## PREPARATION FOR YOUR LABORATORY SESSION

Prior to attending the laboratory, prepare questions that you may ask — during a regional health history — of a patient who presents with another presenting illness, to elicit information about the patient's mental health status and coping strategies. Write these additional questions in the space provided before the regional write-up worksheet so you can use the questions as a prompt.

To enhance your learning concerning examining for mental health issues, choose one of the following mental health disorders, read about the presentation, signs and symptoms of the condition and prepare yourself to become a 'patient' with this underlying condition. You may choose another condition if it is of more interest to you.

- depression
- suicidal ideation
- hallucinations
- anxiety disorder

## STUDY GUIDE

After completing the reading assignment, you should be able to answer the following questions in the spaces provided.

- Define the term 'mental disorder' including the two (2) subcategories, and provide examples of each.

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2. Mental status function is inferred through the assessment of a patient's behaviour. List and briefly describe the 10 behavioural areas that are assessed.

- i. \_\_\_\_\_
- ii. \_\_\_\_\_
- iii. \_\_\_\_\_
- iv. \_\_\_\_\_
- v. \_\_\_\_\_
- vi. \_\_\_\_\_
- vii. \_\_\_\_\_
- viii. \_\_\_\_\_
- ix. \_\_\_\_\_
- x. \_\_\_\_\_

3. Circle True or False to answer the following statements concerning infant and childhood developmental considerations.

- a. Consciousness gradually develops independently from language. True    False
- b. Consciousness is rudimentary at birth because the cerebral cortex is well developed. True    False
- c. By 18 to 24 months the child learns that they are separate from objects in the environment and has words to express this. True    False
- d. Language development may also be traced from the differentiated crying at 4 weeks, the cooing at 6 weeks, through one-word sentences at 1 year to multi-word sentences at 2 years. True    False
- e. The concept of language as a social tool of communication occurs at about 6 to 7 years of age, coincident with the child's readiness to play cooperatively with other children. True    False
- f. Between ages 12 and 15, the child has developed abstract thinking, the ability to consider a hypothetical situation and is able to reason and understand. True    False

4. List the main components of a mental state assessment.

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5. Explain why mental status can be assessed if integrated into the health history interview.

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6. State 4 situations in which it would be necessary to perform a complete mental status examination.

i. \_\_\_\_\_

ii. \_\_\_\_\_

iii. \_\_\_\_\_

iv. \_\_\_\_\_

7. Explain 4 factors that could affect a patient's response to the mental status examination but have nothing to do with mental disorders.

i. \_\_\_\_\_

ii. \_\_\_\_\_

iii. \_\_\_\_\_

iv. \_\_\_\_\_

8. Describe the presentation of patients with each of the following disorders:

anxiety \_\_\_\_\_

\_\_\_\_\_

depression \_\_\_\_\_

\_\_\_\_\_

Alzheimer's or dementia \_\_\_\_\_

\_\_\_\_\_

9. Distinguish *dysphonia* from *dysarthria*.

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

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10. Define 'unilateral neglect' and state the condition with which it is associated.

\_\_\_\_\_

\_\_\_\_\_

11. List the order in which 'orientation' is lost.

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12. Describe how you would assess attention span during a health history interview.

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13. State methods of assessing a person's recent and remote memory within the context of the initial health history.

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14. What is the Four Unrelated Words Test intended to test? Include the procedure to be followed during the test and which conditions may cause incorrect responses.

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15. State how and why you would assess for the following while you are performing a health history interview:

word comprehension

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ability to read

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purpose of tests for higher level functioning

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judgment

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thought processes

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thought content

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perceptions

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16. Identify at least 3 questions you could ask a patient that would screen for suicidal ideation.

i. 

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ii. 

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iii. 

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17. List 10 cues and warning signs that would indicate a risk of suicide.

- i. \_\_\_\_\_
- ii. \_\_\_\_\_
- iii. \_\_\_\_\_
- iv. \_\_\_\_\_
- v. \_\_\_\_\_
- vi. \_\_\_\_\_
- vii. \_\_\_\_\_
- viii. \_\_\_\_\_
- ix. \_\_\_\_\_
- x. \_\_\_\_\_

18. Discuss purpose and reasons for using the Mini-Mental State Examination, the scoring method and what scores may indicate.

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19. Differentiate between delirium and dementia.

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20. Very briefly define each of the following conditions:

depersonalisation (lack of ego boundaries)

euphoria

anxiety

fear

lability

inappropriate affect

confabulation

circumlocution

flight of ideas

word salad

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perseveration

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echolalia

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phobia

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delusions

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hallucination

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**NOTES**

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## REVIEW QUESTIONS

This test is for you to check your own mastery of the content. Answers are provided in Appendix A.

1. Although a full mental status examination may not be required, the nurse must be aware of the four main headings of the assessment while performing the interview and physical examination. These headings are:
  - a. mood, affect, consciousness and orientation
  - b. memory, attention, thought content and perceptions
  - c. language, orientation, attention and abstract reasoning
  - d. appearance, behaviour, cognition and thought processes
2. Select the finding that most accurately describes the general appearance of a patient.
  - a. tense posture and restless activity. Clothing clean but not appropriate for season; patient wearing T-shirt and shorts in cold weather
  - b. orientated  $\times$  3. Affect appropriate for circumstances
  - c. alert and responds to verbal stimuli. Tearful when diagnosis discussed
  - d. laughing inappropriately, orientated  $\times$  3
3. The ability to lay down new memories is part of the assessment of cognitive functions. One way to identify the ability to form new memories is by:
  - a. noting whether the patient completes a thought without wandering
  - b. testing general knowledge
  - c. asking for a description of past medical history
  - d. the use of the Four Unrelated Words Test
4. In order to accurately plan for discharge teaching, additional assessments may be required for the patient with aphasia. This may be accomplished by asking the patient to:
  - a. calculate serial 7s
  - b. name their grandchildren and their birthdays
  - c. demonstrate word comprehension by naming articles in the room or on the body as you point to them
  - d. interpret a proverb
5. During an interview with a patient newly diagnosed with a seizure disorder, the patient states, 'I plan to be an airline pilot'. If the patient continues to have this as a career goal after teaching regarding seizure disorders has been provided, the nurse might question the patient's:
  - a. thought processes
  - b. judgment
  - c. attention span
  - d. recent memory
6. Auditory and visual hallucinations occur with all of the following conditions **except**:
  - a. psychiatric disorders
  - b. organic brain disease
  - c. psychedelic drugs
  - d. antidepressant drugs
7. On a patient's second day in an acute care hospital, the patient complains about the 'bugs' on the bed. The bed is clean. This would be an example of altered:
  - a. thought process
  - b. orientation
  - c. perception
  - d. higher intellectual function
8. One way to assess cognitive function and to detect dementia is with:
  - a. the Proverb Interpretation Test
  - b. the Mini-Mental State Examination
  - c. the Four Unrelated Words Test
  - d. the Older Adult Behavioural Checklist
9. The Behavioural Checklist, completed by a parent, is used to assess the mental status of:
  - a. infants
  - b. children 1 to 5 years of age
  - c. children 7 to 11 years of age
  - d. adolescents
10. Circle True or False to answer the following statements about the over 65-year-old. If the answer is false, state the correct answer.
  - a. The ageing process leaves the parameters of mental status mostly intact. True False
  - b. Response time is slower than in youth so it takes a bit longer for the brain to process information and react to it. True False
  - c. Age-related changes in sensory perception do not affect mental status. True False
  - d. Recent memory and remote memory are not affected by ageing. True False
11. A major characteristic of dementia is:
  - a. impairment of short and long-term memory
  - b. hallucinations
  - c. sudden onset of symptoms
  - d. substance-induced



12. Match the type of mood and affect (Column B) with the definition (Column A).

	Column A		Column B
1.	lack of emotional response	a.	depression
2.	loss of identity	b.	anxiety
3.	excessive wellbeing	c.	flat affect
4.	apprehensive from the anticipation of a danger whose source is unknown	d.	euphoria
5.	annoyed, easily provoked	e.	lability
6.	loss of control	f.	rage
7.	sad, gloomy, dejected	g.	irritability
8.	rapid shift of emotions	h.	fear
9.	worried about known external danger	i.	depersonalisation

13. A thin, scruffy person walks into the ward waiting room and tells the patients that he is a famous international rugby union player. This is an example of:
- persecution
  - delusion
  - obsession
  - compulsion

## PRACTICAL SKILLS IN THE LABORATORY/CLINICAL SETTING

Integrating the mental status examination into the health history interview is adequate for most patients you will deal with, as you can collect enough data to be able to assess mental health strengths, coping skills and the need to screen for dysfunction.

You should already be aware that alterations in mental status can significantly affect the patient's ability to manage their health, relationships, sexuality, self-concept, coping ability and activities of daily living.

You need to be cognisant that the consequence of illness and its treatment can also impact on mental health and that there will be many times that you will need to perform a complete Mental Status Examination (MSE) or a Mini-Mental Status Examination (MMSE) in a variety of clinical settings.

Now that you have been introduced to the steps in the MSE and reviewed a number of abnormalities you are ready for the clinical component of the MSE.

The purpose of the clinical component is to take an integrated subjective health history, achieve beginning competency with the administration of the MSE and/or with the supplemental MMSE.

### Clinical Objectives

At the completion of the clinical laboratory session, with further practice and self-directed learning you should be able to:

- collect a health history demonstrating the integration of questions related to mental health signs and symptoms
- demonstrate satisfactory performance of both the MSE and MMSE
- record assessment findings accurately.

## Instructions

1. Form pairs. (Do not reveal the condition you will be role-playing to your peer.)
2. Prepare the environment to promote security and confidentiality. Gather equipment: a piece of blank paper, wrist watch, pencil, standardised form with 'Close your eyes', standardised form with intersecting pentagons.
3. Perform hand hygiene.
4. Gain consent to perform the examination from your peer.
5. Obtain a health history integrating the questions you have developed to identify the presence of any mental health issues.
6. Practise the steps of the full mental status examination on a peer providing appropriate instructions as you proceed.
7. Record your findings using the regional write-up worksheet.
8. Practise the steps of the MMSE.
9. Record your findings using the MSE form.
10. Swap roles and repeat steps 2–9.
11. Discuss your assessment and questioning techniques, findings and performance with your peer to develop a complete understanding of the process of performing a MSE and/or MMSE.
12. Document your findings using the SOAP format.

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**ADDITIONAL QUESTIONS TO INCLUDE IN HEALTH HISTORY/EXAMINATION**

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## REGIONAL WRITE-UP WORKSHEET — MENTAL STATUS EXAMINATION

Date \_\_\_\_\_

Interview conducted by \_\_\_\_\_

Designation \_\_\_\_\_

Patient \_\_\_\_\_ Age \_\_\_\_\_ Gender \_\_\_\_\_

Occupation \_\_\_\_\_ Medical Record Number \_\_\_\_\_

### A. Complete mental status examination \_\_\_\_\_

(Prior to commencing the examination, tell the person the four words you want them to remember and to recall in a few minutes. These are for the Four Unrelated Words Test.)

#### 1. Appearance

Posture \_\_\_\_\_

Body movements \_\_\_\_\_

Dress \_\_\_\_\_

Grooming and hygiene \_\_\_\_\_

#### 2. Behaviour

Level of consciousness \_\_\_\_\_

Facial expression \_\_\_\_\_

Speech:

Quality \_\_\_\_\_

Pace \_\_\_\_\_

Articulation \_\_\_\_\_

Word choice \_\_\_\_\_

Mood and affect \_\_\_\_\_

#### 3. Cognitive functions

Orientation:

Time \_\_\_\_\_

Place \_\_\_\_\_

Person \_\_\_\_\_

Attention span \_\_\_\_\_

Recent memory \_\_\_\_\_

Remote memory \_\_\_\_\_

New learning—Four Unrelated Words Test \_\_\_\_\_

## REGIONAL WRITE-UP WORKSHEET – MENTAL STATUS EXAMINATION (continued)

Additional testing for aphasia:

Word comprehension \_\_\_\_\_

Reading \_\_\_\_\_

Writing \_\_\_\_\_

Judgment \_\_\_\_\_

4. Thought processes and perceptions

Thought processes \_\_\_\_\_

Thought content \_\_\_\_\_

Perceptions \_\_\_\_\_

Suicidal thoughts? (When indicated) \_\_\_\_\_

**B. Perform the Mini-Mental State Examination**

The Mini-Mental State Examination (MMSE) is an assessment of overall cognitive function.

TABLE 9.1 Mini-Mental State Examination (MMSE)
MMSE Sample Items
<p><b>Orientation to time</b> 'What is the date?'</p> <p><b>Registration</b> 'Listen carefully. I am going to say three words. You say them back after I stop. Ready? Here they are ... APPLE (pause), PENNY (pause), TABLE (pause). Now repeat those words back to me.' (Repeat up to 5 times, but score only the first trial.)</p> <p><b>Naming</b> 'What is this?' (Point to a pencil or pen.)</p> <p><b>Reading</b> 'Please read this and do what it says.' (Show examinee the words on the stimulus form.) CLOSE YOUR EYES</p>

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## REGIONAL DOCUMENTATION (SOAP) – MENTAL HEALTH STATUS

Summarise your findings using the SOAP format.

**Subjective** (Reason for seeking care, health history)

**Objective** (Physical exam findings as needed)

**Assessment** (Assessment of health state or problem, diagnosis)

**Plan** (Diagnostic evaluation, follow-up care, patient teaching)

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## Chapter Ten

# Neurological function

### PURPOSE

In this chapter you will review the structure and function of the components of the neurological system including the cranial nerves, cerebellar system, motor system, sensory system and reflexes. You will develop an understanding of the rationale for and methods of examination of the neurological system and learn to accurately record and document the assessment. Together with the mental status assessment presented in Chapter 9, you should be able to perform a complete assessment of the neurological system.

### KEY CONCEPTS

- Anatomical structure and functions of the head and neck
- Components of the nervous system
- Related neuroanatomy and physiology
- The central and peripheral nervous systems
- Cranial nerves
- The motor system
- The sensory system
- Deep tendon reflexes
- Neurological abnormalities
- Types of neurological assessment (neurological observations)
- Developmental considerations during neurological assessment

While you are completing your reading assignment, ensure you understand each of the key concepts listed above.

### READING ASSIGNMENT

Jarvis, Forbes & Watt (JF&W): *Jarvis's Physical Examination & Health Assessment 2e*, Chapter 10, pp 158–223.

### GLOSSARY

<b>Amnesia</b> .....	loss of memory
<b>Anaesthesia</b> .....	absent touch sensation
<b>Analgesia</b> .....	absent pain sensation
<b>Aphasia</b> .....	true language disturbance, defect in word choice and grammar or defect in comprehension; defect is in higher integrative language processing; is the loss of the ability to speak or write coherently or to understand speech or writing
<b>Astereognosis</b> .....	inability to identify object correctly
<b>Ataxia</b> .....	uncoordinated or unsteady gait, inability to perform coordinated movements
<b>Athetosis</b> .....	bizarre, slow, twisting, writhing movement, resembling a snake or worm
<b>Atrophy</b> .....	abnormally small muscle with a wasted appearance; occurs with disuse, injury and lower motor neuron disease
<b>Aura</b> .....	a subjective sensation that precedes a seizure; it could be auditory, visual or motor
<b>Chorea</b> .....	sudden, rapid, jerky, purposeless movement involving limbs, trunk or face
<b>Clonus</b> .....	rapidly alternating involuntary contraction and relaxation of a muscle in response to sudden stretch
<b>Coma</b> .....	state of profound unconsciousness from which the person cannot be aroused

<b>Contralateral</b> .....	opposite side of the body
<b>Decerebrate rigidity</b> .....	upper extremities stiffly extended, adducted, internal rotation, palms pronated; lower extremities stiffly extended, plantar flexion; teeth clenched; hyperextended back; more ominous than decorticate rigidity; indicates lesion in brainstem at midbrain or upper pons
<b>Decorticate rigidity</b> .....	upper extremities — flexion of arm, wrist and fingers; adduction of arm, i.e. tight against thorax; lower extremities — extension, internal rotation, plantar flexion; indicates hemispheric lesion of cerebral cortex
<b>Dermatome</b> .....	a circumscribed skin area that is supplied from one spinal cord segment through a particular spinal nerve
<b>Dysarthria</b> .....	difficulty forming words; distorted speech sounds; speech may sound unintelligible; basic language (word choice, grammar, comprehension) intact
<b>Dysmetria</b> .....	the inability to control range of motion of muscles; clumsy movement with overshooting the mark; occurs with cerebellar disorders or acute alcohol intoxication
<b>Dysphagia</b> .....	difficulty with swallowing
<b>Dysphasia</b> .....	difficulty with language comprehension or expression impairment in speech consisting of lack of coordination and inability to arrange words in their proper order
<b>Fasciculation</b> .....	rapid continuous twitching of resting muscle without movement of limb
<b>Flaccidity</b> .....	loss of muscle tone, limp; decreased resistance, hypotonic
<b>Graphaesthesia</b> .....	ability to 'read' a number by having it traced on the skin
<b>Hemiplegia</b> .....	spastic or flaccid paralysis of one side of body and extremities; loss of motor power (paralysis) on one side of the body, usually caused by a cerebrovascular accident; paralysis occurs on the side opposite the lesion
<b>Hydrocephalus</b> .....	increased head size due to increased cerebrospinal fluid
<b>Hyper</b> .....	(prefix) increased
<b>Hypertrophy</b> .....	increased size and strength of muscle; occurs with isometric exercise
<b>Hypo</b> .....	(prefix) decreased
<b>Ipsilateral</b> .....	same side of the body
<b>Lower motor neuron</b> .....	motor neuron in the peripheral nervous system with its nerve fibres extending out to the muscle and only its cell body in the central nervous system
<b>Microcephalic</b> .....	head size below norms for age
<b>Macrocephalic</b> .....	an enlarged head for age, or rapidly increasing in size
<b>Myoclonus</b> .....	rapid sudden jerk of a muscle
<b>Nuchal rigidity</b> .....	stiffness in cervical neck area
<b>Nystagmus</b> .....	back-and-forth oscillation of the eyes
<b>Opisthotonos</b> .....	prolonged arching of back, with head and heels bent backward, due to meningeal irritation
<b>Paresis</b> .....	a partial or incomplete paralysis; weakness or diminished strength
<b>Paralysis</b> .....	loss of strength; a loss of motor function due to a lesion in the neurological or muscular system or loss of sensory innervation; problem with motor nerve or muscle fibres
<b>Paraplegia</b> .....	impairment or loss of motor and/or sensory function in the lower half of the body
<b>Paraesthesia</b> .....	abnormal sensation, i.e. burning, numbness, tingling, prickling, crawling skin sensation
<b>Point localisation</b> .....	ability to discriminate exactly where on the body the skin has been touched
<b>Proprioception</b> .....	sensory information concerning body movements and position of the body in space
<b>Ptosis</b> .....	drooping of the eyelid that occurs with damage to or dysfunction of cranial nerve III
<b>Spasticity</b> .....	increased tone or <i>hypertonia</i> ; increased resistance to passive lengthening; then may suddenly give way (clasp-knife phenomenon)
<b>Stereognosis</b> .....	ability to recognise objects by feeling their forms, sizes and weights while the eyes are closed
<b>Syncope</b> .....	a sudden loss of strength, a temporary loss of consciousness (a faint) due to lack of cerebral blood flow
<b>Tic</b> .....	repetitive twitching of a muscle group at inappropriate times, e.g. wink, grimace
<b>Tremor</b> .....	an involuntary shaking, vibrating or trembling; involuntary contraction of opposing muscle groups resulting in rhythmic movement of one or more joints



**Two-point discrimination** ..... ability to distinguish the separation of two simultaneous pinpricks on the skin

**Upper motor neuron** ..... nerve located entirely within the central nervous system

**Vertebra prominens** ..... the long spinous process of C7 vertebra that is palpable when the head is flexed

**Vertigo** ..... rotational spinning caused by neurological disease in the vestibular apparatus in the ear or in the vestibular nuclei in the brainstem

## STUDY GUIDE

After completing the reading assignment, you should be able to answer the following questions in the spaces provided.

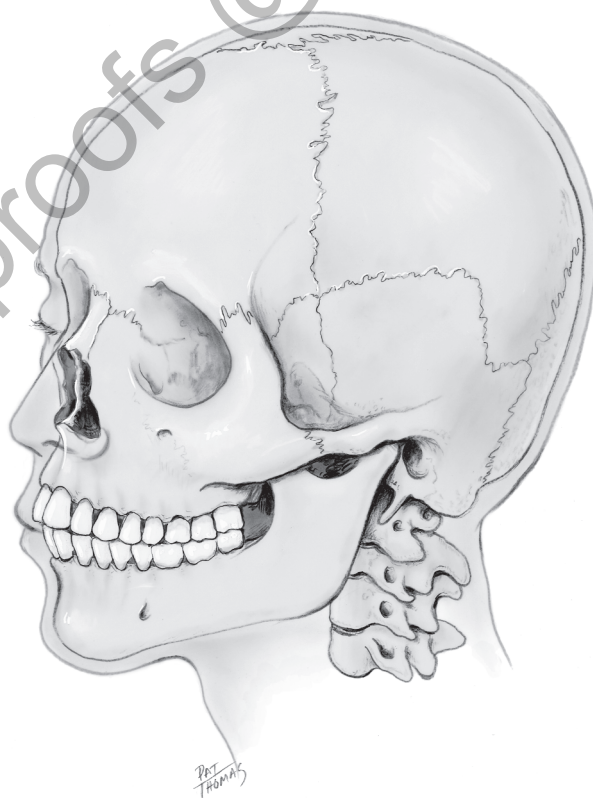
1. State the function of the skull.

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2. Label the figure of the skull with the following:

Coronal suture	External acoustic meatus
Frontal bone	Lacrimal bone
Lambdoid suture	Mandible
Mastoid process	Maxilla
Nasal bone	Nasal septum
Occipital bone	Parietal bone
Sagittal suture	Sphenoid bone
Temporal bone	Temporomandibular joint
Zygomatic bone	C1, Atlas
C2, Axis	3rd cervical vertebra



3. Explain how the cranium is supported and by which structures.

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4. Explain the boundaries of the neck and list the structures contained within.

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5. Describe in detail the two divisions of the nervous system.

i. 

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ii. 

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6. List the major function(s) of the following components of the central nervous system:

cerebral cortex — frontal lobe

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cerebral cortex — parietal lobe

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cerebral cortex — temporal lobe

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cerebral cortex — Wernicke's area

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cerebral cortex — Broca's area

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basal ganglia

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thalamus

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hypothalamus

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cerebellum

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midbrain

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pons

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medulla

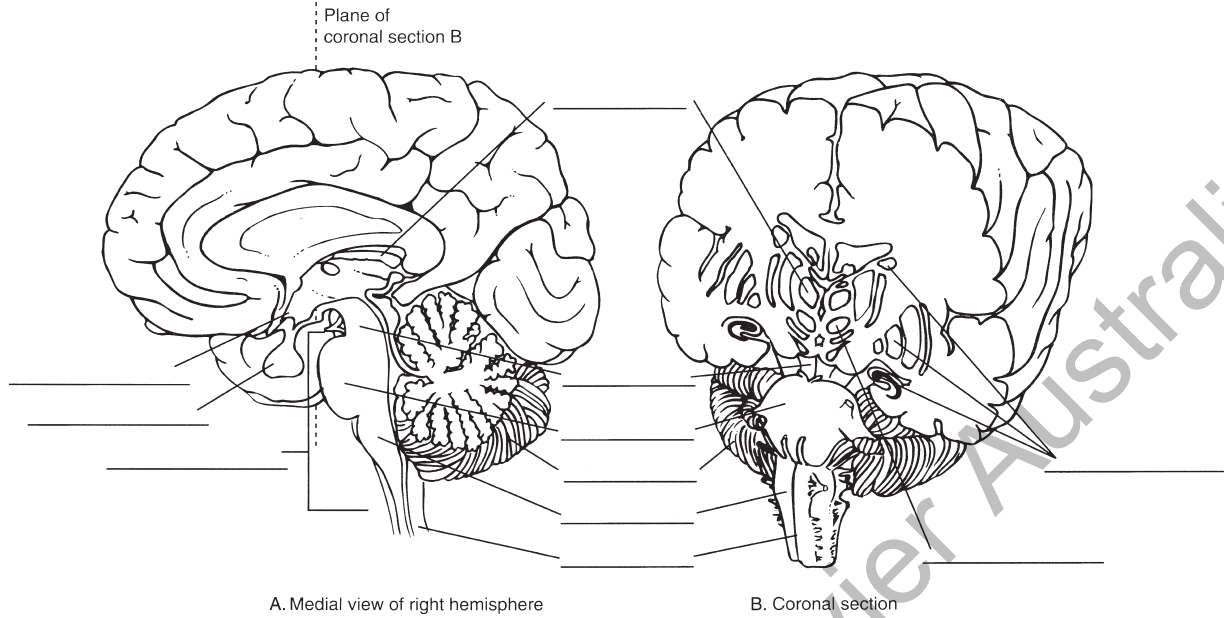
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spinal cord

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7. Fill in the labels on the following illustration.



8. Sensation travels in the afferent fibres in the peripheral nerve, then through the posterior (dorsal) root, then into the spinal cord. There, the sensation may take one of two routes: 1. The spinothalamic tract or 2. The posterior (dorsal) columns. Identify the sensations each of these pathways transmit and the route they take to mediate a response.

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9. Explain how organ pain is felt from the heart, liver or spleen when there is no representation of these organs on the sensory homunculus.

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10. Describe each of the 3 major motor pathways in the CNS including the type of movements mediated by each.

i. 

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ii. 

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iii. 

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11. Differentiate between an upper motor neuron and a lower motor neuron.

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12. List the 4 types of reflexes and provide an example of each.

i. 

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ii. 

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iii. 

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iv. 

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13. Trace the transmission of an impulse from initiation of sensation to response in a deep tendon reflex arc. As you trace the transmission, identify each of the 5 components of a reflex arc.

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14. Fill in the gaps in relation to the spinal nerves:

There are \_\_\_\_\_ of spinal nerves that arise from the length of the spinal cord and supply \_\_\_\_\_.

There are: \_\_\_ cervical, \_\_\_ thoracic, \_\_\_ lumbar, \_\_\_ sacral and \_\_\_ coccygeal.

They are \_\_\_\_\_ nerves because they contain both \_\_\_\_\_ and \_\_\_\_\_ fibres.

The nerves enter and exit the cord through roots: sensory afferent fibres through the \_\_\_\_\_ **or** \_\_\_\_\_ roots; motor efferent fibres through the \_\_\_\_\_ **or** \_\_\_\_\_ roots.

\_\_\_\_\_ is the cutaneous distribution of the various spinal nerves.

A \_\_\_\_\_ is an identified skin area that is supplied mainly from \_\_\_\_\_ through a particular spinal nerve.

15. Circle True or False to answer the following statements concerning developmental considerations.

- |   |      |       |
|---|------|-------|
| a. Motor activity in the newborn is under the control of the spinal cord and medulla.   | True | False |
| b. At birth the neurons are myelinated.   | True | False |
| c. Persistence of the primitive reflexes is an indication of CNS dysfunction.   | True | False |
| d. The infant's sensory and motor development proceeds along with the gradual acquisition of myelin.  | True | False |
| e. Sensation is well developed at birth which is why babies respond by crying and with whole body movements.  | True | False |
| f. The velocity of nerve conduction decreases between 5% and 10% with ageing, making the reaction time slower in some older persons.                    | True | False |
| g. Ageing does not affect cerebral blood flow and oxygen consumption, so cause of dizziness and a loss of balance with position change remains unknown. | True | False |

16. Describe the characteristics and duration of each of the following headache types.

migraine

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cluster headaches

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tension headaches

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17. Identify 5 health history questions you would ask a patient concerning headaches they have.

- i. \_\_\_\_\_
- ii. \_\_\_\_\_
- iii. \_\_\_\_\_
- iv. \_\_\_\_\_
- v. \_\_\_\_\_

18. Name each of the 3 types of neurological examinations; state when they would be performed, on whom, and what is examined with each.

- i. \_\_\_\_\_  
\_\_\_\_\_
- ii. \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_



iii. \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

19. A previously alert patient's level of consciousness appears to be deteriorating, as they no longer open their eyes spontaneously. State, in order, how you would increase the stimulus to elicit a response.

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

20. Differentiate between localising, decorticate and decerebrate movements.

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

21. When assessing the pupils:

What characteristics should be noted?

\_\_\_\_\_  
\_\_\_\_\_

Explain the pupillary light reflex.

\_\_\_\_\_  
\_\_\_\_\_

List factors that may affect pupillary size, shape and response.

\_\_\_\_\_  
\_\_\_\_\_

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How and why is pupil size measured?

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22. Explain the vital sign changes in the Cushing reflex.

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23. Describe the purpose of the Glasgow Coma Scale (GCS) and each of the three divisions being assessed.

Purpose:

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1.

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2.

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3.

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24. List the 12 cranial nerves in the adult identifying if they are sensory (S), motor (M), or mixed (MX) and briefly describe the method of testing for each.

i. \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

ii. \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

iii. \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

iv. \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

v. \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

vi. \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

vii. \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

viii. \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

ix. \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

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x. \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

xi. \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

xii. \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

25. Briefly describe each of the following cerebellar tests and state what a positive test may indicate:

Romberg

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

rapid alternating movement

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

finger-to-nose test

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

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26. Briefly describe the method of testing the sensory system for pain, temperature, touch, vibration and position. **Hint:** pain, temperature, touch test the spinothalamic tract; vibration and position test the posterior column.

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27. Outline the 4-point grading scale for deep tendon reflexes.

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28. State the spinal level that will enable assessment of intactness of the reflex arc associated with the following:

biceps reflex \_\_\_\_\_

triceps reflex \_\_\_\_\_

brachioradialis reflex \_\_\_\_\_

quadriceps reflex \_\_\_\_\_

Achilles reflex \_\_\_\_\_

29. Briefly describe testing of each of the following newborn reflexes and state when they are no longer present.

rooting reflex

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sucking reflex

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palmar grasp

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plantar grasp

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Babinski's reflex

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tonic neck reflex

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Moro reflex

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stepping reflex

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30. Describe patient presentation regarding their level of consciousness that would be graded as:

lethargic or somnolent

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---

obtunded

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stupor or semi-coma

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coma

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## REVIEW QUESTIONS

This test is for you to check your own mastery of the content. The answers are provided in Appendix A.

1. The medical record indicates that a person has an injury to Broca's area. When meeting this person you expect:
  - a. difficulty speaking
  - b. receptive aphasia
  - c. visual disturbances
  - d. emotional lability
2. The control of body temperature is located in:
  - a. Wernicke's area
  - b. the thalamus
  - c. the cerebellum
  - d. the hypothalamus
3. To test for stereognosis, you would:
  - a. have the person close their eyes, then raise the person's arm and ask them to describe its location
  - b. touch the person with a tuning fork
  - c. place a coin in the person's hand and ask them to identify it
  - d. touch the person with a cold object
4. During the examination of an infant, use a cotton-tipped applicator to stimulate the anal sphincter. The absence of a response suggests a lesion of:
  - a. L2
  - b. T12
  - c. S2
  - d. C5
5. During a neurological examination, the tendon reflex fails to appear. Before striking the tendon again, the nurse might use the technique of:
  - a. two-point discrimination
  - b. reinforcement
  - c. vibration
  - d. graphaesthesia
6. The National Stroke Foundation Australia (2010) recommends the FAST test as an easy way to recognise and remember the signs of stroke. What does the acronym FAST stand for?
  - a. Fear, Arms, Stand, Test
  - b. Face, Arms, Speech, Time
  - c. Face, Artery, Stroke, Time
  - d. Face, Artery, Slurring, Time
7. Cerebellar function is assessed by which of the following tests?
  - a. muscle size and strength
  - b. cranial nerve examination
  - c. coordination — hop on one foot
  - d. spinothalamic test
8. To elicit a Babinski reflex:
  - a. gently tap the Achilles tendon
  - b. stroke the lateral aspect of the sole of the foot from heel to the ball
  - c. present a noxious odour to a person
  - d. observe the person walking heel to toe

9. A positive Babinski sign is:
  - a. dorsiflexion of the big toe and fanning of all toes
  - b. plantar flexion of the big toe with a fanning of all toes
  - c. the expected response in healthy adults
  - d. withdrawal of the stimulated extremity from the stimulus
10. The cremasteric response is:
  - a. positive when disease of the pyramidal tract is present
  - b. positive when the ipsilateral testicle elevates upon stroking of the inner aspect of the thigh
  - c. a reflex of the receptors in the muscles of the abdomen
  - d. not a valid neurological examination
11. Senile tremors may resemble parkinsonism, except that senile tremors do not include:
  - a. nodding the head as if responding yes or no
  - b. rigidity and weakness of voluntary movement
  - c. tremor of the hands
  - d. tongue protrusion
12. People who have Parkinson's disease usually have which of the following characteristic styles of speech:
  - a. a garbled manner
  - b. loud, urgent
  - c. slow, monotonous
  - d. word confusion
13. Match the cranial nerves (Column A) with their corresponding function (Column B).

	Column A		Column B
1.	olfactory	a.	movement of the tongue
2.	optic	b.	vision
3.	oculomotor	c.	lateral movement of the eyes
4.	trochlear	d.	hearing and equilibrium
5.	trigeminal	e.	talking, swallowing, carotid sinus and carotid reflex
6.	abducens	f.	smell
7.	facial	g.	extraocular movement, pupil constriction, down and inward movement of the eye
8.	acoustic	h.	mastication and sensation of face, scalp, cornea
9.	glossopharyngeal	i.	phonation, swallowing, taste posterior third of tongue
10.	vagus	j.	movement of trapezius and sternocleidomastoid muscles
11.	spinal	k.	down and inward movement of the eye
12.	hypoglossal	l.	taste, anterior two-thirds of tongue, close eyes

## PRACTICAL SKILLS IN THE LABORATORY/CLINICAL SETTING

Assessment of the neurological system is an important assessment area for nurses. You will perform neurological assessment on a routine basis as an ongoing assessment or as a screening tool. You have reviewed the structure and function of many of the elements involved in the nervous system. Now it is time to practise the knowledge and skills you developed related to performing a comprehensive neurological assessment as you worked through this chapter.

You are now ready for the clinical component of the neurological system.

The purpose of the clinical component is to practise the regional examination on a peer in the skills laboratory.

### Clinical Objectives

At the completion of the clinical laboratory session, with further practice and self-directed learning you should be able to:

1. Demonstrate knowledge of the symptoms related to the neurological system by obtaining a neurological health history from a peer.
2. Demonstrate the techniques used in examination of the neurological system. Beginning practitioners will be able to perform

ongoing neurological observations and use of the Glasgow Coma Scale. With more experience and practice you will develop skills to assess the cranial nerves, cerebellar function, sensory system, motor system and deep tendon reflexes.

3. Record the history and physical examination findings accurately, reach an assessment of the health state and develop a plan of care.

**Instructions**

1. Form pairs.
2. Prepare the examination setting and gather your equipment.
3. Perform hand hygiene.
4. Gain consent to perform the examination from your peer.
5. Practise the neurological health history interview and the steps of the ongoing neurological examination on a peer in the skills laboratory, providing appropriate instructions as you proceed.
6. Record your findings using the regional write-up worksheet.
7. Swap roles and repeat steps 2–6.
8. Discuss your assessment techniques, findings and performance with your peer to develop a complete understanding of the process.
9. Document your findings using the SOAP format.

**NOTES**

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## REGIONAL WRITE-UP WORKSHEET – ONGOING NEUROLOGICAL STATUS

Date \_\_\_\_\_

Interview conducted by \_\_\_\_\_

Designation \_\_\_\_\_

Patient \_\_\_\_\_ Age \_\_\_\_\_ Gender \_\_\_\_\_

Occupation \_\_\_\_\_ Medical Record Number \_\_\_\_\_

### I. Health history

1. Any unusual frequent or unusually severe **headaches**? \_\_\_\_\_  
Location \_\_\_\_\_ When started? \_\_\_\_\_  
How often? \_\_\_\_\_  
Pattern \_\_\_\_\_ Describe characteristics \_\_\_\_\_  
Type of pain? \_\_\_\_\_ How long do they last? \_\_\_\_\_  
Precipitating factors? \_\_\_\_\_ Associated factors? \_\_\_\_\_  
Family history? \_\_\_\_\_ Coping strategies \_\_\_\_\_
2. Do you have **neck pain**? \_\_\_\_\_  
Onset? \_\_\_\_\_ Location? \_\_\_\_\_  
Precipitating factors? \_\_\_\_\_ Associated factors? \_\_\_\_\_
3. Do you have **pain** anywhere else? \_\_\_\_\_  
Score? \_\_\_\_\_ Quality? \_\_\_\_\_  
Onset/duration? \_\_\_\_\_ Relief? \_\_\_\_\_  
Effect on ADLs \_\_\_\_\_
4. Ever had any **head injury**? \_\_\_\_\_  
Show where \_\_\_\_\_ Any loss of consciousness? \_\_\_\_\_
5. Ever feel **dizzy**? \_\_\_\_\_ **Vertigo**? \_\_\_\_\_
6. Ever had any **seizures**? \_\_\_\_\_  
Onset? \_\_\_\_\_ How often? \_\_\_\_\_  
Course and duration? \_\_\_\_\_  
Warning signs? \_\_\_\_\_ Type? \_\_\_\_\_  
Precipitating factors? \_\_\_\_\_  
Medications? \_\_\_\_\_ Coping strategies? \_\_\_\_\_
7. Any **tremors** in hands or face? \_\_\_\_\_  
Worse with anxiety? \_\_\_\_\_ Relieved with rest? \_\_\_\_\_  
Medications? \_\_\_\_\_

## REGIONAL WRITE-UP WORKSHEET — ONGOING NEUROLOGICAL STATUS (continued)

8. Any **weakness** in any body part? \_\_\_\_\_  
Local or generalised? \_\_\_\_\_
9. Any problem with **coordination**? \_\_\_\_\_  
Problems with balance when walking? \_\_\_\_\_ Any falls? \_\_\_\_\_
10. Any **numbness or tingling**? \_\_\_\_\_  
Where? \_\_\_\_\_ When? \_\_\_\_\_
11. Any problem **swallowing**? \_\_\_\_\_  
With solids? \_\_\_\_\_ With liquids? \_\_\_\_\_  
Excessive saliva? \_\_\_\_\_
12. Any problem speaking? \_\_\_\_\_  
Problems forming words? \_\_\_\_\_ Problems getting message across? \_\_\_\_\_
13. Significant past history? \_\_\_\_\_  
Any stroke, spinal cord injury, meningitis, congenital defect, alcoholism? \_\_\_\_\_
14. Any environmental/occupational hazards, e.g. insecticides? \_\_\_\_\_  
Lead? \_\_\_\_\_ Other? \_\_\_\_\_

### II. Physical examination

*Most hospitals and health facilities have specific charts to guide a neurological assessment and for consistency of recording the data. Generally, the assessment data is presented in graphic form, which usually includes the Glasgow Coma Scale (GCS), pupillary response and vital signs. Your teacher may also provide you with an example used in your health service so you can practise recording your findings.*

#### A. Ongoing neurological observations

1. **Mental status** assessment using Mini-Mental State Examination (MMSE) as needed. Refer to MMSE in JF&W 2e, Chapter 9, Table 9.1, p 143.

#### Using Glasgow Coma Scale on the next page

2. **Level of consciousness**

Ease of arousal/state of awareness \_\_\_\_\_

Orientation \_\_\_\_\_ Person \_\_\_\_\_

Place \_\_\_\_\_ Time \_\_\_\_\_

Verbal responses \_\_\_\_\_

3. **Motor function**

Voluntary motor function—obeys commands \_\_\_\_\_

Hand grasp—muscle strength \_\_\_\_\_

Palmar drift? \_\_\_\_\_

Movement in response to painful stimulus? \_\_\_\_\_

**REGIONAL WRITE-UP WORKSHEET — ONGOING NEUROLOGICAL STATUS  
(continued)**

4. **Pupillary response**

Size \_\_\_\_\_ shape \_\_\_\_\_ symmetry \_\_\_\_\_

Direct light reflex \_\_\_\_\_ Consensual light reflex \_\_\_\_\_

Pupillary light reflex \_\_\_\_\_

5. **Vital signs** — Record on next page

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## GLASGOW COMA SCALE

# GLASGOW COMA SCALE : Do it this way

**GCS** | EYES  
at 40 | VERBAL  
MOTOR

Institute of Neurological Sciences NHS Greater Glasgow and Clyde



### CHECK

For factors Interfering with communication, ability to respond and other injuries



### OBSERVE

Eye opening , content of speech and movements of right and left sides



### STIMULATE

Sound: spoken or shouted request  
Physical: Pressure on finger tip, trapezius or supraorbital notch



### RATE

Assign according to highest response observed

#### Eye opening

Criterion	Observed	Rating	Score
Open before stimulus	✓	Spontaneous	4
After spoken or shouted request	✓	To sound	3
After finger tip stimulus	✓	To pressure	2
No opening at any time, no interfering factor	✓	None	1
Closed by local factor	✓	Non testable	NT

#### Verbal response

Criterion	Observed	Rating	Score
Correctly gives name, place and date	✓	Orientated	5
Not orientated but communication coherently	✓	Confused	4
Intelligible single words	✓	Words	3
Only moans / groans	✓	Sounds	2
No audible response, no interfering factor	✓	None	1
Factor interfering with communication	✓	Non testable	NT

#### Best motor response

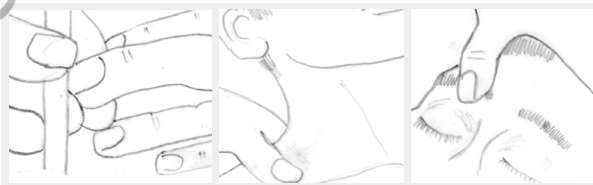
Criterion	Observed	Rating	Score
Obey 2-part request	✓	Obeys commands	6
Brings hand above clavicle to stimulus on head/neck	✓	Localising	5
Bends arm at elbow rapidly but features not predominantly abnormal	✓	Normal flexion	4
Bends arm at elbow, features clearly predominantly abnormal	✓	Abnormal flexion	3
Extends arm at elbow	✓	Extension	2
No movement in arms / legs, no interfering factor	✓	None	1
Paralysed or other limiting factor	✓	Non testable	NT

#### Sites For Physical Stimulation

Finger tip pressure

Trapezius Pinch

Supraorbital notch



#### Features of Flexion Responses

Modified with permission from Van Der Naalt 2004  
Ned Tijdschr Geneeskd

##### Abnormal Flexion

Slow Stereotyped  
Arm across chest  
Forearm rotates  
Thumb clenched  
Leg extends



##### Normal flexion

Rapid  
Variable  
Arm away from body

For further information and video demonstration visit [www.glasgowcomascale.org](http://www.glasgowcomascale.org)

Graphic design by Margaret Frej based on layout and illustrations from Medical Illustration M1 - 268093  
(c) Sir Graham Teasdale 2015

### PUPILS

TIME														
Pupils	right	Size												
		Reaction												
	left	Size												
		Reaction												

### PUPIL SIZE IN MM

1	2	3	4	5	6	7	8	Comments
								+ reacts, - no reaction, c eye closed These sizes are approximate

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### OBSERVATIONS

TIME															
<b>Temperature</b>	40														
	39														
	38														
	37														
	36														
	35														
<b>Blood pressure</b>	310														
	300														
	290														
	280														
	270														
	260														
	250														
	240														
	230														
	220														
	210														
	200														
	190														
	180														
	170														
	160														
	150														
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	130														
	120														
110															
100															
90															
80															
70															
60															
50															
40															
30															
20															
10															
0															
<b>Respiratory rate</b>															
<b>Oxygen saturation</b>															
<b>Pain score</b>															

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## NEURO ASSESSMENT – MOTOR FUNCTION

L I M B  M O V E M E N T S	A R M S	Normal power																			
		Mild weakness																			
		Severe weakness																			
		Spastic action																			
		Extension																			
		No response																			
	L E G S	Normal power																			
		Mild weakness																			
		Severe weakness																			
		Spastic action																			
		Extension																			
		No response																			

Record right (R) and left (L) separately if there is a difference between the two sides.

### Further assessment for advanced practice

**NOTE:** Your teacher may ask you to practise some sections, all sections or none at all. Please check prior to the laboratory session to enable preparation if required.

PREPARATION	EQUIPMENT NEEDED
<p>In addition to the assessment strategies above, use the following sequence for a screening or complete neurological examination.</p> <ol style="list-style-type: none"> <li>1 Mental status (see Ch 9)</li> <li>2 Head and neck</li> <li>3 Cranial nerves</li> <li>4 Motor system</li> <li>5 Sensory system</li> <li>6 Reflexes</li> </ol> <p><b>Position the person sitting up with the head at your eye level.</b></p>	<p>Neurological observations chart</p> <p>Penlight torch</p> <p>Tongue blade</p> <p>Cotton swab</p> <p>Cotton ball</p> <p>Tuning fork (128 Hz or 256 Hz)</p> <p>Percussion hammer</p> <p>(Possibly) familiar aromatic substances, e.g. peppermint, coffee, vanilla</p>

Refer to JF&W 2e, Chapter 10, pp 179-198 for the adult examinations and pp 198-208 for infant and paediatric examinations.

### B. Screening and complete neurological examination for advanced practice

#### A. Cranial nerves

- I \_\_\_\_\_
- II \_\_\_\_\_
- III, IV, VI \_\_\_\_\_
- V \_\_\_\_\_
- VII \_\_\_\_\_

VIII \_\_\_\_\_  
 IX, X \_\_\_\_\_  
 XI \_\_\_\_\_  
 XII \_\_\_\_\_

**B. Motor system**

1. Muscles \_\_\_\_\_  
 Size, strength, tone \_\_\_\_\_  
 Involuntary movements \_\_\_\_\_
2. Cerebellar function \_\_\_\_\_  
 Gait \_\_\_\_\_  
 Romberg test \_\_\_\_\_  
 Rapid alternating movements \_\_\_\_\_  
 Finger-to-finger test \_\_\_\_\_  
 Finger-to-nose test \_\_\_\_\_  
 Heel-to-shin test \_\_\_\_\_

**C. Sensory system**

1. Spinothalamic tract  
 Pain \_\_\_\_\_  
 Temperature \_\_\_\_\_  
 Light touch \_\_\_\_\_
2. Posterior column tract  
 Vibration \_\_\_\_\_  
 Position (kinaesthesia) \_\_\_\_\_  
 Tactile discrimination \_\_\_\_\_  
 Stereognosis \_\_\_\_\_  
 Graphaesthesia \_\_\_\_\_  
 Two-point discrimination \_\_\_\_\_

**D. Reflexes**

	Bi	Tri	BR	P	A	PL(/↓)	Abd	Cre	Bab
R									
L									

0 = absent, 1+ = hypoactive, 2+ = normal, 3+ = hyperactive, 4+ = hyperactive with clonus, ↑ dorsiflexion, ↓ plantar flexion.



## REGIONAL DOCUMENTATION (SOAP) – NEUROLOGICAL SYSTEM

Summarise your findings using the SOAP format.

**Subjective** (Reason for seeking care, health history)

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**Objective** (Physical exam findings)

Record reflexes/findings on diagram

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**Assessment** (Assessment of health state or problem, diagnosis)

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**Plan** (Diagnostic evaluation, follow-up care, patient teaching)

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## Chapter Eleven

# Pain assessment

### PURPOSE

As noted in the introduction to Chapter 11 in the main text, the purpose of pain assessment is to, where possible, establish patients' perception of their experience of pain, identify how pain interferes with physical and psychosocial wellbeing and provide a baseline for decisions about pharmacological and nonpharmacological treatment, self-management and response to treatment.

As pain is a subjective experience it is important for us as nurses to be able to accurately assess our patients' pain level and perception in order to provide the most appropriate pain management and nursing care.

In this chapter you will be introduced to the structure and function of pain pathways and the process of nociception. This chapter will also introduce you to a number of pain assessment tools to aid your understanding of the methods of pain assessment and to assist you to accurately record your findings, using both subjective and objective data.

### KEY CONCEPTS

- Neuroanatomical pathways of pain
- Nociception
- Nociceptive and neurogenic sources of pain
- Types of pain
- Objective pain assessment
- Pain assessment and associated tools
- Life span considerations
- Physiological impact of pain
- Nonverbal behaviours of pain

While you are completing your reading assignment, ensure you understand each of the key concepts listed above.

### READING ASSIGNMENT

Jarvis, Forbes & Watt (JF&W): *Jarvis's Physical Examination & Health Assessment 2e*, Chapter 11, pp 224–240.

### GLOSSARY

<b>Acute pain</b> .....	by duration is a short, self-limiting pain
<b>Allodynia</b> .....	a stimulus that normally would not produce pain does so after amplified central sensitisation to pain
<b>Chronic pain</b> .....	pain that has been daily and persistent for a duration of 3 months or more
<b>Cutaneous somatic pain</b> .....	pain originating from skin surface or subcutaneous structures
<b>Central pain</b> .....	initiated or caused by a primary lesion or dysfunction in the central nervous system that includes the brain, brainstem and spinal cord
<b>Deep somatic pain</b> .....	pain originating from bone, muscle, tendon, joints or blood vessels
<b>Hyperalgesia</b> .....	an exaggerated pain response to a painful stimulus
<b>Modulation</b> .....	inhibition of pain message during this last phase of nociception
<b>Neuropathic pain</b> .....	type of pain that does not adhere to the typical predictable phases in nociceptive pain; occurs as a result of actual nerve cell or axonal damage due to inflammation, trauma, surgery or degenerative disease
<b>Nociception</b> .....	process whereby noxious stimuli are perceived as pain; divided into four phases: (1) transduction, (2) transmission, (3) perception and (4) modulation

- Nociceptors** ..... specialised nerve endings that detect painful sensations from the periphery and transmit them to the central nervous system; located within the skin; connective tissue; muscle; and the thoracic, abdominal and pelvic viscera
- Perception** ..... conscious awareness of a painful sensation
- Referred pain** ..... pain felt at a particular site, but which originates from another location
- Transduction** ..... first phase of nociception whereby the painful stimulus is changed into an action potential
- Transmission** ..... second phase of nociception whereby the pain impulse moves from the spinal cord to the brain
- Visceral pain** ..... pain originating from the larger interior organs: kidneys, stomach, intestines, gallbladder, pancreas and arising from direct injury, or from stretching of the organ from tumour, ischaemia, distension or severe contraction

## PREPARATION FOR YOUR LABORATORY SESSION

You will be performing a pain assessment on your peer, then they will be assessing you. Neither of you should have a source of pain at present which would make the assessment difficult. To ensure maximum learning experience occurs, utilise one of the following suggestions to create a scenario to act out as the interviewee. Either think back to a period when you have experienced pain of some sorts, find out about a relative's pain problem or use the internet to obtain a case study of a person in pain, which you may then use as your scenario for the pain assessment. It is vital that you have a clear idea of what signs and symptoms you have prior to the lab, so ensure you come with a prepared scenario.

## STUDY GUIDE

After completing the reading assignment, you should be able to answer the following questions in the spaces provided.

1. State the most reliable indicator of a patient's pain.

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2. Define pain.

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3. Define nociceptors and explain their location and function.

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4. Compare and contrast A-delta and C-fibres.

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5. Draw the pathway of A-delta and C-fibres through the spinal cord until their termination. Ensure you include the following: stimulus, pain receptors, fibres, posterior root ganglion, tract of Lissauer, substantia gelatinosa — lamina II, dorsal horn, anterolateral spinothalamic tract, medulla, thalamus, cerebral cortex and limbic system.

6. Define nociception.

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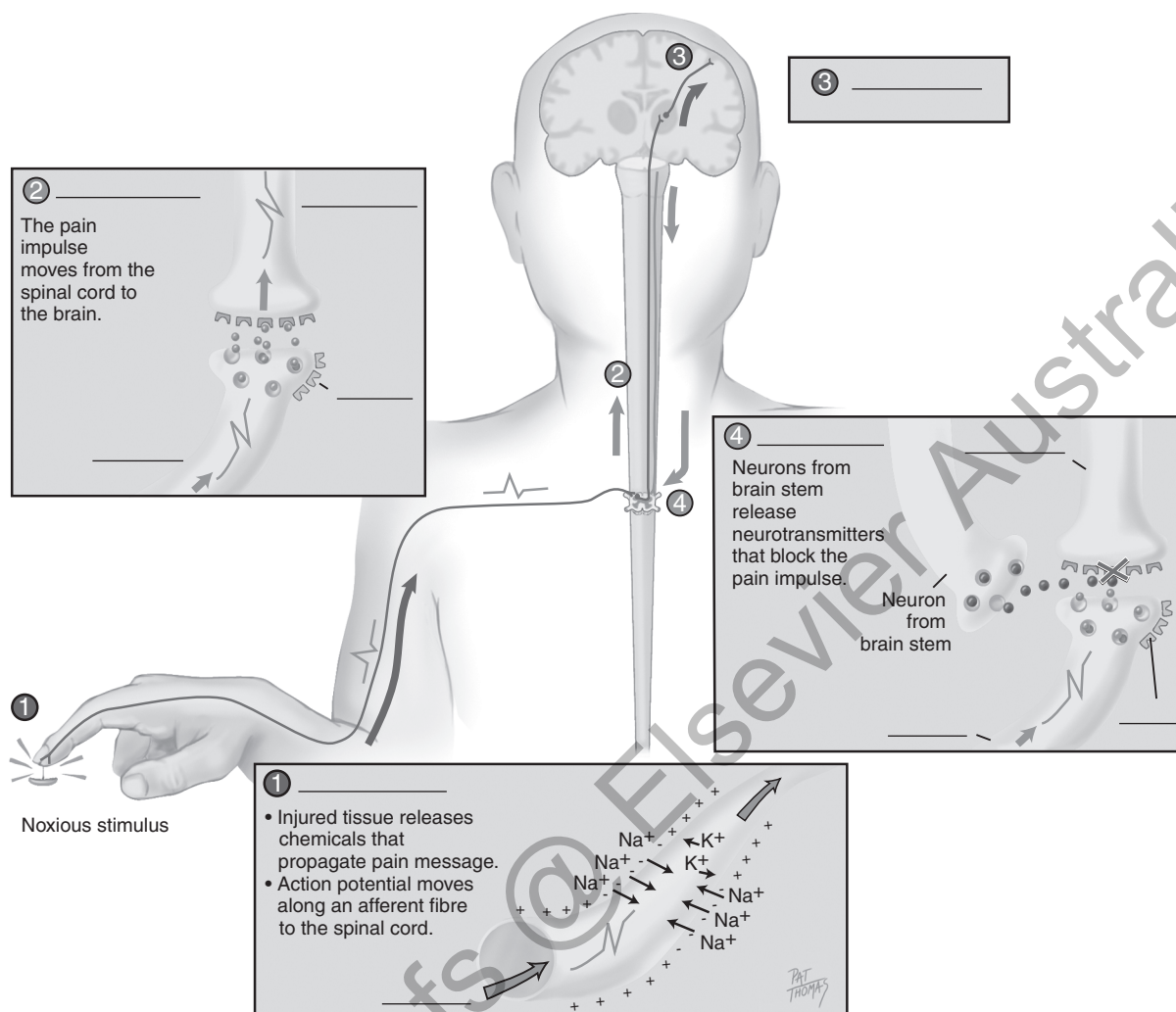
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7. Label the following diagram.



8. Describe the process of nociception using the four phases.

a. transduction

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b. transmission

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c. perception

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d. modulation

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9. Identify which phase of nociception the following sets of neurotransmitters belong to and what effect they have:

substance P, histamine, prostaglandins, serotonin and bradykinin

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substance P, glutamate and adenosine triphosphate (ATP)

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serotonin; noradrenaline; neurotensin; gamma-aminobutyric acid (B) (GABA(B)); endogenous opioids,  $\beta$ -endorphins, enkephalins and dynorphins

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10. Explain the difference between visceral and somatic forms of pain and identify where each may arise.

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11. Explain referred pain.

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12. Identify the differences between nociceptive and neurogenic pain.

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13. Distinguish between the two forms of neurogenic pain:

neuropathic

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central

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14. For each of the following pain types list descriptors that may be used by the patient:

somatic

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visceral

---

neuropathic

---

central

---

15. Differentiate between the following based on causation, pattern and systems/organs affected:

acute pain \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

sub-acute pain \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

chronic pain \_\_\_\_\_

I. non-malignant pain \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

II. malignant pain \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

16. Answer True or False to each of the following questions concerning infants and children. If the answer is false, state the correct answer.

- |   |      |       |
|---|------|-------|
| a. Infants have the same capacity for pain as adults.   | True | False |
| b. There is more discrimination between noxious and non-noxious stimuli in children than in adults. | True | False |
| c. There is adequate supply of neurotransmitters in early development.                              | True | False |
| d. The neonate is more sensitive to painful stimuli than the older child.                           | True | False |
| e. Infants are not at risk for undertreatment of pain.  | True | False |

17. Identify 4 factors that make effective pain management difficult in older adults

i. \_\_\_\_\_

ii. \_\_\_\_\_

iii. \_\_\_\_\_

iv. \_\_\_\_\_

18. There are many preconceptions concerning pain in the ageing population. Answer True or False to the following statements.

- |  |      |       |
|--|------|-------|
| a. The most common pain-producing conditions include arthritis, osteoarthritis, osteoporosis, peripheral vascular disease, cancer, peripheral neuropathies, angina and chronic constipation. | True | False |
| b. Pain is a normal process of ageing.   | True | False |
| c. Pain should be expected with ageing and does not need aggressive treatment.   | True | False |
| d. The somatosensory cortex is generally unaffected by dementia of the Alzheimer's type.   | True | False |



19. List each of the 11 questions that may be used to evaluate pain and outline what information you are trying to elicit from your patient with each question.

- i. \_\_\_\_\_
- ii. \_\_\_\_\_
- iii. \_\_\_\_\_
- iv. \_\_\_\_\_
- v. \_\_\_\_\_
- vi. \_\_\_\_\_
- vii. \_\_\_\_\_
- viii. \_\_\_\_\_
- ix. \_\_\_\_\_
- x. \_\_\_\_\_
- xi. \_\_\_\_\_

20. Briefly explain what the following multidimensional pain assessment tools assess:

- a. Initial Pain Assessment \_\_\_\_\_
- b. Brief Pain Inventory \_\_\_\_\_
- c. McGill Questionnaire \_\_\_\_\_

21. State the function of unidimensional pain rating scales.

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

22. Briefly describe the use and disadvantages of each of the following unidimensional pain scales or tools:

numeric rating scales \_\_\_\_\_

\_\_\_\_\_

categorical scales \_\_\_\_\_

\_\_\_\_\_

Wong-Baker Scale \_\_\_\_\_

\_\_\_\_\_

Oucher Scale \_\_\_\_\_

\_\_\_\_\_

23. Identify nonverbal behaviours that may be demonstrated by patients with acute or chronic pain.

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24. List physiological effects of poorly controlled acute and chronic pain.

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25. Explain the purpose of the CRIES pain assessment tool and its limitations.

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## REVIEW QUESTIONS

This test is intended to check your own mastery of the content. The answers are provided in Appendix A.

1. At what phase during nociception does the individual become aware of a painful sensation?
  - a. modulation
  - b. transduction
  - c. perception
  - d. transmission
2. While taking a history, the patient describes a burning, painful sensation that moves around his toes and bottoms of his feet. These symptoms are suggestive of:
  - a. nociceptive pain
  - b. neuropathic pain
3. During the physical examination, your patient is diaphoretic, pale and complains of pain directly over the LUQ of the abdomen. This would be categorised as:
  - a. cutaneous pain
  - b. somatic pain
  - c. visceral pain
  - d. psychogenic pain
4. While caring for a preterm infant, you are aware that:
  - a. inhibitory neurotransmitters are in sufficient supply by 15 weeks gestation
  - b. the fetus has less capacity to feel pain
  - c. repetitive blood draws have minimal long-term consequences
  - d. the preterm infant is more sensitive to painful stimuli
5. The most reliable indicator of pain in the adult is:
  - a. degree of physical functioning
  - b. nonverbal behaviours
  - c. MRI findings
  - d. the patient's self-report
6. While examining a broken arm of a 4-year-old boy, select the appropriate assessment tool/s to evaluate his pain status. (You may select more than one answer.)
  - a. 0–10 numeric rating scale
  - b. the Wong-Baker scale
  - c. simple descriptor scale of their own words for pain
  - d. 0–5 numeric rating scale
7. When a person presents with acute abdominal pain, and following the initial examination, it is best to withhold analgesia until diagnostic testing is completed and a diagnosis is made.
  - a. True
  - b. False
8. For older adult postoperative patients, poorly controlled acute pain places them at higher risk for:
  - a. atelectasis
  - b. increased myocardial oxygen demand
  - c. impaired wound healing
  - d. all of the above
9. A 30-year-old female reports having persistent intense pain in her right arm related to trauma sustained from a car accident 5 months ago. She states that the slightest touch or clothing can exacerbate the pain. This report is suggestive of:
  - a. referred pain
  - b. psychogenic pain
  - c. allodynia
  - d. cutaneous pain
10. The CRIES is an appropriate pain assessment tool for:
  - a. cognitively impaired older adults
  - b. children aged 2–8 years
  - c. infants
  - d. preterm and term neonates
11. When assessing a pain problem in a cognitively impaired older adult which of the following is correct:
  - a. they do not have the ability to report pain
  - b. they may report pain, but may not be able to describe the pain, discern variations in pain, recall severity of pain or alert others about their pain
  - c. observation of pain behaviours is not an important component of pain assessment
  - d. behaviours such as restlessness, frowning and grimacing can be used to assess pain and are always valid indicators of pain in nonverbal adults
12. Match the most suitable tool with each of the following patients:
 

<i>Patient</i>	<i>Tool</i>
a. neonatal postsurgery	1. Wong-Baker Scale
b. 2-year-old child with broken arm	2. Abbey Pain Scale
c. middle-aged man following melanoma removal	3. CRIES tool
d. aged person with cognitive decline	4. numeric rating scale

## PRACTICAL SKILLS IN THE LABORATORY/CLINICAL SETTING

Now that you have completed the reading preparation and answered the questions, you should be able to perform a pain assessment and to practise your new skills while on clinical.

Pain assessment is one of the most commonly performed nursing-initiated assessments. The purpose of the clinical component is to practise the pain assessment on a peer in the skills laboratory, practise your questioning techniques and general survey skills to observe for cues that may indicate pain and practise using pain scales prior to performing the assessment on a patient in the clinical setting.

### Clinical objectives

At the completion of the clinical laboratory session, with further practice and self-directed learning you should be able to:

1. obtain an initial pain assessment on a peer using the initial pain assessment form included
2. demonstrate a physical examination on a painful area and identify abnormal findings using a focused approach
3. select appropriate pain assessment tools for further follow-up and monitoring of the painful site
4. record the history and physical examination findings accurately, assess the nature of the pain and develop an appropriate plan of care.

### Instructions

1. Form pairs and allocate roles — one assessing the pain, one being the patient with the prepared scenario.
2. Set up your section of the skills laboratory for an initial pain assessment.
3. Gather the equipment you will need.
4. Perform hand hygiene.
5. Gain consent to perform the examination from your peer.
6. Practise the steps of performing a modified health history gathering subjective and objective data for an initial pain assessment on your peer in the skills laboratory, providing appropriate instructions as you proceed.
7. Record your findings using the initial pain assessment write-up sheet.
8. Swap roles and repeat steps 2–7 using the other prepared patient scenario.
9. Discuss your assessment techniques, findings and performance with your peer to develop a complete understanding of the process.
10. Document your findings on the second page using the SOAP format.

## REGIONAL WRITE-UP WORKSHEET — PAIN

Date \_\_\_\_\_

Interview conducted by \_\_\_\_\_

Designation \_\_\_\_\_

Patient \_\_\_\_\_ Age \_\_\_\_\_ Gender \_\_\_\_\_

Occupation \_\_\_\_\_ Medical Record Number \_\_\_\_\_

### I. Health history

#### 1. Biographical data

Address \_\_\_\_\_

Contact Phone \_\_\_\_\_ Mobile phone \_\_\_\_\_

Date of birth \_\_\_\_\_ Birthplace \_\_\_\_\_

Age \_\_\_\_\_ Gender \_\_\_\_\_ Marital status \_\_\_\_\_

Nationality \_\_\_\_\_ Interpreter required? \_\_\_\_\_

Medicare number \_\_\_\_\_

Private health fund Yes No (circle) \_\_\_\_\_

Advanced care directive? Yes No (circle) Details: \_\_\_\_\_

2. History obtained from \_\_\_\_\_

3. Reason/s for seeking care \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

4. Present health or history of present illness \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_

5. Past health \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_

6. Family history \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_

## REGIONAL WRITE-UP WORKSHEET – PAIN (continued)

7. Initial pain assessment using the following tool \_\_\_\_\_

\_\_\_\_\_

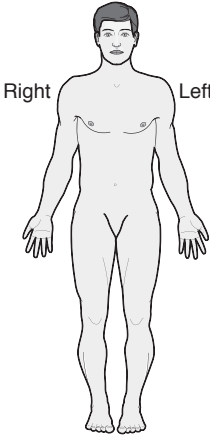
\_\_\_\_\_

8. Focused physical assessment on painful area

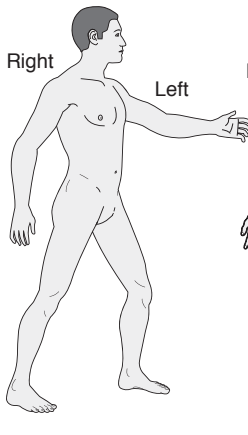
**Initial Pain Assessment Tool**

Patient's Name \_\_\_\_\_ Age \_\_\_\_\_ Date \_\_\_\_\_  
 Room \_\_\_\_\_  
 Diagnosis \_\_\_\_\_ Physician \_\_\_\_\_  
 Nurse \_\_\_\_\_

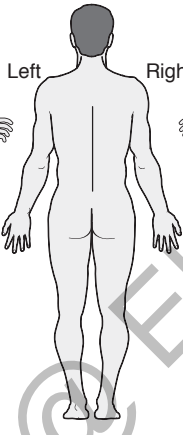
1. LOCATION: Patient or nurse mark drawing.



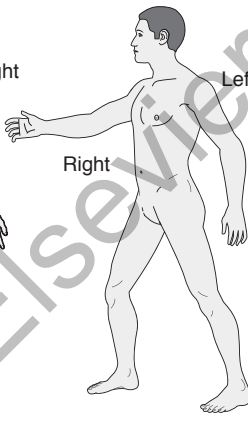
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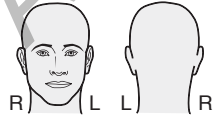
Right Left



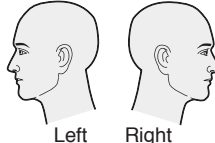
Left Right



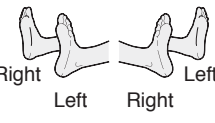
Right



R L L R



Left Right



Right Left Right

2. INTENSITY: Patient rates the pain. Scale used \_\_\_\_\_  
 Present: \_\_\_\_\_  
 Worst pain gets: \_\_\_\_\_  
 Best pain gets: \_\_\_\_\_  
 Acceptable level of pain: \_\_\_\_\_

3. QUALITY: (Use patient's own words, e.g., prick, ache, burn, throb, pull, sharp) \_\_\_\_\_  
 \_\_\_\_\_

4. ONSET, DURATION, VARIATION, RHYTHMS: \_\_\_\_\_  
 \_\_\_\_\_

5. MANNER OF EXPRESSING PAIN: \_\_\_\_\_  
 \_\_\_\_\_

6. WHAT RELIEVES THE PAIN? \_\_\_\_\_  
 \_\_\_\_\_

7. WHAT CAUSES OR INCREASES THE PAIN? \_\_\_\_\_  
 \_\_\_\_\_

8. EFFECTS OF PAIN: (Note decreased function, decreased quality of life.)  
 Accompanying symptoms (e.g., nausea) \_\_\_\_\_  
 Sleep \_\_\_\_\_  
 Appetite \_\_\_\_\_  
 Physical activity \_\_\_\_\_  
 Relationship with others (e.g., irritability) \_\_\_\_\_  
 Emotions (e.g., anger, suicidal, crying) \_\_\_\_\_  
 Concentration \_\_\_\_\_  
 Other \_\_\_\_\_

9. OTHER COMMENTS: \_\_\_\_\_  
 \_\_\_\_\_

10. PLAN: \_\_\_\_\_  
 \_\_\_\_\_

Figure 11.1

### DOCUMENTATION (SOAP)

Summarise your findings using the SOAP format.

**Subjective** (Reason for seeking care, health history)

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**Objective** (Physical exam findings)

Record findings on a diagram if required

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**Assessment** (Assessment of health state or problem, diagnosis)

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**Plan** (Diagnostic evaluation, follow-up care, patient teaching)

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## PAIN ASSESSMENT TOOLS

### Brief Pain Inventory

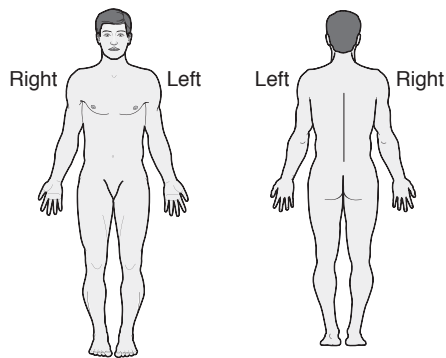
Date: \_\_\_/\_\_\_/\_\_\_

Time: \_\_\_\_\_

Name: \_\_\_\_\_  
Last First Middle initial

1. Throughout our lives, most of us have had pain from time to time (such as minor headaches, sprains, and toothaches). Have you had pain other than these everyday kinds of pain today?  
1. Yes 2. No

2. On the diagram, shade in the areas where you feel pain. Put an X on the area that hurts the most.



3. Please rate your pain by circling the one number that best describes your pain at its **worst** in the past 24 hours.

0	1	2	3	4	5	6	7	8	9	10
No pain					Pain as bad as you can imagine					

4. Please rate your pain by circling the one number that best describes your pain at its **least** in the past 24 hours.

0	1	2	3	4	5	6	7	8	9	10
No pain					Pain as bad as you can imagine					

5. Please rate your pain by circling the one number that best describes your pain on the **average**.

0	1	2	3	4	5	6	7	8	9	10
No pain					Pain as bad as you can imagine					

6. Please rate your pain by circling the one number that tells how much pain you have **right now**.

0	1	2	3	4	5	6	7	8	9	10
No pain					Pain as bad as you can imagine					

7. What treatments or medications are you receiving for your pain?  
\_\_\_\_\_  
\_\_\_\_\_

8. In the past 24 hours, how much **relief** have pain treatments or medications provided? Please circle the one percentage that most shows how much relief you have received.

0%	10	20	30	40	50	60	70	80	90	100%
No relief										Complete relief

9. Circle the one number that describes how, during the past 24 hours, pain has **interfered** with your:

A: General activity

0	1	2	3	4	5	6	7	8	9	10
Does not interfere					Completely interferes					

B: Mood

0	1	2	3	4	5	6	7	8	9	10
Does not interfere					Completely interferes					

C: Walking ability

0	1	2	3	4	5	6	7	8	9	10
Does not interfere					Completely interferes					

D: Normal work (includes both work outside the home and housework)

0	1	2	3	4	5	6	7	8	9	10
Does not interfere					Completely interferes					

E: Relations with other people

0	1	2	3	4	5	6	7	8	9	10
Does not interfere					Completely interferes					

F: Sleep

0	1	2	3	4	5	6	7	8	9	10
Does not interfere					Completely interferes					

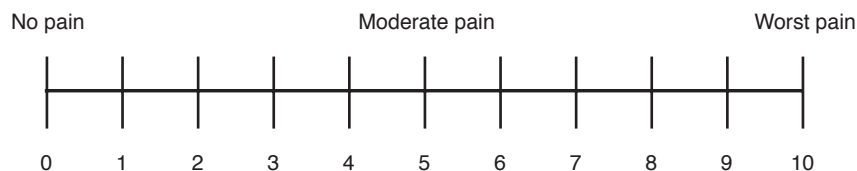
G: Enjoyment of life

0	1	2	3	4	5	6	7	8	9	10
Does not interfere					Completely interferes					

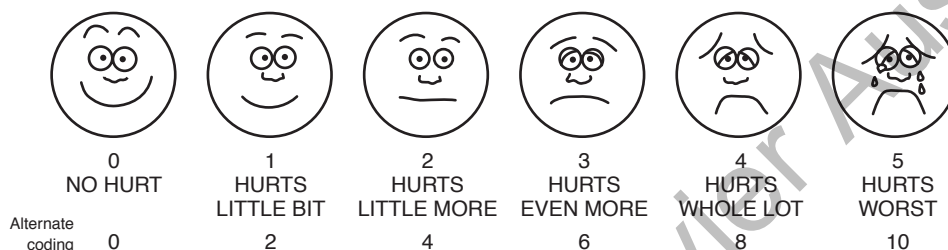
**Figure 11.2** Brief Pain Inventory.



### PAIN ASSESSMENT TOOLS — PAIN (continued)



**Figure 11.3** Numerical Rating Scale (NRS). Patients are asked to choose a number that rates the level of pain, with 0 being no pain and the highest anchor, 10, indicating the worst pain.



**Original instructions:**

Explain to the person that each face is for a person who feels happy because he has no pain (hurt) or sad because he has some or a lot of pain. **Face 0** is very happy because he doesn't hurt at all. **Face 1** hurts just a little bit. **Face 2** hurts a little more. **Face 3** hurts even more. **Face 4** hurts a whole lot. **Face 5** hurts as much as you can imagine, although you don't have to be crying to feel this bad. Ask the person to choose the face that best describes how he is feeling. Rating scale is recommended for persons age 3 years and older.

**Brief word instructions:**

Point to each face using the words to describe the pain intensity. Ask the child to choose face that best describes own pain and record the appropriate number.

**Figure 11.4** Wong-Baker FACES Pain Rating Scale.

Wong-Baker (From Hockenberry MJ, Wilson D, Winkelstein ML: *Wong's Essentials of Pediatric Nursing*, 7th edn. St Louis, 2005, p 1259. Used with permission. Copyright, Mosby.)

# Chapter Twelve

## Eye function

### PURPOSE

This chapter will help you learn the structure and function of the external and internal components of the eyes; accessory muscles, visual pathways; visual fields and visual light reflexes. You will also be introduced to the methods to examine vision, the external eye and ocular fundus. You will also learn how to record the assessment accurately.

### KEY CONCEPTS

- Internal and external anatomy of the eye and accessory muscles
- Visual pathways, fields and reflexes
- External ocular structures
- Anterior eyeball structures
- Extraocular muscles, function and innervation
- Central visual acuity
- The ocular fundus
- Components of the eye examination
- Ocular abnormalities

While you are completing your reading assignment, ensure you understand each of the key concepts listed above.

### READING ASSIGNMENT

Jarvis, Forbes & Watt (JF&W): *Jarvis's Physical Examination & Health Assessment 2e*, Chapter 12, pp 241–285.

### GLOSSARY

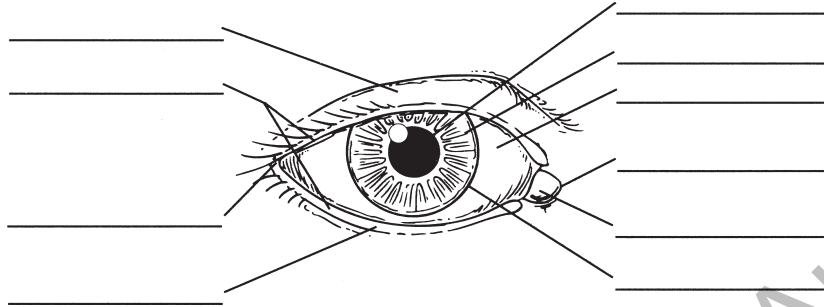
<b>Accommodation</b> .....	adaptation of the eye for near vision by increasing the curvature of the lens; components of accommodation are convergence of the eyeballs and pupillary constriction
<b>Anisocoria</b> .....	unequal pupil size
<b>Arcus senilis</b> .....	grey-white arc or circle around the limbus of the iris that is common with ageing
<b>Argyll Robertson pupil</b> .....	pupil does not react to light; does constrict with accommodation
<b>Blepharitis</b> .....	inflammation of the eyelids; red, scaly, greasy flakes and thickened, crusted lid margins occur with staphylococcal infection or seborrhoeic dermatitis of the lid edge; inflammation of the glands and eyelash follicles along the margin of the eyelids
<b>Blepharospasm</b> .....	increased blink rate that occurs in spasms; may be an inability to open eyelid due to inflammation or malfunction of cranial nerves V and VII; may occur in exposure to bright lights
<b>Cataract</b> .....	lens opacity, resulting from a clumping of proteins in the lens; develops slowly with ageing and gradually obstructs vision
<b>Chalazion</b> .....	infection or retention cyst of a meibomian gland, showing as a beady nodule on the eyelid
<b>Conjunctiva</b> .....	thin mucous membrane between the eyelids and the eyeball
<b>Conjunctivitis</b> .....	infection of the conjunctiva, 'pinkeye'; commonly from bacterial or viral infection, allergy or chemical irritation; purulent discharge accompanies bacterial infection

<b>Conjugate movement</b> .....	when the two eyes move, their axes always remain parallel; allowing eyes to move as a pair
<b>Cotton-wool area</b> .....	abnormal soft exudates visible as grey-white areas; arteriolar microinfarctions that envelop and obscure the vessels; occurs with diabetes, hypertension, subacute bacterial endocarditis, lupus and papilloedema of any cause
<b>Cup-disc ratio</b> .....	ratio of the width of the physiological cup to the width of the optic disc, normally half or less
<b>Diplopia</b> .....	the perception of two images of a single object; double vision
<b>Drusen</b> .....	are small, round, yellow dots that are scattered haphazardly on the retina; benign degenerative hyaline deposits; occur commonly with ageing
<b>Ectropion</b> .....	lower eyelid loose and rolling outwards
<b>Entropion</b> .....	lower eyelid rolling inwards; due to spasm of lids or scar tissue contracting
<b>Exophthalmos</b> .....	a forward displacement of the eyeballs and widened palpebral fissures; protruding eyeballs
<b>Fixation</b> .....	a reflex direction of the eye towards an object attracting a person's attention
<b>Fovea central</b> .....	area of keenest vision at the centre of the macula on the ocular fundus; centre of visual field
<b>Glaucoma</b> .....	a group of eye diseases characterised by increased intraocular pressure; the optic nerve is damaged, as a result of the increasing pressure within the eye
<b>Hordeolum</b> .....	(stye) red, painful pustule; a localised staphylococcal infection of the hair follicles at the lid margin
<b>Lid lag</b> .....	the abnormal white rim of sclera visible between the upper eyelid and the iris when a person moves the eyes downwards
<b>Macula</b> .....	round darker area of the ocular fundus that receives and transduces light from the centre of the visual field
<b>Meibomian glands</b> .....	modified sebaceous glands that secrete an oily lubricating material onto the lids to stop the tears from overflowing which helps to form an airtight seal when the lids are closed
<b>Microaneurysm</b> .....	abnormal finding of round red dots on the ocular fundus that are localised dilations of small vessels; seen in diabetes
<b>Miosis</b> .....	constricted pupils
<b>Mydriasis</b> .....	dilated pupils
<b>Myopia</b> .....	'nearsighted'; refractive error in which near vision is better than far vision
<b>Nystagmus</b> .....	involuntary, rapid, rhythmic movement of the eyeball
<b>Optic atrophy</b> .....	pallor of the optic disc due to partial or complete death of optic nerve
<b>Optic disc</b> .....	area of ocular fundus in which blood vessels exit and enter
<b>Papilloedema</b> .....	increased intracranial pressure causes venous stasis in the globe, showing redness, congestion and elevation of the disc, blurred margins, haemorrhages and absent venous pulsations; is a serious sign of intracranial pressure, usually caused by a space-occupying mass (e.g. a brain tumour or haematoma)
<b>Photophobia</b> .....	the inability to tolerate light
<b>Pinguecula</b> .....	growth on conjunctiva due to chronic ultraviolet light or other environmental exposure
<b>Presbyopia</b> .....	decrease in power of accommodation that occurs with ageing; a decreased ability to focus on close objects with no coinciding changes to distance vision
<b>Pterygium</b> .....	triangular opaque tissue on the nasal side of the conjunctiva that grows over the cornea and sclera towards the centre of the cornea; a degenerative lesion related to ultraviolet radiation/exposure
<b>Ptosis</b> .....	drooping of upper eyelid over the iris and possibly covering pupil
<b>Red reflex</b> .....	red glow that appears to fill the person's pupil when first visualised through the ophthalmoscope; caused by the reflection of the ophthalmoscope light off the inner retina
<b>Scotoma</b> .....	a blind spot in the visual field surrounded by an area of normal or decreased vision; occurs with glaucoma, optic nerve and visual pathway disorders
<b>Strabismus</b> .....	(squint, crossed eye) disparity of the eye axes
<b>Xanthelasma</b> .....	soft, raised yellow plaques occurring on eyelids/nasal portion, often associated with lipid disorders

## STUDY GUIDE

After completing the reading assignment, you should be able to answer the following questions in the spaces provided.

1. Label the following diagram of the external anatomy of the eye.



2. On the eye you labelled in question 1, draw in the following structures:

nose  
 lacrimal gland  
 superior and inferior lacrimal punctum  
 lacrimal sac  
 nasolacrimal duct

Now draw in the flow of tears secreted from the lacrimal gland.

3. State the function of the following structures:

orbital cavity \_\_\_\_\_

eyelids \_\_\_\_\_

eyelashes \_\_\_\_\_

4. Discuss the structure and function of the conjunctiva.

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5. Name the 6 sets of extraocular muscles, the cranial nerve that innervates each one and the movement each produces.

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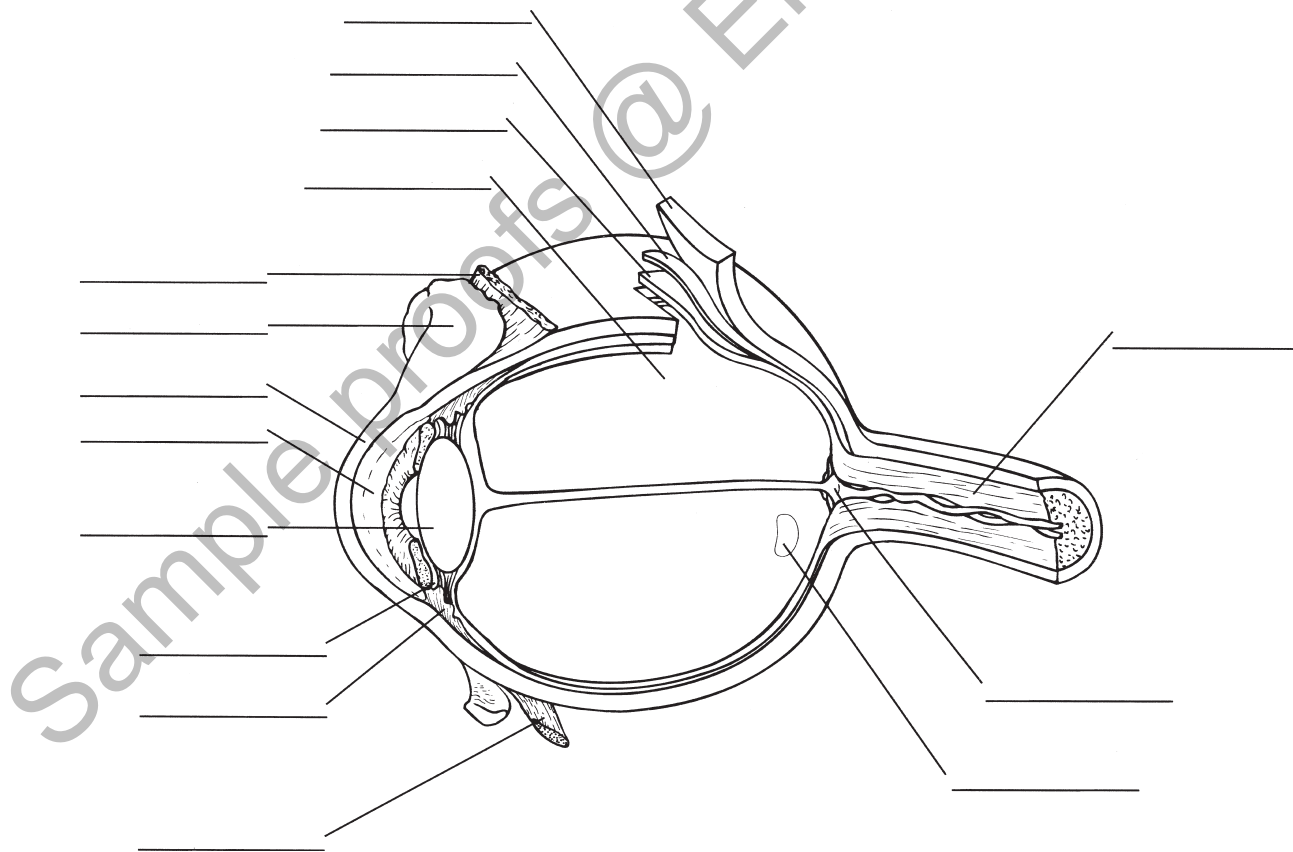
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6. Label the following illustrations where indicated.



7. Name and describe the 3 concentric coats of the eyeball.

i. \_\_\_\_\_

\_\_\_\_\_

ii. \_\_\_\_\_

\_\_\_\_\_

iii. \_\_\_\_\_

\_\_\_\_\_

8. Describe the corneal reflex and identify the cranial nerves involved and their reaction when stimulated.

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

9. Explain the functions of:

the pupil \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

the iris \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

the lens \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

10. State the location and function of the anterior and posterior chambers of the eye.

\_\_\_\_\_

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\_\_\_\_\_

11. Describe the retinal structures that can be viewed through the ophthalmoscope.

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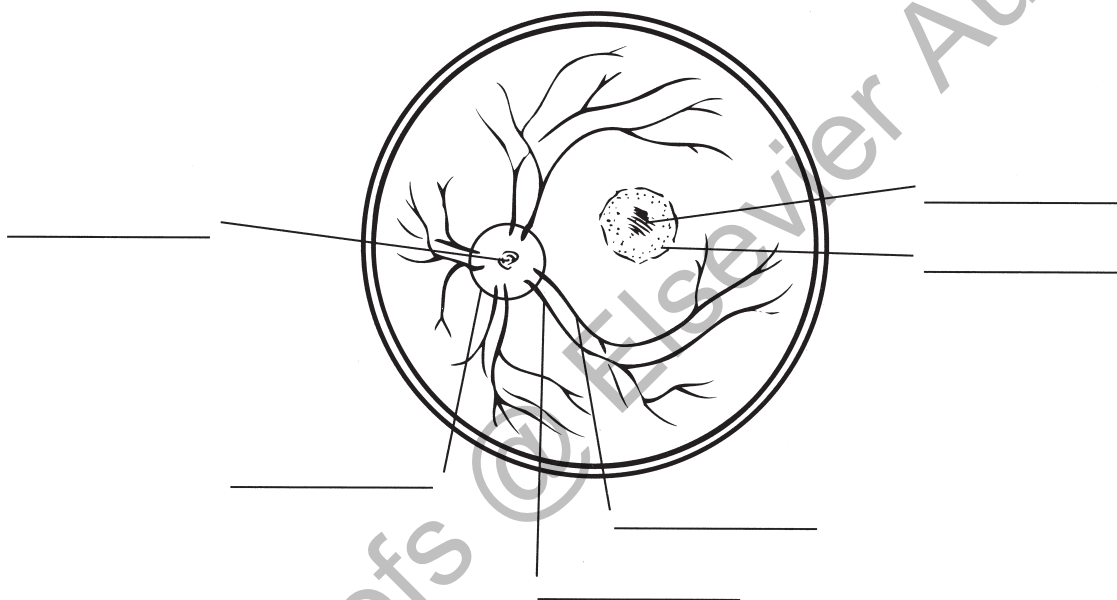
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12. Label the following illustrations where indicated.



13. Describe how an image formed on the retina compares with its actual appearance in the outside world.

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14. Describe both of the pupillary light reflexes and explain why they happen.

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15. List 9 common age-related changes in the eye.

- i. \_\_\_\_\_
- ii. \_\_\_\_\_
- iii. \_\_\_\_\_
- iv. \_\_\_\_\_
- v. \_\_\_\_\_
- vi. \_\_\_\_\_
- vii. \_\_\_\_\_
- viii. \_\_\_\_\_
- ix. \_\_\_\_\_

16. Match patient complaints (Column A) with probable cause (Column B).

**Column A**

- a. acute onset of floaters, 'shade' or 'cobwebs'
- b. halos around lights
- c. increased intraocular pressure
- d. loss of depth perception or central vision
- e. decreased tear production
- f. an even yellowing of the sclera extending up to the cornea

**Column B**

1. jaundice
2. ageing
3. acute narrow-angle glaucoma
4. glaucoma
5. retinal detachment
6. age-related macular degeneration

17. Explain the statement that normal visual acuity is 6/6.

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18. Briefly describe the method of testing for presbyopia and the expected findings.

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19. Describe 3 abnormal findings of tissue colour that are possible on the conjunctiva and explain the significance of each.

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20. Differentiate between pinguecula and pterygium.

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21. Rationalise testing for strabismus during early childhood.

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22. Describe these findings and explain their significance:

epicanthal fold \_\_\_\_\_

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pseudostrabismus \_\_\_\_\_

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ophthalmia neonatorum \_\_\_\_\_

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Brushfield's spots \_\_\_\_\_

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23. Describe each of the following conditions and explain their significance:

conjunctivitis \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

subconjunctival haemorrhage \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

hyphaema \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

acute glaucoma \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

## REVIEW QUESTIONS

This test is intended to check your own mastery of the content. Answers are provided in Appendix A.

1. The palpebral fissure is:
  - a. the border between the cornea and sclera
  - b. the open space between the eyelids
  - c. the angle where the eyelids meet
  - d. visible on the upper and lower lids at the inner canthus
2. The corneal reflex is mediated by cranial nerves:
  - a. II and III
  - b. II and VI
  - c. V and VII
  - d. VI and IV
3. The retinal structures viewed through the ophthalmoscope are:
  - a. the optic disc, the retinal vessels, the general background and the macula
  - b. the cornea, the lens, the choroid and the ciliary body
  - c. the optic papilla, the sclera, the retina and the iris
  - d. the pupil, the sclera, the ciliary body and the macula
4. The nurse records 'positive consensual light reflex'. This is:
  - a. the convergence of the axes of the eyeballs
  - b. the simultaneous constriction of the other pupil when one eye is exposed to bright light
  - c. a reflex direction of the eye towards an object attracting a person's attention
  - d. the adaptation of the eye for near vision
5. Several changes occur in the eye with the ageing process. The thickening and yellowing of the lens is referred to as:
  - a. presbyopia
  - b. floaters
  - c. macular degeneration
  - d. senile cataract

6. Which of the following is not a leading cause of blindness and vision impairment?
  - a. cataract
  - b. hyphaema
  - c. diabetic retinopathy
  - d. under-corrected refractive error
7. Other body systems that can affect the eye include all of the following except:
  - a. musculoskeletal
  - b. cardiovascular
  - c. neurovascular
  - d. neurological
8. Identify the symptom that may constitute an eye emergency and which should be referred immediately.
  - a. floaters
  - b. epiphora
  - c. sudden onset of vision change
  - d. photophobia
9. Visual acuity is assessed with:
  - a. the Snellen eye chart
  - b. an ophthalmoscope
  - c. the Hirschberg test
  - d. the confrontation test
10. The cover test is used to assess for:
  - a. nystagmus
  - b. peripheral vision
  - c. muscle weakness
  - d. visual acuity
11. When using the ophthalmoscope, you would:
  - a. remove your own glasses and approach the patient's left eye with your left eye
  - b. leave light on in the examining room and remove glasses from the patient
  - c. remove glasses and set the diopter setting at 0
  - d. use the smaller white light and instruct the patient to focus on the ophthalmoscope
12. The 6 muscles that control eye movement are innervated by which of the following cranial nerves:
  - a. II, III, V
  - b. IV, VI, VII
  - c. III, IV, VI
  - d. II, III, VI
13. Conjunctivitis is always associated with:
  - a. absent red reflex
  - b. reddened conjunctiva
  - c. impairment of vision
  - d. fever
14. A person is known to be blind in the left eye. What happens to the pupils when the right eye is illuminated by a penlight beam?
  - a. no response in both
  - b. both pupils constrict
  - c. right pupil constricts, left has no response
  - d. left pupil constricts, right has no response
15. One cause of visual impairment in ageing adults is:
  - a. strabismus
  - b. glaucoma
  - c. amblyopia
  - d. retinoblastoma
16. Medications that may cause cataracts include:
  - a. tetracyclines
  - b. beta-blockers
  - c. diuretics
  - d. steroids
17. Infant blindness is suspected at 3 weeks if there is:
  - a. absence of blinking and pupillary light reflex
  - b. no tracking of objects placed in front of the infant
  - c. lack of interaction with the mother
  - d. refusal to open eyes after exposure to a bright light.

## PRACTICAL SKILLS IN THE LABORATORY/CLINICAL SETTING

As disorders of the eye may affect an individual's functional life, accurate and systematic assessment of the eyes can identify issues and provide focus for early treatment that may lead to sight preservation.

When obtaining a health history the nurse may identify symptoms that will lead to a more focused eye assessment or referral. As nurses you will not usually perform the majority of advanced practice physical assessment techniques related to eye examination. Some specialist nurses working in specialist eye centres, emergency departments and community settings may perform these advanced practice assessments.

You have been introduced to all aspects of a complete eye examination and are now ready for the clinical component of the eye examination.

The purpose of the clinical component is to practise the initial steps of the eye examination on a peer in the skills laboratory or a patient in the clinical setting.

### Clinical Hints

- The first practice session usually takes a long time because there are so many separate steps to perform.
- Be aware that success with the use of the ophthalmoscope is hard to achieve during the first practice session. Make sure you are holding the instrument correctly and practise focusing on various objects about the room before you try to look at a person's fundus.
  - Hold the ophthalmoscope right up to your eye, braced firmly against the cheek and brow.
  - Extend your index finger onto the lens selector dial so that you can refocus as needed during the procedure without taking your head away from the ophthalmoscope to look.
  - Now look about the room, moving your head and the instrument together as one unit.
  - Keep both your eyes open; just view the field through the ophthalmoscope.
- When you do examine your peer's eye, make sure to offer frequent rest periods. It can be very tiring for the 'patient' to have the ophthalmoscope light shining in the eye.
- During the first practice session, aim for finding the optic disc and a retinal vessel or two.

### Clinical Objectives

At the completion of the clinical laboratory session, with further practice and self-directed learning you should be able to:

1. collect a health history related to pertinent signs and symptoms of the eye
2. demonstrate and explain assessment of the visual fields, external eye structures, anterior eye structures, pupillary light reflexes and ocular fundus
3. record the history and eye examination findings accurately, reach an assessment of the health state and develop a plan of care.

### Instructions

1. Form pairs.
2. Prepare the examination setting and gather your equipment including ophthalmoscope.
3. Perform hand hygiene.
4. Gain consent to perform the examination from either your peer or the patient.
5. Practise the health history interview and the steps of the eye examination on a peer in the skills laboratory, or a patient in the clinical setting, providing appropriate instructions as you proceed.
6. Record your findings using the regional write-up worksheet.
7. Swap roles and repeat steps 2–6.
8. Discuss your assessment techniques, findings and performance with your peer to develop a complete understanding of the process.
9. Document your findings using the SOAP format.

## REGIONAL WRITE-UP WORKSHEET – EYES

Date \_\_\_\_\_

Interview conducted by \_\_\_\_\_

Designation \_\_\_\_\_

Patient \_\_\_\_\_ Age \_\_\_\_\_ Gender \_\_\_\_\_

Occupation \_\_\_\_\_ Medical Record Number \_\_\_\_\_

### I. Health history

1. Any **difficulty seeing** or blurring? \_\_\_\_\_  
Clouding? \_\_\_\_\_ Spots? \_\_\_\_\_ Halos? \_\_\_\_\_ Tunnel vision? \_\_\_\_\_
2. Any eye **pain**? \_\_\_\_\_
3. Any history of **crossed eyes** or **double vision**? \_\_\_\_\_
4. Any **redness** or **swelling** in eyes? \_\_\_\_\_
5. Any **watering** or **tearing**? \_\_\_\_\_
6. Any history of ocular problems? \_\_\_\_\_  
Injury \_\_\_\_\_  
Surgery \_\_\_\_\_
7. Ever tested for **glaucoma**? \_\_\_\_\_
8. Wear **glasses** or **contact lenses**? \_\_\_\_\_
9. Self-care behaviours? \_\_\_\_\_  
Ever had vision tested? \_\_\_\_\_
10. Taking any medications? \_\_\_\_\_
11. Coping mechanisms for vision loss? \_\_\_\_\_

### II. Physical examination

1. **Test visual fields**  
Confrontation test \_\_\_\_\_
2. **Inspect external eye structures**  
General ability to avoid obstruction \_\_\_\_\_  
**Eyebrows** Move symmetrically? \_\_\_\_\_ Lesions? \_\_\_\_\_  
**Eyelids and lashes** Lids approximate each other? \_\_\_\_\_  
Redness? \_\_\_\_\_ Swelling? \_\_\_\_\_  
Discharge? \_\_\_\_\_ Lesions? \_\_\_\_\_  
Lashes evenly distributed? \_\_\_\_\_ Curve outwards? \_\_\_\_\_

## REGIONAL WRITE-UP WORKSHEET — EYES (continued)

**Eyeball**      Alignment \_\_\_\_\_      Protrusion? \_\_\_\_\_  
                   Sunken? \_\_\_\_\_

**Conjunctiva**    Moist and glossy? \_\_\_\_\_      Clear? \_\_\_\_\_

**Sclera**        Colour change? \_\_\_\_\_      Swellings? \_\_\_\_\_  
                   Lesions? \_\_\_\_\_

### 3. Inspect anterior eyeball structures

**Cornea**        Smooth? \_\_\_\_\_      Clear? \_\_\_\_\_

**Lens**          Clear? \_\_\_\_\_      Cloudy? \_\_\_\_\_

**Iris**            Flat? \_\_\_\_\_      Round? \_\_\_\_\_  
                   Even colour? \_\_\_\_\_

**Pupil**         Size? \_\_\_\_\_      Shape? \_\_\_\_\_  
                   Equality? \_\_\_\_\_

### 4. Test pupillary light reflex

Direct \_\_\_\_\_

Consensual \_\_\_\_\_

(Modified additional skill for advanced practice that may be used in a routine assessment or when assessing for papilloedema. This short examination will allow some practice with the ophthalmoscope.)

### 5. Inspect the ocular fundus

**Optic disc:**      Colour \_\_\_\_\_      Shape. \_\_\_\_\_  
                   Margins \_\_\_\_\_      Any bulging? \_\_\_\_\_

**Vessels:**        Number \_\_\_\_\_      Colour \_\_\_\_\_

General background  
of **fundus:**      Colour? \_\_\_\_\_      Lesions? \_\_\_\_\_

**Macula:**        Lesions? \_\_\_\_\_      Exudate? \_\_\_\_\_

## REGIONAL DOCUMENTATION – EYES

Summarise your findings using the SOAP format.

**Subjective** (Reason for seeking care, health history)

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**Objective** (Physical exam findings)

Record findings on diagram

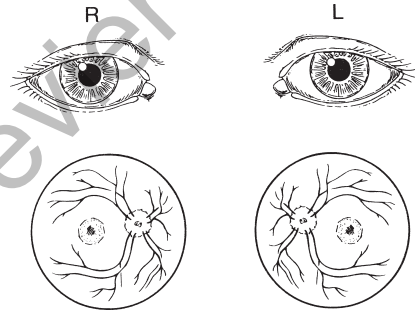
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**Assessment** (Assessment of health state or problem, diagnosis)

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**Plan** (Diagnostic evaluation, follow-up care, patient teaching)

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# Chapter Thirteen

## Ear function

### PURPOSE

Hearing and balance are integral to everyday life. Loss of hearing or incoordination may have an enormous impact on both communication and lifestyle. In this chapter you will review the structure and function of the internal, middle and external ear, focusing on hearing. You will be introduced to assessment of the tympanic membrane and ear canal using the otoscope, the methods to examine the ear, hearing and how to record the assessment accurately.

### KEY CONCEPTS

- Structure and function of the external, middle and inner ear
- The process of hearing
- Hearing acuity test
- The vestibular apparatus
- Abnormalities of the ear
- Developmental considerations of infants and the older person
- Components of the ear examination

While you are completing your reading assignment, ensure you understand each of the key concepts listed above.

### READING ASSIGNMENT

Jarvis, Forbes & Watt (JF&W): *Jarvis's Physical Examination & Health Assessment 2e*, Chapter 13, pp 286–311.

### GLOSSARY

<b>Annulus</b> .....	outer fibrous rim encircling the eardrum
<b>Cerumen</b> .....	yellow waxy material that lubricates and protects the ear canal
<b>Cochlea</b> .....	inner ear structure containing the central hearing apparatus
<b>Eustachian tube</b> .....	tube that connects the middle ear with the nasopharynx and allows passage of air
<b>Incus</b> .....	'anvil', middle of the 3 ossicles of the middle ear
<b>Malleus</b> .....	'hammer', first of the 3 ossicles of the middle ear
<b>Organ of Corti</b> .....	sensory organ of hearing
<b>Otalgia</b> .....	pain in the ear; may be directly due to ear disease or may be referred pain from a problem in teeth or oropharynx
<b>Otitis externa</b> .....	inflammation of the outer ear and ear canal
<b>Otitis media</b> .....	inflammation of the middle ear and tympanic membrane
<b>Otorrhoea</b> .....	discharge from the ear
<b>Otosclerosis</b> .....	a gradual hardening causing the foot plate of the stapes to become fixed in the oval window, impeding transmission of sound and causing progressive deafness
<b>Pars flaccida</b> .....	small, slack, superior section of tympanic membrane
<b>Pars tensa</b> .....	thick, taut, central/inferior section of tympanic membrane
<b>Pinna</b> .....	auricle, or outer ear
<b>Presbycusis</b> .....	a type of hearing loss that occurs with ageing
<b>Stapes</b> .....	'stirrup', inner of the 3 ossicles of the middle ear



**Tinnitus** ..... ringing in the ears

**Tympanic membrane** ..... 'eardrum', thin, translucent, oval membrane that stretches across the ear canal and separates the middle ear from the outer ear

**Umbo** ..... knob of the malleus that shows through the tympanic membrane

**Vertigo** ..... a strong, spinning, twirling sensation

### STUDY GUIDE

After completing the reading assignment you should be able to answer the following questions in the spaces provided.

1. Describe the structure and function of the external ear.

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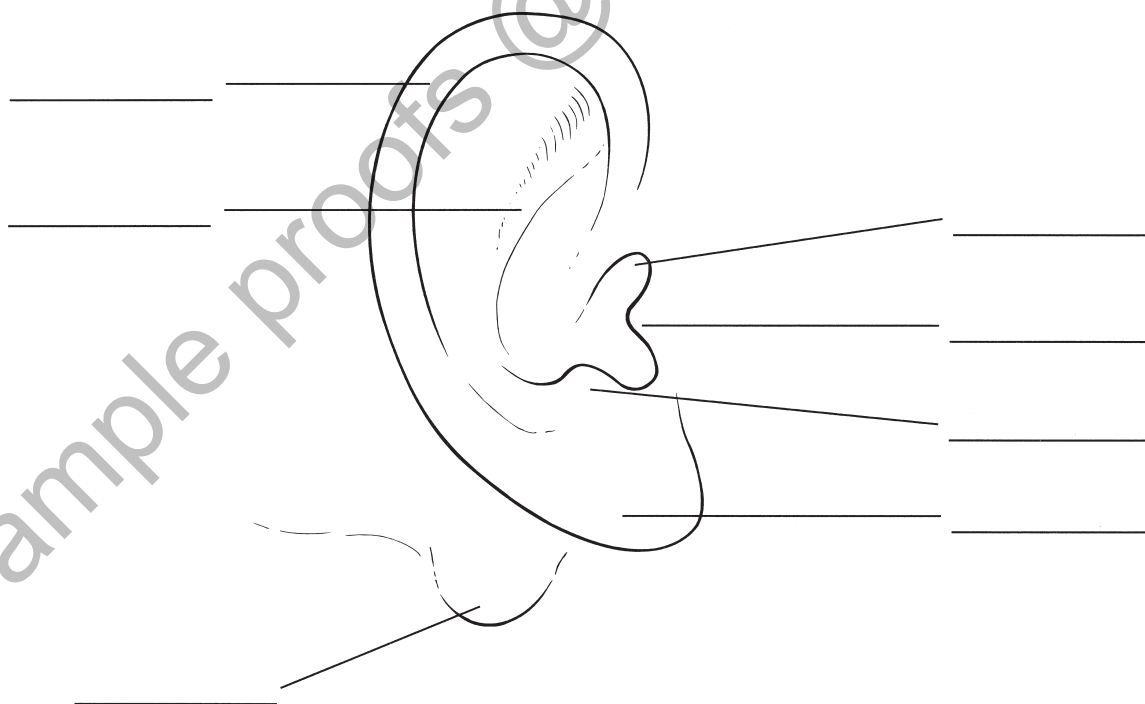
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2. Label the components of the external ear.



3. Describe the appearance of a 'normal' eardrum.

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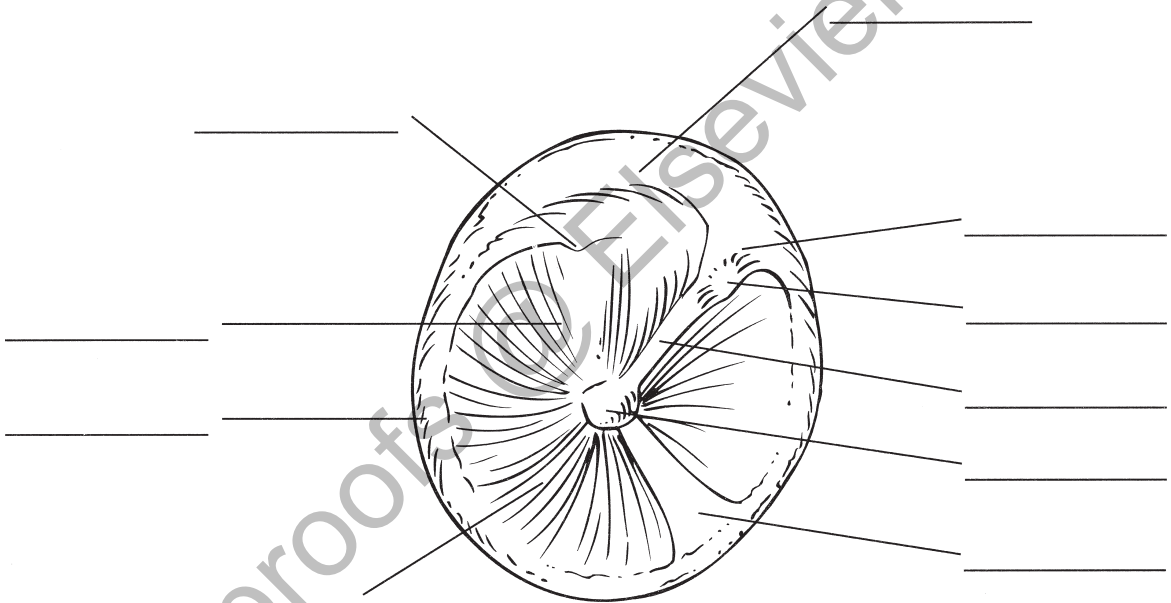
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4. Label the components of the eardrum.



5. Describe the structure of the middle ear.

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6. List the 3 functions of the middle ear.

- i. \_\_\_\_\_
- ii. \_\_\_\_\_
- iii. \_\_\_\_\_

7. Explain the components of the inner ear and their function.

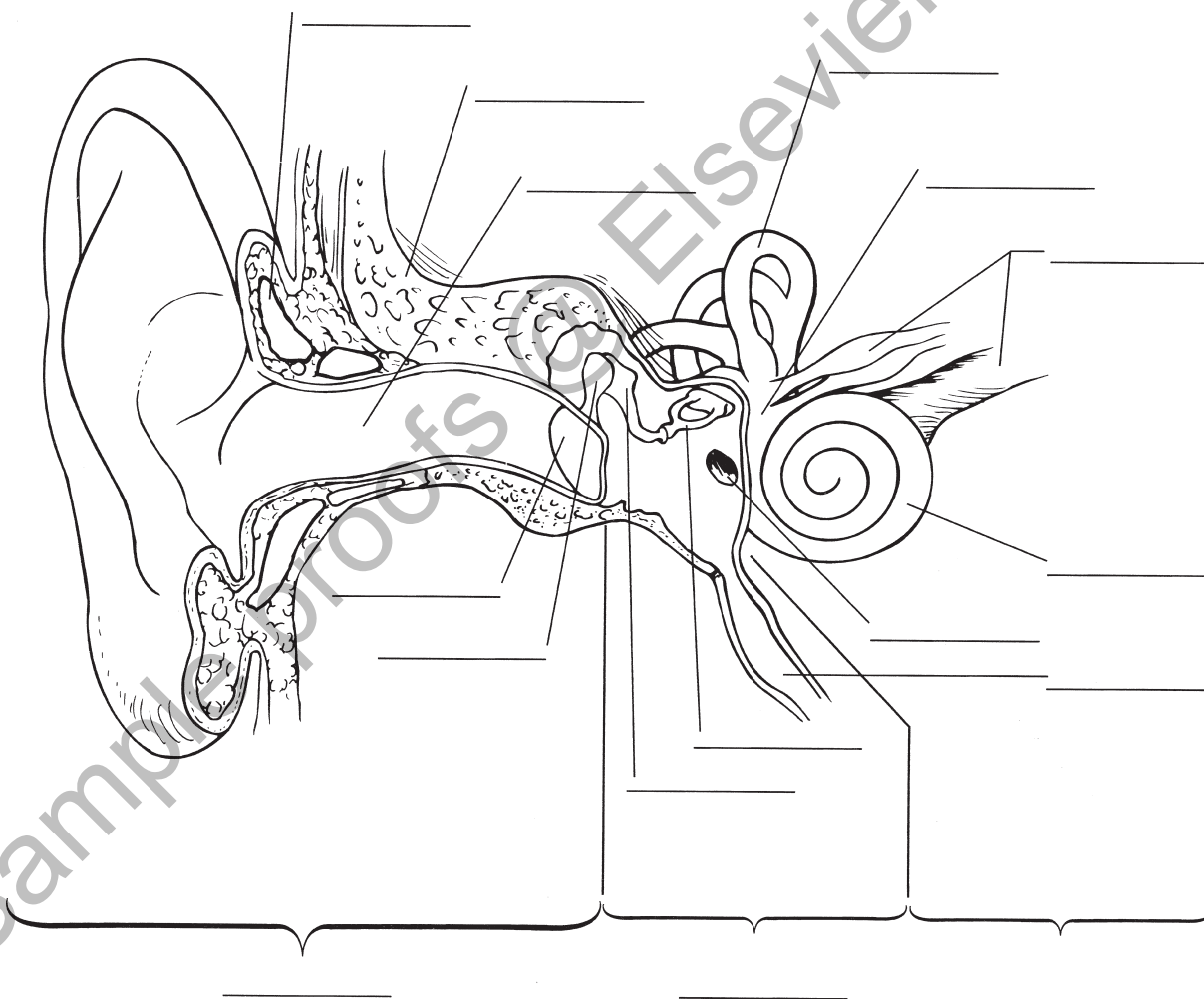
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8. Label the components of the external, middle and inner ear.



9. Describe the passage of a sound from the external ear to the point of recognition (that is, the normal pathway of hearing via air conduction (AC)).

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10. Briefly describe the alternate hearing pathway and compare it with the pathway you described in Question 9.

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11. Differentiate between the 2 types of hearing loss, providing at least one example of each.

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12. Identify the anatomical differences between an adult and an infant and discuss why the infant is at greater risk for middle ear infections.

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13. Your patient claims they do not have any hearing loss. List the cues they may exhibit during the health history that indicate this is not the case.

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14. Circle True or False to answer the following statements concerning otitis media in children. If the answer is false, state the correct answer.

- |   |      |       |
|---|------|-------|
| a. Otitis media is an infection or inflammation of the inner ear and can affect all ages.   | True | False |
| b. Infection ascends into the ear cavity via the throat and causes swelling of the lining and blockage of the eustachian tube and reduction of airflow. | True | False |
| c. A lack of ventilation from the obstruction of the eustachian tube or nasopharyngeal secretion passage leads to an accumulation of fluid.             | True | False |
| d. Fluid, which may be serous or purulent, does not cause the tympanic membrane to change.  | True | False |
| e. Persistent fluid in the ear may lead to effusion and hearing loss, increasing the risk for delayed cognitive development.                            | True | False |
| f. There is an increased incidence of otitis media in premature infants, those with Down syndrome and babies fed by bottle in a supine position.        | True | False |

15. State the causation of the following types of discharge (otorrhoea) that may be noted on ear inspection:

yellow waxy material \_\_\_\_\_

purulent, sanguineous or watery discharge \_\_\_\_\_

purulent discharge \_\_\_\_\_

dirty yellow/grey discharge, foul odour \_\_\_\_\_

16. Differentiate between dizziness and vertigo.

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17. Identify children at risk of hearing deficit using the following headings:

maternal factors \_\_\_\_\_

\_\_\_\_\_

birth \_\_\_\_\_

\_\_\_\_\_

childhood illnesses \_\_\_\_\_

\_\_\_\_\_

18. Explain your actions if, when you start to examine your patient's ear, you notice it is occluded with cerumen.

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

19. Describe these tests of hearing acuity:

Weber test

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Rinne test

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

20. Explain the positioning of what is considered to be a normal ear alignment in the child.

\_\_\_\_\_

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\_\_\_\_\_

21. Define otosclerosis and presbycusis.

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22. Define the motions used to straighten the ear canal when using the otoscope with the following:

Infant \_\_\_\_\_

Adult \_\_\_\_\_

23. Describe the appearance of these nodules that may be present on the external ear:

Darwin's tubercle

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tophi

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chondrodermatitis

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carcinoma

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24. Describe the appearance of these conditions that may be found in the ear canal:

osteoma \_\_\_\_\_

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exostosis \_\_\_\_\_

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polyp \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

25. Identify the condition suggested by the following descriptions of the eardrum:

yellow-amber colour \_\_\_\_\_  
 pearly grey colour \_\_\_\_\_  
 air-fluid level \_\_\_\_\_  
 distorted light reflex \_\_\_\_\_  
 red colour \_\_\_\_\_  
 dense white areas \_\_\_\_\_  
 oval dark areas \_\_\_\_\_  
 black or white dots on drum \_\_\_\_\_  
 blue drum \_\_\_\_\_

## REVIEW QUESTIONS

This test is for you to check your own mastery of the content. Answers are provided in Appendix A.

- Using the otoscope, the tympanic membrane is visualised. The colour of a normal membrane is:
  - deep pink
  - creamy white
  - pearly grey
  - dependent upon the ethnicity of the individual
- Sensorineural hearing loss may be related to:
  - a gradual nerve degeneration
  - foreign bodies
  - impacted cerumen
  - perforated tympanic membrane
- If maternal rubella infection occurs during the first trimester which of the following may be damaged?
  - semicircular canals
  - organ of Corti
  - vestibulocochlear nerve
  - eardrum
- Prior to examining the ear with the otoscope, which structures should be palpated for tenderness:
  - helix, external auditory meatus and lobule
  - mastoid process, tympanic membrane and malleus
  - pinna, pars flaccida and antitragus
  - pinna, tragus and mastoid process
- During the otoscopic examination of a child less than 3 years of age, the nurse:
  - pulls the pinna up and back
  - pulls the pinna down
  - holds the pinna gently but firmly in its normal position
  - tilts the head slightly towards their chest
- While viewing with the otoscope, the nurse instructs the patient to hold their nose and swallow. During this manoeuvre, the eardrum should:
  - flutter
  - retract
  - bulge
  - remain immobile



7. To differentiate between air conduction and bone conduction hearing loss, the nurse would perform the:
  - a. Weber test
  - b. Romberg test
  - c. Rinne test
  - d. whisper test
8. In examining the ear of an adult, the canal is straightened by pulling the auricle:
  - a. down and forwards
  - b. down and back
  - c. up and back
  - d. up and forwards
9. Darwin's tubercle is:
  - a. an overgrowth of scar tissue
  - b. a blocked sebaceous gland
  - c. a sign of gout
  - d. a congenital, painless nodule at the helix
10. When the ear is being examined with an otoscope, the patient's head should be:
  - a. tilted towards the nurse.
  - b. tilted away from the nurse
  - c. as vertical as possible
  - d. tilted down
11. The hearing receptors are located in the:
  - a. vestibule
  - b. semicircular canals
  - c. middle ear
  - d. cochlea
12. The sensation of vertigo is the result of:
  - a. otitis media
  - b. pathology in the semicircular canals
  - c. pathology in the cochlea
  - d. 4th cranial nerve damage
13. A common cause of a conductive hearing loss is:
  - a. impacted cerumen
  - b. acute rheumatic fever
  - c. a stroke
  - d. otitis externa
14. In the Rinne test, the 2 to 1 ratio refers to:
  - a. the loudness of the tone heard by the two ears
  - b. the lengths of time until the patient stops hearing the tone by air conduction and by bone conduction
  - c. the lengths of time until the patient no longer hears the tone and the nurse no longer hears the tone
  - d. the nurse hearing the tone twice as long as the patient hears it
15. Upon examination of the tympanic membrane, visualisation of which of the following findings indicates the infection of acute purulent otitis media?
  - a. absent light reflex, bluish drum, oval dark areas
  - b. absent light reflex, reddened drum, bulging drum
  - c. oval dark areas on drum
  - d. absent light reflex, air-fluid level or bubbles behind drum
  - e. retracted drum, very prominent landmarks
16. In examining a young adult woman, you observe her tympanic membrane to be yellow in colour. You suspect she has:
  - a. serum in the middle ear
  - b. blood in the middle ear
  - c. infection of the drumhead
  - d. jaundice
17. Risk reduction strategies for acute otitis media include:
  - a. use of pacifiers
  - b. increasing group day care
  - c. avoiding breastfeeding
  - d. eliminating smoking in the house and car

## PRACTICAL SKILLS IN THE LABORATORY/CLINICAL SETTING

As the ear is the sensory organ for hearing and maintaining equilibrium, the focus of the health history and physical examination includes screening for hearing loss and assessing for other ear problems such as ear pain, discharge, lumps or the presence of other objects. The nurse is in an ideal position to detect problems with hearing as they interview the patient, and may identify signs of infection, excessive cerumen, problems with the ear canal, the eardrum and middle ear as they perform the physical examination.

You have revised the normal structure and function of the ear and its components and are now ready for the clinical component of the ear examination.

The purpose of the clinical component is to practise interviewing, observing for cues that would indicate a hearing deficit and performing the steps of the ear examination on a peer in the skills laboratory.

### Clinical Hint

Assess your patient's external ear before collecting equipment for assessment.

Ensure the largest speculum for your otoscope that will fit comfortably in your patient's ear is selected.

Hold the otoscope in an 'upside down' position.

The upside down position ensures the otoscope tip does not cause pain to the delicate parts of the ear canal.

### Clinical Objectives

At the completion of the clinical laboratory session, with further practice and self-directed learning you should be able to:

1. collect a health history related to the ear and related structures, by identifying relevant signs, symptoms and cues indicating hearing changes, loss or balance disorders
2. describe the appearance of the normal outer ear and external ear canal
3. describe and demonstrate the correct technique of an otoscopic examination
4. describe and perform tests for hearing acuity
5. systematically describe the normal tympanic membrane including position, colour and landmarks
6. record the history and physical examination findings accurately, reach an assessment about the health state and develop a plan of care.

### Instructions

1. Form pairs.
2. Prepare the examination setting and gather your equipment including otoscope and tuning forks of variable frequency. Ensure the otoscope light is bright and batteries are freshly charged.
3. Perform hand hygiene.
4. Gain consent to perform the examination from your peer.
5. Practise the health history interview and the steps of the exam on a peer in the skills laboratory, providing appropriate instructions as you proceed.
6. Record your findings using the regional write-up worksheet.
7. Swap roles and repeat steps 2–6.
8. Discuss your assessment techniques, findings and performance with your peer to develop a complete understanding of the process.
9. Document your findings using the SOAP format.

## REGIONAL WRITE-UP WORKSHEET — ASSESSMENT OF THE EARS

Date \_\_\_\_\_

Interview conducted by \_\_\_\_\_

Designation \_\_\_\_\_

Patient \_\_\_\_\_ Age \_\_\_\_\_ Gender \_\_\_\_\_

Occupation \_\_\_\_\_ Medical Record Number \_\_\_\_\_

### I. Health history

1. Any **earache** or ear pain? \_\_\_\_\_  
Location? \_\_\_\_\_ Character of pain? \_\_\_\_\_  
Cold symptoms? \_\_\_\_\_ Recent trauma? \_\_\_\_\_
2. Any ear **infections**? \_\_\_\_\_  
As a child? \_\_\_\_\_ How often? \_\_\_\_\_  
As an adult? \_\_\_\_\_ Treatment? \_\_\_\_\_
3. Any **discharge** from ears? \_\_\_\_\_  
Colour? \_\_\_\_\_ Odour? \_\_\_\_\_  
Any associated pain? \_\_\_\_\_
4. Any **hearing loss**? \_\_\_\_\_  
Onset? \_\_\_\_\_ Sudden? \_\_\_\_\_  
Gradual? \_\_\_\_\_ Character? \_\_\_\_\_  
All sounds? \_\_\_\_\_ Which ones? \_\_\_\_\_  
Coping strategies? \_\_\_\_\_  
Noticeable cues during interview? \_\_\_\_\_
5. Any **loud noises** at home or job? \_\_\_\_\_
6. Any **ringing** or **buzzing** in ears? \_\_\_\_\_  
Louder at night? \_\_\_\_\_ Medications? \_\_\_\_\_
7. Ever felt **vertigo** (spinning)? \_\_\_\_\_
8. Ever get **dizzy** (losing balance)? \_\_\_\_\_
9. How do you clean your ears? \_\_\_\_\_
10. Last time had hearing and ears checked? \_\_\_\_\_

## REGIONAL WRITE-UP WORKSHEET — ASSESSMENT OF THE EARS (continued)

### II. Physical examination

#### A. Inspect and palpate external ear

Size and shape of **auricle** \_\_\_\_\_

Position and alignment of head \_\_\_\_\_

**Skin:** \_\_\_\_\_ condition \_\_\_\_\_ colour \_\_\_\_\_ lumps \_\_\_\_\_ lesions \_\_\_\_\_

**Movement** of auricle and tragus \_\_\_\_\_

**Tenderness** auricle and tragus \_\_\_\_\_

**External auditory meatus:** size \_\_\_\_\_ swelling \_\_\_\_\_ redness \_\_\_\_\_

discharge \_\_\_\_\_ cerum \_\_\_\_\_ lesions \_\_\_\_\_

#### B. Otoscopic examination

**External canal** \_\_\_\_\_

Cerumen \_\_\_\_\_ discharge \_\_\_\_\_

foreign bodies \_\_\_\_\_ lesions \_\_\_\_\_

Redness or swelling of **canal wall** \_\_\_\_\_

#### C. Inspect tympanic membrane

Colour and characteristics \_\_\_\_\_

Note position (flat, bulging, retracted) \_\_\_\_\_

Integrity of membrane \_\_\_\_\_

#### D. Test hearing acuity

Note behavioural response to conversational speech \_\_\_\_\_

Voice test \_\_\_\_\_

## REGIONAL DOCUMENTATION (SOAP) – EAR ASSESSMENT

Summarise your findings using the SOAP format.

**Subjective** (Reason for seeking care, health history)

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**Objective** (Physical exam findings)

Record findings on diagram below

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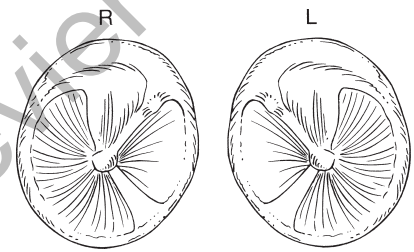
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**Assessment** (Assessment of health state or problem, diagnosis)

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**Plan** (Diagnostic evaluation, follow-up care, patient teaching)

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### Chapter Fourteen

## Peripheral vascular assessment

### PURPOSE

To be able to accurately assess the cardiovascular, peripheral vascular and lymphatic systems you require foundation knowledge about vessels, their structure and function. This chapter will help you review the structure, function and assessment of the peripheral vascular and the lymphatic systems. You will integrate much of the information gained from this chapter with the next chapter which covers the heart and neck vessels.

Reviewing the vascular system will assist you in locating peripheral pulse sites, help you understand the rationale and methods of examination of the peripheral vascular and lymphatic systems and introduce you to methods of accurately recording the assessment.

Once you have completed the readings, study guide and review questions in this chapter you should be able to perform an assessment of the peripheral vascular and lymphatic systems.

### KEY CONCEPTS

- Anatomy and physiology of the vascular system
- Health history questions
- Assessment of the arms and legs
- Vascular and lymphatic assessment
- Documentation

While you are completing the reading assignment ensure you understand each of the key concepts listed above.

### READING ASSIGNMENT

Jarvis, Forbes & Watt (JF&W): *Jarvis's Physical Examination & Health Assessment* 2e, Chapter 14, pp 312–338.

### GLOSSARY

After reading the corresponding chapter in the text, learn the following terms. You should be able to cover the definition on the right and state the associated definition in your own words.

<b>Acrocyanosis</b> .....	persistent, painless, symmetrical cyanosis of the hands, feet or face in newborn babies; caused by vasospasm of the small vessels of the skin in response to cold
<b>Allen test</b> .....	determines the patency of the radial and ulnar arteries by compressing one artery site and observing return of skin colour as evidence of patency of the other artery
<b>Aneurysm</b> .....	defect or sac formed by dilation in artery wall due to atherosclerosis, trauma or congenital defect
<b>Arteriosclerosis</b> .....	thickening and loss of elasticity of the arterial walls that develops with age
<b>Artery</b> .....	one of the large blood vessels carrying blood in a direction away from the heart to other parts of the body
<b>Atherosclerosis</b> .....	the deposition of fatty plaques on the intima (inner lining) of the arteries

<b>Capillary refill</b> .....	an index of peripheral perfusion and cardiac output; is normal if colour returns in less than 1 or 2 seconds
<b>Claudication</b> .....	pain or cramping on walking or exercise
<b>Ischaemia</b> .....	deficient supply of oxygenated arterial blood to a tissue caused by constriction or obstruction of a blood vessel
<b>Lymph nodes</b> .....	small oval clumps of lymphatic tissue located at grouped intervals along lymphatic vessels
<b>Lymphoedema</b> .....	swelling of extremity due to accumulation of protein-rich lymph in the interstitial spaces; may be due to obstruction or damage to lymph nodes and channels or removal of lymph nodes
<b>Pitting oedema</b> .....	swelling or oedema that, when compressed by fingers, leaves a depression or indentation
<b>Profile sign</b> .....	viewing the finger from the side in order to detect early clubbing; normal angle is 160°
<b>Pulse</b> .....	pressure wave created by each heartbeat, palpable at body sites where the artery lies close to the skin and over a bone
<b>Pulsus alternans</b> .....	regular rhythm, but force of pulse varies with alternating beats of large and small amplitude; associated with heart failure
<b>Pulsus bigeminus</b> .....	rhythm is coupled, every other beat comes early, or normal beat followed by premature beat; force of premature beat is decreased because of shortened cardiac filling time; associated with conduction disturbances
<b>Pulsus bisferiens</b> .....	each pulse has two strong systolic peaks, with a dip in between. Best assessed at the carotid artery; associated with aortic valve stenosis plus regurgitation
<b>Pulsus paradoxus</b> .....	beats have weaker amplitude with respiratory inspiration, stronger with expiration; associated with any condition that blocks venous return to the right side of the heart or blocks left ventricular filling
<b>Varicose vein</b> .....	dilated tortuous vein with incompetent valves
<b>Vein</b> .....	tubes forming part of the blood circulation system of the body, carrying mainly oxygen-depleted blood towards the heart
<b>Ulcer</b> .....	open skin lesion extending into dermis with sloughing of necrotic inflammatory tissue

## STUDY GUIDE

After completing the reading assignment you should be able to answer the following questions in the spaces provided.

1. Compare and contrast the structure and function of arteries and veins.

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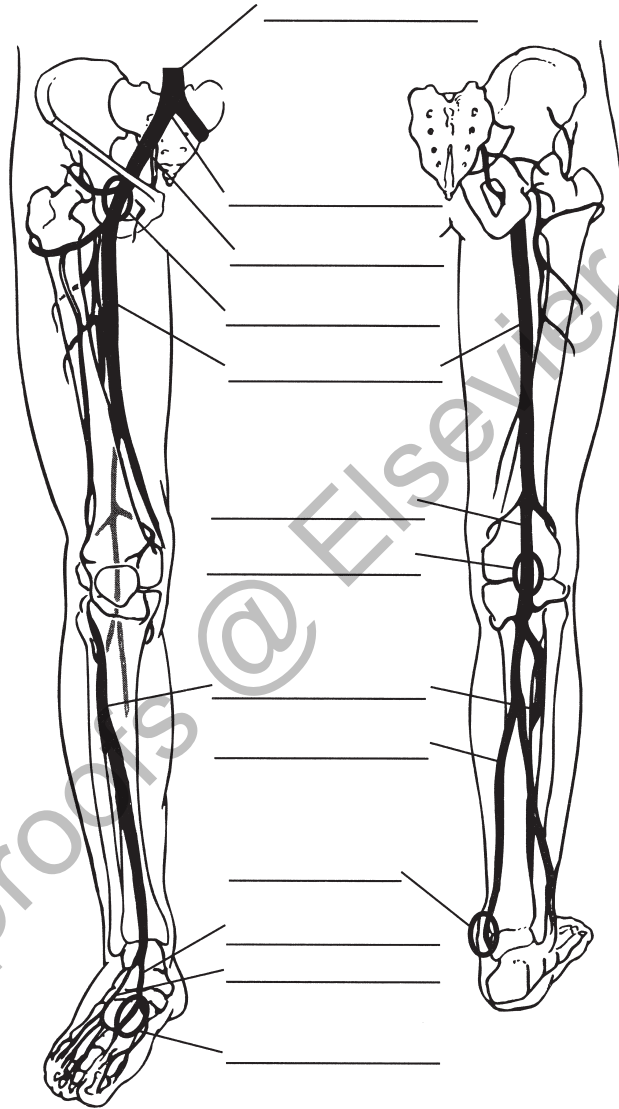
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2. List the 9 arterial pulse sites that are assessed during an examination of the vascular system.

- i. \_\_\_\_\_
- ii. \_\_\_\_\_
- iii. \_\_\_\_\_
- iv. \_\_\_\_\_
- v. \_\_\_\_\_

- vi. \_\_\_\_\_
- vii. \_\_\_\_\_
- viii. \_\_\_\_\_
- ix. \_\_\_\_\_

3. Fill in the labels indicated on the following arteries and pulse sites.



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4. Identify the 3 mechanisms that facilitate the return of venous blood to the heart.

- i. \_\_\_\_\_
- ii. \_\_\_\_\_
- iii. \_\_\_\_\_



5. Define the term *capacitance vessels* and explain its significance.

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6. List 3 factors that venous return is dependent on.

- i. \_\_\_\_\_
- ii. \_\_\_\_\_
- iii. \_\_\_\_\_

7. List 6 risk factors for venous stasis and disease.

- i. \_\_\_\_\_
- ii. \_\_\_\_\_
- iii. \_\_\_\_\_
- iv. \_\_\_\_\_
- v. \_\_\_\_\_
- vi. \_\_\_\_\_

8. State the function of the lymphatic system and explain its importance.

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9. Describe the drainage pattern and distinguishing features of the lymphatic system.

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10. Describe the function of the lymph nodes.

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11. List the structures each of the following groups of nodes drain:

cervical nodes \_\_\_\_\_

axillary nodes \_\_\_\_\_

epitrochlear node \_\_\_\_\_

inguinal nodes \_\_\_\_\_

12. Name the 3 organs related to the lymphatic system and state each organ's function.

i. \_\_\_\_\_

\_\_\_\_\_

ii. \_\_\_\_\_

\_\_\_\_\_

iii. \_\_\_\_\_

\_\_\_\_\_

13. List the 5 symptom areas to address during history taking of the peripheral vascular system and outline the information you are trying to elicit from the patient.

i. \_\_\_\_\_

ii. \_\_\_\_\_

iii. \_\_\_\_\_

iv. \_\_\_\_\_

v. \_\_\_\_\_

14. Fill in the grading scale for assessing the force of an arterial pulse:

0 \_\_\_\_\_

1+ \_\_\_\_\_

2+ \_\_\_\_\_

3+ \_\_\_\_\_

15. Answer True or False to the following objective findings from a vascular assessment. If the answer is false, state the correct answer.
- a. Normal nail bed angle is 180°. True    False
  - b. Capillary refill is normal if colour returns in less than 1 or 2 seconds. True    False
  - c. The femoral artery is always located at a 45° angle to the patient's umbilicus. True    False

16. Pitting oedema is often present in the lower limbs in patients with heart failure and hepatic cirrhosis. What do each of the grades listed below indicate?

1+ \_\_\_\_\_

2+ \_\_\_\_\_

3+ \_\_\_\_\_

4+ \_\_\_\_\_

17. Explain the rationale for performing a modified Allen test then list the steps in performing the test.

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

18. Compare the physical assessment findings and characteristics of leg ulcers associated with arterial insufficiency with ulcers with venous insufficiency.

\_\_\_\_\_

\_\_\_\_\_

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19. Define a deep vein thrombosis (DVT) and describe the assessment you would undertake and the clinical presentation of the patient who has developed a DVT.

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20. Describe the technique for using the Doppler stethoscope to detect peripheral pulses.

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21. Raynaud's phenomenon has associated progressive tricolour changes of the skin. State each of these colours and the mechanism for each.

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## REVIEW QUESTIONS

This test is for you to check your own mastery of the content. Answers are provided in Appendix A.

- A function of the venous system is:
  - to hold more blood when blood volume increases
  - to conserve fluid and plasma proteins that leak out of the capillaries
  - to form a major part of the immune system that defends the body against disease
  - to absorb lipids from the intestinal tract
- The organs that aid the lymphatic system are:
  - liver, lymph nodes and stomach
  - pancreas, small intestine and thymus
  - spleen, tonsils and thymus
  - pancreas, spleen and tonsils
- Lymph vessels drain into two main trunks which empty into the venous system at the subclavian veins. Fill in the gaps in parts a and c using the following words: **right lymphatic, thoracic, right subclavian, left subclavian**; then complete the sentence in part b:
  - The \_\_\_\_\_ duct empties into the \_\_\_\_\_ vein.
  - It drains the \_\_\_\_\_ of the \_\_\_\_\_ and \_\_\_\_\_, \_\_\_\_\_ arm, \_\_\_\_\_, \_\_\_\_\_ and \_\_\_\_\_, \_\_\_\_\_ and \_\_\_\_\_ liver.
  - The \_\_\_\_\_ duct drains the rest of the body. It empties into the \_\_\_\_\_ vein.
- Ms Ting has come for a prenatal visit. She complains of dependent oedema, varicosities in the legs and haemorrhoids. The best response is:
  - 'If these symptoms persist, we will perform an amniocentesis.'
  - 'If these symptoms persist, we will discuss having you hospitalised.'
  - 'The symptoms are caused by the pressure of the growing uterus on the veins. They are usual conditions of pregnancy.'
  - 'At this time, the symptoms are a minor inconvenience. You should learn to accept them.'
- A pulse with an amplitude of 3+ would be considered:
  - bounding
  - absent
  - normal
  - weak
- Inspection of a person's right hand reveals a red, swollen area. To further assess for infection, you would palpate the:
  - cervical node
  - axillary node
  - epitrochlear node
  - inguinal node
- In order to screen for deep vein thrombosis in the leg, you would:
  - measure the circumference of the ankle
  - check the temperature with the palm of the hand
  - compress the dorsalis pedis pulse, looking for blood return
  - measure the widest point of the leg with a tape measure
- During the examination of the lower extremities, you are unable to palpate the popliteal pulse. You should:
  - proceed with the examination. It is often impossible to palpate this pulse
  - refer the patient to a vascular surgeon for further evaluation
  - schedule the patient for a venogram
  - schedule the patient for an arteriogram
- While reviewing a medical record, a notation of 4+ oedema of the right leg is noted. The best description of this type of oedema is:
  - mild pitting, no perceptible swelling of the leg
  - moderate pitting, indentation subsides rapidly
  - deep pitting, leg looks swollen
  - very deep pitting, indentation lasts a long time
- The registered nurse wants to assess for arterial deficit in the lower extremities. After raising the legs 30 cm off the table then having the person sit up and dangle the leg, the colour should return in:
  - 5 seconds or less
  - 10 seconds or less
  - 15 seconds
  - 30 seconds
- A 54-year-old woman with five children has varicose veins of the lower extremities. Her most characteristic sign is:
  - reduced arterial circulation
  - blanching, death-like appearance of the extremities on elevation
  - loss of hair on feet and toes
  - dilated, tortuous superficial bluish vessels

12. Atrophic skin changes that occur with peripheral arterial insufficiency include:
- thin, shiny skin with loss of hair
  - brown discolouration
  - thick, leathery skin
  - slow-healing blisters on the skin
13. Intermittent claudication is:
- muscular pain relieved by exercise
  - neurological pain relieved by exercise
  - muscular pain brought on by exercise
  - neurological pain brought on by exercise
14. A known risk factor for venous ulcer development is:
- obesity
  - male gender
  - history of hypertension
  - daily aspirin therapy
15. Brawny oedema is:
- acute in onset
  - soft
  - non-pitting
  - associated with diminished pulses

## PRACTICAL SKILLS IN THE LABORATORY/CLINICAL SETTING

Now that you have completed the readings, study guide and review questions you should be ready for the clinical component concerning assessment of the peripheral vascular system. The focus of this clinical examination is to examine the patient for clinical signs that support or are in addition to the patient's presenting symptoms. Assessment of the peripheral vascular system is aimed at assessing for risk factors for skin breakdown, pain, immobility and changes to everyday activity. The purpose of the clinical component is to practise the vascular examination on a peer in the skills laboratory or a patient in the clinical setting.

### PROFESSIONAL PRACTICE NOTE

*You will be inspecting the skin and legs and palpating for pulses and lymph nodes, so ensure you maintain the dignity of your patients by keeping them covered as much as possible at all times to maintain their privacy.*

### Clinical Objectives

At the completion of the clinical laboratory session, with further practice and self-directed learning you should be able to:

- collect a health history related to patient's presenting signs and symptoms
- demonstrate knowledge of the symptoms related to the peripheral vascular system by obtaining a regional health history from a peer or patient
- demonstrate palpation of peripheral arterial pulses (brachial, radial, femoral, popliteal, posterior tibial, dorsalis pedis) by assessing amplitude and symmetry, noting any signs of arterial insufficiency
- demonstrate inspection and palpation of peripheral veins by noting any signs of venous insufficiency
- demonstrate palpation of lymphatic system by identifying normal lymph nodes
- demonstrate correct technique for performing the following tests when indicated by your instructor: Allen test and Doppler studies
- record the history and physical examination findings accurately, reach an assessment of the health state and develop a plan of care.

### Instructions

1. Form pairs.
2. Gather your equipment and prepare the examination area.
3. Wash your hands.
4. Gain consent to perform the examination from either your peer or the patient.
5. Practise the health history interview and the steps of the examination of the peripheral vascular system on a peer in the skills laboratory, providing appropriate instructions as you proceed.
6. Record your findings using the regional write-up sheet that follows.
7. Swap roles and repeat steps 3 to 6.
8. Discuss your assessment techniques, findings and performance with your peer to develop a complete understanding of the process.
9. Document your findings using the SOAP format.

**Note:** The peripheral vascular and lymphatic system examination and cardiovascular examination are usually undertaken together in clinical practice.

## REGIONAL WRITE-UP WORKSHEET – PERIPHERAL VASCULAR SYSTEM

Date \_\_\_\_\_

Interview conducted by \_\_\_\_\_

Designation \_\_\_\_\_

Patient \_\_\_\_\_ Age \_\_\_\_\_ Gender \_\_\_\_\_

Occupation \_\_\_\_\_ Medical Record Number \_\_\_\_\_

### I. Health history

	No	Yes, explain
1. Any leg <b>pain</b> (cramps)? Where? When?	_____	_____
2. Any <b>skin changes</b> in arms or legs?	_____	_____
3. Any sores or <b>lesions</b> in arms or legs?	_____	_____
4. Any <b>swelling</b> in the legs?	_____	_____
5. Any <b>swollen glands</b> ? Where?	_____	_____
6. What medications are you taking?	_____	_____

### II. Physical examination

#### A. Inspection

##### 1. The arms

Inspect

Colour of skin and nailbeds \_\_\_\_\_

Symmetry \_\_\_\_\_

Lesions \_\_\_\_\_

Oedema \_\_\_\_\_

Clubbing \_\_\_\_\_

Palpate

Temperature \_\_\_\_\_

Texture \_\_\_\_\_

Capillary refill \_\_\_\_\_

Locate and grade pulses (record on back) \_\_\_\_\_

Check epitrochlear lymph node \_\_\_\_\_

Modified Allen test (if indicated) \_\_\_\_\_



## REGIONAL WRITE-UP WORKSHEET – PERIPHERAL VASCULAR SYSTEM (continued)

2. The legs

Inspect

Colour \_\_\_\_\_

Hair distribution \_\_\_\_\_

Venous pattern/varicosities \_\_\_\_\_

Size \_\_\_\_\_

Swelling/oedema \_\_\_\_\_

Atrophy \_\_\_\_\_

If so, measure calf circumference in cm R \_\_\_\_\_ L \_\_\_\_\_

Skin lesions or ulcers \_\_\_\_\_

Palpate

Temperature \_\_\_\_\_

Check Homans' sign \_\_\_\_\_

Tenderness \_\_\_\_\_

Inguinal lymph nodes \_\_\_\_\_

Locate and grade pulses (record on back) \_\_\_\_\_

Check pretibial oedema (grade if present) \_\_\_\_\_

Auscultate for bruit (if indicated) \_\_\_\_\_

	Brachial	Radial	Femoral	Popliteal	D. pedis	P. tibial
R						
L						

0 = absent, 1+ = weak, 2+ = normal, 3+ = full, bounding.

**REGIONAL DOCUMENTATION (SOAP) – PERIPHERAL VASCULAR SYSTEM**

Summarise your findings using the SOAP format.

**Subjective** (Reason for seeking care, health history)

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**Objective** (Physical exam findings)

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**Assessment** (Assessment of health state or problem, diagnosis)

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**Plan** (Diagnostic evaluation, follow-up care, patient teaching)

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# Chapter Fifteen

## Cardiac function

### PURPOSE

Cardiac assessment is a frequently performed clinical skill. It is often combined with both a vascular and a respiratory assessment in the clinical setting. This chapter will help you to learn the structure and function of the heart, valves and great vessels; to understand the cardiac cycle and to describe the heart sounds in relation to the cycle. The chapter will also assist you to understand the rationale and methods of examination of the heart and how to accurately record the assessment. At the end of this chapter you should be able to perform a complete assessment of the heart and neck vessels.

### KEY CONCEPTS

- Cardiac structure and function
- Cardiac physiology
- Blood flow throughout the body
- Cardiac cycle
- Heart sounds
- Cardiac vasculature and blood flow
- Health history questions
- Steps in cardiac assessment

While you are completing your reading assignment, ensure you understand each of the key concepts listed above.

### READING ASSIGNMENT

Jarvis, Forbes & Watt (JF&W): Jarvis's *Physical Examination & Health Assessment* 2e, Chapter 15, pp 339–383.

### GLOSSARY

<b>Angina pectoris</b> .....	acute chest pain that occurs when myocardial demand exceeds its oxygen supply
<b>Aortic regurgitation</b> .....	(aortic insufficiency) incompetent aortic valve that allows backward flow of blood into left ventricle during diastole
<b>Aortic stenosis</b> .....	calcification of aortic valve cusps that restricts forward flow of blood during systole
<b>Aortic valve</b> .....	the left semilunar valve separating the left ventricle and the aorta
<b>Apex of the heart</b> .....	tip of the heart pointing down towards the 5th left intercostal space
<b>Apical impulse</b> .....	(point of maximal impulse, PMI) pulsation created as the left ventricle rotates against the chest wall during systole, normally at the 5th left intercostal space in the midclavicular line (7 to 9 cm from the midsternal line on the left side)
<b>Automaticity</b> .....	ability of the heart to contract by itself, independent of any signals or stimulation from the body; contracts in response to an electrical current conveyed by its conduction system
<b>Base of the heart</b> .....	broader area of heart's outline located at the 3rd right and left intercostal space
<b>Bell (of the stethoscope)</b> .....	cup-shaped endpiece used for soft, low-pitched heart sounds
<b>Bradycardia</b> .....	slow heart rate, <50 beats per minute in the adult
<b>Bruit</b> .....	a blowing, swishing sound indicating blood flow turbulence, normally not present; indicates turbulence due to a local vascular cause, such as atherosclerotic narrowing
<b>Cardiac output (CO)</b> .....	equals the volume of blood in each systole (called the stroke volume (SV)) times the number of beats per minute (heart rate (HR)); CO is usually between 4 and 6 L of blood per minute

<b>Clubbing</b> .....	bulbous enlargement of distal phalanges of fingers and toes that occurs with chronic hypoxia, cyanotic heart and chronic lung conditions
<b>Coarctation of aorta</b> .....	severe narrowing of the descending aorta, a congenital heart defect
<b>Cyanosis</b> .....	dusky blue mottling of the skin and mucous membranes due to excessive amount of reduced haemoglobin in the blood
<b>Diaphragm (of the stethoscope)</b> .....	flat endpiece of the stethoscope used for hearing relatively high-pitched heart sounds
<b>Diastole</b> .....	the ventricles relax and fill with blood, i.e. the heart's filling phase; it takes up two-thirds of the cardiac cycle
<b>Ductus arteriosus</b> .....	vascular connection between the pulmonary artery and the aorta in the fetus shunting one-third of the blood to bypass the lungs prior to birth; normally closes 10 to 15 hours after birth
<b>Dyspnoea</b> .....	difficult, laboured breathing
<b>Endocardium</b> .....	the thin layer of endothelial tissue that lines the inner surface of the heart chambers and valves
<b>First heart sound (S<sub>1</sub>)</b> .....	occurs with closure of the atrioventricular (AV) valves signalling the beginning of systole
<b>Foramen ovale</b> .....	an opening in the atrial septum into the left side of the heart in the fetus to allow approximately two-thirds of the blood to bypass the lungs prior to birth; normally closes within the first hour of birth
<b>Fourth heart sound (S<sub>4</sub>)</b> .....	(S <sub>4</sub> gallop; atrial gallop) very soft, low-pitched, ventricular filling sound that occurs in late diastole
<b>Gallop rhythm</b> .....	the addition of a 3rd or a 4th heart sound makes the rhythm sound like the cadence of a galloping horse
<b>Left ventricular hypertrophy (LVH)</b> .....	increase in thickness of myocardial wall that occurs when the heart pumps against chronic outflow obstruction, e.g. aortic stenosis
<b>Mediastinum</b> .....	position of the heart and the great vessels between the lungs in the middle third of the thoracic cage
<b>Midclavicular line (MCL)</b> .....	imaginary vertical line bisecting the middle of the clavicle in each hemithorax
<b>Mitral regurgitation</b> .....	(mitral insufficiency) incompetent mitral valve allows regurgitation of blood back into left atrium during systole
<b>Mitral stenosis</b> .....	calcified mitral valve impedes forward flow of blood into left ventricle during diastole
<b>Mitral valve</b> .....	left AV valve separating the left atria and ventricle
<b>Murmur</b> .....	a gentle, blowing, swooshing sound that can be heard on the chest wall
<b>Myocardium</b> .....	the muscular layer of the heart
<b>Oedema</b> .....	swelling of legs or dependent body part due to increased interstitial fluid
<b>Palpitation</b> .....	uncomfortable awareness of rapid or irregular heart rate
<b>Pericardial friction rub</b> .....	high-pitched scratchy extracardiac sound heard when the praecordium is inflamed
<b>Pericardium</b> .....	a tough, fibrous, double-walled sac that surrounds and protects the heart; has two layers that contain 10–30 mL of serous <i>pericardial fluid</i> ensuring smooth, friction-free movement of the heart muscle; is adherent to the great vessels, oesophagus, sternum and pleurae and is anchored to the diaphragm
<b>Praecordium</b> .....	area of the anterior chest wall overlying the heart and great vessels
<b>Pulmonic regurgitation</b> .....	(pulmonic insufficiency) backflow of blood through incompetent pulmonic valve into the right ventricle
<b>Pulmonic stenosis</b> .....	calcification of pulmonic valve that restricts forward flow of blood during systole
<b>Pulmonic valve</b> .....	right semilunar valve separating the right ventricle and pulmonary artery
<b>Second heart sound (S<sub>2</sub>)</b> .....	occurs with closure of the semilunar valves, aortic and pulmonic, and signals the end of systole
<b>Summation gallop</b> .....	abnormal mid-diastolic heart sound heard when both the pathological S <sub>3</sub> and S <sub>4</sub> sounds are present
<b>Syncope</b> .....	temporary loss of consciousness due to decreased cerebral blood flow (fainting), caused by ventricular asystole, pronounced bradycardia, carotid sinus sensitivity or ventricular fibrillation

- Systole** ..... the heart contracts, i.e. the heart's pumping phase, when blood is pumped from the ventricles and fills the pulmonary and systemic arteries; it is one-third of the cardiac cycle
- Tachycardia** ..... rapid heart rate, >100 beats per minute in the adult
- Third heart sound (S<sub>3</sub>)** ..... soft, low-pitched, ventricular filling sound that occurs in early diastole (S<sub>3</sub> gallop, ventricular gallop) and may be an early sign of heart failure
- Thrill** ..... palpable vibration on the chest wall overlying an area of turbulence caused by a valvular defect or abnormal communication between the atria or ventricles
- Tricuspid valve** ..... right AV valve separating the right atria and ventricle

### PREPARATION FOR YOUR LABORATORY SESSION

As a nurse learning cardiac assessment you are only expected to listen to heart sounds and recognise that they are normal. Learning heart sounds is difficult and takes a lot of practice. One of the best ways to be able to recognise what is a normal heart sound is to listen to as many different normal heart sounds as you can. In preparation for your laboratory session visit some websites where you can listen to S<sub>1</sub> and S<sub>2</sub>. There are also cardiac sound audio recordings on YouTube. You may also like to listen to abnormal heart sounds to enable you to differentiate the normal sounds from abnormal sounds and consolidate your knowledge.

### STUDY GUIDE

After completing the reading assignment you should be able to answer the following questions in the spaces provided.

1. Describe where the heart is positioned in the thoracic cavity.

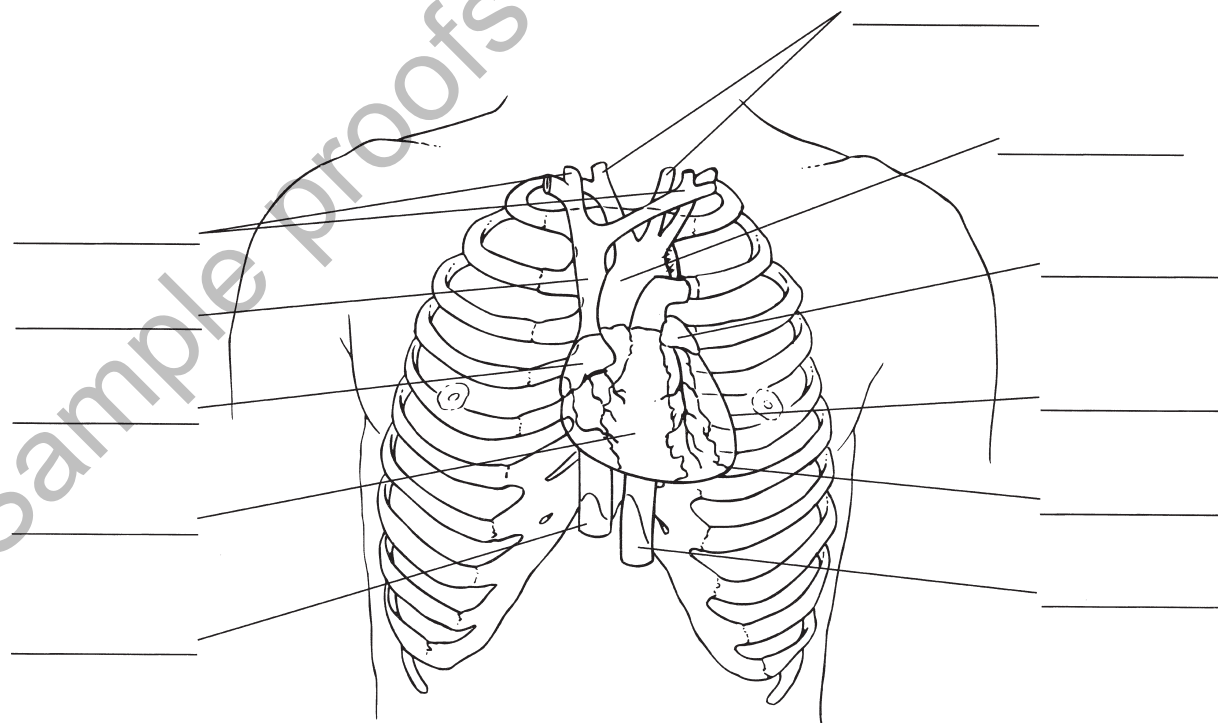
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2. Fill in the labels indicated on the following illustration.



3. Define the apical impulse and describe its normal location, size and duration.

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a. Which normal variations may affect the location of the apical impulse?

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b. Which abnormal conditions may affect the location of the apical impulse?

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4. Fill in the blanks in this review of blood flow through the heart.

The \_\_\_\_\_ and \_\_\_\_\_ return \_\_\_\_\_, venous blood to the right side of the heart from the body.

The \_\_\_\_\_ leaves the right ventricle, bifurcates and carries the venous blood to the \_\_\_\_\_.

The \_\_\_\_\_ return the \_\_\_\_\_ blood to the left side of the heart, and the \_\_\_\_\_ carries it out to the \_\_\_\_\_.

The \_\_\_\_\_ ascends from the left ventricle, arches back at the level of the \_\_\_\_\_, and descends behind the heart.

5. Describe each of the 3 layers of the heart

i. \_\_\_\_\_  
 \_\_\_\_\_

ii. \_\_\_\_\_  
 \_\_\_\_\_

iii. \_\_\_\_\_

6. Discuss each of the 4 valves: their position in the heart, their structure, the structures they are between and when they open and close.

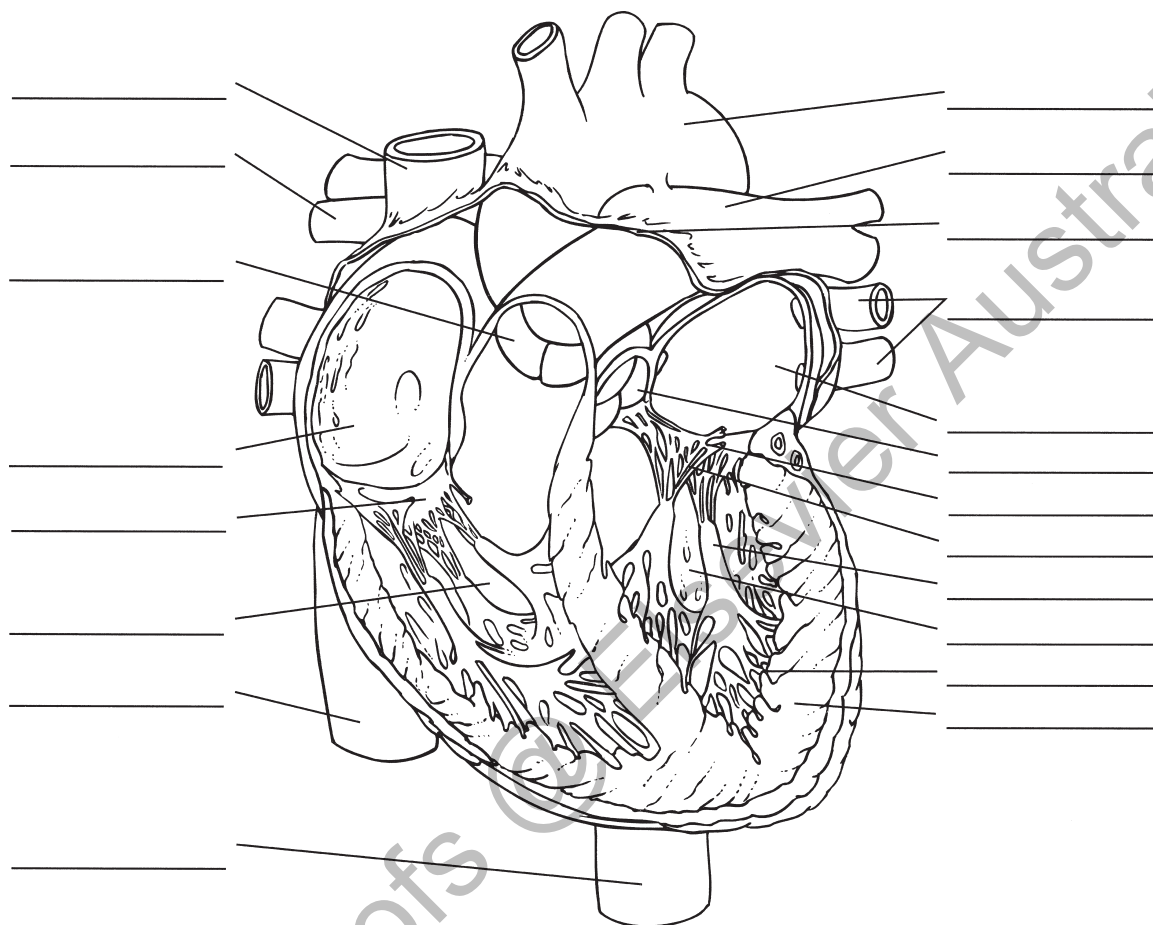
i. \_\_\_\_\_  
 \_\_\_\_\_

ii. \_\_\_\_\_  
 \_\_\_\_\_

iii. \_\_\_\_\_  
 \_\_\_\_\_

iv. \_\_\_\_\_  
\_\_\_\_\_

7. Fill in the labels indicated on the following illustration.



© Pat Thomas, 2006.

8. Explain the concept of 'atrial kick'.

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

9. Explain the mechanism producing normal first and second heart sounds.

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

10. Describe the effect of respiration on the heart sounds.

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11. Describe the characteristics of the first heart sound and its intensity at the apex of the heart and at the base.

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12. Describe the characteristics of the second heart sound and its intensity at the apex of the heart and at the base.

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13. Explain the reason for normal splitting of  $S_2$  in the pulmonic valve area.

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14. Define the third heart sound. When in the cardiac cycle does it occur? Describe its intensity, quality, location in which it is heard and method of auscultation.

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15. Differentiate a physiological  $S_3$  from a pathological  $S_3$ .

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16. Define the fourth heart sound. When in the cardiac cycle does it occur? Describe its intensity, quality, location in which it is heard and method of auscultation.

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17. Define a murmur, list the conditions that may cause it and list the characteristics you would use to explore the murmur.

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18. Describe the characteristics by which all heart sounds are described.

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19. Outline impulse transmission through the heart and explain how this relates to the ECG and cardiac cycle.

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Sample proofs @ Elsevier Australia



20. Define cardiac output.

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21. Differentiate between preload and afterload.

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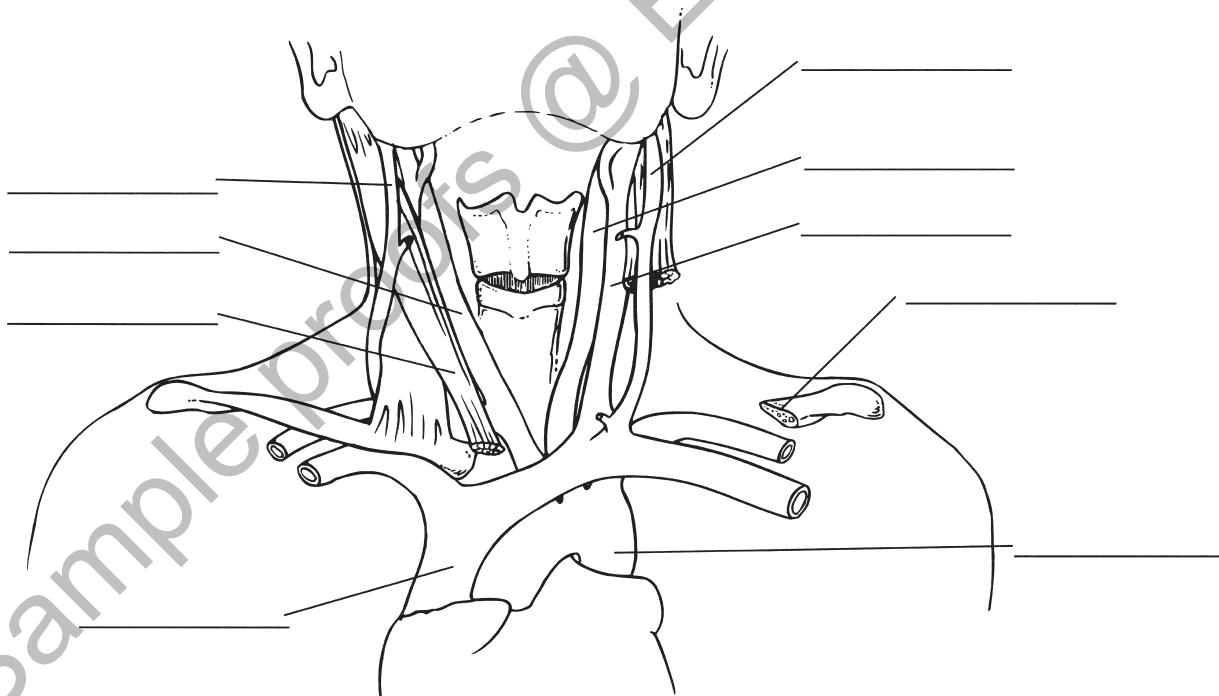


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22. Fill in the labels indicated on the following illustration.



23. Explain why the jugular veins provide information about activity on the right side of the heart.

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24. Differentiate between the carotid artery pulsation and the jugular vein pulsation.

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25. Explain fetal circulation of oxygenated blood.

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26. Outline the circulatory changes that take place at birth.

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27. List 7 modifiable risk factors for heart disease and stroke.

- i. \_\_\_\_\_
- ii. \_\_\_\_\_
- iii. \_\_\_\_\_
- iv. \_\_\_\_\_
- v. \_\_\_\_\_
- vi. \_\_\_\_\_
- vii. \_\_\_\_\_

28. List the 11 areas you would address with your patient during the health history concerning the cardiovascular system. Include under each heading additional information that you may require to qualify their response.

e.g. **Chest pain:** Onset, location, character, brought on by? associated symptoms, made worse by? relieved by?

- i. \_\_\_\_\_
- ii. \_\_\_\_\_
- iii. \_\_\_\_\_
- iv. \_\_\_\_\_
- v. \_\_\_\_\_
- vi. \_\_\_\_\_
- vii. \_\_\_\_\_
- viii. \_\_\_\_\_
- ix. \_\_\_\_\_
- x. \_\_\_\_\_
- xi. \_\_\_\_\_

29. In what order should you perform a regional cardiovascular assessment?

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30. Describe a heave or lift and discuss what it indicates.

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31. Define pulse deficit and discuss what it indicates.

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32. List 4 guidelines to distinguish  $S_1$  from  $S_2$ .

- i. \_\_\_\_\_
- ii. \_\_\_\_\_
- iii. \_\_\_\_\_
- iv. \_\_\_\_\_

33. Discuss the characteristics of an innocent or functional murmur.

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

### REVIEW QUESTIONS

This test is for you to check your own mastery of the content. Answers are provided in Appendix A.

1. The praecordium is:
  - a. a synonym for the mediastinum
  - b. the area on the chest where the apical impulse is felt
  - c. the area on the anterior chest overlying the heart and great vessels
  - d. a synonym for the area where the superior and inferior venae cavae return un氧xygenated venous blood to the right side of the heart
2. Select the best positional description of the tricuspid valve.
  - a. left semilunar valve
  - b. right atrioventricular valve
  - c. left atrioventricular valve
  - d. right semilunar valve
3. The function of the pulmonic valve is to:
  - a. divide the left atrium and left ventricle
  - b. guard the opening between the right atrium and right ventricle
  - c. protect the orifice between the right ventricle and the pulmonary artery
  - d. guard the entrance to the aorta from the left ventricle
4. Atrial systole occurs:
  - a. during ventricular systole
  - b. during ventricular diastole
  - c. concurrently with ventricular systole
  - d. independently of ventricular function
5. The second heart sound is the result of:
  - a. opening of the mitral and tricuspid valves
  - b. closing of the mitral and tricuspid valves
  - c. opening of the aortic and pulmonic valves
  - d. closing of the aortic and pulmonic valves
6. The examiner has estimated the jugular venous pressure. Identify the finding that is abnormal.
  - a. Patient elevated to 30 degrees, internal jugular vein pulsation at 1 cm above sternal angle
  - b. Patient elevated to 30 degrees, internal jugular vein pulsation at 2 cm above sternal angle
  - c. Patient elevated to 40 degrees, internal jugular vein pulsation at 1 cm above sternal angle
  - d. Patient elevated to 45 degrees, internal jugular vein pulsation at 4 cm above sternal angle

7. The examiner is palpating the apical impulse. The normal size of this impulse:
- is less than 1 cm
  - is about 2 cm
  - is 3 cm
  - varies depending on the size of the person
8. The examiner wants to listen in the pulmonic valve area. To do this, the stethoscope would be placed at the:
- second right interspace
  - second left interspace
  - left lower sternal border
  - fifth interspace, left midclavicular line
9. Select the statement that best differentiates a split  $S_2$  from  $S_3$ .
- $S_3$  is lower pitched and is heard at the apex.
  - $S_2$  is heard at the left lower sternal border.
  - The timing of  $S_2$  varies with respirations.
  - $S_3$  is heard at the base; timing varies with respirations.
10. The nurse suspects a pericardial friction rub. Select the best method of listening for this condition.
- with the diaphragm, patient sitting up and leaning forwards, breath held in expiration
  - using the bell with the patient leaning forwards
  - at the base during normal respiration
  - with the diaphragm, patient turned to the left side
11. When auscultating the heart, your first step is to:
- note rate and rhythm and then identify  $S_1$  and  $S_2$
  - listen for  $S_3$  and  $S_4$
  - listen for murmurs
  - identify all 4 sounds on the first round
12. A split  $S_2$  is most clearly heard in what area?
- apical
  - pulmonic
  - tricuspid
  - aortic
13. The stethoscope bell should be pressed lightly against the skin so that:
- chest hair doesn't simulate crackles
  - high-pitched sounds can be heard better
  - it doesn't act as a diaphragm
  - it doesn't interfere with amplification of heart sounds
14. A murmur heard after  $S_1$  and before  $S_2$  is classified as:
- diastolic (possibly benign)
  - diastolic (always pathological)
  - systolic (possibly benign)
  - systolic (always pathological)
15. Match column A to column B
- | <b>Column A</b>   | <b>Column B</b>      |
|---|----------------------|
| 1. tough, fibrous, double-walled sac that surrounds and protects the heart                        | a. pericardial fluid |
| 2. thin layer of endothelial tissue that lines the inner surface of the heart chambers and valves | b. ventricle         |
| 3. reservoir for holding blood  | c. endocardium       |
| 4. ensures smooth, friction-free movement of the heart muscle                                     | d. myocardium        |
| 5. muscular pumping chamber   | e. pericardium       |
| 6. muscular wall of the heart   | f. atrium            |
16. Briefly relate the route of a blood cell from the liver to tissue in the body.
17. List the major risk factors of heart disease and stroke.
18. Answer True or False to the following statements concerning changes that occur with ageing. If the answer is false, state the correct answer.
- From age 20 to 60 years, systolic blood pressure increases by 20 mmHg, and by another 20 mmHg between ages 60 and 80 years. True False
  - The overall size of the heart shrinks with age. True False
  - Resting heart rate increases with ageing. True False
  - Cardiac output at rest does not change with ageing. True False
  - There is a decreased ability of the heart to augment cardiac output with exercise. True False
  - There is an increased frequency of bradyarrhythmias and atrial ectopic beats with ageing, which are asymptomatic, although they may compromise BP. True False
  - Age-related changes in the ECG occur as a result of histological changes in the conduction system. True False

## PRACTICAL SKILLS IN THE LABORATORY/CLINICAL SETTING

Now that you have completed the preparatory readings, study guide and review questions you should be ready for the clinical component of assessing the heart and neck vessels as part of the cardiovascular system. The purpose of the clinical component is to practise the regional examination on a peer in the skills laboratory or a patient in the clinical setting.

### Clinical Objectives

At the completion of the clinical laboratory session, with further practice and self-directed learning you should be able to:

1. demonstrate knowledge of signs and symptoms of the cardiovascular system by collecting a health history from a peer or patient in the clinical setting
2. correctly locate anatomical landmarks, the heart border and auscultatory areas on the chest wall of a peer
3. demonstrate correct technique for inspection and palpation of the neck vessels
4. demonstrate correct techniques for inspection, palpation and auscultation of the praecordium
5. record the health history and physical examination findings, reach an assessment of the health state and develop a plan of care.

### PROFESSIONAL PRACTICE NOTE

*Adhere to infection control best practice guidelines by cleaning your stethoscope and any other equipment you use between each patient to prevent cross infection.*

*Ensure the patient is appropriately covered throughout the procedure.*

### Instructions

1. Form pairs.
2. Prepare the examination setting and gather your equipment; ensure adequate lighting.
3. Wash your hands.
4. Gain consent to perform the examination from either your peer or the patient.
5. Practise the steps of the cardiovascular health interview history on a peer.
6. Using a non-permanent, water-soluble marker, and with your peer's permission, outline borders of the heart and label auscultatory areas on their chest wall.
7. Practise the correct technique for inspection and palpation of the neck vessels.
8. Practise the correct techniques for inspection, palpation and auscultation of the praecordium, providing appropriate instructions as you proceed.
9. Record your findings using the regional write-up worksheet.
10. Reverse roles and repeat steps 2 to 9.
11. Discuss your assessment techniques, findings and performance with your peer to develop a complete understanding of the process.
12. Document your findings using the SOAP format.

## REGIONAL WRITE-UP WORKSHEET – CARDIOVASCULAR SYSTEM

Date \_\_\_\_\_

Interview conducted by \_\_\_\_\_

Designation \_\_\_\_\_

Patient \_\_\_\_\_ Age \_\_\_\_\_ Gender \_\_\_\_\_

Occupation \_\_\_\_\_ Medical Record Number \_\_\_\_\_

### I. Health history

	No	Yes, explain
1. Any <b>chest pain</b> or tightness?	_____	_____
2. Any <b>shortness of breath</b> ?	_____	_____
3. Use more than one pillow to sleep?	_____	_____
4. Do you have a <b>cough</b> ?	_____	_____
5. Do you seem to <b>tire easily</b> ?	_____	_____
6. Facial skin ever turn blue or ashen?	_____	_____
7. Any <b>swelling</b> of feet or legs?	_____	_____
8. Awaken at night to urinate?	_____	_____
9. Any past history of heart disease?	_____	_____
10. Any family history of heart disease?	_____	_____
11. Assess for modifiable and non-modifiable cardiac risk factors:	_____	_____

### II. Physical examination

#### A. Carotid arteries

Inspect and gently palpate

Grade R \_\_\_\_\_ L \_\_\_\_\_

(0 = absent, 1+ weak, 2+ normal, 3+ increased, 4+ bounding)

Contour and amplitude \_\_\_\_\_

#### B. Jugular veins

Inspect and palpate

Visualise external jugular veins: visible/not visible at \_\_\_\_\_ bed elevated

Internal jugular venous pulsations: visible at \_\_\_\_\_ bed elevated



## REGIONAL WRITE-UP WORKSHEET – CARDIOVASCULAR SYSTEM (continued)

### C. Praecordium

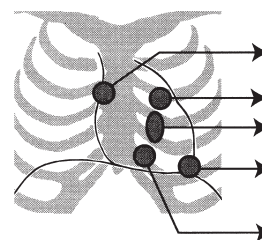
Inspect and palpate

1. Skin colour and condition \_\_\_\_\_
2. Chest wall pulsations \_\_\_\_\_
3. Heave or lift \_\_\_\_\_
4. Apical impulse in the \_\_\_\_\_ at \_\_\_\_\_  
Size \_\_\_\_\_ Amplitude \_\_\_\_\_
5. Pulse deficit? \_\_\_\_\_

### D. Auscultation of heart sounds

1. Identify anatomical areas where you will listen. \_\_\_\_\_
2. Heart rate and rhythm \_\_\_\_\_
3. Identify S1 and S2 in diagram and note any variation:

S<sub>1</sub>      S<sub>1</sub>      S<sub>2</sub>      S<sub>1</sub>      S<sub>2</sub>  
S<sub>1</sub> \_\_\_\_\_  
S<sub>2</sub> \_\_\_\_\_



## REGIONAL DOCUMENTATION (SOAP) – CARDIOVASCULAR SYSTEM

Summarise your findings using the SOAP format.

**Subjective** (Reason for seeking care, health history)

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**Objective** (Physical exam findings)

Record findings on diagram

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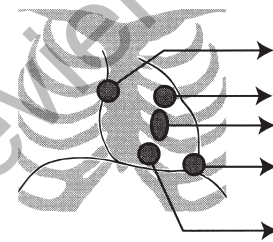
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**Assessment** (Assessment of health state or problem, diagnosis)

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**Plan** (Diagnostic evaluation, follow-up care, patient teaching)

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## Chapter Sixteen

# Upper airways

### PURPOSE

The nose and throat are important when considering both the nutritional status of the person and their respiratory function. Because of the importance of these structures, through this chapter you will revise the structure and function of the nose and throat; be introduced to the methods of inspection and palpation of these structures; and learn how to record the assessment accurately. Assessment of these structures should be conducted in conjunction with Chapter 17 (Lower airways) and Chapter 19 (Nutritional and metabolic assessment).

### KEY CONCEPTS

- Nose, throat and lymphatics structure and function
- Lymphatic drainage patterns
- Symptoms of nose, throat and lymphatic dysfunction
- Effects of ageing
- Assessment (inspection and palpation) of the nose, sinuses, the trachea and the throat
- Documentation

While you are completing your reading assignment, ensure you understand each of the key concepts listed above.

### READING ASSIGNMENT

Jarvis, Forbes & Watt (JF&W): *Jarvis's Physical Examination & Health Assessment 2e*, Chapter 16, pp 384–403.

### GLOSSARY

<b>Choanal atresia</b> .....	a bony or membranous septum between the nasal cavity and the pharynx of the newborn
<b>Crypts</b> .....	indentations on surface of tonsils
<b>Dysphagia</b> .....	difficulty swallowing
<b>Epistaxis</b> .....	nosebleed, usually from anterior septum
<b>Epstein pearls</b> .....	small, whitish, glistening, pearly papules along the median raphe of the hard palate and on the gums, where they look like teeth; are a normal finding in newborns and infants; disappear in the first few weeks
<b>Kiesselbach's plexus</b> .....	the most common site of nosebleeds due to the rich vascular supply
<b>Parotid glands</b> .....	pair of salivary glands in the cheeks in front of the ears
<b>Pharyngitis</b> .....	inflammation of the throat
<b>Polyp</b> .....	smooth, pale grey nodules in the nasal cavity due to chronic allergic rhinitis
<b>Rhinitis</b> .....	red swollen inflammation of nasal mucosa
<b>Turbinates</b> .....	one of 3 bony projections into nasal cavity that increase surface area for warming, humidifying and filtering
<b>Uvula</b> .....	free projection hanging down from the middle of the soft palate
<b>Vibrissae</b> .....	numerous coarse nasal hairs lining the anterior edge of the nasal cavity

## STUDY GUIDE

After completing the reading assignment, you should be able to answer the following questions in the spaces provided.

1. List the 4 functions of the nose.

- i. \_\_\_\_\_
- ii. \_\_\_\_\_
- iii. \_\_\_\_\_
- iv. \_\_\_\_\_

2. Differentiate between the function of the vibrissae and the ciliated mucous membrane within the nasal cavity.

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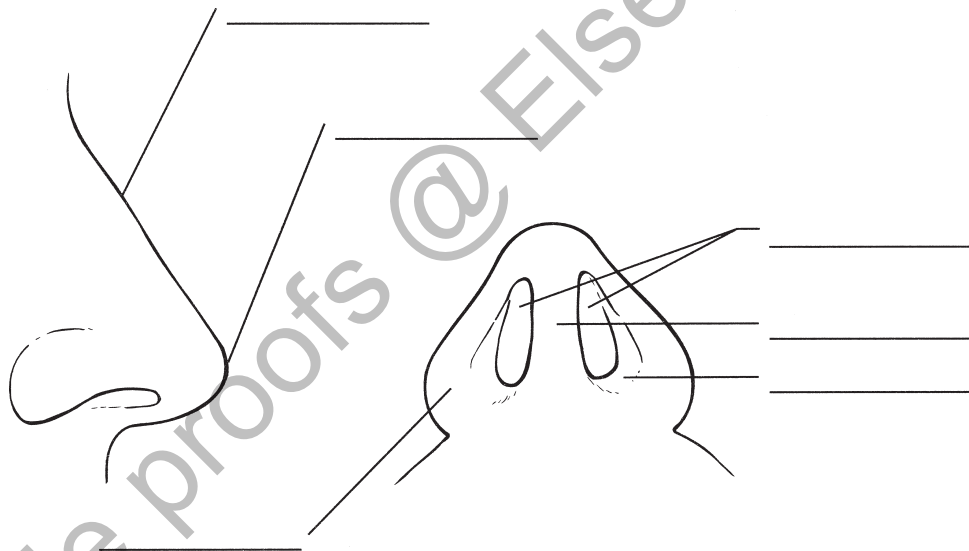


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3. Fill in the labels on the following illustrations.



4. Circle True or False to answer the following statements. If the answer is false, state the correct answer.

- |  |      |       |
|--|------|-------|
| a. Sinuses drain into the middle meatus.   | True | False |
| b. Tears from the nasolacrimal duct drain into the superior meatus.  | True | False |
| c. Olfactory receptors lie in the roof of the nasal cavity and in the upper one-third of the septum.               | True | False |
| d. The receptors for smell merge to form cranial nerve II.   | True | False |
| e. Smell is important as it reduces the risks of poor nutritional intake by enhancing the smell and taste of food. | True | False |

5. List the 4 sets of paranasal sinuses and describe their function.

- i. \_\_\_\_\_
- ii. \_\_\_\_\_
- iii. \_\_\_\_\_
- iv. \_\_\_\_\_

Functions:

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6. List the components of the lymphatic network (10 nodes) draining the oral cavity and throat, state their location and the function of the network.

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Function:

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7. Explain why it is important to ask about sense of smell during the patient history.

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8. Identify the 11 areas that are explored during a health history of the nose and throat, and state the significance of enquiring about each topic area.

i. \_\_\_\_\_

\_\_\_\_\_

ii. \_\_\_\_\_

\_\_\_\_\_

iii. \_\_\_\_\_

\_\_\_\_\_

iv. \_\_\_\_\_

\_\_\_\_\_

v. \_\_\_\_\_

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vi. \_\_\_\_\_

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vii. \_\_\_\_\_

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viii. \_\_\_\_\_

\_\_\_\_\_

ix. \_\_\_\_\_

\_\_\_\_\_

x. \_\_\_\_\_

\_\_\_\_\_

xi. \_\_\_\_\_

\_\_\_\_\_

xii. \_\_\_\_\_

\_\_\_\_\_

xiii. \_\_\_\_\_

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9. Describe the positions on the face where you would assess the sinuses in a person with chronic allergies or acute infection (sinusitis).

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10. Distinguish between the 2 types of tracheal shift and list conditions associated with each.

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11. Outline the normal appearance of the tonsils, their appearance when they are acutely infected and the scale used for size estimation of the tonsils.

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12. Which cranial nerves mediate sense of smell and is this sense essential for human life?

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13. Testing cranial nerve XII, the hypoglossal nerve, is performed by asking the person to stick out their tongue. Describe both a normal response and an abnormal response. Why is an abnormal response significant?

normal \_\_\_\_\_  
\_\_\_\_\_

damaged nerve \_\_\_\_\_  
\_\_\_\_\_

significance? \_\_\_\_\_  
\_\_\_\_\_

14. Describe the characteristics of lymph nodes often associated with the following conditions:

i. acute infection \_\_\_\_\_

ii. chronic inflammation \_\_\_\_\_

iii. cancer \_\_\_\_\_

iv. HIV \_\_\_\_\_

v. neoplasm in the abdomen or thorax \_\_\_\_\_

vi. Hodgkin's lymphoma \_\_\_\_\_

15. Describe the procedure for palpating lymph nodes in the face and throat.

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

16. Describe the appearance of oral Kaposi's sarcoma and state its significance.

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_



## REVIEW QUESTIONS

This test is for you and is intended to check your own mastery of the content. Answers are provided in Appendix A.

- The most common site of nosebleeds is:
  - the turbinates
  - the columellae
  - Kiesselbach's plexus
  - the meatus
- The sinuses that are accessible to examination are the:
  - ethmoid and sphenoid
  - frontal and ethmoid
  - maxillary and sphenoid
  - frontal and maxillary sinuses
- In order to differentiate between an acute infection and chronic inflammation, you palpate the lymph nodes. Your findings would reveal which of the following to confirm an acute infection?
  - nodes are hard, unilateral, nontender and fixed
  - nodes are bilateral, enlarged, warm, tender and firm but freely moveable
  - nodes are enlarged, firm, nontender and mobile
  - nodes are clumped in strings
- Match each of the following objective findings (Column A) with the appropriate cause (Column B):
 

Column A	Column B
a. circumoral pallor	1. carbon monoxide poisoning
b. cherry red lips	2. hypoxaemia and chilling
c. cyanosis	3. shock and anaemia
- In a medical record, the tonsils are graded as 3+. The tonsils would be:
  - visible
  - halfway between the tonsillar pillars and uvula
  - touching the uvula
  - touching each other
- The function of the nasal turbinates is to:
  - warm the inhaled air
  - detect odours
  - stimulate tear formation
  - lighten the weight of the skull bones
- A nasal polyp may be distinguished from the nasal turbinates for 3 of the following reasons. Which reason is **false**?
  - The polyp is highly vascular.
  - The polyp is moveable.
  - The polyp is pale grey in colour.
  - The polyp is non-tender.
- Conditions causing tracheal shift that is pushing to the unaffected (healthy) side include all of the following **except**:
  - an aortic aneurysm
  - pleural adhesions
  - unilateral thyroid lobe enlargement
  - pneumothorax
- Match Column A Lymph nodes with Column B Location
 

Column A — Lymph nodes	Column B — Location
1. preauricular	a. above and behind the clavicle
2. posterior auricular	b. deep under the sternocleidomastoid muscle
3. occipital	c. in front of the ear
4. submental	d. in the posterior triangle along the edge of the trapezius muscle
5. submandibular	e. superficial to the mastoid process
6. jugulodigastric	f. at the base of the skull
7. superficial cervical	g. halfway between the angle and the tip of the mandible
8. deep cervical	h. behind the tip of the mandible
9. posterior cervical	i. under the angle of the mandible
10. supraclavicular	j. overlying the sternocleidomastoid muscle

## PRACTICAL SKILLS IN THE LABORATORY/CLINICAL SETTING

The examination of nose and throat is to assess patent airway presence, patterns of pain, any abnormalities and the impact these may have on the person's nutritional state and/or respiratory function. Objective examination should be performed in conjunction with the lower airway (Ch 17) as well as nutritional assessment (Ch 19).

Now that you have completed the preparatory activities, you should be ready for the clinical component of the nose and throat examination.

The purpose of the clinical component is to practise collecting an appropriate health history relating to presentation, and to practise the steps of the examination of the nose and throat on a peer in the skills laboratory or on a patient in the clinical setting.

### Clinical Objectives

At the completion of the clinical laboratory session, with further practice and self-directed learning you should be able to:

1. collect a health history related to pertinent signs and symptoms stated by the patient
2. inspect the external nose
3. demonstrate use of the otoscope and nasal attachment to inspect the structures of the nasal cavity
4. demonstrate inspection and palpation of structures of the tongue and throat
5. record the history and physical examination findings accurately, reach an assessment of the health state and develop a plan of care.

### Instructions

1. Form pairs.
2. Prepare the examination setting and gather your equipment.
3. Wash your hands.
4. Gain consent to perform the examination from either your peer or the patient.
5. Practise the health history interview and the steps of the examination of the nose and throat on a peer in the skills laboratory, providing appropriate instructions as you proceed.
6. Record your findings using the regional write-up worksheet.
7. Swap roles and repeat steps 2–6.
8. Discuss your assessment techniques, findings and performance with your peer to develop a complete understanding of the process.
9. Document your findings using the SOAP format.

## REGIONAL WRITE-UP WORKSHEET — UPPER AIRWAYS

Date \_\_\_\_\_

Interview conducted by \_\_\_\_\_

Designation \_\_\_\_\_

Patient \_\_\_\_\_ Age \_\_\_\_\_ Gender \_\_\_\_\_

Occupation \_\_\_\_\_ Medical Record Number \_\_\_\_\_

### I. Health history

#### A. Nose

1. Any nasal **discharge**?
2. Unusually frequent or severe colds?
3. Any **sinus pain** or sinusitis?
4. Any **trauma** or injury to nose?
5. Any **nosebleeds**? How often?
6. Any **allergies** or hay fever?
7. Any change in sense of **smell**?

No

Yes, explain

	No	Yes, explain

#### B. Throat

1. Any **sore throat**? How often?
2. Any **hoarseness**, voice change?
3. **Lumps** or swellings? Any difficulty **swallowing**?
4. Do you **smoke**? How much/day?


### II. Physical examination

#### A. Inspect and palpate the nose

Symmetry \_\_\_\_\_

Deformity, asymmetry, inflammation, skin lesions \_\_\_\_\_

Test patency of each nostril \_\_\_\_\_

#### B. Palpate the sinus area

Frontal \_\_\_\_\_

Maxillary \_\_\_\_\_

#### C. Palpate the trachea

**Deviations** from midline? \_\_\_\_\_

#### D. Inspect the throat

Tonsils: condition and grade \_\_\_\_\_

Pharyngeal wall \_\_\_\_\_

Any breath odour? \_\_\_\_\_

## REGIONAL DOCUMENTATION — UPPER AIRWAYS

Summarise your findings using the SOAP format.

**Subjective** (Reason for seeking care, health history)

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**Objective** (Physical exam findings)

Record findings on diagram

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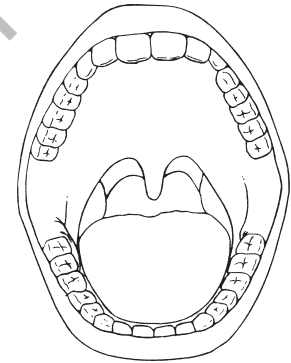
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**Assessment** (Assessment of health state or problem, diagnosis)

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**Plan** (Diagnostic evaluation, follow-up care, patient teaching)

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# Chapter Seventeen

## Lower airways

### PURPOSE

The respiratory system has a number of important functions that include contributions to the maintenance of acid–base balance, oxygenation and removal of carbon dioxide. Many procedures that patients undergo will have some form of impact on their respiratory status, which in turn may affect their overall condition. Others may present with disorders of the respiratory system or with unrelated conditions but may have respiratory comorbidities, so it is really important to learn and understand regional respiratory anatomy, physiology and techniques to evaluate lung function, as well as to learn and understand how to assess respiratory status and respiratory health.

This chapter will help you learn the structure and function of the thorax and lungs and understand the methods used in the examination of the respiratory system. You will begin to learn to identify normal lung sounds, to describe the characteristics of adventitious lung sounds and to accurately record the examination. At the end of this chapter you should be able to obtain a respiratory history and perform a complete physical examination of the respiratory system.

### KEY CONCEPTS

- Anatomy and physiology of the thorax and lungs
- Surface landmarks of the thorax
- Mechanics of respiration
- Respiratory health history
- Normal lung sounds
- Adventitious lung sounds
- Common respiratory conditions
- Inspection, palpation, percussion and auscultation techniques and sequencing for a respiratory examination

While you are completing your reading assignment, ensure you understand each of the key concepts listed above.

### READING ASSIGNMENT

Jarvis, Forbes & Watt (JF&W): *Jarvis's Physical Examination & Health Assessment 2e*, Chapter 17, pp 404–443.

### GLOSSARY

<b>Acinus</b> .....	functional respiratory unit that consists of the bronchioles, alveolar ducts, alveolar sacs and the alveoli
<b>Alveoli</b> .....	functional units of the lung; the thin-walled chambers surrounded by networks of capillaries that are the site of respiratory exchange of carbon dioxide and oxygen
<b>Angle of Louis</b> .....	manubriosternal angle, the articulation of the manubrium and body of the sternum, continuous with the second rib
<b>Apnoea</b> .....	cessation of breathing
<b>Asthma</b> .....	an allergic hypersensitivity to certain inhaled allergens (pollen), irritants (tobacco, ozone), microorganisms, stress or exercise that produces a complex response characterised by bronchospasm and inflammation, oedema in walls of bronchioles and secretion of highly viscous mucus into airways
<b>Atelectasis</b> .....	collapsed shrunken section of alveoli, or an entire lung, as a result of (1) airway obstruction, (2) compression on the lung or (3) lack of surfactant (hyaline membrane disease)
<b>Bradypnoea</b> .....	slow breathing, <10 breaths per minute, regular rate
<b>Bronchiole</b> .....	one of the smaller respiratory passageways into which the segmental bronchi divide

<b>Bronchitis</b> .....	proliferation of mucous glands in the passageways, resulting in excessive mucus secretion; inflammation of bronchi with partial obstruction of bronchi by secretions or constrictions
<b>Bronchophony</b> .....	the spoken voice sound heard through the stethoscope, which sounds soft, muffled and indistinct over normal lung tissue
<b>Bronchovesicular</b> .....	the normal breath sound heard over major bronchi, characterised by moderate pitch and an equal duration of inspiration and expiration
<b>Chronic obstructive pulmonary disease (COPD)</b> .....	a functional category of abnormal respiratory conditions characterised by airflow obstruction, e.g. emphysema, chronic bronchitis, asthma
<b>Cilia</b> .....	millions of hair-like cells lining the tracheobronchial tree
<b>Consolidation</b> .....	the solidification of portions of lung tissue as it fills up with infectious exudate, as in pneumonia
<b>Costochondral junctions</b> .....	the points at which the ribs join their cartilages
<b>Crackles</b> .....	(rales) abnormal, discontinuous, adventitious lung sounds heard on inspiration
<b>Crepitus</b> .....	coarse crackling sensation palpable over the skin when air abnormally escapes from the lung and enters the subcutaneous tissue
<b>Dead space</b> .....	passageways that transport air but are not available for gaseous exchange, e.g. trachea and bronchi
<b>Diaphragm</b> .....	a musculotendinous septum that separates the thoracic cavity from the abdomen
<b>Dyspnoea</b> .....	difficult, laboured breathing
<b>Egophony</b> .....	an 'eeee' sound heard over a fluid consolidation when the patient says 'a' and is due to change in sound transmission through fluid
<b>Emphysema</b> .....	destruction of pulmonary connective tissue (elastin, collagen); characterised by permanent enlargement of alveoli distal to terminal bronchioles and rupture of interalveolar walls; increased airway resistance, especially on expiration, producing a hyperinflated lung and an increase in lung volume
<b>Fissure</b> .....	the narrow crack dividing the lobes of the lungs
<b>Fremitus</b> .....	a palpable vibration from the spoken voice felt over the chest wall
<b>Friction rub</b> .....	inflammation of the parietal or visceral pleura causing a decrease in normal lubricating fluid; opposing surfaces make a coarse grating sound when rubbed together during breathing
<b>Hypercapnia</b> .....	increased levels of carbon dioxide in the blood
<b>Hyperventilation</b> .....	increased rate and depth of breathing
<b>Hypoxaemia</b> .....	decreased level of oxygen in the blood
<b>Intercostal space</b> .....	space between the ribs
<b>Kussmaul's respiration</b> .....	a type of hyperventilation that occurs with diabetic ketoacidosis
<b>Manubriosternal angle</b> .....	the sternal angle or the 'angle of Louis'; is the articulation of the manubrium and body of the sternum; is continuous with the second rib
<b>Mediastinum</b> .....	the middle section of the thoracic cavity containing the oesophagus, trachea, heart and great vessels
<b>Midclavicular line (MCL)</b> .....	bisects the centre of each clavicle at a point halfway between the palpated sternoclavicular and acromioclavicular joints; reference line
<b>Orthopnoea</b> .....	difficulty breathing when supine; ability to breathe easily only in an upright position
<b>Paroxysmal nocturnal dyspnoea</b> .....	sudden awakening from sleeping with shortness of breath and needing to be upright to achieve comfort
<b>Percussion</b> .....	striking over the chest wall with short sharp blows of the fingers in order to determine the size and density of the underlying organ
<b>Pleural effusion</b> .....	collection of excess fluid in the intrapleural space; gravity causes fluid to settle in dependent areas of thorax
<b>Rhonchi</b> .....	low-pitched, musical, snoring, adventitious lung sound caused by airflow obstruction from secretions
<b>Suprasternal notch</b> .....	hollow U-shaped depression just above the sternum, in between the clavicles
<b>Tachypnoea</b> .....	rapid shallow breathing, >24 breaths per minute
<b>Vesicular</b> .....	the soft, low-pitched, normal breath sounds heard over peripheral lung fields
<b>Vital capacity</b> .....	the maximum amount of air that a person can expel from the lungs after maximum inspiration

**Unit 5** Assessing respiratory function

**Wheeze** ..... high-pitched, musical, squeaking adventitious lung sound

**Whispered pectoriloquy** ..... a whispered phrase heard through the stethoscope that sounds faint and inaudible over normal lung tissue

**Xiphoid process** ..... sword-shaped lower tip of the sternum

**STUDY GUIDE**

After completing the reading assignment, you should be able to answer the following questions in the spaces provided.

1. Outline the significance of the angle of Louis.

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2. Explain the location of the costal angle, the normal value and when this angle may increase.

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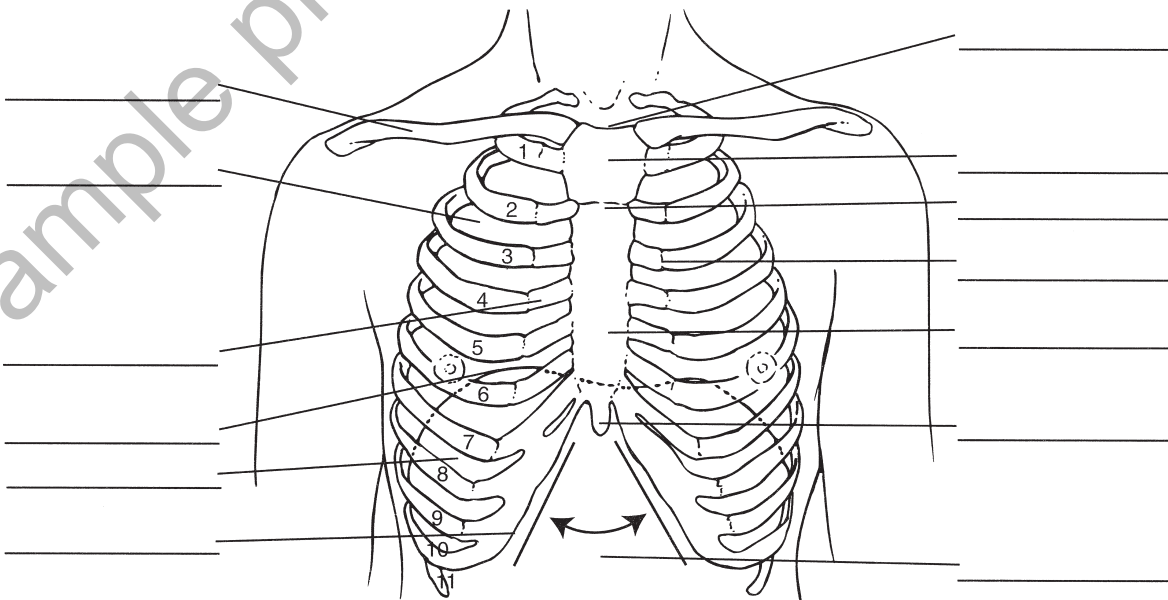
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3. Fill in the labels indicated on the following illustration.



4. Describe each of the lung borders and explain how their position changes with inspiration.

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5. Compare and contrast the left and right lungs including lobes and fissures.

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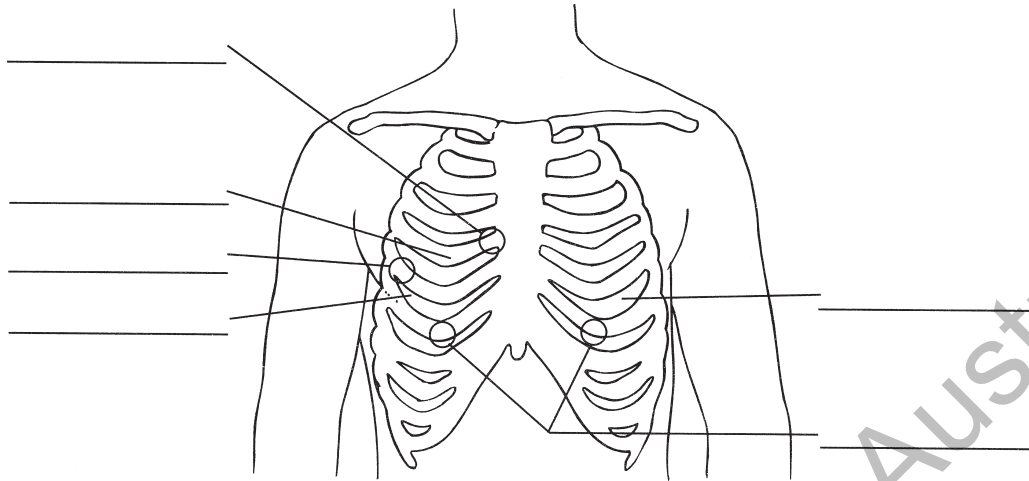
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6. Fill in the labels indicated on the following illustrations.



7. Describe the pleurae, its structure and function.

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8. Circle True or False to answer the following statements concerning the trachea and bronchial tree. If the answer is false, state the correct answer.

- |   |      |       |
|---|------|-------|
| a. The trachea lies posterior to the oesophagus.  | True | False |
| b. The adult trachea is 10 to 11 cm long.   | True | False |
| c. The trachea begins at the level of the cricoid cartilage in the neck and bifurcates just below the sternal angle into the right and left main bronchi. | True | False |
| d. Tracheal bifurcation is at the level of T2.  | True | False |
| e. The left main bronchus is shorter, wider and more vertical than the right main bronchus.   | True | False |
| f. The trachea and bronchi constitute the <i>dead space</i> .   | True | False |

9. Explain the protective function of the trachea and bronchial tree.

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10. List the 4 major functions of the respiratory system

- i. \_\_\_\_\_
- ii. \_\_\_\_\_
- iii. \_\_\_\_\_
- iv. \_\_\_\_\_

11. Summarise the mechanics of respiration, including control of respiration and changing chest size.

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12. Match the Column A terms with the appropriate statement in Column B concerning the respiratory system development in neonates and infants.

**Column A**

- 1. primitive lung buds
- 2. conducting airways
- 3. surfactant
- 4. ductus arteriosus
- 5. foramen ovale
- 6. sudden infant death syndrome (SIDS)

**Column B**

- a. the complex lipid substance needed for sustained inflation of the air sacs, is present in adequate amounts by 32 weeks
- b. contracts and closes 10–15 hours after birth
- c. reach the same number as in the adult by 16 weeks
- d. associated with postnatal exposure to environmental tobacco smoke
- e. develop during the first 5 weeks of fetal life
- f. closes just after birth due to the gush of blood into the pulmonary circulation when the cord is cut

13. Identify the respiratory and thoracic changes that occur in adults over 65 years of age.

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14. Discuss health history findings in relation to the following headings concerning cough:

timing of the cough \_\_\_\_\_

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productive versus non-productive coughs \_\_\_\_\_

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sputum colour or blood \_\_\_\_\_

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characteristic of the cough \_\_\_\_\_

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remedies tried \_\_\_\_\_

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association with pain \_\_\_\_\_

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15. Outline the sequence you would follow when assessing the thorax and lungs.

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16. List the elements included in the inspection of the respiratory system.

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17. Discuss the significance of a 'barrel chest'.

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18. Describe both of the following common thoracic deformities:

scoliosis \_\_\_\_\_

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kyphosis \_\_\_\_\_

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19. Percussion of the thorax produces the following sounds. State the quality of each sound, explain what it may indicate and where it may be heard.

resonance \_\_\_\_\_  
\_\_\_\_\_

hyperresonance \_\_\_\_\_  
\_\_\_\_\_

dull \_\_\_\_\_  
\_\_\_\_\_

flat \_\_\_\_\_  
\_\_\_\_\_

20. List and describe the 3 normal breath sounds, and where they should be heard. Then, draw a schematic anterior and posterior thorax and indicate where these sounds may be heard.

i. \_\_\_\_\_  
\_\_\_\_\_

ii. \_\_\_\_\_  
\_\_\_\_\_

iii. \_\_\_\_\_

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21. Explain conditions that may cause increased, decreased or absent breath sounds.

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22. Define at least 3 types of adventitious breath sounds.

- i. 

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- ii. 

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- iii. 

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23. Explain the purpose of purse-lipped breathing.

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24. List the accessory muscles of breathing and explain when they may be used.

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25. What is tripod position? State when it may be used.

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26. State the objective clinical findings associated with the following respiratory conditions:

asthma

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bronchitis

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emphysema

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pneumothorax

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27. Define pneumothorax and explain the 3 types.

i. 

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ii. 

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iii. 

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## REVIEW QUESTIONS

This test is for you to check your own mastery of the content. Answers are provided in Appendix A.

1. The manubriosternal angle is:
  - a. the articulation of the manubrium and the body of the sternum
  - b. a hollow, U-shaped depression just above the sternum
  - c. also known as the breastbone
  - d. a term synonymous with costochondral junction
2. Select the correct description of the left lung.
  - a. narrower than the right lung with three lobes
  - b. narrower than the right with two lobes
  - c. wider than the right lung with two lobes
  - d. shorter than the right with three lobes
3. Some conditions have a cough with characteristic timing. The cough associated with chronic bronchitis is best described as:
  - a. continuous throughout the day
  - b. productive cough for at least 3 months of the year for 2 years in a row
  - c. occurring in the afternoon/evening because of exposure to irritants at work
  - d. occurring in the early morning
4. Symmetrical chest expansion is best confirmed by:
  - a. placing hands on the posterolateral chest wall with thumbs at the level of T9 or T10, then sliding the hands up to pinch up a small fold of skin between the thumbs
  - b. inspection of the shape and configuration of the chest wall
  - c. placing the palmar surface of the fingers of one hand against the chest and having the person repeat the words 'ninety-nine'
  - d. percussion of the posterior chest
5. Absence of diaphragmatic excursion occurs with:
  - a. asthma
  - b. an unusually thick chest wall
  - c. pleural effusion or atelectasis of the lower lobes
  - d. age-related changes in the chest wall
6. Auscultation of breath sounds is an important component of respiratory assessment. Select the most accurate description of this part of the examination.
  - a. Hold the bell of the stethoscope against the chest wall, listen to the entire right field, then the entire left field.
  - b. Hold the diaphragm of the stethoscope against the chest wall; listen to one full respiration in each location, being sure to do side-to-side comparisons.
  - c. Listen from the apices to the bases of each lung field using the bell of the stethoscope.
  - d. Select the bell or diaphragm depending upon the quality of sounds heard; listen for one respiration in each location, moving from side to side.
7. Select the best description of bronchovesicular breath sounds:
  - a. high pitched, of longer duration on inspiration than expiration
  - b. moderate pitch, inspiration equal to expiration
  - c. low pitched, inspiration greater than expiration
  - d. rustling sound, like the wind in the trees
8. After examining a patient, you make the following notation: Increased respiratory rate, chest expansion decreased on left side, dull to percussion over left lower lobe, breath sounds louder with fine crackles over left lower lobe. These findings are consistent with a diagnosis of:
  - a. bronchitis
  - b. asthma
  - c. pleural effusion
  - d. lobar pneumonia
9. Match Column A respiratory pattern with Column B description and condition:
 

<b>Column A</b>	<b>Column B</b>
a. tachypnoea	1. increase in both rate and depth; diabetic ketoacidosis
b. hypoventilation	2. cyclic, regular, increasing in rate and depth and then decreasing; severe heart failure, renal failure, meningitis, drug overdose and increased intracranial pressure
c. Cheyne-Stokes	3. irregular shallow pattern; respiration an overdose of narcotics or anaesthetics
d. bradypnoea	4. rapid shallow breathing, increased rate >24 per minute; normal response to fever, fear or exercise. Rate increases with respiratory insufficiency, pneumonia, alkalosis, pleurisy and lesions in the pons
e. hyperventilation — Kussmaul's respirations	5. slow breathing, decreased, regular rate (<10 per minute); drug-induced depression of the respiratory centre increased intracranial pressure and diabetic coma



10. Upon examination of a patient, you note a coarse, low-pitched sound during both inspiration and expiration. This patient complains of pain with breathing. These findings are consistent with:
- fine crackles
  - wheezes
  - atelectatic crackles
  - pleural friction rub
11. In order to use the technique of egophony, ask the patient to:
- take several deep breaths, then hold for 5 seconds
  - say 'eeeeee' each time the stethoscope is moved
  - repeat the phrase 'ninety-nine' each time the stethoscope is moved
  - whisper a phrase as auscultation is performed
12. The pulse oximeter measures:
- arterial oxygen saturation
  - venous oxygen saturation.
  - combined saturation of arterial and venous blood
  - carboxyhaemoglobin levels
13. Match Column A to Column B.
- | <b>Column A —<br/>lung borders</b> | <b>Column B —<br/>location</b>                     |
|------------------------------------|--|
| a. apex                            | 1. rests on the diaphragm                          |
| b. base                            | 2. C7  |
| c. lateral left                    | 3. sixth rib, midclavicular line                   |
| d. lateral right                   | 4. fifth intercostal                               |
| e. posterior apex                  | 5. 3 to 4 cm above the inner third of the clavicle |
14. When performing a respiratory assessment on an infant or child, which of the following is incorrect?
- The newborn's chest circumference is equal to the head circumference until 2 years of age.
  - The thoracic cage is soft and flexible.
  - Respiratory assessment is part of the Apgar scoring system.
  - Infants breathe through the nose rather than the mouth and are obligate nose breathers until 3 months.
15. Match Column A to Column B.
- | <b>Column A —<br/>configurations<br/>of the thorax</b> | <b>Column B —<br/>description</b>   |
|--|---|
| a. normal chest  | 1. anteroposterior > transverse diameter  |
| b. barrel chest  | 2. exaggerated posterior curvature of thoracic spine                                  |
| c. pectus excavatum                                    | 3. lateral, S-shaped curvature of the thoracic and lumbar spine                       |
| d. pectus carinatum                                    | 4. sunken sternum and adjacent cartilages   |
| e. scoliosis   | 5. elliptical shape with an anteroposterior : transverse diameter in the ratio of 1:2 |
| f. kyphosis  | 6. forward protrusion of the sternum with ribs sloping back at either side            |

## PRACTICAL SKILLS IN THE LABORATORY/CLINICAL SETTING

You have revised the respiratory system and are now familiar with the anatomy, physiology and landmarks and understand the importance of an accurate patient history and physical examination. Now you are now ready for the clinical component of the respiratory system. The purpose of the clinical component is to practise the respiratory history and then regional examination on a peer in the skills laboratory or on a patient in the clinical setting.

### PROFESSIONAL PRACTICE NOTE

*Adhere to infection control best practice guidelines by cleaning your stethoscope and any other equipment you use between each patient to prevent cross infection. Ensure you maintain the dignity of your patients by keeping them covered as much as possible at all times to maintain their privacy.*

*Ensure the patient is appropriately covered throughout the procedure.*

## Clinical Objectives

At the completion of the clinical laboratory session, with further practice and self-directed learning you should be able to:

1. demonstrate knowledge of the symptoms related to the respiratory system by obtaining a regional health history from a peer or a patient
2. correctly locate anatomical landmarks on the thorax of a peer
3. demonstrate correct techniques for inspection, palpation, percussion and auscultation of the respiratory system
4. demonstrate the technique for estimation of diaphragmatic excursion
5. record the respiratory history and physical examination findings accurately, reach an assessment of the health state and develop a plan of care.

## Instructions

1. Gather your equipment. Ensure adequate lighting and enough drapes or blankets to keep your peer/patient covered.
2. Wash your hands.
3. Clean the stethoscope with an alcohol wipe.
4. Gain consent to perform the examination from either your peer or the patient.
5. Using a nonpermanent water-soluble marker, and with your peer's permission, draw lobes of the lungs on your peer's thorax and other landmarks as directed by your instructor.
6. Practise taking a respiratory health history and the steps of the respiratory examination of the thorax and lungs on a peer or on a patient in the clinical area.
7. Record your findings using the regional write-up worksheet.
8. Reverse roles and repeat steps 1 to 7.
9. Discuss your assessment techniques, findings and performance with your peer to develop a complete understanding of the process.
10. Document your findings using the SOAP format.

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**REGIONAL WRITE-UP WORKSHEET – RESPIRATORY/THORAX AND LUNGS**

Date \_\_\_\_\_

Interview conducted by \_\_\_\_\_

Designation \_\_\_\_\_

Patient \_\_\_\_\_ Age \_\_\_\_\_ Gender \_\_\_\_\_

Occupation \_\_\_\_\_ Medical Record Number \_\_\_\_\_

**I. Health history**

	No	Yes, explain
1. Do you have a <b>cough</b> ?	_____	_____
2. Any shortness of <b>breath</b> ?	_____	_____
3. Any <b>chest pain</b> with breathing?	_____	_____
4. Any <b>past history</b> of respiratory infections?	_____	_____
5. <b>Smoke</b> cigarettes? How many/day?	_____	_____
6. <b>Environmental exposure</b> ?	_____	_____
7. <b>Self-care behaviours</b> Last TB skin test, chest x-ray, 'flu vaccine?	_____	_____

**II. Physical examination**

**A. Inspection**

1. Shape and configuration of the chest wall \_\_\_\_\_
2. Respirations \_\_\_\_\_
3. Skin colour and condition \_\_\_\_\_
4. Person's position \_\_\_\_\_
5. Facial expression \_\_\_\_\_
6. Level of consciousness \_\_\_\_\_

**B. Palpation**

1. Confirm symmetrical expansion \_\_\_\_\_
2. Detect any lumps, masses, tenderness \_\_\_\_\_

**C. Percussion**

1. Percussion over lung fields \_\_\_\_\_
2. Estimate diaphragmatic excursion \_\_\_\_\_

**REGIONAL WRITE-UP WORKSHEET – RESPIRATORY/THORAX AND LUNGS  
(continued)****D. Auscultation**

1. Assess normal lung sounds \_\_\_\_\_
2. Note any abnormal breath sounds \_\_\_\_\_  
If so, perform bronchophony, \_\_\_\_\_  
whispered pectoriloquy, \_\_\_\_\_  
egophony \_\_\_\_\_
3. Note any adventitious sounds \_\_\_\_\_

**Additional observations/comments:**

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## REGIONAL DOCUMENTATION (SOAP) – RESPIRATORY/THORAX AND LUNGS

Summarise your findings using the SOAP format.

**Subjective** (Reason for seeking care, health history)

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**Objective** (Physical exam findings)

Record findings on diagram below

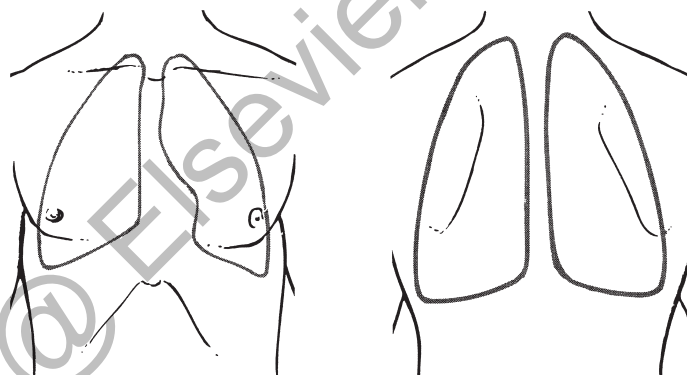
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**Assessment** (Assessment of health state or problem, diagnosis)

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**Plan** (Diagnostic evaluation, follow-up care, patient teaching)

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## Chapter Eighteen Musculoskeletal function

### PURPOSE

The musculoskeletal system provides locomotion, an upright posture and protection for the body. It is composed of various forms of connective tissue that include bones, skeletal muscle, cartilage, ligaments, tendons and joints. This chapter will help you learn the structure and function of the various joints in the body and know their normal ranges of motion. You will also become familiar with a musculoskeletal health history format. You will be introduced to how to position the patient comfortably during the examination, to understand the rationale and methods of examining the musculoskeletal system to assess functional ability and how to accurately record the musculoskeletal assessment.

### KEY CONCEPTS

- Components of the musculoskeletal system
- Structure and function: bones, ligaments, tendons, joints, muscles
- Range of motion
- Musculoskeletal health history
- Gait Arms Legs and Spine (GALS) screening and musculoskeletal assessment
  - Temporomandibular joint
  - Cervical spine
  - Upper extremity: shoulders, elbows, wrist and hands
  - Lower extremity: hips, knees, ankles and feet
  - Spine
  - Functional assessment
  - Self-care

While you are completing your reading assignment, ensure you understand each of the key concepts listed above.

### READING ASSIGNMENT

Jarvis, Forbes & Watt (JF&W): *Jarvis's Physical Examination & Health Assessment* 2e, Chapter 18, pp 444–501.

### GLOSSARY

<b>Abduction</b>	..... moving a body part away from an axis or the median line
<b>Adduction</b>	..... moving a body part towards the centre or towards the median line
<b>Ankylosis</b>	..... immobility, consolidation and fixation of a joint because of disease, injury or surgery; most often due to chronic rheumatoid arthritis
<b>Bulge sign</b>	..... confirms the presence of swelling in the suprapatellar pouch; occurs with very small amounts of effusion, 4 to 8 mL, from fluid flowing across the joint
<b>Bursa</b>	..... enclosed sac filled with viscous fluid located in joint areas of potential friction

<b>Circumduction</b> .....	moving the arm in a circle around the shoulder
<b>Compartment syndrome</b> .....	a rise in intracompartmental tissue pressure following major injury to muscles; syndrome is characterised by muscle necrosis called rhabdomyolysis
<b>Crepitation</b> .....	an audible and palpable crunching or grating that accompanies movement; occurs when the articular surfaces in the joints are roughened
<b>Dorsal</b> .....	directed towards or located on the surface
<b>Dupuytren's contracture</b> .....	flexion contractures of the fingers due to chronic hyperplasia of the palmar fascia
<b>Epiphyses (growth plates)</b> .....	specialised growth centres; transverse discs located at the ends of long bones
<b>Eversion</b> .....	moving the sole of the foot outwards at the ankle
<b>Extension</b> .....	straightening a limb at a joint
<b>Flexion</b> .....	bending a limb at a joint
<b>Ganglion</b> .....	round, cystic, nontender nodule overlying a tendon sheath or joint capsule, usually on dorsum of wrist
<b>Hallux valgus</b> .....	lateral or outwards deviation of the great toe
<b>Inversion</b> .....	moving the sole of the foot inwards at the ankle
<b>Kyphosis</b> .....	outward or convex curvature of the thoracic spine, hunchback
<b>Ligament</b> .....	fibrous bands running directly from one bone to another bone that strengthen the joint
<b>Lordosis</b> .....	inwards or concave curvature of the lumbar spine
<b>Nucleus pulposus</b> .....	centre of the intervertebral disc
<b>Olecranon process</b> .....	bony projection of the ulna at the elbow
<b>Phalen's test</b> .....	a test for carpal tunnel: hold both hands back to back while flexing the wrists 90 degrees; produces numbness and burning in a person with carpal tunnel syndrome
<b>Plantar</b> .....	surface of the sole of the foot
<b>Pronation</b> .....	turning the forearm so that the palm is down
<b>Protraction</b> .....	moving a body part forwards and parallel to the ground
<b>Range of motion (ROM)</b> .....	extent or range of movement of a joint
<b>Retraction</b> .....	moving a body part backwards and parallel to the ground
<b>Rheumatoid arthritis</b> .....	chronic systemic inflammatory disease of joints and surrounding connective tissue
<b>Rotation</b> .....	moving the head around a central axis
<b>Sciatica</b> .....	nerve pain along the course of the sciatic nerve that travels down from the back or thigh through the leg and into the foot
<b>Scoliosis</b> .....	S-shaped curvature of the thoracic spine
<b>Supination</b> .....	turning the forearm so that the palm is up
<b>Talipes equinovarus</b> .....	(clubfoot) congenital deformity of the foot in which it is plantar flexed and inverted
<b>Tinel's sign</b> .....	in carpal tunnel syndrome, percussion of the median nerve produces burning and tingling along its distribution

**STUDY GUIDE**

After completing the reading assignment, you should be able to answer the following questions in the spaces provided.

1. List the functions of the musculoskeletal system.

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2. Define bone, and explain the processes of remodelling in the maintenance of bony structures.

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3. Define cartilage and describe the function of the 3 types of cartilage.

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4. State 1 major difference between ligaments and tendons.

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5. Fill in the gaps.

Skeletal muscles are innervated by the \_\_\_\_\_ nerve fibres of \_\_\_\_\_ nerves.

Conscious and subconscious contractions of muscles affect \_\_\_\_\_ and \_\_\_\_\_ and also generate \_\_\_\_\_.

The human body contains over 400 skeletal muscles representing \_\_\_\_\_ of total body weight.

Skeletal muscle fibres have an abundant \_\_\_\_\_ and \_\_\_\_\_ supply.

These are bundled together in a compartment wrapped in a tough fibrous connective tissue called \_\_\_\_\_.

6. Define rhabdomyolysis and explain associated complications.

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7. For each of the following joint types, identify their classification by range of motion, explain their structure and provide examples of each.

fibrous (synarthrotic) joints \_\_\_\_\_

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cartilaginous (amphiarthrotic) joints \_\_\_\_\_

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synovial (diarthrotic) joints \_\_\_\_\_

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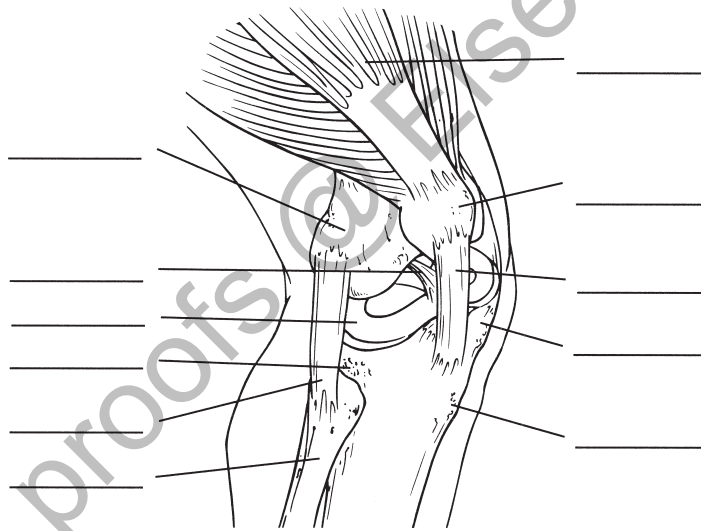
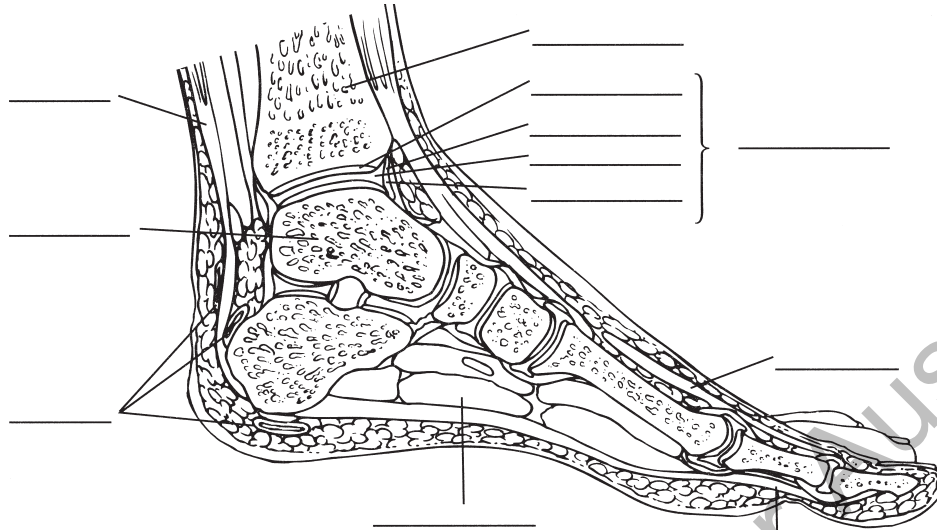
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8. Fill in the labels indicated on the following illustrations.



9. The temporomandibular joint (TMJ) permits jaw function for speaking and chewing. Describe each of the 3 movements it performs.

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10. Identify the 4 spinal curves and state their purpose.

- i. \_\_\_\_\_
- ii. \_\_\_\_\_
- iii. \_\_\_\_\_
- iv. \_\_\_\_\_

11. Describe the structure and function of intervertebral discs.

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12. Briefly explain the technique used to identify the 7 cervical, 12 thoracic, 5 lumbar, 5 sacral and 3 or 4 coccygeal vertebrae.

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13. For each of the following joints, state the movements they allow.

vertebral column \_\_\_\_\_

elbow \_\_\_\_\_

radius and ulnar \_\_\_\_\_

wrist or radiocarpal joint \_\_\_\_\_

metacarpophalangeal and the interphalangeal joints \_\_\_\_\_

ankle \_\_\_\_\_

14. Explain the function of the ligaments of the knee

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15. Match the curvature of the spine (Column A) with the approximate age (Column B).

**Column A**

- a. anterior curve in the cervical neck region
- b. anterior curve in the lumbar region
- c. single C-shaped curve

**Column B**

- 1. birth
- 2. 3 to 4 months
- 3. 1 year to 18 months

16. List the 3 core questions used to gather the subjective patient history using the GALS screening tool. What should be done if there is a positive response to any of the questions?

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17. List 4 signs that suggest acute inflammation in a joint.

- i. 

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- ii. 

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- iii. 

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- iv. 

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18. Explain why it is important to screen ADLs when performing a musculoskeletal health history.

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19. Why is a medication history a vital part of musculoskeletal health history?

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20. Explain the systematic approach to musculoskeletal assessment.

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21. Define each of the following:

dislocation \_\_\_\_\_

subluxation \_\_\_\_\_

contracture \_\_\_\_\_

ankylosis \_\_\_\_\_

effusion \_\_\_\_\_

22. State when the goniometer would be used, then describe the correct method for its use.

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23. Differentiate between the testing of active range of motion versus passive range of motion and state the grades that are used.

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24. State the expected range of degrees of flexion and extension of the following joints.

elbow \_\_\_\_\_

wrist \_\_\_\_\_

fingers (at metacarpophalangeal joints) \_\_\_\_\_

hip \_\_\_\_\_

knee \_\_\_\_\_

ankle \_\_\_\_\_

25. Circle True or False to answer the following statements regarding shoulder pain. If the answer is false, state the correct answer.

- |  |      |       |
|--|------|-------|
| a. Swelling of subacromial bursa is localised under deltoid muscle and may be accentuated when the person tries to abduct the arm. | True | False |
| b. Shoulder pain may be from local causes or it may be referred pain from a hiatus hernia or a cardiac or pleural condition.       | True | False |
| c. A dislocated shoulder loses the normal rounded shape and looks flattened anteriorly.  | True | False |
| d. Pain from a local cause is reproducible during the examination by palpation or motion.  | True | False |

26. Explain why Lasègue's test would be used.

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

27. Explain the assessment of an infant's foot to identify the presence of a true or a positional deformity.

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

28. Briefly describe each of the following:

syndactyly \_\_\_\_\_

polydactyly \_\_\_\_\_

simian crease \_\_\_\_\_

## REVIEW QUESTIONS

This test is for you to check your own mastery of the content. Answers are provided in Appendix A.

1. During an assessment of the spine, the patient would be asked to:
  - a. adduct and extend
  - b. supinate, evert and retract
  - c. extend, adduct, invert and rotate
  - d. flex, extend, abduct and rotate
2. Pronation and supination of the hand and forearm are the result of the articulation of the:
  - a. scapula and clavicle
  - b. radius and ulna
  - c. patella and condyle of fibula
  - d. femur and acetabulum
3. Anterior and posterior stability is provided to the knee joint by the:
  - a. medial and lateral menisci
  - b. patellar tendon and ligament
  - c. medial collateral ligament and quadriceps muscle
  - d. anterior and posterior cruciate ligaments
4. Which of the following is a common age-related change in the curvature of the spinal column?
  - a. lordosis
  - b. scoliosis
  - c. kyphosis
  - d. lateral scoliosis
5. The timing of joint pain may assist the nurse in determining the cause. The joint pain associated with rheumatic fever would:
  - a. be worse in the morning
  - b. be worse later in the day
  - c. be worse in the morning but improve during the day
  - d. occur 10 to 14 days after an untreated sore throat
6. Examination of the shoulder includes 4 ranges of motion. These are:
  - a. forward flexion, internal rotation, abduction and external rotation
  - b. abduction, adduction, pronation and supination
  - c. circumduction, inversion, eversion and rotation
  - d. elevation, retraction, protraction and circumduction
7. The bulge sign is a test for:
  - a. swelling in the suprapatellar pouch
  - b. carpal tunnel syndrome
  - c. Heberden's nodes
  - d. olecranon bursa inflammation
8. The examiner is going to measure the patient's legs for length discrepancy. The normal finding would be:
  - a. no difference in measurements
  - b. 0.5 cm difference
  - c. within 1 cm of each other
  - d. 2 cm difference
9. A 2-year-old child has been brought to the clinic for a health examination. A common finding would be:
  - a. kyphosis
  - b. lordosis
  - c. scoliosis
  - d. no deviation is normal
10. Many disorders can impact bone health. Which of the following disorders would not be included?
  - a. hyperthyroidism
  - b. diabetes
  - c. cardiac disease
  - d. malabsorption syndromes
11. Which of the following surface landmarks would not be used to identify vertebral levels/orient you to the levels?
  - a. the inferior angle of the scapula normally at the level of the interspace between T7 and T8
  - b. an imaginary line connecting the 10th ribs
  - c. an imaginary line connecting the highest point on each iliac crest crosses L4
  - d. an imaginary line joining the two symmetric dimples that overlie the posterior superior iliac spines crosses the sacrum
12. Spina bifida would be suspected in the infant who had which of the following?
  - a. a small dimple in the midline, anywhere from the head to the coccyx
  - b. a tuft of hair over a dimple in the midline
  - c. a dimple in the gluteal fold
  - d. a positive Allis sign

13. Circle True or False to answer the following statements concerning joints and associated disease processes. If the answer is false, state the correct answer.

- |  |      |       |
|--|------|-------|
| a. Rheumatoid arthritis (RA) involves symmetrical joints.                              | True | False |
| b. Chronic pain is not associated with degenerative musculoskeletal disorders.         | True | False |
| c. Pain related to acute inflammation is often described as exquisitely tender.        | True | False |
| d. Osteoarthritis pain is worse in morning when arising; RA is worse later in the day. | True | False |
| e. Most joint pain is mechanical except in RA, when deformities restrict movement.     | True | False |
| f. Joint pain 10 to 14 days after an untreated strep throat suggests rheumatic fever.  | True | False |

14. Match the movement (Column A) with its description (Column B).

**Column A —  
Movement**

1. flexion
2. extension
3. abduction
4. adduction
5. pronation
6. supination
7. circumduction
8. inversion
9. eversion
10. rotation
11. protraction
12. retraction
13. elevation
14. depression

**Column B —  
Description**

- a. turning the forearm so that the palm is up
- b. bending a limb at a joint
- c. lowering a body part
- d. turning the forearm so that the palm is down
- e. straightening a limb at a joint
- f. raising a body part
- g. moving a limb away from the midline of the body
- h. moving a body part backwards and parallel to the ground
- i. moving a limb towards the midline of the body
- j. moving the arm in a circle around the shoulder
- k. moving the sole of the foot outwards at the ankle
- l. moving a body part forwards and parallel to the ground
- m. moving the sole of the foot inwards at the ankle
- n. moving the head around a central axis

## PRACTICAL SKILLS IN THE LABORATORY/CLINICAL SETTING

The purpose of the musculoskeletal examination is to assess patterns of pain, joint abnormalities and the impact these have on the person's activities of daily living (ADLs) and psychosocial functioning. It is essential to identify painful joints during the history to ensure these are examined last. A comprehensive musculoskeletal assessment should be integrated into a patient's health assessment as numerous general health issues and prescribed medications affect this system.

A current medical history is an essential part of musculoskeletal assessment as a number of disorders, nutritional conditions and medications can impact on bone health. As there is a strong genetic link associated with musculoskeletal health the patient should be asked about any family history of fractures or arthritis.

The musculoskeletal system is closely linked with the neurological system (Ch 10) and acute pain and chronic pain (Ch 11) often accompany musculoskeletal disorders; you should refer to these chapters when needed.

Having completed the readings, study guide and review questions you should now be ready for the clinical component of examining the musculoskeletal system. The purpose of the clinical component is to obtain a musculoskeletal history and practise GALS screening and the regional musculoskeletal examination on a peer in the skills laboratory.

### PROFESSIONAL PRACTICE NOTE

*You need to ensure the privacy and comfort of the patient during musculoskeletal assessment.*

*Ensure you have enough drapes available and that your patient is in a suitable hospital gown, to prevent exposure.*



### **Clinical Objectives**

At the completion of the clinical laboratory session, with further practice and self-directed learning you should be able to:

1. collect a health history related to the presenting musculoskeletal signs and symptoms
2. demonstrate knowledge of symptoms related to the musculoskeletal system by obtaining a musculoskeletal health history
3. administer the subjective GALS screening and decide the need for further objective screening using the complete GALS screening tool
4. assess the ability to carry out functional activities of daily living
5. record the health history and GALS screening examination findings accurately, reach an assessment about the musculoskeletal health state and develop a plan of care.

### **Instructions**

1. Form pairs.
2. Gather your equipment.
3. Perform hand hygiene.
4. Gain consent to perform the examination from your peer.
5. Practise the musculoskeletal health history and steps of the examination (including the GALS screening) on a peer or a patient in the clinical setting, providing appropriate instructions as you proceed, and maintaining the safety of the person during movement.
6. Record your findings using the regional write-up worksheet.
7. Swap roles and repeat steps 2–6.
8. Discuss your assessment techniques, findings and performance with your peer to develop a complete understanding of the process.
9. Document your findings using the SOAP format.

## REGIONAL WRITE-UP WORKSHEET — MUSCULOSKELETAL SYSTEM ASSESSMENT

Date \_\_\_\_\_

Interview conducted by \_\_\_\_\_

Designation \_\_\_\_\_

Patient \_\_\_\_\_ Age \_\_\_\_\_ Gender \_\_\_\_\_

Occupation \_\_\_\_\_ Medical Record Number \_\_\_\_\_

### I. Health history

#### A. Joints

1. Joint **problems**? One side or both sides? \_\_\_\_\_
2. Any swelling, heat, redness? \_\_\_\_\_
3. Any **limitation of movement**? \_\_\_\_\_ Which joint/s? \_\_\_\_\_
4. Which activities give you problems? \_\_\_\_\_
5. Any **pain**? \_\_\_\_\_
6. **Describe the pain**: aching, stiff, sharp or dull, shooting? \_\_\_\_\_
7. How **severe**? \_\_\_\_\_
8. When did **pain start**? \_\_\_\_\_
9. What **time of day** does the pain occur? **How long** does it last? \_\_\_\_\_
10. **How often** does it occur? \_\_\_\_\_
11. Any stiffness? \_\_\_\_\_
12. **Aggravated by**? movement, rest, position, weather? \_\_\_\_\_
13. **Relieved by**? rest, medications, application of heat or ice? \_\_\_\_\_
14. Is the pain associated with chills, fever, recent sore throat, trauma and repetitive activity? \_\_\_\_\_

#### B. Muscles

1. **Muscle problems**, pain or cramping? \_\_\_\_\_ Which muscles? \_\_\_\_\_  
If **calf muscles**: is the pain **with walking**? \_\_\_\_\_ Does it go away with rest? \_\_\_\_\_
2. Muscle aches **associated with** fever, chills, the 'flu'? \_\_\_\_\_
3. Any **weakness** in muscles? \_\_\_\_\_ **Where**? \_\_\_\_\_ **How long**? \_\_\_\_\_
4. Do the muscles **look different** there? \_\_\_\_\_

## REGIONAL WRITE-UP WORKSHEET – MUSCULOSKELETAL SYSTEM ASSESSMENT (continued)

### C. Bones

1. **Bone pain?** \_\_\_\_\_ Affected by movement? \_\_\_\_\_
2. Any **deformity** of any bone or joint? \_\_\_\_\_
3. Deformity due to **injury** or **trauma**? \_\_\_\_\_ Does the deformity affect ROM? \_\_\_\_\_
4. Any **accidents or trauma** to bones or joints: fractures, joint strain, sprain, dislocation? \_\_\_\_\_  
Which ones? \_\_\_\_\_
5. **When?** \_\_\_\_\_ **Treatment?** \_\_\_\_\_ Any **problems or limitations?** \_\_\_\_\_
6. Any **back pain?** \_\_\_\_\_ In which part of your back? \_\_\_\_\_  
Is **pain felt elsewhere?** \_\_\_\_\_ **Describe it.** \_\_\_\_\_
7. How long have you had this pain? \_\_\_\_\_
8. Any **numbness and tingling?** \_\_\_\_\_ Any **limping?** \_\_\_\_\_

### D. Functional assessment (ADLs)

Joint problems creating limitations on ADLs? \_\_\_\_\_ Which ones? \_\_\_\_\_

- a. Bathing \_\_\_\_\_
- b. Toileting \_\_\_\_\_
- c. Dressing \_\_\_\_\_
- d. Grooming \_\_\_\_\_
- e. Eating \_\_\_\_\_
- f. Mobility \_\_\_\_\_
- g. Communicating \_\_\_\_\_

### E. Self-care behaviours

1. Any **occupational hazards?** \_\_\_\_\_
2. Work involve **heavy lifting?** \_\_\_\_\_
3. **Repetitive motion** or chronic stress to joints in your work? \_\_\_\_\_
4. Any **measures taken** to alleviate? \_\_\_\_\_
5. **Exercise program?** \_\_\_\_\_ Type? \_\_\_\_\_ Frequency? \_\_\_\_\_ Warm-up? \_\_\_\_\_
6. Any **pain during exercise?** \_\_\_\_\_ How do you treat it? \_\_\_\_\_
7. **Weight changed** recently? \_\_\_\_\_ Usual daily diet? \_\_\_\_\_
8. **Medications** for musculoskeletal system? \_\_\_\_\_  
Aspirin, anti-inflammatory, muscle relaxant, pain reliever? \_\_\_\_\_  
Are you taking any herbal supplements, vitamins or other 'natural remedies'? \_\_\_\_\_

**REGIONAL WRITE-UP WORKSHEET – MUSCULOSKELETAL SYSTEM  
ASSESSMENT (continued)**

9. If **chronic disability** and/or severe musculoskeletal dysfunction:

How have these symptoms/illness affected:

- a. your interaction with family and friends? \_\_\_\_\_
- b. your employment and leisure activities? \_\_\_\_\_
- c. the way you view yourself? \_\_\_\_\_
- d. how you manage your health? \_\_\_\_\_
- e. the impact on your social life? \_\_\_\_\_
- f. the impact on your stress levels and coping ability? \_\_\_\_\_

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## GALS SCREENING EXAMINATION

Date \_\_\_\_\_

Interview conducted by \_\_\_\_\_

Designation \_\_\_\_\_

Patient \_\_\_\_\_ Age \_\_\_\_\_ Gender \_\_\_\_\_

Occupation \_\_\_\_\_ Medical Record Number \_\_\_\_\_

### GALS Subjective Screening Assessment Questions

1. 'Have you any pain or stiffness in your muscles, joints or back?'
2. 'Can you dress yourself completely without any difficulty?'
3. 'Can you walk up and down stairs without any difficulty?'

A positive response to the first question and/or a negative response to the second or third questions indicate that a complete musculoskeletal assessment should be undertaken.

### GALS Objective Screening Examination

Refer to JF&W 2e, Ch18: pp 459–461 for a detailed guide.

Procedure	Findings
<p><b>GAIT</b></p> <ul style="list-style-type: none"> <li>• Observe the person walking, turning, then walking back.</li> <li>• Observe for symmetry and smoothness of gait.</li> <li>• Does the patient limp?</li> <li>• Observe for any reduced muscle bulk in the gluteals.</li> <li>• Can the person turn quickly?</li> </ul>	
<p><b>ARMS</b></p> <p><b>Shoulder movements</b></p> <ul style="list-style-type: none"> <li>• Ask the patient to place their hands behind their head, with their elbows back. This movement assesses abduction, external rotation of the shoulder and elbow flexion.</li> </ul> <p><b>Palpate each shoulder for rotator cuff problems.</b></p> <p><b>Elbow movements and hands</b></p> <ul style="list-style-type: none"> <li>• Ask the patient to extend their arms fully and turn their hands over so palms are down.</li> <li>• Following this ask the patient to turn their hands over.</li> <li>• Observe the elbow and hands for any joint/tissue swelling or deformities.</li> </ul> <p><b>Grip strength</b></p> <ul style="list-style-type: none"> <li>• Ask the patient to make a fist. Observe the hand and finger movements.</li> <li>• Ask the patient to grip your fingers and assess the degree of grip strength.</li> <li>• Squeeze across the second to fifth metacarpal. Observe for pain.</li> </ul>	

## GALS SCREENING EXAMINATION (continued)

### LEGS

- Patient is lying down with upper torso covered.

#### Hip movement

- Hold the knee and hip flexed to 90 degrees. Assess the degree of internal rotation in each hip.

#### Knee

- Observe for any reduced muscle bulk especially in quadriceps.
- Assess: ask patient to flex and extend both knees.
- Palpate the knee for crepitus and warmth.

#### Patellar tap test

- Perform a patellar tap on each knee for the presence of an effusion.

#### Inspection of feet

- Inspect the feet for any swelling, deformity or any callosities.
- Look at patient's shoes for unequal wear.

### SPINE

- Inspect the spinal column for any abnormalities including kyphosis, scoliosis or lordosis.
- Observe for symmetry of legs and pelvis.

#### Cervical spine

- Ask the patient to bring their ear towards their shoulder — assesses lateral cervical flexion.

#### Thoracolumbar spine

- Hold the patient's pelvis from behind and ask them to turn from side to side—assesses thoracolumbar rotation.
- Ask the patient to touch their toes. Palpate for the range of lumbar movement. Place two fingers over the lumbar vertebra. Your fingers should move apart as the patient bends forwards — assess lumbar spine movement.

Record your findings to the GALS screening examination on this table.

	Appearance	Movement
Gait		
Arms		
Legs		
Spine		

## REGIONAL DOCUMENTATION (SOAP) – MUSCULOSKELETAL FUNCTION

Summarise your findings using the SOAP format.

**Subjective** (Reason for seeking care, health history)

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**Objective** (Physical exam findings)

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**Assessment** (Assessment of health state or problem, diagnosis)

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**Plan** (Diagnostic evaluation, follow-up care, patient teaching)

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### Chapter Nineteen

## Nutritional and metabolic assessment

### PURPOSE

Nutritional status affects every system in the body. Without adequate nutrition, growth, development and general health will be affected and resistance to infection, healing and response to illness compromised. Though many patients entering health facilities may appear to be well nourished they may actually be undernourished or malnourished. Poor nutritional status will affect their recovery and increase their length of stay. As nutritional status affects all body systems you need to consider nutrition status during every regional assessment.

This chapter will help you learn the components of a nutritional assessment, including the assessment of dietary intake and the assessment of the nutritional status. You will also be introduced to how to identify the possible occurrence, nature and extent of impaired nutritional status (ranging from undernutrition to overnutrition), and to record the assessment accurately.

### KEY CONCEPTS

- The mouth structure and function
- Thyroid gland structure and function
- Nutritional status
- Effects of poor nutrition
- Purposes and components of nutritional assessment
- Anthropometric measures and related laboratory studies
- Clinical conditions relating to nutritional status

While you are completing your reading assignment, ensure you understand each of the key concepts listed above.

### READING ASSIGNMENT

Jarvis, Forbes & Watt (JF&W): *Jarvis's Physical Examination & Health Assessment* 2e, Chapter 19, pp 502–543.

### GLOSSARY

<b>Android obesity</b> .....	obesity in which there is a greater proportion of fat in the upper body, especially in the abdomen
<b>Anergy</b> .....	a less-than-expected or absent immune reaction in response to the injection of antigens within the skin
<b>Ankyloglossia</b> .....	a short lingual frenulum that can limit protrusion and impair speech development
<b>Anthropometry</b> .....	the measurement and evaluation of growth, development and body composition; for registered nurses height, weight and waist-to-hip ratio measurements are used
<b>Bednar aphthae</b> .....	traumatic areas or ulcers on the posterior hard palate on either side of the midline resulting from abrasions while sucking
<b>Bitot's spots</b> .....	foamy plaques of the cornea caused by vitamin A deficiency



<b>Body mass index</b> .....	a practical marker of optimal weight for height and an indicator of obesity or protein–kilojoule malnutrition; calculated by weight in kilograms divided by height in metres squared ( $W/H^2$ ); value of 30 or more is indicative of obesity; value of less than 18.5 is indicative of undernutrition
<b>Cachectic</b> .....	widespread fat and muscle wasting
<b>Cheilitis (perlèche)</b> .....	cracking at the corners of the mouth
<b>Creatinine–height index (CHI)</b> .....	index or ratio sometimes used to assess body protein status
<b>Diet history</b> .....	a detailed record of dietary intake obtainable from 24-hour recalls, food frequency questionnaires, food diaries and similar methods
<b>Fordyce’s granules</b> .....	small, isolated white or yellow papules on the mucosa of cheek, tongue and lips; little sebaceous cysts; painless and not significant
<b>Goitre</b> .....	an increase in the size of the thyroid gland occurring with hyperthyroidism, Hashimoto’s thyroiditis and hypothyroidism
<b>Gynoid obesity</b> .....	excess body fat that is placed predominantly within the hips and thighs
<b>Koplik’s spots</b> .....	small blue-white spots with irregular red halo scattered over mucosa opposite the molars; an early sign, and pathognomonic, of measles (JF&W 2e, Ch 19, Table 19.9)
<b>Kwashiorkor</b> .....	protein malnutrition which is a result of diets that are high in kilojoules but which contain little or no protein
<b>Leucoplakia</b> .....	chalky white thick, raised patches on buccal mucosa or side of tongue; precancerous (JF&W 2e, Ch 19, Table 19.9)
<b>Leukoedema</b> .....	a large patch that may be present along the buccal mucosa; a benign greyish opaque area, more common in dark-skinned people; when mild, it disappears when the cheeks are stretched; severity increases with age, looking greyish white and thickened; not to be confused with oral infections such as candidiasis (thrush)
<b>Marasmus/kwashiorkor mix</b> .....	type of malnutrition with features of both types of malnutrition, usually seen in those who have undergone acute catabolic stress and prolonged starvation; due to prolonged inadequate intake of proteins and kilojoules
<b>Marasmus</b> .....	type of malnutrition due to inadequate intake of protein and kilojoules or prolonged starvation; present with significant loss of body weight, skeletal muscle and adipose tissue mass, but with serum protein concentrations relatively intact
<b>Mid-arm muscle area (MAMA)</b> .....	a good indicator of lean body mass and thus skeletal protein reserves; a more sensitive indicator of long-standing malnutrition than MAC or MAMC
<b>Mid-upper arm circumference (MAC)</b> ...	estimates skeletal muscle mass and fat stores
<b>Mid-upper arm muscle circumference (MAMC)</b> .....	estimates skeletal muscle reserves or the amount of lean body mass; derived from the TSF and MAC
<b>Nitrogen balance</b> .....	condition in which nitrogen losses from the body are equal to nitrogen intake; the expected state of the healthy adult
<b>Nutrition screening</b> .....	first step in assessing nutritional status; process used to identify individuals at nutrition risk or with nutritional problems
<b>Obesity</b> .....	defined as a BMI of 30 or above; accumulation of body fat; usually defined as 20% or more above desirable weight
<b>Scorbutic gums</b> .....	swollen, ulcerated and bleeding gums due to vitamin C deficiency
<b>Serum proteins</b> .....	proteins present in serum that are indicators of the body’s visceral protein status (e.g. albumin, prealbumin, transferrin)
<b>Skinfold thickness</b> .....	double fold of skin and underlying subcutaneous tissue that is measured with skinfold callipers at various body sites
<b>Stensen’s duct</b> .....	the opening of the parotid salivary gland; a small dimple opposite the upper second molar
<b>Sucking tubercle</b> .....	a small pad in the middle of the upper lip from friction of breast- or bottle-feeding
<b>Triceps skinfold (TSF) measurement</b> .....	skinfold thickness measurement to provide an estimate of body fat stores or the extent of obesity or undernutrition
<b>Torus palatinus</b> .....	a nodular bony ridge down the middle of the hard palate; normal

**Waist-to-hip ratio (WHR)** ..... method for assessing body fat distribution as an indicator of health risk; calculated by waist or abdominal circumference divided by the hip or gluteal circumference

**Xerostomia** ..... dry mouth; a side-effect of many drugs such as antidepressants, anticholinergics, antihypertensives, antipsychotics, bronchodilators

## PREPARATION FOR YOUR LABORATORY SESSION

As you will be using the 'MUST' Screening Tool in the laboratory you should access and read the 'MUST' Screening tool explanatory booklet which can be found at [www.bapen.org.uk/pdfs/must/must\\_explan.pdf](http://www.bapen.org.uk/pdfs/must/must_explan.pdf)

Familiarise yourself with the steps in the assessment.

For further information on any aspect of 'MUST' visit <http://www.bapen.org.uk>

### Formulae used in anthropometry

Formula	
<p><b>Body weight as a percentage of ideal body weight:</b>            Percentage ideal body weight = <math>\frac{\text{Current weight}}{\text{Ideal weight}} \times 100</math></p>	<p>A current weight % of ideal weight suggests:</p> <ul style="list-style-type: none"> <li>• 80% to 90% of mild malnutrition</li> <li>• 70% to 80%, moderate malnutrition</li> <li>• &lt;70%, severe malnutrition.</li> </ul>
<p><b>The per cent usual body weight:</b>            Percentage ideal body weight = <math>\frac{\text{Current weight}}{\text{Usual weight}} \times 100</math></p>	<p>A current weight % of usual body weight indicates:</p> <ul style="list-style-type: none"> <li>• 85% to 95% mild malnutrition</li> <li>• 75% to 84%, moderate malnutrition</li> <li>• &lt;75%, severe malnutrition.</li> </ul>
<p><b>Recent weight change:</b>            Usual weight = <math>\frac{\text{Current weight}}{\text{Usual weight}} \times 100</math></p>	<p>An unintentional loss of:</p> <ul style="list-style-type: none"> <li>• &gt;5% of body weight over 1 month</li> <li>• &gt;7.5% of body weight over 3 months or</li> <li>• &gt;10% of body weight over 6 months is clinically significant.</li> </ul>
<p><b>Body mass index:</b>            Body mass index = <math>\frac{\text{Weight (in kilograms)}}{\text{Height (in metres)}^2}</math></p>	<p>BMI interpretation for adults (WHO, 2000):</p> <ul style="list-style-type: none"> <li>• &lt;18.5 Underweight</li> <li>• 18.5–24.9 Normal weight</li> <li>• 25.0–29.9 Overweight</li> <li>• 30.0–39.9 Obesity</li> <li>• <math>\geq 40</math> Extreme obesity</li> </ul>
<p><b>Waist-to-hip ratio:</b>            Waist-to-hip = <math>\frac{\text{Waist circumference}}{\text{Hip circumference}}</math></p>	<p>A waist-to-hip ratio of 1.0 or &gt; in men or 0.8 or &gt; in women is indicative of increased risk for obesity-related diseases and early mortality.</p>
<p><b>Waist circumference (WC)</b> is measured in centimetres at the smallest circumference below the rib cage and above the umbilicus</p>	<p>A WC &gt;80 cm in women and &gt;90 cm in men increases risk of cardiovascular and metabolic diseases.</p>
<p><b>Mid-upper arm muscle circumference (MAMC):</b>            MAMC = <math>\text{MAC} - (\pi \times \text{TSF})</math>            where  <math>\pi = 3.14</math>            MAC = Mid-upper arm circumference (in cm)            TSF = Triceps skinfold (in mm)            MAMC = Mid-upper arm muscle circumference (in cm)</p>	<p>A MAMC that is:</p> <ul style="list-style-type: none"> <li>• 90% of standard is suggestive of mild malnutrition</li> <li>• 60% to 90% suggests moderate malnutrition</li> <li>• &lt;60% is indicative of severe malnutrition.</li> </ul>
<p><b>Mid-arm muscle area (MAMA):</b>            MAMA = <math>\frac{(\text{MAC} - \text{MAMC})^2}{4\pi}</math>            where            MAMA = mid-arm muscle area (in cm<sup>2</sup>)            MAC = mid-upper arm circumference (in cm)            MAMC = mid-upper arm muscle circumference (in cm)  <math>4\pi = 4 \times 3.14 = 12.56</math></p>	<p>A MAMA of:</p> <ul style="list-style-type: none"> <li>• 90% of standard reflects mild malnutrition</li> <li>• 60% to 90% moderate malnutrition</li> <li>• &lt;60% severe malnutrition.</li> </ul>

## STUDY GUIDE

After completing the reading assignment, you should be able to answer the following questions in the spaces provided.

1. Review and describe the following structures in the oral cavity that are involved in beginning digestion and subsequent swallowing:

tongue \_\_\_\_\_  
\_\_\_\_\_

salivary glands \_\_\_\_\_  
\_\_\_\_\_

teeth \_\_\_\_\_  
\_\_\_\_\_

2. State the location and structure of the thyroid gland, the type of gland it is and its functions.

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

3. Define nutritional status and distinguish between optimal, under- and over-nutritional status.

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

4. Circle True or False to answer the following statements concerning developmental nutritional needs. If the answer is false, state the correct answer.
- |   |      |       |
|---|------|-------|
| a. The time from birth to 4 months of age is the most rapid period of growth in the life cycle.                                 | True | False |
| b. Infants lose weight during the first few days of life; birth weight is usually regained by the 15th to 20th day after birth. | True | False |
| c. Infants double their birth weight by 4 months and triple it by 1 year of age.  | True | False |
| d. Brain size increases slowly during infancy and childhood.  | True | False |
| e. Infants and children should be placed on low-fat diets and drinks to prevent them becoming overweight.                       | True | False |
| f. Adolescents' increased metabolic needs may be met with three square meals a day.   | True | False |

5. Nutritional status in the older population is varied. List 6 risk factors that make them prone to nutritional abnormalities. Under each of the risk factor headings, explain why these factors may impact on nutritional status.

- i. \_\_\_\_\_  
\_\_\_\_\_
- ii. \_\_\_\_\_  
\_\_\_\_\_
- iii. \_\_\_\_\_  
\_\_\_\_\_
- iv. \_\_\_\_\_  
\_\_\_\_\_
- v. \_\_\_\_\_  
\_\_\_\_\_
- vi. \_\_\_\_\_  
\_\_\_\_\_

6. Newly arrived immigrants are at high nutritional risk. Explain why this may be the case.

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

List cultural factors that should be considered when discussing eating patterns.

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

7. The Indigenous Australian and New Zealand Māori populations have an increased risk of obesity, cardiovascular disease and diabetes. Explain why this is the case.

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8. State 3 purposes of a nutritional assessment.

i. 

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ii. 

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iii. 

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9. List 4 items that are used to screen nutritional status.

i. 

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ii. 

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iii. 

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iv. 

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10. Describe 4 methods of obtaining information about dietary intake and identify sources of error associated with each.

i. \_\_\_\_\_

\_\_\_\_\_

ii. \_\_\_\_\_

\_\_\_\_\_

iii. \_\_\_\_\_

\_\_\_\_\_

iv. \_\_\_\_\_

\_\_\_\_\_

11. Why is it important for nurses to perform a nutritional assessment on their patients?

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

12. List the elements that are discussed in a subjective nutritional assessment.

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

13. Briefly explain changes to nutritional needs with surgery, trauma or sepsis.

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

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14. List at least 9 medications, both prescription and OTC, that may interact with, or interfere with, the metabolism of nutrients.

- i. \_\_\_\_\_
- ii. \_\_\_\_\_
- iii. \_\_\_\_\_
- iv. \_\_\_\_\_
- v. \_\_\_\_\_
- vi. \_\_\_\_\_
- vii. \_\_\_\_\_
- viii. \_\_\_\_\_
- ix. \_\_\_\_\_

15. Explain the ramifications of low maternal weight and poor nutrition (including drugs and alcohol) on the fetus.

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

16. Circle True or False to answer the following statements concerning adolescent nutritional assessment. If the answer is false, state the correct answer.

- a. Obesity, particularly in boys, may precipitate fad dieting and malnutrition. True False
- b. Because of adolescents' increased body awareness and self-consciousness, they are prone to eating disorders (anorexia nervosa or bulimia). True False
- c. The use of anabolic steroids and other performance-enhancing agents now extends to middle school, high school and university or TAFE in both males and females. True False
- d. There are no side effects from performance-enhancing drugs and steroids. True False
- e. Side effects of caffeine-based energy drinks include dehydration, dangerously high blood pressure and heart rate and sleep problems. True False
- f. Menarche is usually delayed in girls with malnutrition. They may also have amenorrhoea or scant menstrual flow with nutritional deficiency. True False

17. Identify 6 types of breath odour and the causation of each that may be noticed on mouth examination.

- i. \_\_\_\_\_
- ii. \_\_\_\_\_
- iii. \_\_\_\_\_
- iv. \_\_\_\_\_
- v. \_\_\_\_\_
- vi. \_\_\_\_\_

18. Provide the rationale for blood glucose monitoring in nutritional screening.

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19. Explain why height and weight should be measured at regular intervals during infancy, childhood and adolescence.

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20. Briefly explain why arm span is a better measure of height in the over-65 age group who are confined to bed or are in wheelchairs. What other technique may be used in this group?

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21. Describe the most accurate method to determine body frame size and explain what frame size is used for.

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22. For each of the following routinely performed laboratory indicators of nutritional status, state the reason for the test, provide normal ranges for adults and identify what an increase or decrease from normal values may indicate.

haemoglobin \_\_\_\_\_

haematocrit \_\_\_\_\_

blood glucose (BGL) \_\_\_\_\_

cholesterol \_\_\_\_\_

triglycerides (TGs) \_\_\_\_\_

total lymphocyte count (TLC) \_\_\_\_\_

serum proteins; serum albumin \_\_\_\_\_

serum transferrin \_\_\_\_\_

prealbumin, or thyroxin-binding prealbumin \_\_\_\_\_

C-reactive protein (CRP) \_\_\_\_\_



23. Explain each of the 6 key areas required for a healthy adult diet.

- i. \_\_\_\_\_
- ii. \_\_\_\_\_
- iii. \_\_\_\_\_
- iv. \_\_\_\_\_
- v. \_\_\_\_\_
- vi. \_\_\_\_\_

24. State 3 features of a successful long-term weight loss plan.

- i. \_\_\_\_\_
- ii. \_\_\_\_\_
- iii. \_\_\_\_\_

25. Define each of the following types of malnutrition, including causation and clinical changes associated with each:

obesity \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

marasmus \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

kwashiorkor \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

marasmus/kwashiorkor mix \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

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## REVIEW QUESTIONS

This test is for you to check your own mastery of the content. Answers are provided in Appendix A.

1. The balance between nutrient intake and nutrient requirements is described as:
  - a. undernutrition
  - b. malnutrition
  - c. nutritional status
  - d. overnutrition
2. To support the synthesis of maternal and fetal tissue during pregnancy, a total weight gain of \_\_\_ kilograms is recommended.
  - a. 5 to 11.5
  - b. 11 to 16
  - c. 12.5 to 18
  - d. recommendation depends on BMI of mother at the start of the pregnancy
3. Which of the following are normal, expected changes with ageing?
  - a. increase in energy needs
  - b. increase in body water
  - c. decrease in height
  - d. increase in AP diameter of the chest
4. Which of the following data would be obtained as part of a nutritional screening?
  - a. temperature, pulse and respiration
  - b. blood pressure and genogram
  - c. weight and nutrition intake history
  - d. serum creatinine levels
5. The 24-hour recall of dietary intake is:
  - a. an anthropometric measure of kilojoules consumed
  - b. a questionnaire or interview about everything eaten within the last 24 hours
  - c. the same as a food frequency questionnaire
  - d. a form of food diary
6. The nutritional needs of a patient with trauma or major surgery:
  - a. are met by fat reserves in obese individuals
  - b. may be two to three times greater than normal
  - c. can be met with intravenous fluids, supplemented with vitamins and electrolytes
  - d. are met by glycogen reserves
7. Mary, a 15-year-old, has come for a school physical. During the interview, she tells the nurse that menarche has not occurred. An explanation to be explored is:
  - a. nutritional deficiency
  - b. alcohol intake
  - c. smoking history
  - d. possible elevated blood sugar
8. Older adults are at risk for alteration in nutritional status. From the individuals described below, select the individual(s) who appear(s) least at risk.
  - a. an 80-year-old widow who lives alone
  - b. a 65-year-old widower who visits a senior centre with a meal program 5 days a week
  - c. a 70-year-old with poor dentition who lives with a son
  - d. a 73-year-old couple with low income and no transportation
9. Body weight as a percentage of ideal body weight is calculated to assess for malnutrition. Severe malnutrition is diagnosed when current body weight is:
  - a. 80% to 90% of ideal weight
  - b. 70% to 80% of ideal weight
  - c. less than 70% of ideal body weight
  - d. 120% of ideal body weight
10. The nurse is completing an initial assessment for a patient being admitted to a long-term care facility. The patient is unable to stand for a measurement of height. In order to obtain this important anthropometric information the nurse may:
  - a. measure the waist-to-hip circumference
  - b. estimate the body mass index
  - c. measure arm span
  - d. obtain a mid-upper arm muscle circumference to estimate skeletal muscle reserve
11. A skin testing or energy panel has been ordered for a patient. This test is done to:
  - a. determine serum protein levels
  - b. determine the need for adult immunisation
  - c. assess for excessive exposure to ultraviolet light
  - d. assess for immunocompetence
12. Which assessment finding indicates nutrition risk?
  - a. BMI = 24
  - b. serum albumin = 2.5 g/dL
  - c. current weight = 90.5 kg
  - d. Hb = 15 g/dL

13. Marasmus is often characterised by:
- severely depleted visceral proteins
  - elevated triglycerides
  - hyperglycaemia
  - low weight for height
14. Which BMI category in adults is indicative of obesity?
- 18.5–24.9
  - 25.0–29.9
  - 30.0–39.9
  - <18.5
15. Which of the following drugs can interact with nutrients, impairing their digestion, absorption, metabolism or utilisation?
- antacids
  - antidepressants
  - anticonvulsants
  - antibiotics
16. Factors contributing to low birth weight include which of the following:
- poor gestational nutrition
  - small frame
  - low maternal weight gain
  - maternal alcohol and drug use
- Select the correct answer from the following choices.
- 2, 3 and 4
  - 1, 3 and 4
  - 1, 2 and 3
  - 1, 2 and 4
17. Which of the following criteria is NOT included in the diagnosis of metabolic syndrome?
- fasting plasma glucose level  $\geq 110$  mg/dL
  - blood pressure  $>130/85$
  - heart rate  $>110$
  - waist circumference of  $>90$  cm for men and 80 cm for women
  - high density lipoprotein (HDL) cholesterol  $>1.3$  mmol/L for men and 1.5 mmol/L for women
  - triglyceride levels  $>1.7$  mmol/L (ATP III, 2001)
18. A patient with Graves' disease manifested by goitre and exophthalmos presents with the following signs and symptoms: fatigue, weight loss, muscle cramps, heat intolerance, shortness of breath and excessive sweating. Graves' disease is a metabolic disorder related to:
- parathyroidism
  - hypothyroidism
  - euthyroidism
  - hyperthyroidism

## PRACTICAL SKILLS IN THE LABORATORY/CLINICAL SETTING

As you are aware, the assessment of nutritional status has become an important nursing role, especially with the increase in ageing patients. Completion of the study guide questions and reading material has provided the preparation to perform a complete nutritional assessment. You should now be ready for the clinical component using nutritional screening tools and performing a nutritional health history and nutritional assessment.

The purpose of the clinical component is to practise the steps of nutritional assessment and anthropometric measurements on a peer in the skills laboratory or a patient in the healthcare setting.

### Clinical Objectives

At the completion of the clinical laboratory session, with further practice and self-directed learning you should be able to:

- collect a health history related to nutritional status and presenting signs and symptoms
- use a variety of tools to screen nutritional health status
- complete a nutrition screen on a peer in the laboratory or a patient in the clinical setting, to identify persons at risk for developing malnutrition using the Malnutrition Universal Screening Tool ('MUST') (which appears on the following pages)
- use anthropometric measures and laboratory data to contribute to the assessment of the nutritional status of an individual
- develop an increased awareness of cultural influences on nutritional status
- record the assessment findings accurately.

## Instructions

1. Form pairs.
2. Prepare the examination setting and gather nutritional assessment forms and anthropometric equipment.
3. Perform hand hygiene.
4. Gain consent to perform the examination from either your peer or the patient.
5. Obtain a dietary health history relevant to nutritional status on a peer in the skills laboratory or a patient in the clinical setting, providing appropriate instructions as you proceed.
6. Practise the steps of the '*MUST*' *Screening Tool* on a peer in the skills laboratory or a patient in the clinical setting.
7. **Inspect** skin, hair, eyes, oral cavity, nails and musculoskeletal and neurological systems for clinical signs and symptoms suggestive of nutritional deficiencies.
8. **Measure** height, weight and other anthropometric parameters. Practise computing the derived weight measures using the formulae provided earlier in this chapter, excluding mid-upper arm muscle circumference (MAMC) and mid-arm muscle area (MAMA).
9. Review relevant laboratory tests. **Note:** It is likely you will not have access to a peer's serum laboratory data; however, the history and nutritional examination data should provide you with all the data you need to make a clinical judgment on a well adult.
10. Document your findings on the regional write-up worksheet.
11. Swap roles and repeat steps 2–10 (as directed).
12. Discuss your assessment techniques, findings and performance with your peer to develop a complete understanding of the process.
13. Document findings using SOAP methods.
14. Offer health promotion education.

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## REGIONAL WRITE-UP — NUTRITIONAL HEALTH HISTORY

Date \_\_\_\_\_

Interview conducted by \_\_\_\_\_

Designation \_\_\_\_\_

Patient \_\_\_\_\_ Age \_\_\_\_\_ Gender \_\_\_\_\_

Occupation \_\_\_\_\_ Medical Record Number \_\_\_\_\_

### 1. Eating patterns

Number of meals/snacks per day? \_\_\_\_\_

Kind and amount of food eaten? \_\_\_\_\_

Diets? \_\_\_\_\_

Where is food eaten? \_\_\_\_\_

Food preferences \_\_\_\_\_

Religious or cultural restrictions? \_\_\_\_\_

Able to feed self? \_\_\_\_\_

### 2. Weight

Usual weight \_\_\_\_\_ kg

20% below or above desirable weight? \_\_\_\_\_ %

Recent weight change? \_\_\_\_\_ kg

How much lost or gained? \_\_\_\_\_ kg

Over what time period? \_\_\_\_\_

Reason for loss or gain? \_\_\_\_\_

### 3. Changes in: Appetite, taste, smell, chewing, swallowing

Type of change \_\_\_\_\_

When change occurred \_\_\_\_\_

Current dental and oral health good \_\_\_\_\_ poor \_\_\_\_\_

### 4. Toothache

Teeth sensitive to heat \_\_\_\_\_ cold \_\_\_\_\_

Lost any teeth \_\_\_\_\_ When \_\_\_\_\_ Where \_\_\_\_\_

### 5. Recent surgery, trauma, burns, infection

When \_\_\_\_\_

Type \_\_\_\_\_

Treatment \_\_\_\_\_

Conditions that increase nutrient loss (e.g. draining wounds, effusions, blood loss, dialysis and sepsis)? \_\_\_\_\_

\_\_\_\_\_

## REGIONAL WRITE-UP – NUTRITIONAL HEALTH HISTORY (continued)

### 6. Chronic illnesses

Type \_\_\_\_\_

When diagnosed \_\_\_\_\_

Treatment \_\_\_\_\_

Dietary modifications \_\_\_\_\_

Recent cancer chemotherapy or radiation therapy \_\_\_\_\_

### 7. Nausea, vomiting, diarrhoea, constipation

Any problems \_\_\_\_\_

Cause \_\_\_\_\_

Frequency    None \_\_\_\_\_    Some \_\_\_\_\_    Daily \_\_\_\_\_

### 8. Food allergies or intolerances

Foods \_\_\_\_\_

Reaction \_\_\_\_\_

How long \_\_\_\_\_

### 9. Medications and/or nutritional supplements

Prescription medications \_\_\_\_\_

Nonprescription \_\_\_\_\_

Use over a 24-hour period \_\_\_\_\_

Type of vitamin/mineral supplement? \_\_\_\_\_

Amount? Duration of use? \_\_\_\_\_

Herbal and botanical products \_\_\_\_\_

Specific type/brand and where obtained \_\_\_\_\_

How often used? \_\_\_\_\_

Who recommended? \_\_\_\_\_

How does it help you? \_\_\_\_\_

Any problems? \_\_\_\_\_

### 10. Self-care behaviours

Meal preparation facilities? \_\_\_\_\_

Transportation for travel to the supermarket? \_\_\_\_\_

Adequate income for food purchase? \_\_\_\_\_

Food preparation \_\_\_\_\_

Shopping? \_\_\_\_\_

Environment during mealtimes? \_\_\_\_\_

## REGIONAL WRITE-UP – NUTRITIONAL HEALTH HISTORY (continued)

### 11. Smoking, alcohol or non-prescription drug use

Smoke cigarettes? \_\_\_\_\_ Number packs per day \_\_\_\_\_

Daily use for how many years \_\_\_\_\_ Age started \_\_\_\_\_

Ever tried to give up? \_\_\_\_\_ How did it go? \_\_\_\_\_

Drink alcohol? \_\_\_\_\_ Date of last alcohol use \_\_\_\_\_

Amount of alcohol that episode \_\_\_\_\_

Out of last 30 days, on how many days had alcohol? \_\_\_\_\_

Ever had a drinking problem? \_\_\_\_\_

Nonprescription drugs? \_\_\_\_\_

Other? \_\_\_\_\_

Ever been in treatment for drugs or alcohol? \_\_\_\_\_

Daily intake caffeine (coffee, tea, colas) \_\_\_\_\_

### 12. Exercise and activity patterns

Amount? \_\_\_\_\_

Type? \_\_\_\_\_

### 13. Family or personal history of:

Heart disease \_\_\_\_\_

Osteoporosis \_\_\_\_\_

Cancer \_\_\_\_\_

Gout \_\_\_\_\_

GI disorders \_\_\_\_\_


Obesity \_\_\_\_\_

Diabetes \_\_\_\_\_

• Effect of each on eating patterns? \_\_\_\_\_


• Effect on activity patterns \_\_\_\_\_

## REGIONAL WRITE-UP — NUTRITIONAL HEALTH HISTORY (continued)



**BAPEN**  
Advancing Clinical Nutrition

# 'Malnutrition Universal Screening Tool'



**MAG**  
Malnutrition Advisory Group  
A Standing Committee of BAPEN

BAPEN is registered charity number 1023927 www.bapen.org.uk

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**'MUST'**

'MUST' is a five-step screening tool to identify **adults**, who are malnourished, at risk of malnutrition (undernutrition), or obese. It also includes management guidelines which can be used to develop a care plan.

It is for use in hospitals, community and other care settings and can be used by all care workers.

**This guide contains:**

- A flow chart showing the 5 steps to use for screening and management
- BMI chart
- Weight loss tables
- Alternative measurements when BMI cannot be obtained by measuring weight and height.

**The 5 'MUST' Steps**

**Step 1**  
**Measure height and weight to get a BMI score using chart provided. If unable to obtain height and weight, use the alternative procedures shown in this guide.**

**Step 2**  
**Note percentage unplanned weight loss and score using tables provided.**

**Step 3**  
**Establish acute disease effect and score.**

**Step 4**  
**Add scores from steps 1, 2 and 3 together to obtain overall risk of malnutrition.**

**Step 5**  
**Use management guidelines and/or local policy to develop care plan.**

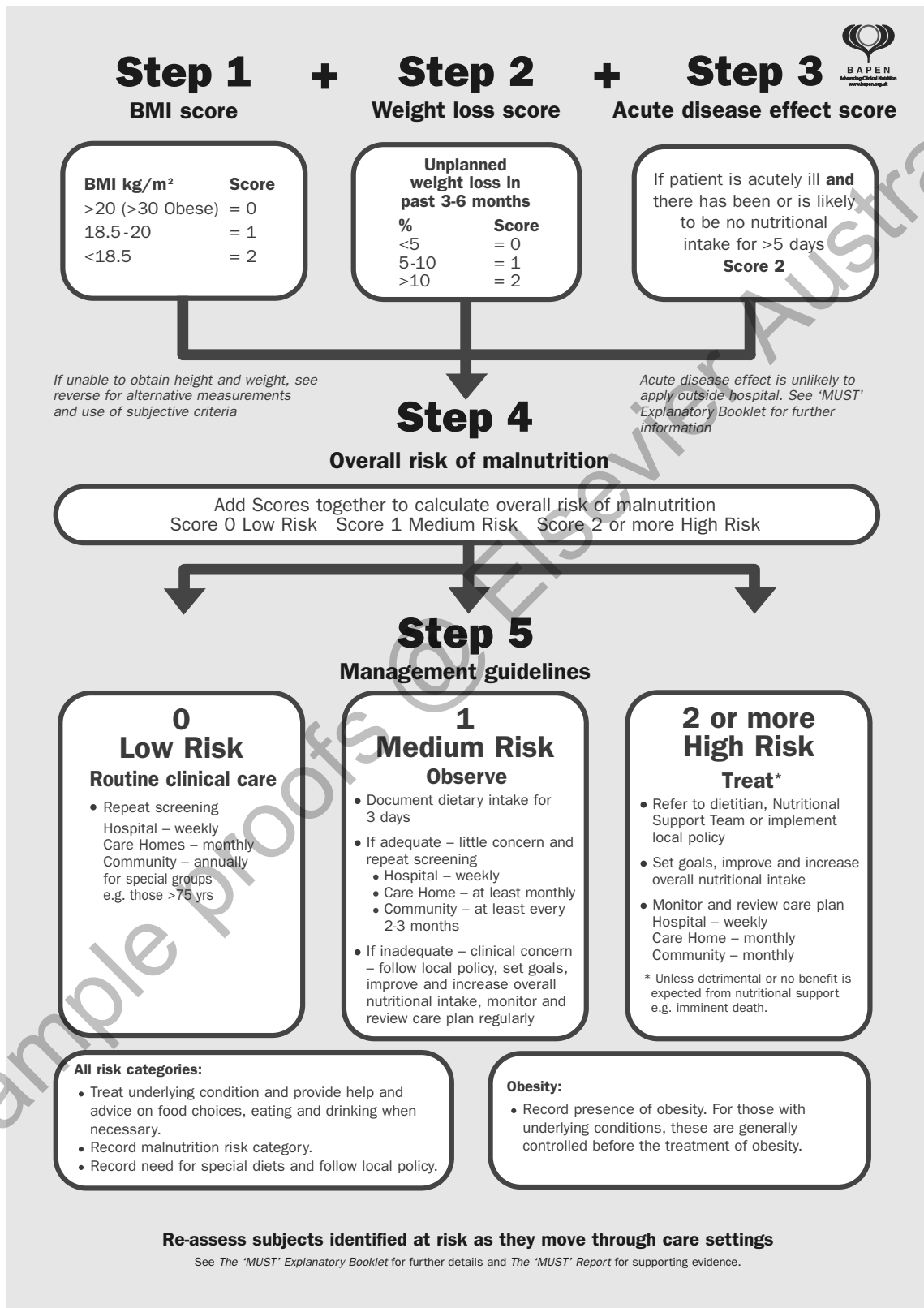
Please refer to *The 'MUST' Explanatory Booklet* for more information when weight and height cannot be measured, and when screening patient groups in which extra care in interpretation is needed (e.g. those with fluid disturbances, plaster casts, amputations, critical illness and pregnant or lactating women). The booklet can also be used for training. See *The 'MUST' Report* for supporting evidence. Please note that 'MUST' has not been designed to detect deficiencies or excessive intakes of vitamins and minerals and is of **use only in adults**.

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## REGIONAL WRITE-UP – NUTRITIONAL HEALTH HISTORY (continued)



## REGIONAL WRITE-UP – NUTRITIONAL HEALTH HISTORY (continued)

### Step 2 – Weight loss score



	SCORE 0 Wt Loss <5%	SCORE 1 Wt Loss 5-10%	SCORE 2 Wt Loss >10%
34 kg	<1.70	1.70 – 3.40	>3.40
36 kg	<1.80	1.80 – 3.60	>3.60
38 kg	<1.90	1.90 – 3.80	>3.80
40 kg	<2.00	2.00 – 4.00	>4.00
42 kg	<2.10	2.10 – 4.20	>4.20
44 kg	<2.20	2.20 – 4.40	>4.40
46 kg	<2.30	2.30 – 4.60	>4.60
48 kg	<2.40	2.40 – 4.80	>4.80
50 kg	<2.50	2.50 – 5.00	>5.00
52 kg	<2.60	2.60 – 5.20	>5.20
54 kg	<2.70	2.70 – 5.40	>5.40
56 kg	<2.80	2.80 – 5.60	>5.60
58 kg	<2.90	2.90 – 5.80	>5.80
60 kg	<3.00	3.00 – 6.00	>6.00
62 kg	<3.10	3.10 – 6.20	>6.20
64 kg	<3.20	3.20 – 6.40	>6.40
66 kg	<3.30	3.30 – 6.60	>6.60
68 kg	<3.40	3.40 – 6.80	>6.80
70 kg	<3.50	3.50 – 7.00	>7.00
72 kg	<3.60	3.60 – 7.20	>7.20
74 kg	<3.70	3.70 – 7.40	>7.40
76 kg	<3.80	3.80 – 7.60	>7.60
78 kg	<3.90	3.90 – 7.80	>7.80
80 kg	<4.00	4.00 – 8.00	>8.00
82 kg	<4.10	4.10 – 8.20	>8.20
84 kg	<4.20	4.20 – 8.40	>8.40
86 kg	<4.30	4.30 – 8.60	>8.60
88 kg	<4.40	4.40 – 8.80	>8.80
90 kg	<4.50	4.50 – 9.00	>9.00
92 kg	<4.60	4.60 – 9.20	>9.20
94 kg	<4.70	4.70 – 9.40	>9.40
96 kg	<4.80	4.80 – 9.60	>9.60
98 kg	<4.90	4.90 – 9.80	>9.80
100 kg	<5.00	5.00 – 10.00	>10.00
102 kg	<5.10	5.10 – 10.20	>10.20
104 kg	<5.20	5.20 – 10.40	>10.40
106 kg	<5.30	5.30 – 10.60	>10.60
108 kg	<5.40	5.40 – 10.80	>10.80
110 kg	<5.50	5.50 – 11.00	>11.00
112 kg	<5.60	5.60 – 11.20	>11.20
114 kg	<5.70	5.70 – 11.40	>11.40
116 kg	<5.80	5.80 – 11.60	>11.60
118 kg	<5.90	5.90 – 11.80	>11.80
120 kg	<6.00	6.00 – 12.00	>12.00
122 kg	<6.10	6.10 – 12.20	>12.20
124 kg	<6.20	6.20 – 12.40	>12.40
126 kg	<6.30	6.30 – 12.60	>12.60

Weight before weight loss (kg)

	SCORE 0 Wt Loss <5%	SCORE 1 Wt Loss 5-10%	SCORE 2 Wt Loss >10%
5st 4lb	<4lb	4lb – 7lb	>7lb
5st 7lb	<4lb	4lb – 8lb	>8lb
5st 11lb	<4lb	4lb – 8lb	>8lb
6st	<4lb	4lb – 8lb	>8lb
6st 4lb	<4lb	4lb – 9lb	>9lb
6st 7lb	<5lb	5lb – 9lb	>9lb
6st 11lb	<5lb	5lb – 10lb	>10lb
7st	<5lb	5lb – 10lb	>10lb
7st 4lb	<5lb	5lb – 10lb	>10lb
7st 7lb	<5lb	5lb – 11lb	>11lb
7st 11lb	<5lb	5lb – 11lb	>11lb
8st	<6lb	6lb – 11lb	>11lb
8st 4lb	<6lb	6lb – 12lb	>12lb
8st 7lb	<6lb	6lb – 12lb	>12lb
8st 11lb	<6lb	6lb – 12lb	>12lb
9st	<6lb	6lb – 13lb	>13lb
9st 4lb	<7lb	7lb – 13lb	>13lb
9st 7lb	<7lb	7lb – 13lb	>13lb
9st 11lb	<7lb	7lb – 1st 0lb	>1st 0lb
10st	<7lb	7lb – 1st 0lb	>1st 0lb
10st 4lb	<7lb	7lb – 1st 0lb	>1st 0lb
10st 7lb	<7lb	7lb – 1st 1lb	>1st 1lb
10st 11lb	<8lb	8lb – 1st 1lb	>1st 1lb
11st	<8lb	8lb – 1st 1lb	>1st 1lb
11st 4lb	<8lb	8lb – 1st 2lb	>1st 2lb
11st 7lb	<8lb	8lb – 1st 2lb	>1st 2lb
11st 11lb	<8lb	8lb – 1st 3lb	>1st 3lb
12st	<8lb	8lb – 1st 3lb	>1st 3lb
12st 4lb	<9lb	9lb – 1st 3lb	>1st 3lb
12st 7lb	<9lb	9lb – 1st 4lb	>1st 4lb
12st 11lb	<9lb	9lb – 1st 4lb	>1st 4lb
13st	<9lb	9lb – 1st 4lb	>1st 4lb
13st 4lb	<9lb	9lb – 1st 5lb	>1st 5lb
13st 7lb	<9lb	9lb – 1st 5lb	>1st 5lb
13st 11lb	<10lb	10lb – 1st 5lb	>1st 5lb
14st	<10lb	10lb – 1st 6lb	>1st 6lb
14st 4lb	<10lb	10lb – 1st 6lb	>1st 6lb
14st 7lb	<10lb	10lb – 1st 6lb	>1st 6lb
14st 11lb	<10lb	10lb – 1st 7lb	>1st 7lb
15st	<11lb	11lb – 1st 7lb	>1st 7lb
15st 4lb	<11lb	11lb – 1st 7lb	>1st 7lb
15st 7lb	<11lb	11lb – 1st 8lb	>1st 8lb
15st 11lb	<11lb	11lb – 1st 8lb	>1st 8lb
16st	<11lb	11lb – 1st 8lb	>1st 8lb
16st 4lb	<11lb	11lb – 1st 9lb	>1st 9lb
16st 7lb	<12lb	12lb – 1st 9lb	>1st 9lb

Weight before weight loss (st lb)

## REGIONAL WRITE-UP – NUTRITIONAL HEALTH HISTORY (continued)

### Alternative measurements and considerations



#### Step 1: BMI (body mass index)

##### If height cannot be measured

- Use recently documented or self-reported height (if reliable and realistic).
- If the subject does not know or is unable to report their height, use one of the alternative measurements to estimate height (ulna, knee height or demispan).

#### Step 2: Recent unplanned weight loss

If recent weight loss cannot be calculated, use self-reported weight loss (if reliable and realistic).

#### Subjective criteria

If height, weight or BMI cannot be obtained, the following criteria which relate to them can assist your professional judgement of the subject's nutritional risk category. Please note, these criteria should be used collectively not separately as alternatives to steps 1 and 2 of 'MUST' and are not designed to assign a score. Mid upper arm circumference (MUAC) may be used to estimate BMI category in order to support your overall impression of the subject's nutritional risk.

##### 1. BMI

- Clinical impression – thin, acceptable weight, overweight. Obvious wasting (very thin) and obesity (very overweight) can also be noted.

##### 2. Unplanned weight loss

- Clothes and/or jewellery have become loose fitting (weight loss).
- History of decreased food intake, reduced appetite or swallowing problems over 3-6 months and underlying disease or psycho-social/physical disabilities likely to cause weight loss.

##### 3. Acute disease effect

- Acutely ill and no nutritional intake or likelihood of no intake for more than 5 days.

Further details on taking alternative measurements, special circumstances and subjective criteria can be found in *The 'MUST' Explanatory Booklet*. A copy can be downloaded at [www.bapen.org.uk](http://www.bapen.org.uk) or purchased from the BAPEN office. The full evidence-base for 'MUST' is contained in *The 'MUST' Report* and is also available for purchase from the BAPEN office.

BAPEN Office, Secure Hold Business Centre, Studley Road, Redditch, Worcs, B98 7LG. Tel: 01527 457 850. Fax: 01527 458 718.  
bapen@sovereignconference.co.uk BAPEN is registered charity number 1023927. [www.bapen.org.uk](http://www.bapen.org.uk)

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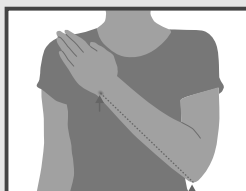
## REGIONAL WRITE-UP – NUTRITIONAL HEALTH HISTORY (continued)



### Alternative measurements: instructions and tables

If height cannot be obtained, use length of forearm (ulna) to calculate height using tables below.  
(See *The 'MUST' Explanatory Booklet* for details of other alternative measurements (knee height and demispan) that can also be used to estimate height).

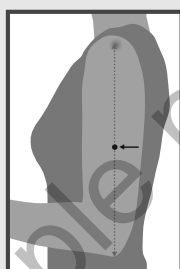
#### Estimating height from ulna length



Measure between the point of the elbow (olecranon process) and the midpoint of the prominent bone of the wrist (styloid process) (left side if possible).

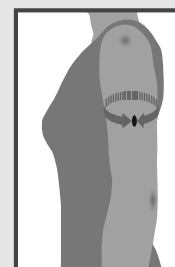
HEIGHT (m)	Men (<65 years)	1.94	1.93	1.91	1.89	1.87	1.85	1.84	1.82	1.80	1.78	1.76	1.75	1.73	1.71
	Men (≥65 years)	1.87	1.86	1.84	1.82	1.81	1.79	1.78	1.76	1.75	1.73	1.71	1.70	1.68	1.67
Ulna length (cm)		32.0	31.5	31.0	30.5	30.0	29.5	29.0	28.5	28.0	27.5	27.0	26.5	26.0	25.5
HEIGHT (m)	Women (<65 years)	1.84	1.83	1.81	1.80	1.79	1.77	1.76	1.75	1.73	1.72	1.70	1.69	1.68	1.66
	Women (≥65 years)	1.84	1.83	1.81	1.79	1.78	1.76	1.75	1.73	1.71	1.70	1.68	1.66	1.65	1.63
HEIGHT (m)	Men (<65 years)	1.69	1.67	1.66	1.64	1.62	1.60	1.58	1.57	1.55	1.53	1.51	1.49	1.48	1.46
	Men (≥65 years)	1.65	1.63	1.62	1.60	1.59	1.57	1.56	1.54	1.52	1.51	1.49	1.48	1.46	1.45
Ulna length (cm)		25.0	24.5	24.0	23.5	23.0	22.5	22.0	21.5	21.0	20.5	20.0	19.5	19.0	18.5
HEIGHT (m)	Women (<65 years)	1.65	1.63	1.62	1.61	1.59	1.58	1.56	1.55	1.54	1.52	1.51	1.50	1.48	1.47
	Women (≥65 years)	1.61	1.60	1.58	1.56	1.55	1.53	1.52	1.50	1.48	1.47	1.45	1.44	1.42	1.40

#### Estimating BMI category from mid upper arm circumference (MUAC)



The subject's left arm should be bent at the elbow at a 90 degree angle, with the upper arm held parallel to the side of the body. Measure the distance between the bony protrusion on the shoulder (acromion) and the point of the elbow (olecranon process). Mark the mid-point.

Ask the subject to let arm hang loose and measure around the upper arm at the mid-point, making sure that the tape measure is snug but not tight.



If MUAC is <23.5 cm, BMI is likely to be <20 kg/m<sup>2</sup>.

If MUAC is >32.0 cm, BMI is likely to be >30 kg/m<sup>2</sup>.

The use of MUAC provides a general indication of BMI and is not designed to generate an actual score for use with 'MUST'. For further information on use of MUAC please refer to *The 'MUST' Explanatory Booklet*.

## REGIONAL DOCUMENTATION (SOAP) – NUTRITIONAL ASSESSMENT

Summarise your findings using the SOAP format.

**Subjective** (Reason for seeking care, health history)

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**Objective** (Physical exam findings)

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**Assessment** (Assessment of health state or problem, diagnosis)

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**Plan** (Diagnostic evaluation, follow-up care, patient teaching)

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## Chapter Twenty

# Skin, hair and nails

### PURPOSE

The skin is the largest organ in the body and performs a number of key functions. In this chapter you will learn the structure and function of the skin as well as the nails and hair. This will enable you to understand the rationale for and the methods of inspection and palpation of the skin, nails and hair; abnormalities that may arise and how to record the assessment accurately.

### KEY CONCEPTS

- Structure and function of the skin, hair and nails
- Health history regarding skin, hair and nails
- Changes related to the ageing process
- Abnormalities of the hair, skin and nails
- Skin, hair and nails examination
- Patient education — skin self-examination and self-care

While you are completing your reading assignment, ensure you understand each of the key concepts listed above.

### READING ASSIGNMENT

Jarvis, Forbes & Watt: (JF&W) *Jarvis's Physical Examination & Health Assessment 2e*, Chapter 20, pp 544–590.

### GLOSSARY

<b>Alopecia</b> .....	a significant loss of hair (baldness)
<b>Anasarca</b> .....	bilateral oedema or oedema that is generalised over the whole body
<b>Annular</b> .....	circular shape to skin lesion
<b>Atrophic skin</b> .....	very thin, shiny skin that occurs with arterial insufficiency
<b>Bulla</b> .....	elevated cavity larger than 1 cm diameter containing free fluid
<b>Café au lait spot</b> .....	large round or oval patch of light-brown pigmentation, usually present at birth; six or more larger than 1.5 cm are diagnostic of neurofibromatosis
<b>Cherry (senile) angioma</b> .....	small (1 to 5 mm), smooth, slightly raised bright red dot that appears on the trunk in adults over 30 years old; these increase in number with age; not significant
<b>Chloasma</b> .....	irregular brown patch of hyperpigmentation on the face with changing hormone levels during pregnancy
<b>Confluent</b> .....	skin lesions that run together
<b>Crust</b> .....	thick, dried-out exudate left on skin when vesicles/pustules burst or dry up
<b>Cyanosis</b> .....	dusky blue colour to skin or mucous membranes due to increased amount of deoxygenated haemoglobin
<b>Diaphoresis</b> .....	profuse perspiration
<b>Ephelides</b> .....	(freckles) small, flat macules of brown melanin pigment that occur on sun-exposed skin
<b>Erosion</b> .....	scooped out, shallow depression in skin
<b>Erythema</b> .....	intense redness of the skin due to excess blood in dilated superficial capillaries, as in fever or inflammation
<b>Excoriation</b> .....	self-inflicted abrasion on skin due to scratching
<b>Fissure</b> .....	linear crack in skin extending into dermis

<b>Furuncle</b> .....	(boil) red, swollen, hard, tender, pus-filled lesion due to infected hair follicle
<b>Haemangioma</b> .....	skin lesion due to benign proliferation of blood vessels in the dermis
<b>Hirsutism</b> .....	excess body hair; in females a male pattern of hair distribution on the face and chest develops; indicates endocrine abnormalities
<b>Iris</b> .....	also called target; shape of skin lesion such as erythema multiforme that resembles iris of the eye
<b>Jaundice</b> .....	yellow colour to skin, palate and sclera due to excess bilirubin in the blood
<b>Keloid</b> .....	hypertrophic scar, elevated beyond site of original injury
<b>Lanugo</b> .....	the fine downy hair of the newborn infant
<b>Lesion</b> .....	traumatic or pathological change in previously normal structure; called a primary lesion when it develops on previously unaltered skin; called a secondary lesion, when a lesion changes over time or changes because of a factor such as scratching or infection
<b>Lichenification</b> .....	tightly packed set of papules that thickens skin, from prolonged intense scratching
<b>Lipoma</b> .....	benign fatty tumour
<b>Macule</b> .....	small pigmented spot on the skin that is neither raised nor depressed
<b>Melanoma</b> .....	malignant skin lesion; usually brown; can be tan, black, pink-red, purple or mixed pigmentation; often with irregular or notched borders; may have scaling, flaking or oozing texture; half arise from preexisting naevi
<b>Mongolian spot</b> .....	a common variation of hyperpigmentation in infants of South-East Asian, Pacific Island and African descent; is a blue-black to purple macular area at the sacrum or buttocks, sometimes it occurs on the abdomen, thighs, shoulders or arms; due to deep dermal melanocytes
<b>Naevus</b> .....	(mole) a proliferation of melanocytes, tan to brown colour, flat or raised, circumscribed skin lesion due to excess melanocytes
<b>Nodule</b> .....	solid, elevated, hard or soft skin lesion; larger than 1 cm; may extend deeper into dermis than papule
<b>Oedema</b> .....	fluid accumulating in the intercellular spaces
<b>Pallor</b> .....	excessively pale, whitish-pink colour to lightly pigmented skin
<b>Papule</b> .....	a small hard round protuberance on the skin <1 cm diameter
<b>Plaque</b> .....	papules coalesce to form surface elevation wider than 1 cm; a plateau-like, disc-shaped lesion
<b>Profile sign</b> .....	the angle of the nail base; should be about 160 degrees
<b>Pruritus</b> .....	skin itching
<b>Purpura</b> .....	red-purple skin lesion due to blood in tissues from breaks in blood vessels
<b>Pustule</b> .....	elevated cavity containing thick turbid (pus) fluid
<b>Scale</b> .....	compact desiccated flakes of skin from shedding of dead skin cells
<b>Seborrhoea</b> .....	oily skin
<b>Terminal hair</b> .....	the darker thicker hair that grows on the scalp and eyebrows and, after puberty, on the axillae, pubic area and the face and chest in the male
<b>Turgor</b> .....	ability of skin to return to its normal position promptly when released after being pinched; reflects the elasticity of the skin
<b>Ulcer</b> .....	sloughing of necrotic inflammatory tissue that causes a deep depression in skin, extending into dermis
<b>Vellus hair</b> .....	fine, faint hair covering most of the body (except the palms and soles, the dorsa of the distal parts of the fingers, the umbilicus, the glans penis and inside the labia)
<b>Vesicle</b> .....	elevated cavity containing free fluid up to 1 cm diameter
<b>Vitiligo</b> .....	complete absence of melanin pigment in patchy areas of white or light skin on the face, neck, hands, feet, body folds and around orifices
<b>Wheal</b> .....	superficial, raised, transient and erythematous; slightly irregular shape due to oedema
<b>Xerosis</b> .....	dry skin
<b>Zosteriform</b> .....	linear shape of skin lesion along a nerve route



## STUDY GUIDE

After completing the reading assignment, you should be able to answer the following questions in the spaces provided.

1. Describe the structure and contents of each of the following 3 layers associated with the skin

epidermis \_\_\_\_\_

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dermis \_\_\_\_\_

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subcutaneous layer \_\_\_\_\_

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2. List 3 sources that influence skin colour.

i. \_\_\_\_\_

ii. \_\_\_\_\_

iii. \_\_\_\_\_

3. Define 'epidermal appendage' and provide 3 examples.

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i. \_\_\_\_\_

ii. \_\_\_\_\_

iii. \_\_\_\_\_

4. Differentiate between sebaceous, eccrine and apocrine glands.

sebaceous glands \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

eccrine glands \_\_\_\_\_

\_\_\_\_\_

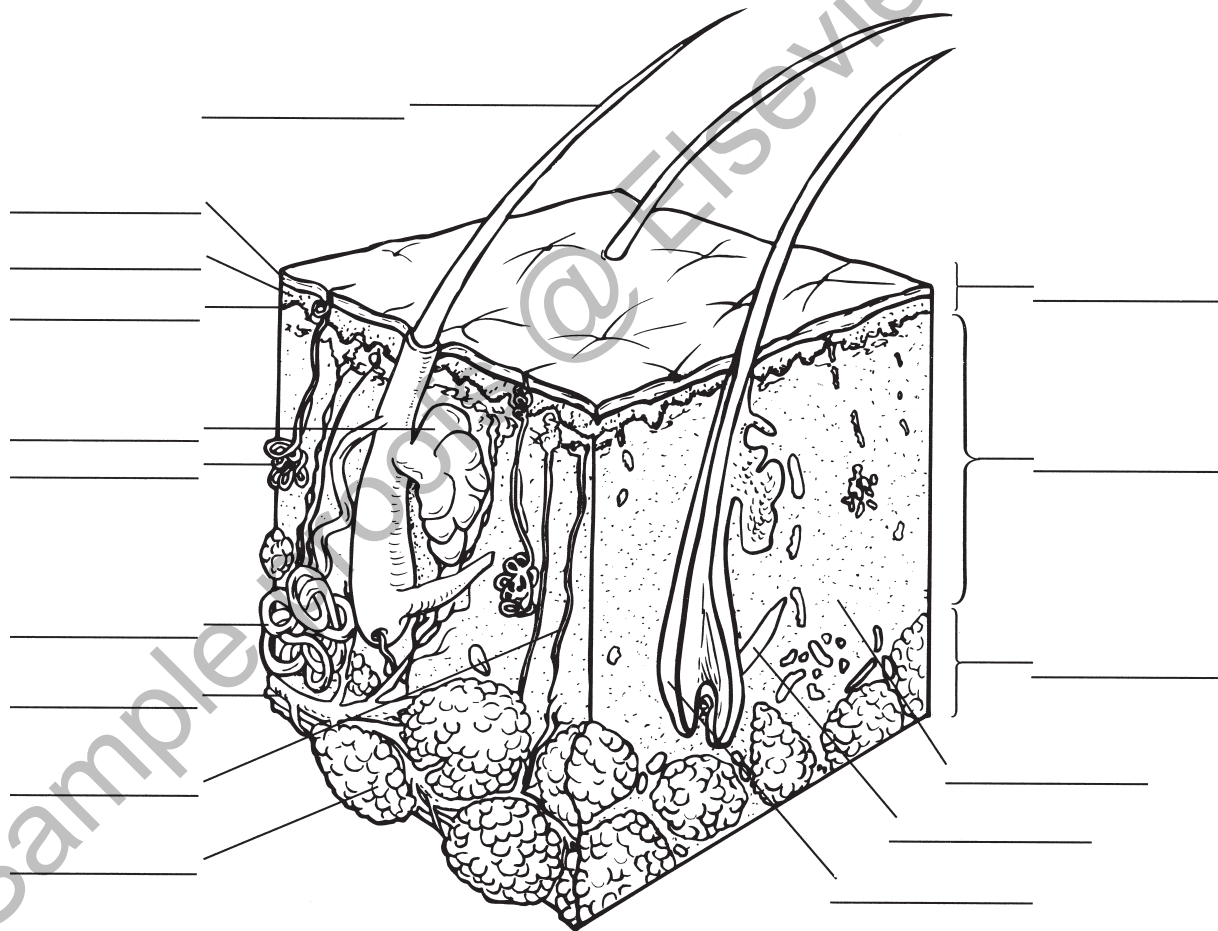
\_\_\_\_\_

apocrine glands \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

5. Fill in the labels indicated on the following illustration.



6. List the 9 functions of the skin and provide a brief description of each function.

- i. \_\_\_\_\_
- ii. \_\_\_\_\_
- iii. \_\_\_\_\_
- iv. \_\_\_\_\_
- v. \_\_\_\_\_
- vi. \_\_\_\_\_
- vii. \_\_\_\_\_
- viii. \_\_\_\_\_
- ix. \_\_\_\_\_

7. Describe at least 7 changes that occur in the skin with ageing.

- i. \_\_\_\_\_
- ii. \_\_\_\_\_
- iii. \_\_\_\_\_
- iv. \_\_\_\_\_
- v. \_\_\_\_\_
- vi. \_\_\_\_\_
- vii. \_\_\_\_\_

8. Complete the following sentences in relation to skin integrity:

Changes in skin integrity may indicate alterations in \_\_\_\_\_ and \_\_\_\_\_, \_\_\_\_\_ and \_\_\_\_\_ state of the person.

Altered skin integrity can also occur as a result of reduced \_\_\_\_\_, \_\_\_\_\_ or \_\_\_\_\_ factors, \_\_\_\_\_ of temperature, \_\_\_\_\_ or secretions and \_\_\_\_\_.

Altered skin integrity often results in \_\_\_\_\_ and puts the person at risk of \_\_\_\_\_.

9. Define each of the following, describe recognition in various skin colours and identify conditions that may cause each.

- pallor \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

erythema \_\_\_\_\_

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cyanosis \_\_\_\_\_

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jaundice \_\_\_\_\_

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10. Rashes are a common reason for seeking healthcare. List specific questions you would ask to determine causation, progression and self-management.

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11. Abnormal characteristics of pigmented lesions are summarised in the mnemonic ABCDE. Explain what each letter represents and what additional symptoms may indicate malignancy.

A \_\_\_\_\_  
\_\_\_\_\_

B \_\_\_\_\_  
\_\_\_\_\_

C \_\_\_\_\_  
\_\_\_\_\_

D \_\_\_\_\_  
\_\_\_\_\_

E \_\_\_\_\_  
\_\_\_\_\_

Additional symptoms: \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

12. Describe each of the 4 grades of pressure injury; identify those at risk and common sites of injury.

i. \_\_\_\_\_

ii. \_\_\_\_\_

iii. \_\_\_\_\_

iv. \_\_\_\_\_

At risk: \_\_\_\_\_

\_\_\_\_\_

Common sites: \_\_\_\_\_

\_\_\_\_\_



13. List causes of changes in skin temperature, texture, moisture, mobility and turgor.

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14. Describe each grade on the 4-point grading scale for pitting oedema.

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15. When lesions are present list the 6 items that should be noted.

- i. 

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- ii. 

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- iii. 

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- iv. 

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- v. 

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- vi. 

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16. Differentiate between a primary and a secondary lesion.

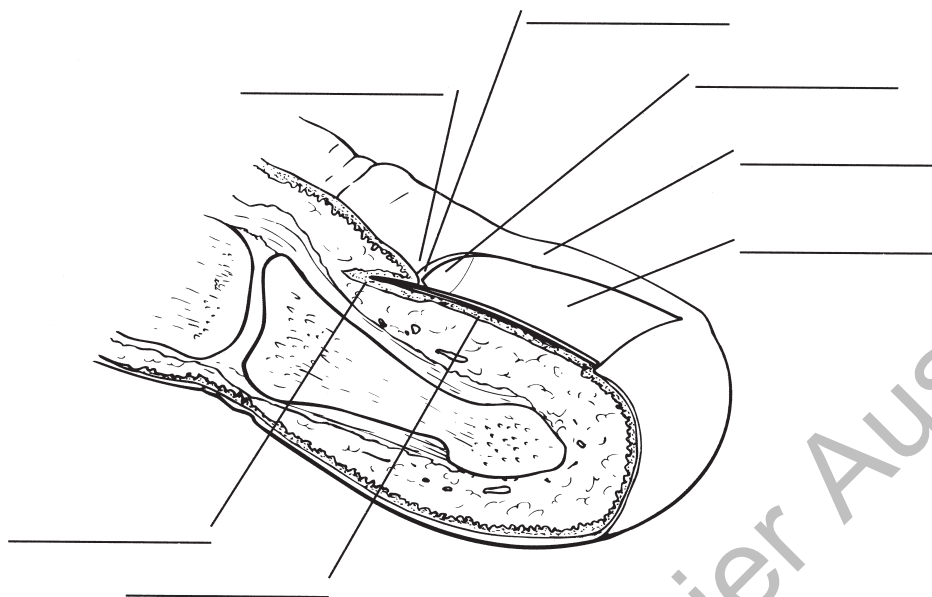
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17. Fill in the labels indicated on the following illustration.



18. The white linear markings that normally are visible through the nail and on the pink nail bed are termed \_\_\_\_\_.

19. Describe the following findings that are common variations on the infant's skin:

café au lait spot \_\_\_\_\_

\_\_\_\_\_

erythema toxicum \_\_\_\_\_

\_\_\_\_\_

cutis marmorata \_\_\_\_\_

\_\_\_\_\_

physiological jaundice \_\_\_\_\_

\_\_\_\_\_

milia \_\_\_\_\_

\_\_\_\_\_

20. Describe the following findings that are common variations with the ageing adult's skin:

lentigines \_\_\_\_\_

\_\_\_\_\_

seborrhoeic keratosis \_\_\_\_\_

\_\_\_\_\_

actinic keratosis \_\_\_\_\_

\_\_\_\_\_

acrochordons (skin tags) \_\_\_\_\_

\_\_\_\_\_

sebaceous hyperplasia \_\_\_\_\_

\_\_\_\_\_

21. Describe each of the following vascular lesions:

haemangioma \_\_\_\_\_

\_\_\_\_\_

spider or star angioma \_\_\_\_\_

\_\_\_\_\_

purpuric lesion \_\_\_\_\_

\_\_\_\_\_

petechiae \_\_\_\_\_

\_\_\_\_\_

haematoma \_\_\_\_\_

\_\_\_\_\_

contusion \_\_\_\_\_

\_\_\_\_\_

22. Differentiate between the appearance of the skin rash of these childhood illnesses:

measles (rubeola) \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

German measles (rubella) \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_



chickenpox (varicella) \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

23. Differentiate between a furuncle and an abscess.

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

24. State the causation and describe the appearance of the following nail disorders:

koilonychia (spoon nails) \_\_\_\_\_  
\_\_\_\_\_

paronychia \_\_\_\_\_  
\_\_\_\_\_

splinter haemorrhages \_\_\_\_\_  
\_\_\_\_\_

late clubbing \_\_\_\_\_  
\_\_\_\_\_

### REVIEW QUESTIONS

This test is for you to check your own mastery of the content. Answers are provided in Appendix A.

- Select the best description of the secretions of the eccrine glands.
  - thick, milky
  - dilute saline solution
  - protective lipid substance
  - keratin
- Naevus is the medical term for:
  - a freckle
  - a birthmark
  - an infected hair follicle
  - a mole
- To assess for early jaundice, you will assess:
  - sclera and hard palate
  - nail beds
  - lips
  - all visible skin surfaces
- Checking for skin temperature is best accomplished by using:
  - palmar surface of the hands
  - ventral surface of the hands
  - fingertips
  - dorsal surface of the hands
- Skin turgor is assessed by picking up a large fold of skin on the anterior chest under the clavicle. This is done to determine the presence of:

- a. oedema  
b. dehydration  
c. vitiligo  
d. scleroderma
6. You note a lesion during an examination. Select the description that is most complete.
- a. raised, irregular lesion the size of a 10 cent piece, located on dorsum of left hand  
b. open lesion with no drainage or odour approximately 1 cm in diameter  
c. pedunculated lesion below left scapula with consistent red colour, no drainage or odour  
d. dark brown, raised lesion with irregular border, on dorsum of right foot, 3 cm in size with no drainage
7. You examine nail beds for clubbing. The normal angle between the nail base and the nails is:
- a. 60 degrees  
b. 100 degrees  
c. 160 degrees  
d. 180 degrees
8. The capillary beds should refill after being depressed in:
- a. <1 second  
b. >2 seconds  
c. 1–2 seconds  
d. time is not significant as long as colour returns
9. During a routine visit, Mr Bond, age 78, asks about small, round, flat, brown macules on the hands. Your best response after examining the areas is:
- a. 'These are the result of sun exposure and do not require treatment.'  
b. 'These are related to exposure to the sun. They may become cancerous.'  
c. 'These are the skin tags that occur with ageing. No treatment is required.'  
d. 'I'm glad you brought this to my attention. I will arrange for a biopsy.'
10. An area of smooth, rubbery, raised tissue near a scar is called:
- a. lichenification  
b. plaque  
c. atrophy  
d. keloid
11. Flattening of the angle between the nail and its base is:
- a. found in subacute bacterial endocarditis  
b. a description of spoon-shaped nails  
c. related to calcium deficiency  
d. described as clubbing
12. The configuration for individual lesions arranged in circles or arcs, as occurs with ringworm, is called:
- a. linear  
b. clustered  
c. annular  
d. gyrate
13. The 'A' in the ABCDE rule stands for:
- a. accuracy  
b. appearance  
c. asymmetry  
d. attenuated
14. A risk factor for melanoma is:
- a. brown eyes  
b. darkly pigmented skin  
c. skin that freckles or burns before tanning  
d. use of sunscreen products
15. Physiological jaundice is a common newborn condition. Answer True or False to the following statements. If the answer is false, state the correct answer.
- a. Yellowing of the skin, sclera and mucous membranes develops after the 3rd or 4th day of life. True False  
b. Yellowing occurs because of the decreased numbers of red blood cells that haemolyse after birth. True False  
c. Jaundice on the first day of life may indicate haemolytic disease. True False  
d. The haemoglobin in the red blood cells is metabolised by the liver and spleen but its pigment is not converted into bilirubin. True False  
e. Jaundice after 2 weeks of age may indicate biliary tract obstruction. True False

16. Place the name of the following 3 skin layers next to the structures which are contained within that specific layer. These items may be used more than once.

- |                       |                                  |
|-----------------------|----------------------------------|
| a. epidermis          | 1. basal cell layer              |
| b. dermis             | 2. aids protection by cushioning |
| c. subcutaneous layer | 3. collagen                      |
|                       | 4. adipose tissue                |
|                       | 5. uniformly thin                |
|                       | 6. stratum corneum               |
|                       | 7. elastic tissue                |

17. Match Column A with Column B.

<b>Column A — Descriptor</b>	<b>Column B — Colour change</b>
1. pallor	a. intense redness of the skin due to excess blood in the dilated superficial capillaries
2. erythema	b. bluish mottled colour that signifies decreased perfusion
3. cyanosis	c. absence of red-pink tones from the oxygenated haemoglobin in blood
4. jaundice	d. increase in bilirubin in the blood causing a yellow colour in the skin

18. Match Column A with Column B.

<b>Column A — Descriptor</b>	<b>Column B — Skin colour change</b>
1. tiny, punctate red macules and papules on the cheeks, trunk, chest, back and buttocks	a. harlequin
2. lower half of body turns red, upper half blanches toxicum	b. erythema
3. transient mottling on trunk and extremities	c. acrocyanosis
4. bluish colour around the lips, hands and fingernails, pigmentation and feet and toenails	d. physiological jaundice
5. large round or oval patch of light brown usually present at birth	e. carotenaemia
6. yellowing of skin, sclera, and mucous membranes due to increased numbers of red blood cells.	f. café au lait
7. yellow-orange colour in light-skinned persons from large amounts of foods containing carotene	g. cutis marmorata

## PRACTICAL SKILLS IN THE LABORATORY/CLINICAL SETTING

In clinical practice, skin assessment is integrated throughout the complete health assessment; it is not a separate isolated step. At times, you may need to perform a regional assessment if the patient enquires about a particular problem relating to their skin.

The skills you use when assessing the skin are inspection and palpation, as some skin changes have accompanying signs that can be felt. Remember to maintain patient privacy and ensure appropriate environment when performing your assessment.

Now you have completed the preparatory readings and exercises you are ready for the clinical component of the integumentary system.

The purpose of practising the steps of this examination separately is so that you begin to think of the skin and its appendages as a separate organ system, and so that you learn the components of skin examination. You will practise these skills on your peer in the laboratory or a patient in the clinical setting.

### PROFESSIONAL PRACTICE NOTE

*To accurately inspect all of the skin for lesions, your patient needs to disrobe, so remember to maintain patient privacy and ensure an appropriate environment when performing your assessment.*

## Clinical Objectives

At the completion of the clinical laboratory session, with further practice and self-directed learning you should be able to:

1. collect a health history that is related to the presenting signs and symptoms and problems as stated by the patient
2. inspect and palpate the skin, noting its colour, vascularity, oedema, moisture, temperature, texture, thickness, mobility and turgor, and any lesions
3. inspect the fingernails, noting colour, shape and any lesions
4. inspect the hair, noting texture, distribution and any lesions
5. record the history and physical examination findings accurately, reach an assessment of the health state and develop an appropriate plan of care.

## Instructions

1. Form pairs. If possible, choose a peer from an ethnic background other than your own, as it will further heighten your recognition of the range of normal skin tones.
2. Prepare the examination setting and gather your equipment. Ensure you try to control external variables that may influence skin colour and confuse your findings. Don't forget you may need additional equipment in addition to a strong direct light (natural daylight is ideal to evaluate skin characteristics but is usually not available in the clinical/laboratory area). Additional equipment may include a small centimetre ruler, penlight and gloves. A magnifying glass for close examination of suspicious lesions may also be needed.
3. Wash your hands.
4. Gain consent to perform the examination from either your peer or the patient.
5. Practise the health history interview and the steps of the examination of the skin, hair and nails on a peer in the skills laboratory or a patient in the clinical setting, providing appropriate instructions as you proceed.
6. Record your findings using the regional write-up worksheet.
7. Swap roles and repeat steps 2–6.
8. Discuss your assessment techniques, findings and performance with your peer to develop a complete understanding of the process.
9. Document your findings using the SOAP format.

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## REGIONAL WRITE-UP WORKSHEET — SKIN, HAIR AND NAILS

Date \_\_\_\_\_

Interview conducted by \_\_\_\_\_

Designation \_\_\_\_\_

Patient \_\_\_\_\_ Age \_\_\_\_\_ Gender \_\_\_\_\_

Occupation \_\_\_\_\_ Medical Record Number \_\_\_\_\_

### I. Health history

Presenting concern:

	No	Yes, explain
1. Any previous <b>skin disease</b> ?	_____	_____
2. Any change in skin colour or <b>pigmentation</b> ?	_____	_____
3. Any changes in a <b>mole</b> ?	_____	_____
4. Excessive <b>dryness</b> or <b>moisture</b> ?	_____	_____
5. Pruritus?	_____	_____
6. Any excess <b>bruising</b> ?	_____	_____
7. Any skin <b>rash</b> or <b>lesions</b> ?	_____	_____
8. <b>Medications</b> ?	_____	_____
9. Any recent hair loss?	_____	_____
10. Any change in nails?	_____	_____
11. Environmental or occupational hazards for skin?	_____	_____
12. Self-care behaviours? Sunscreen?	_____	_____

### II. Physical examination

#### A. Inspect skin

Colour \_\_\_\_\_

General pigmentation \_\_\_\_\_

Hypo/hyperpigmentation \_\_\_\_\_

Abnormal colour changes \_\_\_\_\_

Pressure injury \_\_\_\_\_

#### B. Palpate skin

Temperature \_\_\_\_\_

Moisture \_\_\_\_\_

Texture \_\_\_\_\_

Thickness \_\_\_\_\_

## REGIONAL WRITE-UP WORKSHEET — SKIN, HAIR AND NAILS (continued)

Any oedema \_\_\_\_\_

Mobility and turgor \_\_\_\_\_

Hygiene \_\_\_\_\_

Vascularity and bruising \_\_\_\_\_

**C. Note any lesions**

Colour \_\_\_\_\_

Shape and configuration \_\_\_\_\_

Size \_\_\_\_\_

Location and distribution \_\_\_\_\_

**D. Inspect and palpate hair**

Colour \_\_\_\_\_

Texture \_\_\_\_\_

Distribution \_\_\_\_\_

Any scalp lesions (describe) \_\_\_\_\_

**E. Inspect and palpate nails**

Shape and contour \_\_\_\_\_

Consistency \_\_\_\_\_

Colour \_\_\_\_\_

Capillary refill \_\_\_\_\_

**F. Patient education: Skin self-examination (see checklist included after regional documentation)**

## REGIONAL DOCUMENTATION – SKIN, HAIR AND NAILS

Summarise your findings using the SOAP format.

**Subjective** (Reason for seeking care, health history)

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**Objective** (Physical exam findings)

Record findings on diagram below

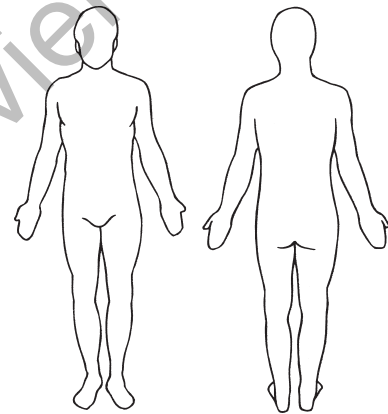
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**Assessment** (Assessment of health state or problem, diagnosis)

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**Plan** (Diagnostic evaluation, follow-up care, patient teaching)

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## PATIENT EDUCATION: SKIN SELF-EXAMINATION (SSE)

Steps	Comments
1. Explain: <ol style="list-style-type: none"> <li>a. Why the skin is examined</li> <li>b. Who should perform skin self-examination</li> <li>c. Frequency of skin exam</li> </ol>	Use a well-lit room that has a full-length mirror. It helps to have a small handheld mirror. Ask a relative to search skin areas difficult to see (e.g. behind ears, back of neck, back)
2. Define the ABCDE rule:	<p><b>A</b>symmetry (<i>not</i> regularly round or oval, two halves of lesion do not look the same)</p> <p><b>B</b>order irregularity (notching, scalloping, ragged edges or poorly defined margins)</p> <p><b>C</b>olour variation (areas of brown, tan, black, blue, red, white or combination)</p> <p><b>D</b>iameter greater than 6 mm (i.e. the size of a pencil rubber), although early melanomas may be diagnosed at a smaller size</p> <p><b>E</b>levation and <b>E</b>nlargement</p> <p>Additional symptoms: change in mole's size, a new pigmented lesion and development of itching, burning or bleeding in a mole. Any of these signs should raise suspicion of malignant melanoma and warrant referral.</p>
3. Instruct patient on technique of SSE: <ol style="list-style-type: none"> <li>a. demonstrate the order and body positioning for inspecting skin</li> <li>b. describe normal skin characteristics</li> <li>c. describe abnormal findings to look for</li> </ol>	Refer to JF&W 2e, Ch 20, Fig 20.11, p 561 for the technique for performing SSE.  Note: Patients will remember the sequence better if they are given a handout to follow. You may want to photocopy Fig 20.11 to give to them.
4. Advise patient to report unusual findings to nurse or doctor at once.	



## Chapter Twenty-One

## Abdominal assessment

**PURPOSE**

Abdominal assessment is often performed in response to a patient's complaint of specific symptoms such as abdominal pain, nausea and vomiting, bowel or bladder problems. When assessing the abdomen, you need to remember the other systems that may also be involved. These include but are not limited to, the urinary system (Ch 22), bowel function (Ch 23) and the female reproductive system (Ch 24).

Abdominal assessment is commonly performed in conjunction with nutritional, mouth and throat assessment and/or assessment of bowel and bladder function. The focus of the abdominal assessment you will practise is primarily related to investigation of abdominal pain.

This chapter will help you learn the contents of the abdomen, the structure and function of the abdominal organs and the location of each of the abdominal organs. You should be able to develop the ability to discriminate normal bowel sounds, to palpate some of the abdominal organs, to understand the rationale and methods of examining the abdomen and to accurately record the assessment. At the end of this chapter you should be able to perform a complete assessment of the abdomen.

**KEY CONCEPTS**

- Abdominal internal anatomy
- Structure, function and anatomical location of abdominal organs
- Specific developmental considerations
- Surface landmarks
- Health history question variations
- Physical examination techniques: inspection, auscultation, percussion and palpation, normal and abnormal findings
- Bowel sounds
- Abdominal examination
- Hepatitis
- Referred pain

While you are completing your reading assignment, ensure you understand each of the key concepts listed above.

**READING ASSIGNMENT**

Jarvis, Forbes & Watt (JF&W): *Jarvis's Physical Examination & Health Assessment* 2e, Chapter 21, pp 591–626.

## GLOSSARY

<b>Aneurysm</b> .....	defect or sac formed by dilation in artery wall due to atherosclerosis, trauma or congenital defect
<b>Anorexia</b> .....	loss of appetite for food
<b>Ascites</b> .....	abnormal accumulation of serous fluid within the peritoneal cavity, associated with congestive heart failure, portal hypertension, cirrhosis, hepatitis, pancreatitis and cancer
<b>Blumberg's sign</b> .....	test used to assess for rebound tenderness
<b>Borborygmi</b> .....	the hyperperistalsis when you feel your stomach growling; loud gurgling bowel sounds signalling increased motility; occur with early bowel obstruction, gastroenteritis, diarrhoea
<b>Bruit</b> .....	blowing, swooshing sound heard through a stethoscope when an artery is partially occluded
<b>Caecum</b> .....	first or proximal part of large intestine
<b>Cholecystitis</b> .....	inflammation of the gallbladder
<b>Costal margin</b> .....	lower border of rib margin formed by the medial edges of the 8th, 9th and 10th ribs
<b>Costovertebral angle (CVA)</b> .....	angle formed by the 12th rib and the vertebral column on the posterior thorax, overlying the kidney
<b>Cullen's sign</b> .....	bluish periumbilical colour; occurs with intraabdominal bleeding
<b>Diastasis recti</b> .....	midline longitudinal ridge in the abdomen, a separation of abdominal rectus muscles
<b>Dysphagia</b> .....	difficulty swallowing
<b>Epigastrium</b> .....	name of abdominal region between the costal margins
<b>Hepatomegaly</b> .....	abnormal enlargement of liver
<b>Hernia</b> .....	abnormal protrusion of bowel through weakening in abdominal musculature
<b>Iliopsoas muscle test</b> .....	test used to assess for the acute abdominal pain of appendicitis
<b>Inguinal ligament</b> .....	ligament extending from pubic bone to anterior superior iliac spine, forming lower border of abdomen
<b>Involuntary rigidity or guarding</b> ..	a constant board-like hardness of the muscles; a protective mechanism accompanying acute inflammation of the peritoneum; may be unilateral; the area becomes painful with increased intraabdominal pressure
<b>Linea alba</b> .....	midline tendinous seam joining the abdominal muscles
<b>Murphy's sign</b> .....	test used to assess for gallbladder inflammation or cholecystitis
<b>Obturator test</b> .....	test used to assess for perforated appendix
<b>Paralytic ileus</b> .....	complete absence of peristaltic movement that may follow abdominal surgery or complete bowel obstruction or with inflammation of the peritoneum
<b>Peritoneal friction rub</b> .....	rough grating sound heard through the stethoscope over the site of peritoneal inflammation
<b>Peritonitis</b> .....	inflammation of peritoneum
<b>Pyloric stenosis</b> .....	congenital narrowing of pyloric sphincter, forming outflow obstruction of stomach
<b>Pyrosis</b> .....	(heartburn) burning sensation in upper abdomen, due to reflux of gastric acid
<b>Rectus abdominis muscle</b> .....	midline abdominal muscles extending from rib cage to pubic bone
<b>Scaphoid</b> .....	abnormally sunken abdominal wall as with dehydration, malnutrition or underweight
<b>Splenomegaly</b> .....	abnormal enlargement of spleen
<b>Striae</b> .....	(linea albicantes) silvery white, linear, jagged marks about 1 to 6 cm long; occur when elastic fibres in the reticular layer of the skin are broken after rapid or prolonged stretching, e.g. pregnancy or excessive weight gain; recent striae are pink or blue; older striae are silvery white
<b>Spider naevi</b> .....	cutaneous angiomas that occur with portal hypertension and liver disease
<b>Suprapubic</b> .....	name of abdominal region just superior to pubic bone
<b>Tympany</b> .....	high-pitched, musical, drum-like percussion note heard when percussing over the stomach and intestine
<b>Umbilicus</b> .....	depression on the abdomen, marking site of entry of umbilical cord
<b>Viscera</b> .....	internal organs
<b>Voluntary guarding</b> .....	occurs when the person is cold, tense or ticklish; bilateral; muscles relax slightly during exhalation

## STUDY GUIDE

After completing the reading assignment, you should be able to answer the following questions in the spaces provided.

1. The abdomen is enclosed posteriorly by the vertebral column and paravertebral muscles, laterally (sides) and anteriorly by the lower rib cage and abdominal muscles. List each of the anterior abdominal muscles and state the structure that closes the abdomen.

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2. Differentiate between the 'solid' and the 'hollow' viscera and state whether they can be palpated.

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3. Describe the course, bifurcations and anatomical positions of the aorta as it descends in the abdomen and becomes the femoral arteries.

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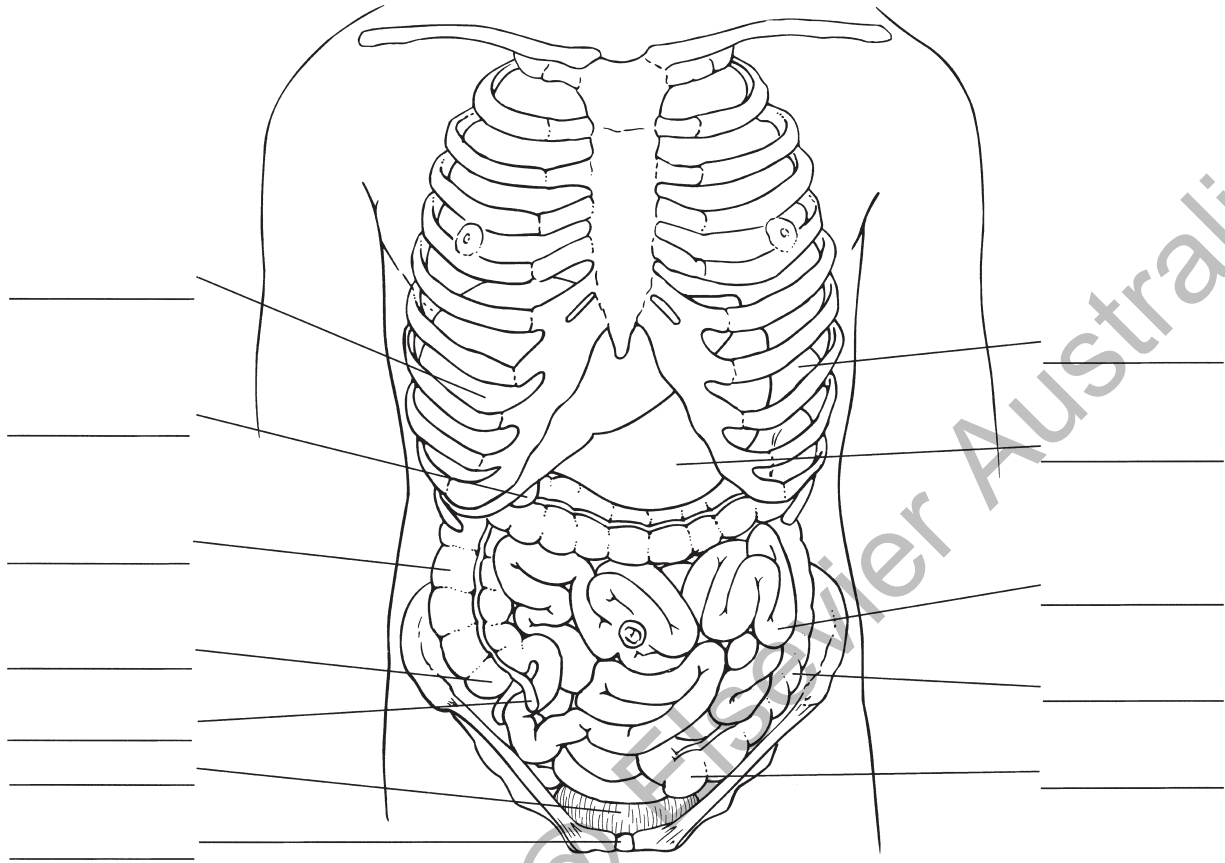
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4. Fill in the labels indicated on the following illustrations.



5. List the organs that are contained within:  
each of the four abdominal quadrants

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the midline

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the epigastric region

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the umbilical region

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the suprapubic or hypogastric region

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6. State the organs and structures that are normally palpable in the abdomen.

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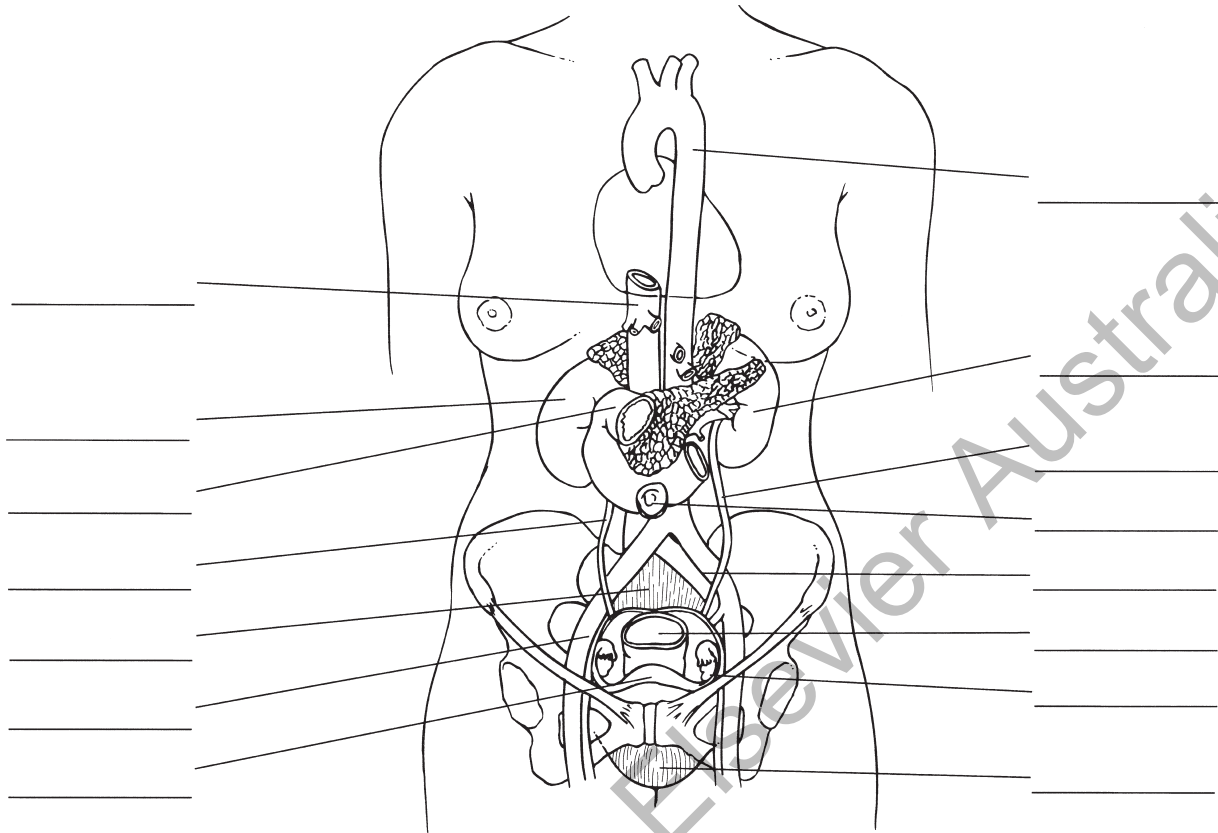
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7. Fill in the labels indicated on the following illustrations.



8. Explain what retroperitoneal means.

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9. Explain why the right kidney is lower than the left.

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10. Describe all the anatomical structures a bolus of food would travel through or past, from the mouth to the anus. State the length of structures if appropriate.

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11. Identify the anatomical differences in the abdominal organs between a newborn and an adult.

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12. Discuss the anatomical changes and subsequent effects that take place within the abdomen during pregnancy.

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13. Circle True or False to answer the following statements concerning the ageing process on the abdominal organs. If the answer is false, state the correct answer.

- |   |      |       |
|---|------|-------|
| a. Salivation decreases, causing a dry mouth and a decreased sense of taste.  | True | False |
| b. Gastric acid secretion remains the same with ageing.   | True | False |
| c. Liver size decreases with age, although liver function remains normal.   | True | False |
| d. Drug metabolism by the liver remains the same.   | True | False |
| e. The incidence of gallstones increases with age, occurring in 10% to 20% of middle-aged and older adults, being more common in females. | True | False |

14. Differentiate between the 3 common types of abdominal pain, stating their source and qualities.

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15. The characteristics of stools may indicate gastrointestinal problems. For each of the following colours of stool state their qualities and probable causation.

- black tarry \_\_\_\_\_
- black non-tarry \_\_\_\_\_
- bright red \_\_\_\_\_
- grey \_\_\_\_\_

16. Describe the correct positioning and preparation of the patient for the abdominal examination.

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17. Draw a line from each item in the righthand column to match the type of pain with the patient's presentation in the left hand column.

- |  |   |
|--|---|
| a. restlessness and constant turning to find comfort                     | 1. the pain of peritonitis                              |
| b. absolute stillness, resisting any movement                            | 2. acute abdominal pain                                 |
| c. knees flexed up; facial grimacing; shallow rapid, uneven respirations | 3. colicky pain of gastroenteritis or bowel obstruction |

18. Rationalise the performance of auscultation of the abdomen prior to palpation or percussion.

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19. Discuss inspection of the abdomen, including findings that should be noted.

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20. Describe the procedure for auscultation of bowel sounds.

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21. Differentiate between the following bowel and abdominal sounds: normal, hyperactive and hypoactive bowel sounds, bruit.

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22. Identify and provide the rationale for each of the percussion notes heard over the abdomen.

tympany \_\_\_\_\_

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dullness \_\_\_\_\_

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hyperresonance \_\_\_\_\_

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23. Differentiate between light and deep palpation, and explain the purpose of each.

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24. Differentiate between voluntary guarding and involuntary rigidity.

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25. If a mass is noted on palpation what should be noted?

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26. Describe the technique of eliciting and identifying rebound tenderness.

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27. Explain the rationale for assessment for costovertebral angle tenderness.

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28. Identify the 3 tests that are used if acute appendicitis is suspected, and state the positive result for each test.

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29. Complete the following table relating to types of hepatitis (A, B, C).

Hepatitis type	Spread	Individuals/groups likely to contract and/or spread
A		
B		
C		

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## REVIEW QUESTIONS

This test is for you to check your own mastery of the content. Answers are provided in Appendix A.

- Select the sequence of techniques used during an examination of the abdomen.
  - percussion, inspection, palpation, auscultation
  - inspection, palpation, percussion, auscultation
  - inspection, auscultation, percussion, palpation
  - auscultation, inspection, palpation, percussion
- Which of the following may be noted through inspection of the abdomen?
  - fluid waves and abdominal contour
  - umbilical eversion and Murphy's sign
  - venous pattern, peristaltic waves and abdominal contour
  - peritoneal irritation, general tympany and peristaltic waves
- Right upper quadrant tenderness may indicate pathology in the:
  - liver, pancreas or ascending colon
  - liver and stomach
  - sigmoid colon, spleen or rectum
  - appendix or ileocaecal valve
- Hyperactive bowel sounds are:
  - high pitched
  - rushing
  - tinkling
  - all of the above
- The absence of bowel sounds is established after listening for:
  - 1 full minute
  - 3 full minutes
  - 5 full minutes
  - none of the above
- Auscultation of the abdomen may reveal bruits of which of these arteries.
  - aortic, renal, iliac and femoral
  - jugular, aortic, carotid and femoral
  - pulmonic, aortic and portal
  - renal, iliac, internal jugular and basilar
- The range of normal liver span in the right midclavicular line in the adult is:
  - 2–6 cm
  - 4–8 cm
  - 8–14 cm
  - 6–12 cm
- The left upper quadrant (LUQ) contains the:
  - liver
  - appendix
  - left ovary
  - spleen
- Striae, which occur when the elastic fibres in the reticular layer of the skin are broken following rapid or prolonged stretching, have a distinct colour when of long duration. This colour is:
  - pink
  - blue
  - purple-blue
  - silvery white
- Peptic ulcer disease occurs with which of the following:
  - frequent use of non-steroidal anti-inflammatory drugs (NSAIDs)
  - alcohol consumption
  - smoking
  - Helicobacter pylori* infection
  - a, b and d
  - a, b and c
  - none of the above
  - all of the above
- Auscultation of the abdomen is begun in the right lower quadrant (RLQ) because:
  - bowel sounds are always normally present here
  - peristalsis through the descending colon is usually active
  - this is the location of the pyloric sphincter
  - vascular sounds are best heard in this area
- A dull percussion note forwards of the left midaxillary line is:
  - normal, an expected finding during splenic percussion
  - expected between the 8th and 12th ribs
  - found if the examination follows a large meal
  - indicative of splenic enlargement
- Shifting dullness is a test for:
  - ascites
  - splenic enlargement
  - inflammation of the kidney
  - hepatomegaly

14. Tenderness during abdominal palpation is expected when palpating:
- the liver edge
  - the spleen
  - the sigmoid colon
  - the kidneys
15. Murphy's sign is best described as:
- the pain felt when the hand of the examiner is rapidly removed from an inflamed appendix
  - pain felt when taking a deep breath when the examiner's fingers are on the approximate location of the inflamed gallbladder
  - a sharp pain felt by the patient when one hand of the examiner is used to thump the other at the costovertebral angle
  - not a valid examination technique

16. Match the condition in Column A with the sites of referred abdominal pain in Column B.

**Column A**

- hepatitis
- gastro-oesophageal reflux disease (GORD)
- cholecystitis is biliary colic
- pancreatitis
- duodenal ulcer
- gastric ulcer pain
- perforated ulcer
- appendicitis
- kidney stones

**Column B**

- starts as dull, diffuse pain in periumbilical region that shifts to severe, sharp, persistent pain and tenderness localised in RLQ
- dull, aching, gnawing pain, does not radiate
- mild to moderate, dull pain in right upper quadrant or epigastrium
- a sudden onset of severe, colicky flank or lower abdominal pain, loin to groin pain
- burning pain in midepigastrium or behind lower sternum that radiates upwards
- acute, boring midepigastic pain radiating to the back and sometimes to the left scapula or flank
- sudden pain in right upper quadrant radiates to right or left scapula
- burning epigastric pain of sudden onset refers to one or both shoulders
- dull, aching, gnawing epigastric pain, radiates to back or substernal area

## PREPARATION FOR YOUR LABORATORY SESSION

In the practical skills session you will need to assess the patient's presenting concern. In abdominal assessment the presenting concern is often abdominal pain. To be adequately prepared for the health history component of the laboratory you will need to prepare a list of additional questions you would ask to investigate the patient's pain and obtain comprehensive subjective information about their discomfort. One such question would be to ask the patient to rate their pain on a scale of 1–10. When writing your questions, consider the information you are trying to elicit from the patient.

This preparation needs to be undertaken prior to your laboratory session.

## PRACTICAL SKILLS IN THE LABORATORY/CLINICAL SETTING

Abdominal assessment is performed for a variety of reasons, which may include abdominal pain assessment, to assess bowel and/or urinary function or to explore other GI concerns. It is important to focus your assessment according to the patient's requirements; you will need to gather information which allows you to identify problems. You may need to adjust the questions you ask.

At this point, you have revised abdominal structure and function and considered deviations from normal. You should now be ready for the clinical component of the abdominal system, the purpose of which is to practise the abdominal health history and regional abdominal examination on a peer in the skills laboratory or a patient/client in the clinical setting.

## Clinical Objectives

At the completion of the clinical laboratory session, with further practice and self-directed learning you should be able to:

1. demonstrate knowledge of the signs and symptoms related to the abdominal system by collecting a health history related to the abdomen from a peer in the laboratory or a patient in the clinical setting
2. demonstrate inspection of the abdomen by assessing contour, symmetry, umbilicus, skin condition, pulsation and nutritional state
3. demonstrate auscultation of the abdomen by assessing characteristics of bowel sounds
4. demonstrate percussion of the abdomen by identifying predominant percussion notes, percussing all four quadrants and noting borders of organs such as the liver, bladder or spleen
5. demonstrate light palpation in all four quadrants, and by assessing muscular resistance, tenderness and any abnormal masses
6. demonstrate deep palpation in all four quadrants by assessing for any masses; the liver, spleen, kidneys, aorta; any costovertebral tenderness or rebound tenderness (Blumberg's sign)
7. record the regional health history and abdominal examination findings accurately, reach an assessment of the health state and develop a plan of care.

## Instructions

1. Form pairs.
2. Prepare the examination setting and gather your equipment: secondary light source directed at a 45-degree angle across the abdomen, stethoscope, alcohol wipe (to clean endpiece) and two pillows (one pillow for under the head and one for under the knees).
3. Wash your hands.
4. Gain consent to perform the examination from either your peer or the patient.
5. Prepare the patient:
  - a. Keep room warm to avoid chilling and tensing of muscles.
  - b. Expose the abdomen so that it is fully visible and drape the genitalia and female breasts.
  - c. Enhance abdominal wall relaxation by having the patient empty their bladder (save a urine specimen if needed).
  - d. Position supine, with the head on a pillow, the knees bent or on pillow, and the arms at the sides or across the chest. (NOTE: Discourage the person from placing their arms over the head because this tenses abdominal musculature.)
  - e. Warm the stethoscope endpiece and your hands to avoid abdominal tensing. Your fingernails must be short.
  - f. Enquire about any painful areas. Examine these areas last to avoid any muscle guarding.
  - g. Learn to use distraction to enhance muscle relaxation as required.
  - h. Assess the patient's comfort before starting.
6. Practise the health history interview and the steps of the abdominal examination on a peer in the skills laboratory or a patient in the clinical setting, providing appropriate instructions as you proceed.
7. Practise the steps of the examination on a peer or a patient in the clinical setting, providing appropriate instructions as you proceed and maintaining dignity at all times.
8. Record your findings using the regional write-up worksheet.
9. Swap roles and repeat steps 2–8.
10. Discuss your assessment techniques, findings and performance with your peer — provide your peer with constructive feedback in their assessment.
11. Document your findings using the SOAP format.

QUESTIONS TO INCLUDE IN HEALTH HISTORY/NOTES

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## REGIONAL WRITE-UP WORKSHEET — ABDOMEN

Date \_\_\_\_\_

Interview conducted by \_\_\_\_\_

Designation \_\_\_\_\_

Patient \_\_\_\_\_ Age \_\_\_\_\_ Gender \_\_\_\_\_

Occupation \_\_\_\_\_ Medical Record Number \_\_\_\_\_

### I. Health history

1. Presenting concern: \_\_\_\_\_
2. Any changes in **appetite**? \_\_\_\_\_
3. Any difficulty **swallowing**? \_\_\_\_\_
4. Any foods you **cannot tolerate**? \_\_\_\_\_
5. Any **abdominal pain**?
  - Character: \_\_\_\_\_
  - Onset: \_\_\_\_\_
  - Location: \_\_\_\_\_
  - Duration: \_\_\_\_\_
  - Severity: \_\_\_\_\_
  - Pattern: \_\_\_\_\_
  - Associated factors: \_\_\_\_\_
6. Any **nausea or vomiting**? \_\_\_\_\_
7. How often are **bowel movements**? \_\_\_\_\_
8. Any past history of **GI problems or disease**? \_\_\_\_\_
9. Pregnant? If so, EDD? \_\_\_\_\_
10. What **medications** are you taking? \_\_\_\_\_
11. Food eaten in the last **24 hours**:
 

breakfast _____	snack _____	lunch _____
snack _____	dinner _____	snack _____
12. Fluid intake in the last **24 hours**:
  - Types of fluid (caffeine, alcohol intake) \_\_\_\_\_

### II. Physical examination

#### A. Inspection

Person's facial expression and position in bed \_\_\_\_\_

Contour of abdomen \_\_\_\_\_



### REGIONAL WRITE-UP WORKSHEET – ABDOMEN (continued)

General symmetry \_\_\_\_\_

Umbilicus \_\_\_\_\_

Skin colour and condition (note scars and lesions) \_\_\_\_\_

Pulsation or movement \_\_\_\_\_

#### B. Auscultation

Bowel sounds \_\_\_\_\_

Note any vascular sounds \_\_\_\_\_

#### C. Percussion

Percuss in all four quadrants (tympany and dullness) \_\_\_\_\_

#### D. Palpation

Surface and light palpation in all four quadrants \_\_\_\_\_

Muscle wall \_\_\_\_\_

Tenderness \_\_\_\_\_

Enlarged organs \_\_\_\_\_

Masses \_\_\_\_\_

Deep palpation (as required) in all four quadrants \_\_\_\_\_

Masses \_\_\_\_\_

Rebound tenderness \_\_\_\_\_

Costovertebral angle tenderness \_\_\_\_\_

#### E. Additional tests, if indicated

**REGIONAL DOCUMENTATION — ABDOMINAL ASSESSMENT**

Summarise your findings using the SOAP format.

**Subjective** (Reason for seeking care, health history)

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**Objective** (Physical exam findings)

Record findings on diagram C

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**Assessment** (Assessment of health state or problem, diagnosis)

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**Plan** (Diagnostic evaluation, follow-up care, patient teaching)

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# Chapter Twenty-Two

## Urinary function

### PURPOSE

Assessment of urinary tract function and fluid balance are frequent tasks performed by nurses, so it is important that you have a sound understanding of the urinary system. This system is composed of a number of components that are not only involved in urine production and waste excretion, but also have several other important functions including assisting in the regulation of blood pressure, the regulation of blood volume, regulation of blood glucose levels, production of hormones and acid–base balance.

Structures involved in the urinary system include the kidneys, the ureters, the bladder and the urethra. The male prostate gland, which is not directly related to the urinary system, is an important structure to consider as any enlargement of the prostate can lead to obstructed urine flow through the urethra. The structure and function of the prostate gland is described in Chapter 25. In addition, the pelvic floor muscles are important in the maintenance of continence and will be discussed in Chapter 24. Problems relating to the urinary system are also accompanied by complaints concerning bowel function which are discussed in Chapter 23.

This chapter relates to the assessment of structures involved in the production, transport, storage and excretion of urine. This chapter will help you to learn about the structure and function of the urinary system, assessment of urinary tract functioning and fluid balance. The chapter also introduces you to methods that may be used to assess for continence problems through a sensitive health history. The chapter also highlights the importance of considering other systems in assessment such as bowel function. You will also be introduced to methods of assessment that may be used to identify the presence and severity of urinary symptoms, including incontinence, the impact of these symptoms on the quality of life and how to record your assessment accurately.

### KEY CONCEPTS

- Structure and function of the kidneys, ureters, bladder and urethra
- Urinary system health history
- Preparation and equipment requirements
- Post-void residual urine volume using a portable bladder scanner
- Examination of urine
- Fluid balance chart/voiding diary
- Urinary tract dysfunction
- Urinary tract function assessment

While you are completing your reading assignment, ensure you understand each of the key concepts listed above.

### READING ASSIGNMENT

Jarvis, Forbes & Watt (JF&W): *Jarvis's Physical Examination & Health Assessment*, Chapter 22, pp 627–643.

### GLOSSARY

<b>Benign prostatic hypertrophy (BPH)</b> .....	gradual enlargement of the prostate gland with age
<b>Dysuria</b> .....	painful urination
<b>Functional incontinence</b> .....	urinary leakage associated with impairment of the person's mobility, dexterity or cognitive function
<b>Glomerular filtration rate (GFR)</b> .....	the amount of filtrate formed in the renal corpuscle (a Bowman's capsule and a glomerulus) of both kidneys each minute
<b>Haematuria</b> .....	blood in the urine
<b>Hesitancy</b> .....	a delay in the starting of a urinary stream despite the desire to urinate
<b>Mixed urinary incontinence</b> .....	a combination of stress and urge symptoms
<b>Nocturia</b> .....	voiding at night

<b>Nocturnal enuresis</b> .....	any involuntary loss of urine occurring during sleep; involuntary passing of urine after an age at which continence is expected
<b>Oliguria</b> .....	diminished urinary output <400 mL/24 hours
<b>Overactive bladder</b> .....	the term used to describe a syndrome of urgency, frequency, nocturia and sometimes urine leakage
<b>Pelvoureteric junctions</b> .....	the point at which the renal pelvis meets the ureter
<b>Polyuria</b> .....	excessive quantity of urine
<b>Post-micturition dribble</b> .....	a small loss of urine after urination is completed
<b>Post-void residual volume</b> .....	the volume of urine left in the bladder following voiding
<b>Renal colic</b> .....	acute pain in the flank region that may be the result of acute obstruction of the renal pelvis or proximal (upper) ureter; moderate to severe in intensity; tends to occur in waves during which the pain intensifies for periods of time as the pressure in the ureter and renal pelvis increases in response to the peristaltic waves
<b>Retention (urinary)</b> .....	inability to empty the bladder of urine; may be acute or chronic; often associated with enlarged prostate in men; can cause significant lower abdominal pain and restlessness; chronic urinary retention can result in renal damage due to increased pressures and/or infection in the urinary tract
<b>Straining</b> .....	using muscular effort to initiate, maintain or improve the urinary stream
<b>Stress urinary incontinence</b> .....	urine leakage occurring when there is an increase in intraabdominal pressure; often caused by weakness of the pelvic floor muscles; small amounts of urine are leaked
<b>Urge incontinence</b> .....	occurs in the presence of a significant sensation of urgency; person may not be able to inhibit the urge, resulting in the entire bladder contents being leaked
<b>Urgency</b> .....	inability to defer voiding after feeling the desire to void
<b>Urinary incontinence</b> .....	inability to control the passage of urine sufficient to be a social or hygiene problem (involuntary)
<b>Vesicoureteric junction</b> .....	the point at which ureters attach to the trigone of the bladder and enter the bladder on an angle

## PREPARATION FOR YOUR LABORATORY SESSION

You (and your peer) should have a few glasses of water prior to the laboratory session to enable palpation of the 'full' bladder manually and with the bladder scanner (if available).

## STUDY GUIDE

After completing the reading assignment, you should be able to answer the following questions in the spaces provided.

- List the structures involved in the:

upper urinary tract \_\_\_\_\_

lower urinary tract \_\_\_\_\_

- State the 8 functions of the urinary system.

i. \_\_\_\_\_

ii. \_\_\_\_\_

iii. \_\_\_\_\_

iv. \_\_\_\_\_

v. \_\_\_\_\_

vi. \_\_\_\_\_

vii. \_\_\_\_\_

viii. \_\_\_\_\_

3. Describe the size, location and covering of the kidneys.

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4. List structures that pass through the renal hilum.

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5. Describe in detail the structure and function of the two regions of the kidney (renal cortex and renal medulla).

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6. Sketch a kidney and label it with the following structures:

renal column, renal pyramid, renal artery, renal vein, ureter, fibrous capsule, calyx, renal pelvis, cortex, medulla, renal papilla

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7. Define glomerular filtration rate.

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8. Describe the structure and function of the ureters.

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9. Describe the mechanism to prevent reflux of urine during micturition.

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10. With reference to the bladder describe each of the following:

structure \_\_\_\_\_

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function \_\_\_\_\_

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location in males and females \_\_\_\_\_

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tissue layers \_\_\_\_\_

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11. Differentiate between the male and the female urethra.

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12. Explain why women are more prone to urinary tract infections.

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13. Describe the course and structure of the male urethra.

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14. Circle True or False to answer the following statements concerning infants and children. If the answer is false, state the correct answer.

- a. Urine formation occurs at the sixth month of fetal development and contributes to the volume of amniotic fluid. True    False
- b. At birth the kidneys occupy a large portion of the abdominal cavity. The bladder is also located in the abdomen and as the child grows it becomes a pelvic structure. True    False
- c. As the child develops the frequency of voiding increases and mean voiding volume decreases. True    False
- d. As the central nervous system develops the child learns to inhibit the detrusor muscle activity, which enables them to achieve continence. True    False

15. Discuss the physiological changes that occur in the kidneys and bladder with ageing.

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16. Explain what would be considered a 'normal' voiding pattern.

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17. Describe in detail the normal characteristics of urine then discuss what the following findings may indicate.

normal urine: \_\_\_\_\_

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blood \_\_\_\_\_

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cloudy \_\_\_\_\_

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odour \_\_\_\_\_

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colour change lasting more than one day \_\_\_\_\_

18. Discuss each of the several sites for pain associated with upper and/or lower urinary tract dysfunction.

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19. Discuss causation of continual urinary leakage.

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20. When performing a urinary system examination, why is it pertinent to obtain vital signs?

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21. Discuss the significance of post-void residual volumes.

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22. State what is considered to be a 'normal' urine output:

in the adult \_\_\_\_\_

in the infant \_\_\_\_\_

23. List the signs and symptoms of benign prostatic hypertrophy.

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## REVIEW QUESTIONS

This test is for you to check your own mastery of the content. Answers are provided in Appendix A.

- Circle True or False to answer the following statements concerning the urinary system and ageing. If the answer is false, state the correct answer.
  - By 70 years of age approximately 30–50% of glomeruli have stopped functioning. True False
  - The decrease in renal function does not increase the risk for health problems with rapid changes to blood volume or other insults. True False
  - Changes to the female bladder, urethra, vagina and pelvic floor such as the structures becoming less vascular, thin and less elastic are due to decreasing oestrogen following menopause. True False
  - In men the bulbourethral gland enlarges and can obstruct the flow of urine through the urethra. True False
- The normal adult bladder capacity is approximately:
  - 300 mL
  - 400 mL
  - 500 mL
  - 600 mL
- All of the following are conditions that cause nocturia **except**:
  - prostatitis
  - urinary tract infection
  - hyperglycaemia
  - arthritis.
- The kidneys receive how much of the resting cardiac output?
  - 15%
  - 20%
  - 25%
  - 30%
- Match Column A with its associated definition in Column B.
 

Column A	Column B
1. urinary incontinence	a. the person may not be able to inhibit the urge and this can result in the entire bladder contents being leaked
2. stress urinary incontinence	b. the inability to control the passage of urine sufficient to be a social or hygiene problem
3. urge incontinence	c. a syndrome of urgency, frequency, nocturia and urine leakage
4. overactive bladder	d. urine leakage which occurs when there is an increase in intraabdominal pressure
- Which of the following symptoms is NOT associated with an enlarged prostate:
  - post-micturition dribble
  - stress incontinence
  - difficulty voiding
  - continuous urinary leak
- Which of the following symptoms, when associated with pain and fever, may indicate an increase in creatinine?
  - nausea and vomiting
  - increased urgency
  - restlessness
  - confusion
- All of the following are risk factors for the development of incontinence **except**:
  - pregnancy
  - constipation
  - obesity
  - pain
- Which of the following medications commonly cause bladder dysfunction?
  - anticholinergics
  - antidepressants
  - sedatives
  - anxiolytics

10. Normal urine output per hour is defined as:
  - a. 0.2–0.5 mL/kg/hr
  - b. 0.5–0.7 mL/kg/hr
  - c. 0.5–1.0 mL/kg/hr
  - d. 0.7–1.0 mL/kg/hr
11. Which of the facts below concerning the prostate gland is incorrect?
  - a. Prostate cancer is the second most common cancer that occurs in men and the second leading cause of cancer deaths in men.
  - b. The risk of developing prostate cancer to age 75 years is 1 in 7 for Australian men.
  - c. Gradual enlargement is considered to be a normal part of ageing and is termed benign prostatic hypertrophy, or BPH.
  - d. BPH may cause lower urinary tract symptoms including urinary urgency, frequency, poor stream hesitancy, post-micturition dribble and acute or chronic urinary retention.
  - e. PSA and DRE are recommended to be done together when screening for prostate cancer.

## PRACTICAL SKILLS IN THE LABORATORY/CLINICAL SETTING

Assessment of urinary tract function in the form of urinalysis, fluid balance charts and bladder scanning are frequent assessment areas for nurses in a variety of healthcare settings. The extent of the questioning and examination required in the urinary health history will depend on the person's main health concern.

Assessment of urinary tract function may be integrated with other relevant areas such as bowel function, skin, genitals, mobility and cognitive examination. As you assess your patients in these areas, keep in mind the components of the urinary tract assessment.

You have reviewed the structure and function of the upper and lower urinary tracts, completed the readings and study guide questions and are now ready for the clinical component of the urinary tract assessment. The purpose of this clinical component is to practise the steps in sensitive history taking and to perform a urinary system examination on a peer in the skills laboratory or on a patient in the clinical setting.

### Clinical Objectives

At the completion of the clinical laboratory session, with further practice and self-directed learning you should be able to:

1. demonstrate knowledge of the signs and symptoms related to the urinary tract dysfunction by obtaining a regional health history from a peer or a patient
2. correctly locate anatomical landmarks on the abdomen relating to the urinary tract
3. demonstrate correct techniques for inspection, palpation and percussion of the lower abdomen including the bladder
4. demonstrate the techniques for estimation of bladder size and post-residual volume estimation using the bladder scanner
5. record the health history and examination findings accurately, reach an assessment of the health state and develop a plan of care.

### PROFESSIONAL PRACTICE NOTE

*As you will be handling body fluids you must adhere to standard precautions and wear protective eyewear, gloves and protective clothing.*

*Ensure you maintain privacy and dignity by covering your peer or the patient appropriately when examining the abdomen and using the bladder scanner.*

## Instructions

**NOTE:** You and your peer should have a few glasses of water prior to the laboratory to enable palpation of the 'full' bladder manually and with the bladder scanner (if available).

1. Gather your equipment. You will need: urine jug or jar to collect a clean specimen, urine testing equipment (dipsticks), gloves and bladder scanner and ultrasound transmission gel.
2. Wash your hands.
3. Gain consent to perform the examination from either your peer or the patient.
4. Practise the urinary system health history interview and the steps of the urinary function examination on a peer in the skills laboratory or a patient in the clinical setting, providing appropriate instructions as you proceed.
5. Use the bladder scanner to practise finding the bladder pre- and post-voiding.
6. Using dipsticks and a urine sample (your own, your peer's or the simulated urine provided), practise interpreting urinalysis results.
7. Record your findings using the regional write-up worksheet.
8. Reverse roles and repeat steps 2–7.
9. Discuss your assessment techniques, findings and performance with your peer to develop a complete understanding of the process.
10. Document your findings using the SOAP format.

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## REGIONAL WRITE-UP WORKSHEET – URINARY FUNCTION

Date \_\_\_\_\_

Interview conducted by \_\_\_\_\_

Designation \_\_\_\_\_

Patient \_\_\_\_\_ Age \_\_\_\_\_ Gender \_\_\_\_\_

Occupation \_\_\_\_\_ Medical Record Number \_\_\_\_\_

### I. Health history

1. Presenting concern: \_\_\_\_\_

How does this impact on your **quality of life**? \_\_\_\_\_

#### 2. Usual urinary pattern

Number of times **void** during day? \_\_\_\_\_ Night? \_\_\_\_\_

#### 3. Urinary characteristics

Clear? \_\_\_\_\_ Colour? \_\_\_\_\_ Odour? \_\_\_\_\_ Blood? \_\_\_\_\_

4. **Fluid intake** Type \_\_\_\_\_ Amount \_\_\_\_\_

Tea/Coffee \_\_\_\_\_ Other \_\_\_\_\_

5. **Change or disturbance** to urinary tract function?

Describe change \_\_\_\_\_ How long? \_\_\_\_\_

6. **Pain?**

Character? \_\_\_\_\_ Onset? \_\_\_\_\_

Location? \_\_\_\_\_ Duration? \_\_\_\_\_

Severity? \_\_\_\_\_ Pattern? \_\_\_\_\_

Associated factors? \_\_\_\_\_

7. **Lower urinary tract** symptoms

Daytime voiding frequency \_\_\_\_\_

Nocturia? \_\_\_\_\_ How often? \_\_\_\_\_

Urgency? \_\_\_\_\_ Urinary leakage? \_\_\_\_\_

Incontinence? \_\_\_\_\_ Causes? \_\_\_\_\_ How often? \_\_\_\_\_

Nocturnal enuresis? \_\_\_\_\_ How often? \_\_\_\_\_

Urinary stream? \_\_\_\_\_ Weak? \_\_\_\_\_ Hesitancy? \_\_\_\_\_

Straining? \_\_\_\_\_ Post-micturition dribble? \_\_\_\_\_

Problems voiding? \_\_\_\_\_ Sensation when voiding? \_\_\_\_\_

## REGIONAL WRITE-UP WORKSHEET – URINARY FUNCTION (continued)

8. Other **symptoms**?

Fever? \_\_\_\_\_ Fatigue? \_\_\_\_\_

Nausea &amp; vomiting? \_\_\_\_\_ Weight loss/gain? \_\_\_\_\_

9. Any **past history** of urinary problems? \_\_\_\_\_

Obstetric history? \_\_\_\_\_

Family history? \_\_\_\_\_

10. **Health and Lifestyle Factors**

Activity? \_\_\_\_\_ Smoking? \_\_\_\_\_

Continence products? \_\_\_\_\_ Aids? \_\_\_\_\_

**Prostate examination?** \_\_\_\_\_ **PSA?** \_\_\_\_\_

Activities/exercise? \_\_\_\_\_

11. **Environmental issues?**

Home? \_\_\_\_\_ Work? \_\_\_\_\_

Dexterity? \_\_\_\_\_ Mobility? \_\_\_\_\_

**II. Physical examination**1. **Vital signs:** \_\_\_\_\_ T \_\_\_\_\_ HR \_\_\_\_\_ BP \_\_\_\_\_ RR \_\_\_\_\_2. **Abdominal examination**

a. Inspect lower abdomen for distension of bladder. \_\_\_\_\_

b. Percuss and palpate for bladder position and size. \_\_\_\_\_

3. Using the bladder scanner (if available) assess **post-void residual volume** (PVR). \_\_\_\_\_4. **Urine examination**

a. Characteristics \_\_\_\_\_

b. Urinalysis \_\_\_\_\_ SG \_\_\_\_\_ Protein \_\_\_\_\_ Leucocytes \_\_\_\_\_

Nitrites \_\_\_\_\_ Glucose \_\_\_\_\_ Blood \_\_\_\_\_

Other? \_\_\_\_\_

5. **Fluid balance** assessment/voiding diary

a. Input \_\_\_\_\_ Output \_\_\_\_\_

b. Balance \_\_\_\_\_

c. Pattern of urinary elimination \_\_\_\_\_

Voiding frequency during the daytime \_\_\_\_\_

Presence and severity of nocturia \_\_\_\_\_

Proportion of urine formed overnight \_\_\_\_\_

**REGIONAL WRITE-UP WORKSHEET – URINARY FUNCTION  
(continued)**

- d. Patterns of urinary leakage \_\_\_\_\_  
Frequency of incontinence, relationship to voiding and precipitating events (e.g. coughing, sneezing)  
\_\_\_\_\_
- Volume of leakage \_\_\_\_\_
- e. Fluid consumption \_\_\_\_\_  
Patterns of intake \_\_\_\_\_  
Types of fluids \_\_\_\_\_  
Relationship of intake and voiding or incontinence \_\_\_\_\_
- f. Bladder capacity \_\_\_\_\_

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**REGIONAL DOCUMENTATION (SOAP) – URINARY FUNCTION**

Summarise your findings using the SOAP format.

**Subjective** (Reason for seeking care, health history)

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**Objective** (Physical exam findings)

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**Assessment** (Assessment of health state or problem, diagnosis)

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**Plan** (Diagnostic evaluation, follow-up care, patient teaching)

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# Chapter Twenty-Three

## Bowel function

### PURPOSE

There are many body systems involved in the assessment of bowel function and, as you may be aware, assessment of bowel function is a frequent focus for nurses and a commonly performed skill. As you progress through this chapter you will need to consider the anatomy, structure and function related to other systems such as nutrition (Ch 19) and abdominal assessment, which includes the small and large bowel (Ch 21) as well as the anus and rectum as described in this chapter. Most nurses do not perform screening examinations of patients, but may perform a rectal examination as part of a comprehensive assessment, depending on the patient's symptomology. Continence nurse advisors or clinical nurse specialists may perform a full rectal and anal assessment as part of a comprehensive assessment of constipation and faecal incontinence.

In this chapter on bowel function you should learn the structure and function of the anus and rectum. You will be introduced to the methods of inspection and palpation of these structures and how to record the health history and assessment accurately.

### KEY CONCEPTS

- Structure and function of anus and rectum
- Health history
- Bowel diary
- Stool abnormalities
- Anus and rectal examination

While you are completing your reading assignment, ensure you understand each of the key concepts listed above.

### READING ASSIGNMENT

Jarvis, Forbes & Watt (JF&W): *Jarvis's Physical Examination & Health Assessment*, Chapter 23, pp 644–658.

### GLOSSARY

<b>Anal canal</b> .....	the outlet of the gastrointestinal tract
<b>Anal reflex</b> .....	neonatal reflex: when anal area is gently stroked there is a quick contraction of the anal sphincter
<b>Constipation</b> .....	decrease in stool frequency, passing very hard, dry stools with difficulty
<b>Diarrhoea</b> .....	loose stools; may be associated with nausea and vomiting, abdominal pain or something eaten recently
<b>Encopresis</b> .....	persistent passing of stools into clothing in a child older than age 4 years, at which age continence would be expected
<b>Fissure</b> .....	painful longitudinal tear in tissue, e.g. in the superficial mucosa at the anal margin
<b>Haemorrhoid</b> .....	flabby papules of skin or mucous membrane in the anal region caused by a varicose vein of the haemorrhoidal plexus
<b>Melaena</b> .....	blood in the stool
<b>Meningocele</b> .....	sac containing meninges that protrudes through a defect in the bony spine
<b>Occult blood</b> .....	nonvisible blood in the stool
<b>Peristalsis</b> .....	bowel action causing movement of contents along the bowel
<b>Pruritus</b> .....	itching or burning sensation in the skin
<b>Steatorrhoea</b> .....	excessive fat in the stool as in gastrointestinal malabsorption of fat
<b>Stool</b> .....	another term for faeces
<b>Valves of Houston</b> .....	one of three semilunar transverse folds that cross one-half the circumference of the rectal lumen

### STUDY GUIDE

After completing the reading assignment, you should be able to answer the following questions in the spaces provided.

1. State the length of the anal canal and the rectum in the adult, describe their location and their structure and function in the lower abdomen.

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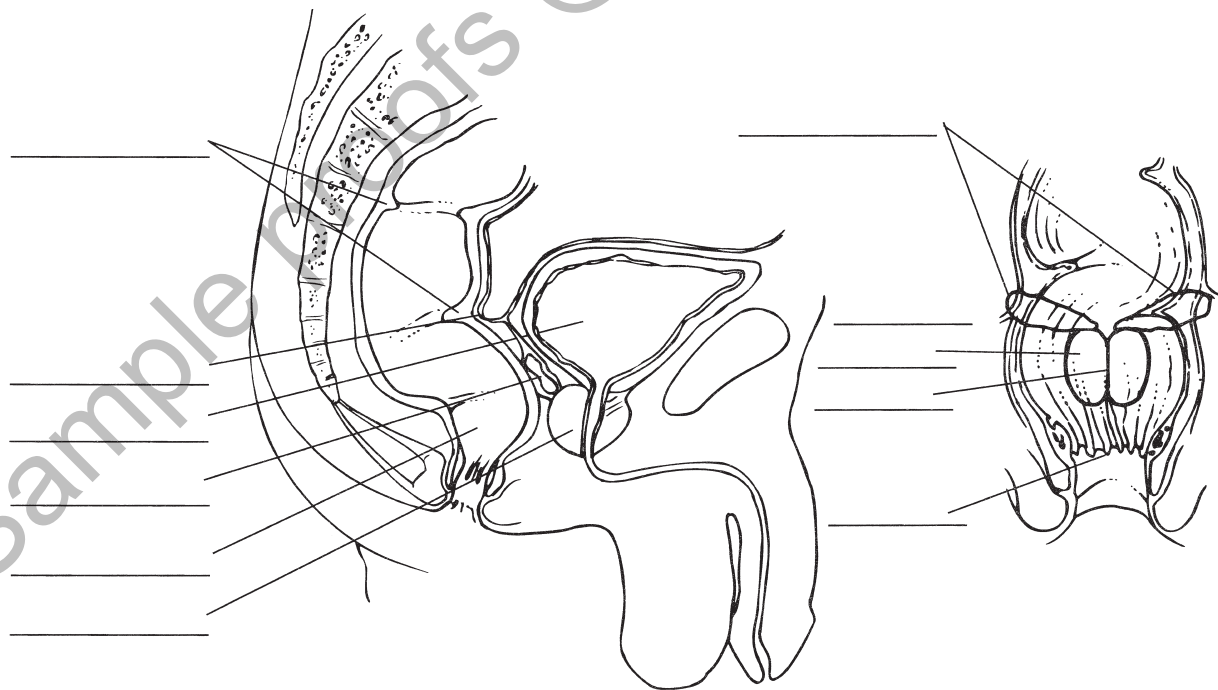
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2. Fill in the labels indicated on the following illustrations.



3. Explain where the sigmoid colon lies and how it may be visualised/examined.

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4. Briefly discuss the gastrocolonic reflex.

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5. List 4 factors that may contribute to bowel problems in the older person.

- i. 

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- ii. 

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- iii. 

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- iv. 

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6. When obtaining the health history, why is it important to ask if the patient has had an alteration or disturbance in their bowel pattern?

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7. Explain what each of the following stools variations may indicate.

melaena 

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red blood 

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clay-coloured stools 

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steatorrhoea 

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8. Explain the purpose and uses of the Bristol Stool Chart.

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9. List examples of high-fibre foods of both the soluble type and the insoluble type; state the advantages these foods have for the body.

soluble fibre \_\_\_\_\_

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insoluble fibre \_\_\_\_\_

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advantages \_\_\_\_\_

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10. Explain the purpose and use of a bowel diary.

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11. State the positions that facilitate examination of the rectum and anus.

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12. State the method of promoting anal sphincter relaxation in order to aid palpation of the anus and rectum.

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13. List risk factors for colon cancer, presenting symptoms and state screening measures that are recommended for early detection of colon/rectal cancer.

risk factors \_\_\_\_\_

\_\_\_\_\_

presenting symptoms \_\_\_\_\_

\_\_\_\_\_

screening measures \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

14. For each of the following stool types state what they may indicate:

jelly-like mucus shreds mixed in stool \_\_\_\_\_

bright red blood on stool surface \_\_\_\_\_

bright red blood mixed with faeces \_\_\_\_\_

black tarry stool with distinct malodour \_\_\_\_\_

black stool \_\_\_\_\_

grey, tan stool \_\_\_\_\_

pale yellow, greasy stool \_\_\_\_\_

occult bleeding (hidden in stool, not obvious) \_\_\_\_\_

15. Describe the physical appearance and clinical significance of a pilonidal cyst and an anorectal fistula.

\_\_\_\_\_

\_\_\_\_\_

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## REVIEW QUESTIONS

This test is for you to check your own mastery of the content. Answers are provided in Appendix A.

1. The gastrocolic reflex is:
  - a. a peristaltic wave
  - b. the passage of meconium in the newborn
  - c. another term for borborygmi
  - d. reverse peristalsis
2. Select the best description of the anal canal.
  - a. a 12-cm-long portion of the large intestine
  - b. under involuntary control of the parasympathetic nervous system
  - c. a 3.8-cm-long outlet of the gastrointestinal tract
  - d. an S-shaped portion of the colon
3. While good nutrition is important for everyone, foods believed to help reduce risk of colon cancer are:
  - a. high in fibre
  - b. low in fat
  - c. high in protein
  - d. high in carbohydrate
4. Inspection of stool is an important part of the rectal examination. Normal stool is:
  - a. black in colour and tarry in consistency
  - b. brown in colour and soft in consistency
  - c. clay coloured and dry in consistency
  - d. varies depending upon the individual's diet
5. A false positive may occur on faecal occult blood tests of the stool if the person has ingested significant amounts of:
  - a. red meat
  - b. sweets with red dye #2
  - c. cranberry juice
  - d. red beets
6. Risk factors for colon cancer include all of the following **except**:
  - a. age
  - b. inherited genetic risk
  - c. inflammatory bowel disease
  - d. alcohol consumption
7. Which of the following contribute to the development of constipation?
  - a. volume of water/liquids consumed
  - b. sedentary lifestyle
  - c. exercise
  - d. high fibre foods
8. Circle True or False to answer the following statements. If the answer is false, state the correct answer.
  - a. To confirm an imperforate anus, note the first meconium stool passed within 24 to 48 hours of birth. True False
  - b. To be considered melaena, the stool must be a malodourous black tarry stool containing more than 50 mL partially digested blood. True False
  - c. All haemorrhoids result from a decreased portal venous pressure, as occurs with straining at stool, chronic constipation, pregnancy, obesity, chronic liver disease or low-fibre diet. True False

## PRACTICAL SKILLS IN THE LABORATORY/CLINICAL SETTING

Most patients will self-manage their bowel function, but as nurses we are expected to screen patients who are at risk of developing constipation and initiate appropriate management.

Assessment of the rectum and anus is usually integrated with other regional assessments such as abdominal assessment (Ch 21), urinary tract function (Ch 22), female reproductive function (Ch 24) and male genitalia (Ch 25), depending on the presentation of the patient. You have completed the preparation for an assessment of the rectum and anus, by completing the readings, study guide and review questions and should now be ready for the clinical component.

The purpose of this clinical component is to practise the steps in sensitive history taking and bowel function examination on a peer in the laboratory (health history) and manikin (bowel function) in the laboratory or a patient in the clinical setting.

**Please note:** You will be expected to practise taking the health history on your peer but you will not be expected to perform the rectal and anal examination on them. You may be expected to practise the steps of the anal and rectal examination on a manikin or task trainer in the laboratory to enhance your learning experience.

### Clinical Objectives

At the completion of the clinical laboratory session, with further practice and self-directed learning you should be able to:

1. demonstrate knowledge of the signs and symptoms related to bowel function by obtaining an accurate yet sensitive health history
2. assess for bowel dysfunction
3. integrate rectal and anal examination with other regional examinations as directed
4. inspect and palpate the perianal region
5. test stool specimens for occult blood
6. record the health history and examination findings accurately.

### Instructions

1. Form pairs.
2. Prepare the examination setting and gather your equipment (penlight, lubricating jelly, gloves).
3. Wash your hands.
4. Gain consent to perform the examination from either your peer or the patient.
5. Practise obtaining the health history from your peer, or a patient in the clinical setting.
6. Position the manikin or patient appropriately to facilitate the examination, while maintaining their dignity.
7. Apply gloves before commencing the examination.
8. Practise the steps of the examination on the manikin or a patient in the clinical setting, providing appropriate instructions and maintaining dignity as you proceed.
9. Wash hands again after removing gloves.
10. Record your findings using the regional write-up worksheet.
11. Swap roles and repeat steps 2–10.
12. Discuss your assessment techniques, findings and performance with your peer to develop a complete understanding of the process.
13. Note that only the worksheet is included in this chapter. Your documentation using the SOAP format may be included with that of the genitalia as directed by your instructor.

## REGIONAL WRITE-UP WORKSHEET – BOWEL FUNCTION

Date \_\_\_\_\_

Interview conducted by \_\_\_\_\_

Designation \_\_\_\_\_

Patient \_\_\_\_\_ Age \_\_\_\_\_ Gender \_\_\_\_\_

Occupation \_\_\_\_\_ Medical Record Number \_\_\_\_\_

### I. Health history

**Presenting concern:** \_\_\_\_\_

1. Bowels move **regularly**? How often? \_\_\_\_\_

Usual colour? Hard or soft? \_\_\_\_\_

2. Any **change** in usual bowel habits? \_\_\_\_\_

Bowel symptoms? \_\_\_\_\_

Anal symptoms? \_\_\_\_\_

Any rectal itching or haemorrhoids? \_\_\_\_\_

**Any pain?** \_\_\_\_\_

Describe bowel movements using Bristol Stool Chart \_\_\_\_\_

3. Ever had **black or bloody stool**? \_\_\_\_\_

4. Medications \_\_\_\_\_

5. Past history? \_\_\_\_\_

6. Any family history of **colon/rectal polyps or cancer**? \_\_\_\_\_

7. Self-care practices \_\_\_\_\_

Exercise and activity levels \_\_\_\_\_

Usual amount of high-fibre foods in diet \_\_\_\_\_

Water consumption \_\_\_\_\_

8. **Environmental issues** \_\_\_\_\_

Help/assistance with toileting? \_\_\_\_\_

9. **Bowel diary?** \_\_\_\_\_

### II. Physical examination

#### A. Inspect the perianal area

Skin condition \_\_\_\_\_

Sacroccocygeal area \_\_\_\_\_

Note skin integrity while patient performs Valsalva manoeuvre \_\_\_\_\_



**REGIONAL WRITE-UP WORKSHEET – BOWEL FUNCTION  
(continued)**

**B. Palpate anus and rectum**

Anal sphincter \_\_\_\_\_

Anal canal \_\_\_\_\_

Rectal wall \_\_\_\_\_

**C. Examination of stool**

Visual inspection \_\_\_\_\_

Test for occult blood \_\_\_\_\_

Sample proofs @ Elsevier Australia

### Chapter Twenty-Four

## Female sexual and reproductive function

### PURPOSE

In this chapter you will revise the female reproductive structures. You will be introduced to the methods of inspection and palpation of the external genitalia and internal structures. As beginning practitioners you will not be expected to perform the internal examination or to perform the procedures for collection of cytological specimens, as both of these are advanced practice skills, although you should understand the steps in both of the techniques. You will be expected to be able to complete a comprehensive health history and perform elements of inspection and palpation of the external genitalia and to record these components of the assessment accurately.

As the organs and muscles of the abdomen, urinary tract and bowel are also relevant to female sexual and reproductive function you should also revise Chapters 21, 22 and 23 and consider them throughout the examination.

### KEY CONCEPTS

- Structure and function of the external and internal genitalia
- Pelvic floor muscles and perineum
- Preparation and positioning
- Communication
- Advanced practice skills and assessment
- Abnormalities and infections associated with the female reproductive function

While you are completing your reading assignment, ensure you understand each of the key concepts listed above.

### READING ASSIGNMENT

Jarvis, Forbes & Watt (JF&W): *Jarvis's Physical Examination & Health Assessment* 2e, Chapter 24, pp 659–694.

### GLOSSARY

<b>Adnexa</b> .....	accessory organs of the uterus, i.e. ovaries and fallopian tubes
<b>AIDS</b> .....	acquired immune deficiency syndrome; a late form of infection with HIV
<b>Amenorrhoea</b> .....	absent menses
<b>Bartholin's glands</b> .....	vestibular glands, located on either side of the vaginal orifice, that secrete a clear lubricating mucus during intercourse
<b>Caruncle</b> .....	small, deep red mass protruding from urethral meatus, usually due to urethritis
<b>Chadwick's sign</b> .....	bluish discolouration of cervix that occurs normally in pregnancy at 6 to 8 weeks gestation
<b>Chancere</b> .....	small, solitary silvery papule that erodes to a red, round or oval, superficial ulcer with a yellowish serous discharge; a sign of syphilis
<b>Chlamydia</b> .....	sexually transmitted bacterial infection; often no symptoms; may have unusual vaginal discharge
<b>Clitoris</b> .....	small, elongated erectile tissue in the female, located at anterior juncture of labia minora

<b>Cyst</b> .....	uninflamed closed sac containing fluid or semisolid material; can occur in various locations
<b>Cystocele</b> .....	the bladder, covered by vaginal mucosa, prolapses into vagina causing a bulge; a result of the pelvic musculature failing to support the bladder
<b>Dysmenorrhoea</b> .....	abdominal cramping and pain associated with menstruation
<b>Dyspareunia</b> .....	irritation and pain with intercourse
<b>Dysuria</b> .....	pain on urination
<b>Endometriosis</b> .....	aberrant growths of endometrial tissue scattered throughout pelvis
<b>Fibroid</b> .....	(myoma) hard painless nodules in uterine wall; cause uterine enlargement; oestrogen dependent
<b>Genital warts</b> .....	caused by human papilloma virus (HPV); cauliflower-like clusters in genital and anus areas; may be itchy
<b>Gonorrhoea</b> .....	sexually transmitted bacterial infection; often no symptoms; may have purulent vaginal discharge
<b>Gravida</b> .....	number of pregnancies
<b>Haematuria</b> .....	red-tinged or blood stained urine
<b>Hegar's sign</b> .....	isthmus of the uterus softens at 6 to 8 weeks gestation; a sign of pregnancy
<b>Hepatitis B</b> .....	sexually transmitted viral infection that affects the liver; flu-like symptoms, dark urine and yellowing of skin and eyes; may have no symptoms
<b>Herpes</b> .....	sores caused by herpes simplex virus (HSV); blistering ulcers found on mouth (type 1) and genitals (type 2)
<b>HIV</b> .....	human immunodeficiency virus; sexually transmitted viral infection which damages the immune system; no symptoms for several years after infection
<b>Hymen</b> .....	a thin, circular or crescent-shaped fold of tissue that may cover part of the vaginal orifice or may be absent
<b>Leucorrhoea</b> .....	sanguineous mucoid vaginal discharge
<b>Menarche</b> .....	onset of first menstruation, usually between 11 and 13 years of age
<b>Menopause</b> .....	cessation of menstruation
<b>Menorrhagia</b> .....	heavy menses
<b>Papanicolaou test</b> .....	test used to detect cervical cancer
<b>Para</b> .....	number of births (over 20 weeks gestation; live or stillborn)
<b>Polyp</b> .....	bright red, soft, pedunculated growth emerging from os
<b>Rectouterine pouch</b> .....	(cul-de-sac of Douglas) deep recess formed by the peritoneum between the rectum and cervix
<b>Salpingitis</b> .....	inflammation of fallopian tubes
<b>Skene's glands</b> .....	paraurethral glands
<b>Syphilis</b> .....	bacterial infection; single painless clear ulcer on genitals, may have enlargement of glands in groin, body rash and flu-like symptoms. Serious complications if left untreated
<b>Vaginitis</b> .....	inflammation of vagina
<b>Vulva</b> .....	external genitalia of female

### STUDY GUIDE

After completing the reading assignment, you should be able to answer the following questions in the spaces provided.

1. Briefly describe each of the structures and openings comprising the external female genitalia.

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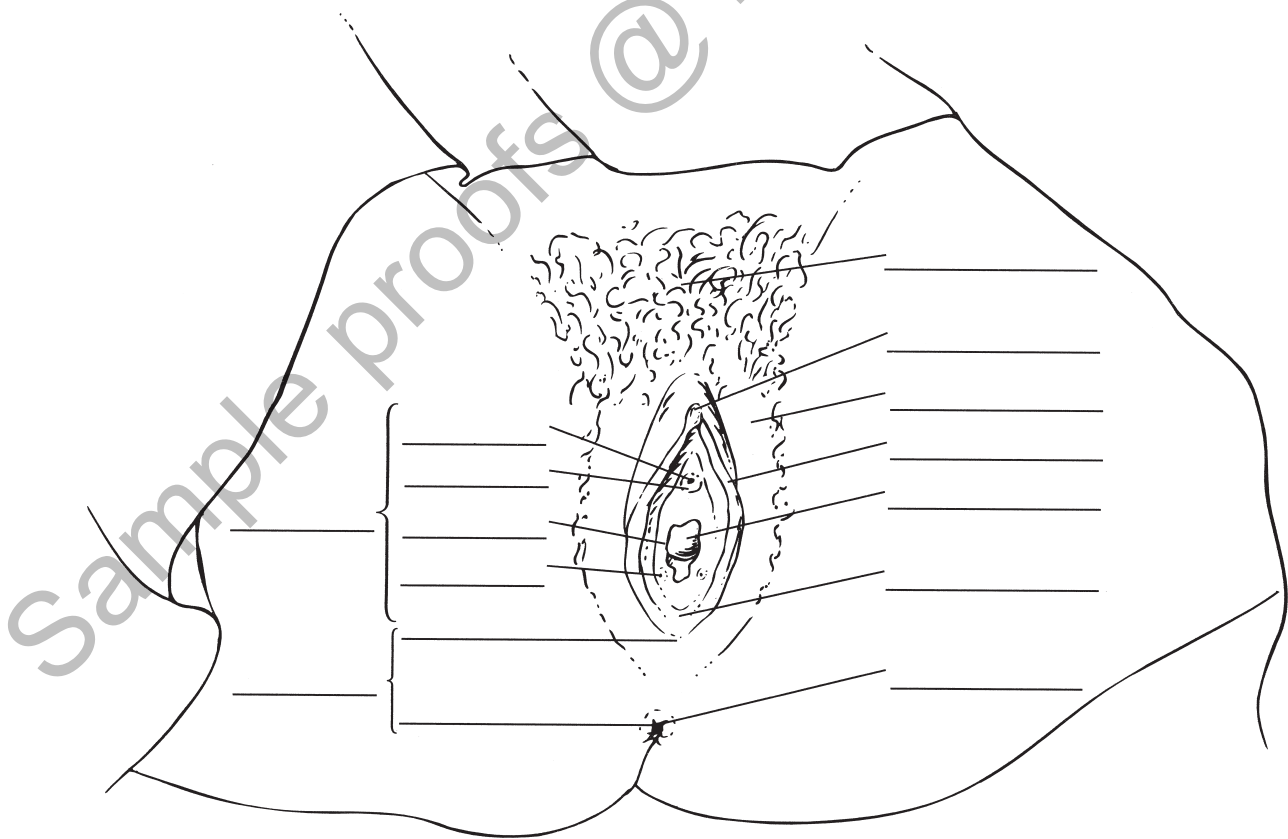
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2. Label the external structures of the female genitalia on the diagram.



3. Describe the boundaries, structure, muscles and components of the pelvic floor and perineum.

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4. Describe the size, shape and location of the internal structures of the female genitalia.

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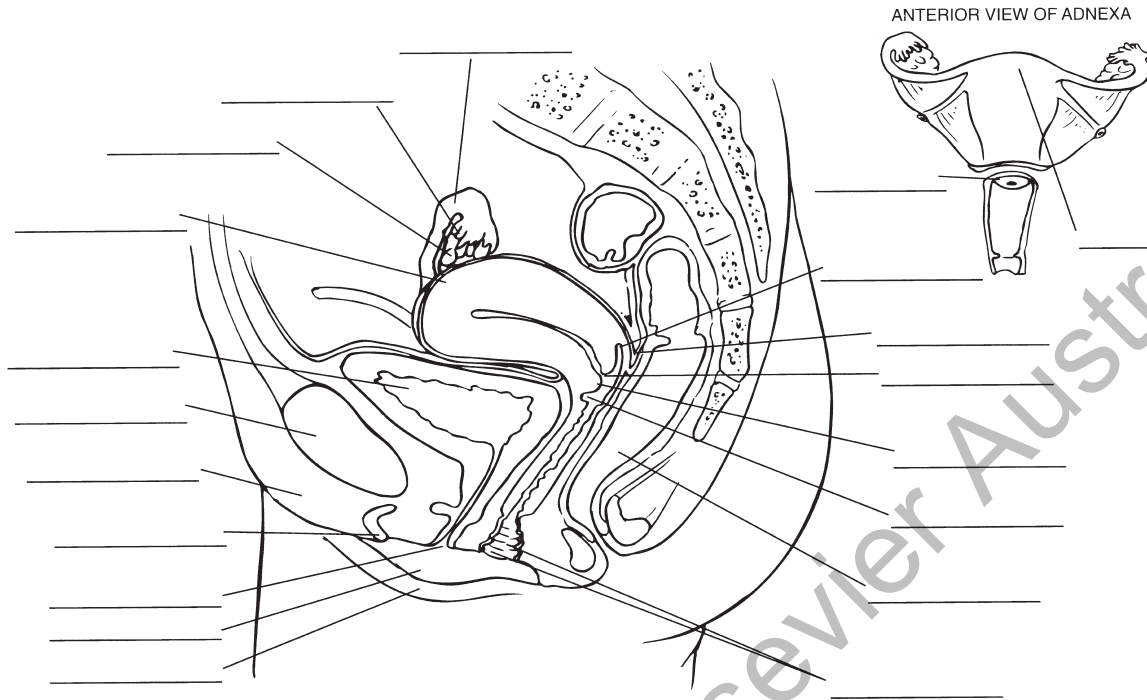
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5. Label the internal structures of the female genitalia on the diagram.



6. Circle True or False to answer the following statements. If the answer is false, state the correct answer.

- |  |      |       |
|--|------|-------|
| a. At birth, the external genitalia are engorged because of the presence of maternal progesterone.                       | True | False |
| b. During childhood the ovaries are located in the abdomen.  | True | False |
| c. The first signs of puberty are breast and pubic hair development.   | True | False |
| d. Puberty occurs between the ages of 7 and 12 years.  | True | False |
| e. Irregularity of the menstrual cycle is common during adolescence because of the girl's occasional failure to ovulate. | True | False |

7. State the physiological changes and approximate times associated with the following pregnancy signs.

Goodell's sign \_\_\_\_\_

Chadwick's sign \_\_\_\_\_

Hegar's sign \_\_\_\_\_

8. Describe changes in the uterus that occur during pregnancy.

\_\_\_\_\_

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13. Discuss strategies to create an environment that will provide psychological comfort for both the woman and the nurse during the health history. You may include any strategies that you have encountered.

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14. List the 5 specific areas for subjective data collection when assessing sexuality and reproductive function using the female health history assessment guidelines.

i. 

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ii. 

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iii. 

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iv. 

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v. 

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15. List, and then explain, 3 conditions or medications that increase the risk of vaginitis.

i. 

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ii. 

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iii. 

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16. When discussing their health history with preadolescent and adolescent girls to assess their sexual growth, development and sexual behaviour, describe strategies and questions you might ask to elicit accurate information about their sexual health and knowledge. What strategies and questions might provide opportunities for education?

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17. Describe the patient position for a vaginal examination (or catheterisation).

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18. Explain the expected normal findings in an external genitalia examination using the following headings:

skin colour and hair distribution \_\_\_\_\_

labia majora \_\_\_\_\_

labia minora \_\_\_\_\_

urethra \_\_\_\_\_

vaginal opening \_\_\_\_\_

perineum \_\_\_\_\_

anus \_\_\_\_\_

19. Circle True or False to answer the following statements concerning examination of the external genitalia of infants and children. If the answer is false, state the correct answer.

- a. In the newborn, a sanguineous vaginal discharge or leucorrhoea (muroid discharge) is not normal during the first few weeks. True     False
- b. Frog-leg positioning with hips flexed, soles of feet together and pulled up to their bottom is used for both infants and school-age children to prepare for the examination. True     False
- c. Drapes are always used when performing female examinations, even in children. True     False
- d. During childhood, routine screening is limited to inspection of the external genitalia to determine that (1) the structures are intact, (2) the vagina is present and (3) the hymen is patent. True     False
- e. Absence of pubic hair by 13 years indicates delayed puberty. True     False

20. Identify the different types of speculum and explain preparation and insertion of the vaginal speculum. (**Note: Only** advanced practitioners working in specialist areas will perform this skill, but you may be asked to assist or explain the process to the patient, so you should be aware of the procedure.)

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21. Describe the normal, nulliparous cervix and os.

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22. Describe Nabothian cysts; include their causation.

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23. Briefly discuss *normal* variation in vaginal secretions.

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24. State the purpose of the Papanicolaou (Pap smear) test, then list the structures that are sampled with the following components of the Pap test:

purpose: \_\_\_\_\_

vaginal pool \_\_\_\_\_

cervical scrape \_\_\_\_\_

endocervical specimen \_\_\_\_\_

25. List 10 items of data that must accompany the Pap smear tests to the laboratory.

i. \_\_\_\_\_

ii. \_\_\_\_\_

iii. \_\_\_\_\_

iv. \_\_\_\_\_

v. \_\_\_\_\_

vi. \_\_\_\_\_

vii. \_\_\_\_\_

viii. \_\_\_\_\_

ix. \_\_\_\_\_

x. \_\_\_\_\_

26. List the characteristics of vaginal discharge associated with the following conditions of vaginitis:

candidiasis \_\_\_\_\_

trichomoniasis \_\_\_\_\_

bacterial vaginosis \_\_\_\_\_

chlamydia \_\_\_\_\_

gonorrhoea \_\_\_\_\_

27. Discuss infection control precautions during examination of female genitalia and procuring of specimens.

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28. Differentiate the signs and symptoms of these conditions of adnexal enlargement:

ectopic pregnancy \_\_\_\_\_

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ovarian cyst \_\_\_\_\_

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## REVIEW QUESTIONS

This test is for you to check your own mastery of the content. Answers are provided in Appendix A.

- Vaginal lubrication is provided during intercourse by:
  - the labia minora
  - sebaceous follicles
  - Skene's glands
  - Bartholin's glands
- A young woman has come for her first gynaecological examination. Because the patient has not had any children, the nurse would expect the cervical os to appear:
  - smooth and circular
  - irregular and slit-like
  - irregular and circular
  - smooth and enlarged
- A woman has come for an examination because of a missed menstrual period and a positive home pregnancy test. Examination reveals a cervix that appears cyanotic. This is referred to as:
  - Goodell's sign
  - Hegar's sign
  - Tanner's sign
  - Chadwick's sign
- During the examination of the genitalia of a 70-year-old woman, a normal finding would be:
  - hypertrophy of the mons pubis
  - increase in vaginal secretions
  - thin and sparse pubic hair
  - bladder prolapse
- For a woman, history of her mother's health during pregnancy is important. The daughter would require frequent follow-up, if the mother took the following medication:
  - corticosteroid
  - theophylline
  - diethylstilboestrol
  - aminoglycoside
- A woman has come for healthcare complaining of a thick, white discharge with intense itching. These symptoms are suggestive of:
  - atrophic vaginitis
  - trichomoniasis
  - chlamydia
  - candidiasis
- To prepare the vaginal speculum for insertion, the nurse should:
  - lubricate it with a water-soluble lubricant
  - lubricate it with petrolatum
  - warm it under the light, then insert it into the vagina
  - lubricate it with warm water
- To insert the speculum as comfortably as possible, the nurse:
  - opens the speculum slightly and inserts in an upwards direction
  - presses the introitus down with one hand and inserts the blades obliquely with the other
  - spreads the labia with one hand, inserts the closed speculum horizontally with the other
  - pushes down on the introitus and inserts the speculum in an upwards direction
- Select the best description of the uterus:
  - anteverted, round asymmetrical organ
  - pear-shaped, thick-walled organ flattened anteroposteriorly
  - retroverted, almond-shaped asymmetrical organ
  - midposition, thick-walled oval organ
- Which of the following is a common finding on inspection and palpation of the vulva and perineum?
  - palpable Bartholin's glands
  - labia majora that are wide apart and gaping
  - clear, thin discharge from paraurethral glands
  - bulging at introitus during Valsalva manoeuvre
- The current cervical screening recommendations are that women should have a Pap smear:
  - every 2 years from the age of 14 or 2 years after having sex, whichever is later
  - every 2 years from the age of 16 or 2 years after having sex, whichever is later
  - every 2 years from the age of 18 or 2 years after having sex, whichever is later
  - every 2 years after having sex but no later
- Human papillomavirus vaccine to prevent cervical cancer was introduced in Australia and New Zealand to target HPV, the virus responsible for most cases of cervical cancer. The vaccine is administered to which of the following groups:
  - women who are already infected with HPV
  - girls and women before they become sexually active
  - all girls and women as they do not know if they are carrying the virus

## PRACTICAL SKILLS IN THE LABORATORY/CLINICAL SETTING

Assessment of female reproductive function is particularly sensitive and therefore requires the demonstration of empathy, understanding, tact and the establishment of a trusting and therapeutic relationship. Privacy and confidentiality of any information disclosed or discussed with the patient needs to be ensured.

As a beginning practitioner you will not be expected to, for example, perform an internal examination. Only advanced practice nurses or clinical specialists in select areas will perform components of this assessment. However, it is important that you understand these concepts and are aware of the correct technique for the performance of these skills, as you will often be asked to explain the procedure to a patient or assist.

Given the sensitive nature of assessment of the female genitalia, you will not be practising on your peer. It is likely that you will practise on a teaching manikin in the skills laboratory or with a woman in the clinical setting under the guidance of a preceptor or teacher if you are to engage in advanced practice skill development.

After completing the readings, exercises and review questions you should be ready for the clinical component of taking of the health history and explain the physical examination of external genitalia.

### Clinical Objectives

At the completion of the clinical laboratory session, with further practice and self-directed learning you should be able to:

1. collect information concerning the patient's sexual and reproductive system by obtaining an accurate and pertinent health history relating to the presenting signs and symptoms
2. provide an explanation or demonstrate, using a manikin in the skills laboratory, the steps of the sexual and reproductive examination by inspection of the external genitalia
3. demonstrate measures to increase the woman's comfort before, during and after the examination
4. demonstrate knowledge of infection control precautions before, during and after the examination
5. record the history and physical examination findings accurately, reach an assessment of the health state and develop a plan of care.

### PROFESSIONAL PRACTICE NOTE

- *Before you commence, discuss with your peer or group feelings that may be experienced by a woman undergoing the assessment, the nurse who is performing the assessment and methods to increase the comfort of both.*
- *Make sure you have discussed the steps of the examination with your teacher before examining a patient in the clinical setting.*
- *When you start interviewing your peer during the health history, practise your questioning techniques. Begin with more general health areas to establish rapport, then move on to more specific and sensitive topic areas.*
- *Use open-ended questions to promote patient discussion/disclosure.*
- *Practise your listening skills by letting them 'tell their story'.*
- *Be open, honest and display respect, empathy and professionalism.*

### Instructions

1. Form pairs.
2. Prepare the examination setting and gather your equipment (gloves, goose-necked lamp with a strong light).
3. Ask the woman to empty her bladder before the examination, put on a gown and ask if she would like a friend, family member or chaperone present. Position this person by the woman's head to maintain privacy.
4. Gain consent to perform the examination from either your peer or the patient.
5. Collect the health history relating to the presenting signs and symptoms before the woman disrobes for the examination.
6. Perform hand hygiene; wear gloves during the examination; repeat hand hygiene again after removing gloves.
7. Perform the steps of the sexual and reproductive examination by inspection of the external genitalia, on the manikin in the skills laboratory, providing appropriate instructions and minimising exposure as you proceed.

8. Ensure measures to increase the woman's comfort before, during and after the examination are demonstrated during the procedure.
9. Implement infection control precautions before, during and after the examination.
10. Record your findings using the regional write-up worksheet.
11. **Note:** Collection of data for the rectal examination is often combined with the examination of female genitalia. Refer to Chapter 23 for the regional write-up worksheet for the rectal examination if required.
12. Swap roles and repeat steps 2–11.
13. Discuss your assessment techniques, findings and performance with your peer to develop a complete understanding of the process.
14. Document your findings using the SOAP format.

**Advanced practice components not required for clinical laboratory**

As a beginning practitioner you will not be expected to, for example, perform an internal examination. Only advanced practice nurses or clinical specialists in select areas will perform components of this assessment.

1. Palpation of the external genitalia
2. Using the vaginal speculum, to gather materials for cytological study
3. Inspection and palpation of the internal genitalia

## REGIONAL WRITE-UP WORKSHEET — FEMALE SEXUAL AND REPRODUCTIVE FUNCTION

Date \_\_\_\_\_

Interview conducted by \_\_\_\_\_

Designation \_\_\_\_\_

Patient \_\_\_\_\_ Age \_\_\_\_\_ Gender \_\_\_\_\_

Occupation \_\_\_\_\_ Medical Record Number \_\_\_\_\_

### I. Health history

#### 1. Menstrual history

Age at first period? \_\_\_\_\_

Date of your last menstrual period? \_\_\_\_\_

How often are your periods? Cycle? \_\_\_\_\_

How many days does your period last? \_\_\_\_\_

Usual amount of flow: (Circle)      light      medium      heavy

Any clotting? \_\_\_\_\_ Any pain or cramps? \_\_\_\_\_ Any spotting? \_\_\_\_\_

Any associated symptoms: Bloating? \_\_\_\_\_ Breast tenderness? \_\_\_\_\_ Moodiness? \_\_\_\_\_

#### 2. Obstetric history

Have you ever been pregnant? \_\_\_\_\_ How many times? \_\_\_\_\_

Any miscarriages or abortions? \_\_\_\_\_

Describe pregnancy(ies): \_\_\_\_\_

Duration: \_\_\_\_\_ Any complications? \_\_\_\_\_

Labour and delivery? \_\_\_\_\_ Baby's sex \_\_\_\_\_

Birth weight \_\_\_\_\_ Condition \_\_\_\_\_

Pregnant now? \_\_\_\_\_ Symptoms? \_\_\_\_\_

#### 3. Menopause

Periods slowed down or stopped? \_\_\_\_\_ Any associated symptoms? \_\_\_\_\_

Any management? \_\_\_\_\_ Hormone replacement? \_\_\_\_\_

How much? \_\_\_\_\_ How is it working? \_\_\_\_\_

Any side-effects? \_\_\_\_\_ Using other therapies? \_\_\_\_\_

How do you feel about menopause? \_\_\_\_\_

#### 4. Self-care practices

Pap smear frequency? \_\_\_\_\_ Breast examination? \_\_\_\_\_

Last Pap smear? \_\_\_\_\_ Results? \_\_\_\_\_



## REGIONAL WRITE-UP WORKSHEET – FEMALE SEXUAL AND REPRODUCTIVE FUNCTION (continued)

- Immunised against human papillomavirus? \_\_\_\_\_
- Mother took hormones while pregnant with you? \_\_\_\_\_ Which ones? \_\_\_\_\_
5. Any problems with **urinating**? \_\_\_\_\_ Pain or burning? \_\_\_\_\_  
Frequency? \_\_\_\_\_ Urgency? \_\_\_\_\_
6. Any unusual **vaginal discharge**? \_\_\_\_\_ Increased amount? \_\_\_\_\_  
Character or colour: (Circle) white yellow-green grey curd-like foul smelling?  
When did this begin? \_\_\_\_\_ Associated with vaginal itching? \_\_\_\_\_  
Rash? \_\_\_\_\_  
Pain with intercourse? \_\_\_\_\_  
Taking any medications? \_\_\_\_\_  
Family history of diabetes? \_\_\_\_\_  
What part of your menstrual cycle are you in now? \_\_\_\_\_
7. **Past history**  
Any other problems in the genital area? \_\_\_\_\_  
Sores or lesions? \_\_\_\_\_ At present? \_\_\_\_\_  
In the past? \_\_\_\_\_ Treatment? \_\_\_\_\_  
Any abdominal pain? \_\_\_\_\_  
Any past surgery on uterus? \_\_\_\_\_ Ovaries? \_\_\_\_\_  
Vagina? \_\_\_\_\_
8. **Sexual activity**  
Any questions about your **sexual relationship**? \_\_\_\_\_  
In a relationship involving sex now? \_\_\_\_\_  
Are aspects of sex satisfactory to you and your partner? \_\_\_\_\_  
Communicate about sex? \_\_\_\_\_  
More than one sexual partner? \_\_\_\_\_ Explain \_\_\_\_\_
9. **Contraceptive use**  
Planning a pregnancy? \_\_\_\_\_ Avoiding pregnancy? \_\_\_\_\_  
Use a **contraceptive**? \_\_\_\_\_ Which method? \_\_\_\_\_  
Is this satisfactory? \_\_\_\_\_ Do you have any questions? \_\_\_\_\_  
Have you ever had any problems becoming pregnant? \_\_\_\_\_

## REGIONAL WRITE-UP WORKSHEET – FEMALE SEXUAL AND REPRODUCTIVE FUNCTION (continued)

### 10. Sexually transmitted infection (STI) contact

Any sexual contact with partner who had an STI? \_\_\_\_\_

When? \_\_\_\_\_ How was this treated? \_\_\_\_\_

Any complications? \_\_\_\_\_

### 11. STI risk reduction

Measures to reduce the risk of STIs? \_\_\_\_\_

Partner use condoms? \_\_\_\_\_

## II. Physical examination

### A. Inspect external genitalia

Skin colour and characteristics \_\_\_\_\_

Hair distribution \_\_\_\_\_

Labia majora symmetry \_\_\_\_\_

Clitoris \_\_\_\_\_

Labia minora \_\_\_\_\_

Urethral opening \_\_\_\_\_

Vaginal opening \_\_\_\_\_

Perineum \_\_\_\_\_

Anus \_\_\_\_\_

### Advanced practice physical examination not included in the laboratory

B. Palpate external genitalia \_\_\_\_\_

C. Speculum examination \_\_\_\_\_

D. Bimanual examination \_\_\_\_\_

## REGIONAL DOCUMENTATION (SOAP) – FEMALE SEXUAL AND REPRODUCTIVE FUNCTION

Summarise your findings using the SOAP format.

**Subjective** (Reason for seeking care, health history)

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**Objective** (Physical exam findings)

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**Assessment** (Assessment of health state or problem, diagnosis)

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**Plan** (Diagnostic evaluation, follow-up care, patient teaching)

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## Chapter Twenty-Five

# Male sexual and reproductive function

### PURPOSE

In this chapter you will revise the structure and function of the male genitalia. You will be introduced to the methods of inspection and palpation of these structures. In addition, you will be required to elicit an accurate male health history, to teach a patient testicular self-examination techniques and to document the assessment and education session accurately. As the organs, muscles and structures of the urinary tract, abdomen and bowel are relevant to male sexual and reproductive function you should also revise Chapters 21, 22 and 23.

### KEY CONCEPTS

- Structure and function of the male reproductive system
- Hernias
- Inguinal lymph nodes
- The prostate gland
- Examination of male genitalia
- Conditions affecting the male genitalia

While you are completing your reading assignment, ensure you understand each of the key concepts listed above.

### READING ASSIGNMENT

Jarvis, Forbes & Watt (JF&W): *Jarvis's Physical Examination & Health Assessment 2e*, Chapter 25, pp 695–723.

### GLOSSARY

<b>Chancere</b> .....	small, silvery papule that erodes to a red, round or oval, superficial ulcer with a yellowish serous discharge; STI; is a sign of syphilis
<b>Cryptorchidism</b> .....	undescended testes
<b>Ductus deferens</b> .....	duct carrying sperm from the epididymis through the abdomen then into the urethra
<b>Epididymis</b> .....	structure composed of coiled ducts located over the superior and posterior surface of the testes; stores sperm
<b>Epispadias</b> .....	congenital defect in which urethra opens on the dorsal (upper) side of glans or shaft above a broad, spade-like penis instead of at the tip
<b>Genital warts</b> .....	soft, pointed, fleshy papules that occur on the genitalia; caused by the human papillomavirus (HPV); (also called <b>Condylomata acuminata</b> ); an STI
<b>Genital herpes</b> .....	HSV-2 infection; clusters of small vesicles with surrounding erythema; often painful; erupt on the glans or foreskin; an STI
<b>Hernia</b> .....	weak spot in abdominal muscle wall (usually in area of inguinal canal or femoral canal) through which a loop of bowel may protrude
<b>Hydrocoele</b> .....	a cystic collection of serous fluid in the tunica vaginalis, surrounding the testis
<b>Hypospadias</b> .....	urethra opens on the ventral (under) side of penis shaft or at the penoscrotal junction rather than at the tip; congenital defect
<b>Orchitis</b> .....	acute inflammation of testis; usually associated with mumps
<b>Paraphimosis</b> .....	condition in which the foreskin cannot be slipped forwards once it is retracted
<b>Peyronie's disease</b> .....	nontender, hard plaques on the surface of penis, associated with painful bending of penis during erection

- Phimosis** ..... foreskin is advanced and tightly fixed over the glans penis; foreskin is impossible to retract
- Prepuce** ..... (foreskin) the hood or flap of skin over the glans penis; may be surgically removed after birth by circumcision for religious or cultural reasons
- Priapism** ..... prolonged, painful erection of penis without sexual desire
- Spermatic cord** ..... collection of ductus deferens, blood vessels, lymphatics and nerves that ascends along the testis and through the inguinal canal into the abdomen
- Spermatocoele** ..... retention cyst in epididymis filled with thin milky fluid that contains sperm
- Torsion** ..... sudden twisting of spermatic cord; a surgical emergency
- Varicocoele** ..... dilated tortuous varicose veins in the spermatic cord

### STUDY GUIDE

After completing the reading assignment, you should be able to answer the following questions in the spaces provided.

1. Describe the structure and function of each of the components of the male reproductive system:

penis

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scrotum

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testes

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epididymis

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ductus deferens

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2. Outline the structure, function and positioning of the prostate gland.

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3. Describe the function of the cremaster muscle.

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4. Describe each of the structures involved in the transport of sperm.

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5. Explain the function of seminal vesicles and bulbourethral (Cowper's) glands.

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6. Label the structures on the diagram:



7. Describe the inguinal area, including structures comprising the borders and the inguinal canal contents.

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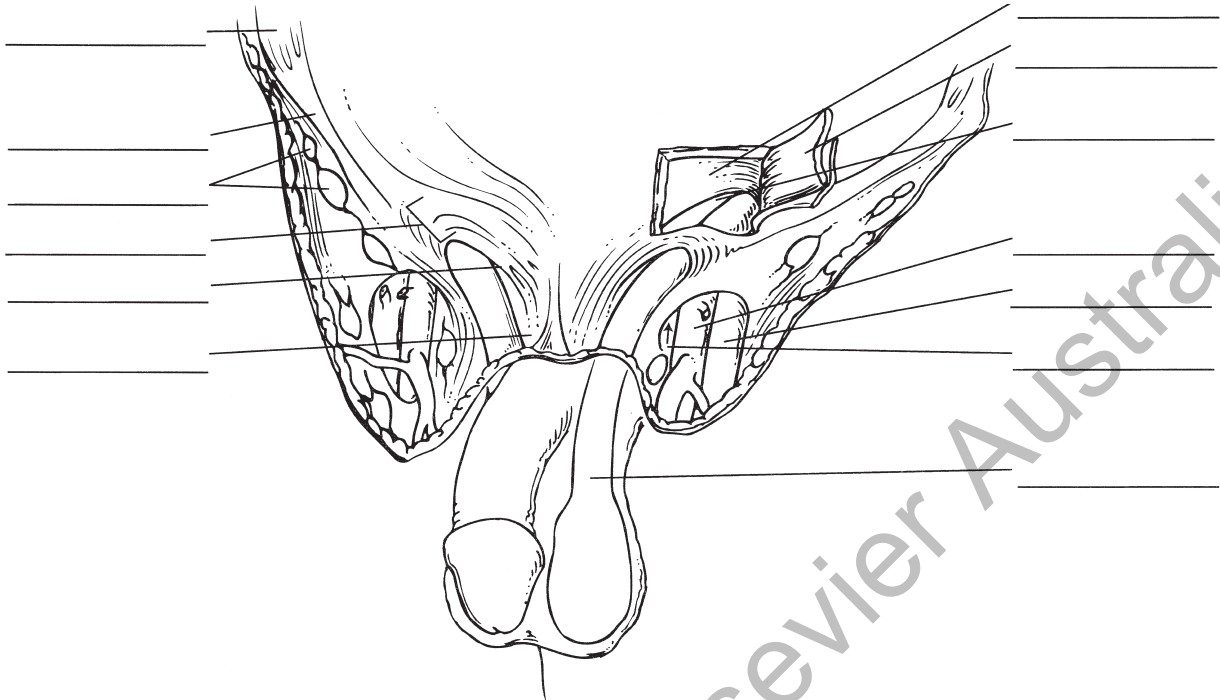
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8. State the significance of the inguinal and the femoral canals.

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9. Label the following diagram.



STRUCTURES OF THE INGUINAL AREA

10. Discuss the development and possible causation of benign prostatic hypertrophy across the life span.

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11. Outline the differential diagnosis of prostate cancer and screening measures that may assist early detection of prostate cancer.

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12. Discuss strategies to create an environment that will provide psychological comfort for both the man and the nurse during the health history and examination of male genitalia. You may include any strategies that you have encountered.

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13. List six (6) aspects of sexual maturity that should be noted on adolescent genital examination.

i. \_\_\_\_\_

ii. \_\_\_\_\_

iii. \_\_\_\_\_

iv. \_\_\_\_\_

v. \_\_\_\_\_

vi. \_\_\_\_\_

14. State two (2) reasons why men are no longer asked to 'cough' when being examined for inguinal hernias.

i. \_\_\_\_\_

ii. \_\_\_\_\_

15. Describe the normal physical characteristics of the prostate gland that would be assessed by rectal palpation using these headings:

Size \_\_\_\_\_

Shape \_\_\_\_\_

Surface \_\_\_\_\_

Consistency \_\_\_\_\_

Mobility \_\_\_\_\_

Sensitivity \_\_\_\_\_

16. Discuss the rationale for ensuring that testes have descended in the male infant; when they might remain undescended and when they should have descended by.

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17. Identify the important points to include when teaching testicular self-examination.

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18. Define the condition *benign prostatic hypertrophy*, list the usual symptoms the man experiences with this condition and describe the physical characteristics.

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19. Describe the presentation of each of the following STIs:

genital herpes

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syphilis

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genital warts

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urethritis

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20. Describe the clinical presentation and development of testicular torsion and justify treating this condition as an emergency.

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### REVIEW QUESTIONS

This test is for you to check your own mastery of the content. Answers are provided in Appendix A.

1. The nurse is going to inspect and palpate for a hernia. During this exam, the man is instructed to:
  - a. hold his breath during palpation
  - b. cough after the examiner has gently inserted the exam finger into the rectum
  - c. bear down when the examiner's finger is at the inguinal canal
  - d. relax in a supine position while the exam finger is inserted into the canal
2. During examination of the scrotum, a normal finding would be the:
  - a. left testicle is firmer to palpation than the right
  - b. left testicle is larger than the right
  - c. left testicle hangs lower than the right
  - d. left testicle is more tender to palpation than the right
3. Prostatic hypertrophy occurs frequently in older men. The symptoms that may indicate this problem are:
  - a. polyuria and urgency
  - b. dysuria and oliguria
  - c. straining, loss of force and sense of residual urine
  - d. foul-smelling urine and dysuria
4. Which finding in the prostate gland suggests prostate cancer?
  - a. symmetrical smooth enlargement
  - b. extreme tenderness to palpation
  - c. boggy soft enlargement
  - d. diffuse hardness

5. The bulbourethral gland is assessed:
  - a. during an examination of a female patient
  - b. during an examination of both male and female patients
  - c. cannot be assessed with a rectal examination
  - d. during an examination of a male patient
6. A 64-year-old man has come for a health examination. A normal, age-related change in the scrotum would be:
  - a. testicular atrophy
  - b. testicular hypertrophy
  - c. pendulous scrotum
  - d. increase in scrotal rugae
7. During palpation of the testes, the normal finding would be:
  - a. firm to hard, and rough
  - b. nodular
  - c. 2 to 3 cm long by 2 cm wide and firm
  - d. firm, rubbery and smooth
8. A 20-year-old man has indicated that he does not perform testicular self-examination. One of the facts that should be shared with him is that testicular cancer, though rare, does occur in men aged:
  - a. under 15
  - b. 15 to 34
  - c. 35 to 55
  - d. 55 and older
9. During the examination of a full-term newborn male, a finding requiring investigation would be:
  - a. absent testes
  - b. meatus centred at the tip of the penis
  - c. wrinkled scrotum
  - d. penis 2 to 3 cm in length
10. During transillumination of a scrotum, you note a nontender mass that transilluminates with a red glow. This finding is suggestive of:
  - a. scrotal hernia
  - b. scrotal oedema
  - c. orchitis
  - d. hydrocoele
11. How sensitive to pressure are normal testes?
  - a. somewhat
  - b. not at all
  - c. left is more sensitive than right
  - d. only when inflammation is present
12. The congenital displacement of the urethral meatus to the inferior surface of the penis is:
  - a. hypospadias
  - b. epispadias
  - c. hypoaesthesia
  - d. hypophysis
13. An adhesion of the prepuce to the head of the penis, making it impossible to retract, is:
  - a. paraphimosis
  - b. phimosis
  - c. smegma
  - d. dyschezia
14. The first physical sign associated with puberty in boys is:
  - a. height spurt
  - b. penis lengthening
  - c. sperm production
  - d. pubic hair development
  - e. testes enlargement

## PRACTICAL SKILLS IN THE LABORATORY/CLINICAL SETTING

Like the assessment of female sexual and reproductive function, the extent of the physical examination of the male will depend on the presenting signs and symptoms. Only specialist nurses working in sexual health clinics and some urological and continence settings will need to develop the advanced practice skills in order to perform a more comprehensive assessment of male sexual and reproductive function. Advanced assessment for infants and children is again performed by specialist neonatal and paediatric nurses, some midwives and maternal and child health nurses. For most nurses asking questions about the man's reproductive health during the health history will be sufficient for a nursing assessment.

Because of the sensitive nature of this exam and the need to maintain personal privacy, you will not practise this examination on a peer. Your practice will be with a teaching manikin in the skills laboratory or with a male patient in the clinical setting under the guidance of a preceptor or instructor.

Having revised the male reproductive organs and completed the readings, activities and review questions you are now ready for the clinical component of male genitalia, primarily the taking of the male health history and inspection of the male genitalia on the male manikin in the laboratory or a man, under supervision and guidance, in the clinical setting.

## Clinical Objectives

At the completion of the clinical laboratory session, with further practice and self-directed learning you should be able to:

1. collect information related to signs and symptoms of the male genitalia by obtaining an accurate and pertinent health history
2. inspect the penis and scrotum
3. teach testicular self-examination
4. record the history and physical examination findings accurately, reach an assessment of the health state and develop a plan of care.

### PROFESSIONAL PRACTICE NOTE

- *Before you commence, discuss with your peer or group feelings that may be experienced by a man undergoing the assessment, the nurse who is performing the assessment and methods to increase the comfort of both.*
- *Make sure you have discussed the steps of the examination with your instructor before examining a patient in the clinical setting.*
- *When you start interviewing your peer, taking the health history, practise your questioning techniques. Begin with more general health areas to establish rapport, then move on to more sensitive and specific topic areas.*
- *Use open-ended questions to promote patient discussion/disclosure.*
- *Practise your listening skills by letting them 'tell their story'.*
- *Be open, honest and display respect, empathy and professionalism.*

### Instructions

1. Form pairs.
2. Prepare the examination setting and gather your equipment.
3. Wash your hands.
4. Gain consent to perform the examination from either your peer or the patient.
5. Practise the health history interview technique by collecting the health history before the man disrobes for the examination.
6. Put on gloves and practise the steps of the inspection and palpation on the manikin in the skills laboratory, or a man in the clinical setting under supervision, providing appropriate instructions and minimising exposure as you proceed.
7. Wear gloves during the examination; wash hands again after removing gloves.
8. Ensure measures to increase the man's comfort before, during and after the examination are demonstrated during the procedure.
9. Implement infection control precautions before, during and after the examination.
10. Record your findings using the regional write-up worksheet.
11. Swap roles and repeat steps 2–10.
12. Discuss your assessment techniques, findings and performance with your peer to develop a complete understanding of the process.
13. Document your findings using the SOAP format.

### Advanced practice components not required for clinical laboratory

1. Palpate the penis and the scrotum
2. Inspect and palpate for hernia
3. Palpate inguinal lymph nodes
4. Palpate the prostate gland via the rectum

## REGIONAL WRITE-UP WORKSHEET — MALE GENITOURINARY SYSTEM

Date \_\_\_\_\_

Interview conducted by \_\_\_\_\_

Designation \_\_\_\_\_

Patient \_\_\_\_\_ Age \_\_\_\_\_ Gender \_\_\_\_\_

Occupation \_\_\_\_\_ Medical Record Number \_\_\_\_\_

### I. Health history

1. Any urinary **frequency**? \_\_\_\_\_ **Urgency**? \_\_\_\_\_ **Nocturia**? \_\_\_\_\_
2. Any **pain** or **burning** with urinating? \_\_\_\_\_
3. Any **trouble starting urine stream**? \_\_\_\_\_
4. Urine: \_\_\_\_\_ **Colour**? \_\_\_\_\_ **Cloudy**? \_\_\_\_\_  
**Foul-smelling**? \_\_\_\_\_ **Red-tinged or blood-stained**? \_\_\_\_\_
5. Any **pain** or **sores** on penis? \_\_\_\_\_
6. **Any discharge**? \_\_\_\_\_ **How much**? \_\_\_\_\_  
**Discharge colour**? \_\_\_\_\_ **Cloudy**? \_\_\_\_\_ **Foul-smelling**? \_\_\_\_\_
7. Any **lump** in testicles or scrotum? \_\_\_\_\_
8. **Do you perform testicular self-exam**? \_\_\_\_\_ **Any Lumps or swelling**? \_\_\_\_\_  
**Bulge or swollen** scrotum? \_\_\_\_\_  
**Dragging**? \_\_\_\_\_ **Hernia**? \_\_\_\_\_
9. **Family history** of prostate cancer? \_\_\_\_\_
10. **PSA or DRE**? \_\_\_\_\_ When? \_\_\_\_\_
11. **Sexual activity**: In relationship now? \_\_\_\_\_  
 Use a **contraceptive**? \_\_\_\_\_ Which one? \_\_\_\_\_  
 How many partners in last 6 months? \_\_\_\_\_  
 Problems with **erection**? \_\_\_\_\_  
**Sexual preference**? \_\_\_\_\_
12. **STI contact**? \_\_\_\_\_  
 Ever been diagnosed with an STI? \_\_\_\_\_ When? \_\_\_\_\_  
 Treatment? \_\_\_\_\_

## REGIONAL WRITE-UP WORKSHEET — MALE GENITOURINARY SYSTEM (continued)

### II. Physical examination

#### A. Inspect penis

Skin condition \_\_\_\_\_ Lesions? \_\_\_\_\_

Glans \_\_\_\_\_ Foreskin retractable? \_\_\_\_\_ Smegma? \_\_\_\_\_

Urethral meatus \_\_\_\_\_

Pubic hair distribution \_\_\_\_\_

#### B. Inspect the scrotum

Skin condition \_\_\_\_\_ Lesions? \_\_\_\_\_

Size \_\_\_\_\_

Swelling \_\_\_\_\_

Symmetry \_\_\_\_\_

#### C. Teach testicular self-examination

#### Advanced Practice Components not included in the clinical laboratory

1. Palpate the penis and the scrotum
2. Inspect and palpate for hernia
3. Palpate inguinal lymph nodes
4. Palpate the prostate gland via the rectum

**REGIONAL DOCUMENTATION (SOAP) – MALE GENITOURINARY SYSTEM**

Summarise your findings using the SOAP format.

**Subjective** (Reason for seeking care, health history)

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**Objective** (Physical exam findings)

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**Assessment** (Assessment of health state or problem, diagnosis)

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**Plan** (Diagnostic evaluation, follow-up care, patient teaching)

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## STUDENT COMPETENCY CHECKLIST

**Note:** This student performance checklist lists the essential behaviours you should display when teaching a male patient.

### Teaching Testicular Self-Examination (TSE)/Testicular Awareness

	S	U	Comments
<b>I. COGNITIVE</b>			
<b>1. Explain:</b>			
a. why testicles are examined			
b. who should do it			
c. frequency of examination			
d. where			
<b>2. Describe the technique</b>			
<b>II. PERFORMANCE</b>			
<b>1. Explains to male need for TSE</b>			
<b>2. Instructs male on technique of TSE by:</b>			
a. describing method of palpating testicles			
b. describing normal findings			
c. describing abnormal findings to look for			
<b>3. Instructs male to report unusual findings to the health professional at once</b>			
<b>4. Asks man to do return demonstration</b>			

## Chapter Twenty-Six

# Breast assessment

### PURPOSE

The purpose of this chapter is to help you to understand the structure, function and surface anatomy of the breast, underlying tissues and associated lymphatics. You will be introduced to the steps, the rationale and methods of examination of the breast. You will also consolidate your knowledge of developmental changes concerning the breast and be made aware of a number of common conditions affecting the breast. By the end of the clinical laboratory you should be able to accurately record the assessment using the SOAP format. You will also be practising patient education techniques by teaching breast self-examination.

### KEY CONCEPTS

- Structure and function, surface and internal anatomy of the breast
- Lymphatics associated with the breast
- The male breast and its examination
- Health history questions
- Inspection and palpation of the breasts and axillae
- Conditions affecting the breast
- Breast self-examination (BSE) and awareness
- Patient teaching of BSE
- Breasts and regional lymphatics examination

While you are completing your reading assignment, ensure you understand each of the key concepts listed above.

### READING ASSIGNMENT

Jarvis, Forbes & Watt (JF&W): *Jarvis's Physical Examination & Health Assessment 2e*, Chapter 26, pp 724–750.

### GLOSSARY

<b>Alveoli</b> .....	smallest structure of mammary gland
<b>Areola</b> .....	darkened area surrounding nipple
<b>Colostrum</b> .....	thin, yellow fluid, precursor of milk, secreted for a few days after birth
<b>Cooper's ligaments</b> .....	suspensory ligament, fibrous bands extending from the inner breast surface to the chest wall muscles
<b>Fibroadenoma</b> .....	benign breast mass
<b>Galactorrhoea</b> .....	lactation not associated with childbirth
<b>Gynaecomastia</b> .....	enlargement of breast tissue in the male; normally occurs during puberty; usually unilateral and temporary
<b>Intraductal papilloma</b> .....	serosanguineous nipple discharge
<b>Inverted</b> .....	describes nipples that are depressed or invaginated
<b>Lactiferous</b> .....	conveying milk
<b>Lumpectomy</b> .....	surgical removal of a small tumour, which may be benign or cancerous
<b>Mammogram</b> .....	use of x-ray to study the breasts
<b>Mastitis</b> .....	inflammation of the breast
<b>Mastalgia</b> .....	pain in the breast; occurs with trauma, inflammation, infection and benign breast disease

**Montgomery's glands** ..... sebaceous glands in the areola, secrete protective lipid during lactation; also called tubercles of Montgomery

**Paget's disease of the nipple** ..... inflammatory malignant neoplasm of the nipple and areola; associated with carcinoma in deeper breast tissue

**Peau d'orange** ..... orange-peel appearance of breast due to oedema

**Premature thelarche** ..... early breast development with no other hormone-dependent signs (pubic hair, menses)

**Retraction** ..... dimple or pucker on the skin

**Striae** ..... atrophic pink, purple or white linear streaks on the breasts, associated with pregnancy, excessive weight gain or rapid growth during adolescence

**Supernumerary nipple** ..... minute extra nipple along the embryonic milk line

**Tail of Spence** ..... extension of breast tissue into the axilla

## STUDY GUIDE

After completing the reading assignment, you should be able to answer the following questions in the spaces provided.

1. Describe the anatomical position of the breast and the associated surface landmarks (nipple and areola).

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2. Describe the following 3 components of the breast tissue.  
glandular

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fibrous

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adipose

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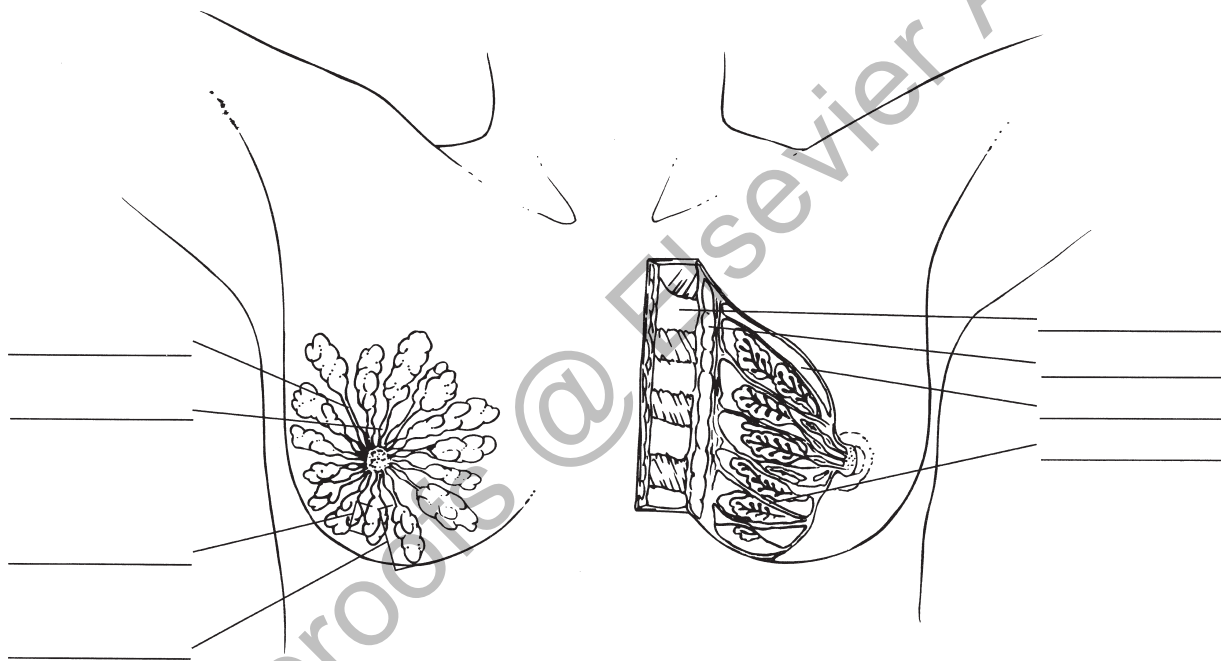


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3. Label the following figure.



4. Once you have completed labelling the figure in question 3, divide the lefthand breast into its 4 quadrants (upper inner, upper outer, lower inner, lower outer) and label each quadrant appropriately. Also draw in the axillary tail of Spence and label it.

5. Describe the position of the 4 sets of breast lymph nodes, and the pattern of lymph drainage from the breast.

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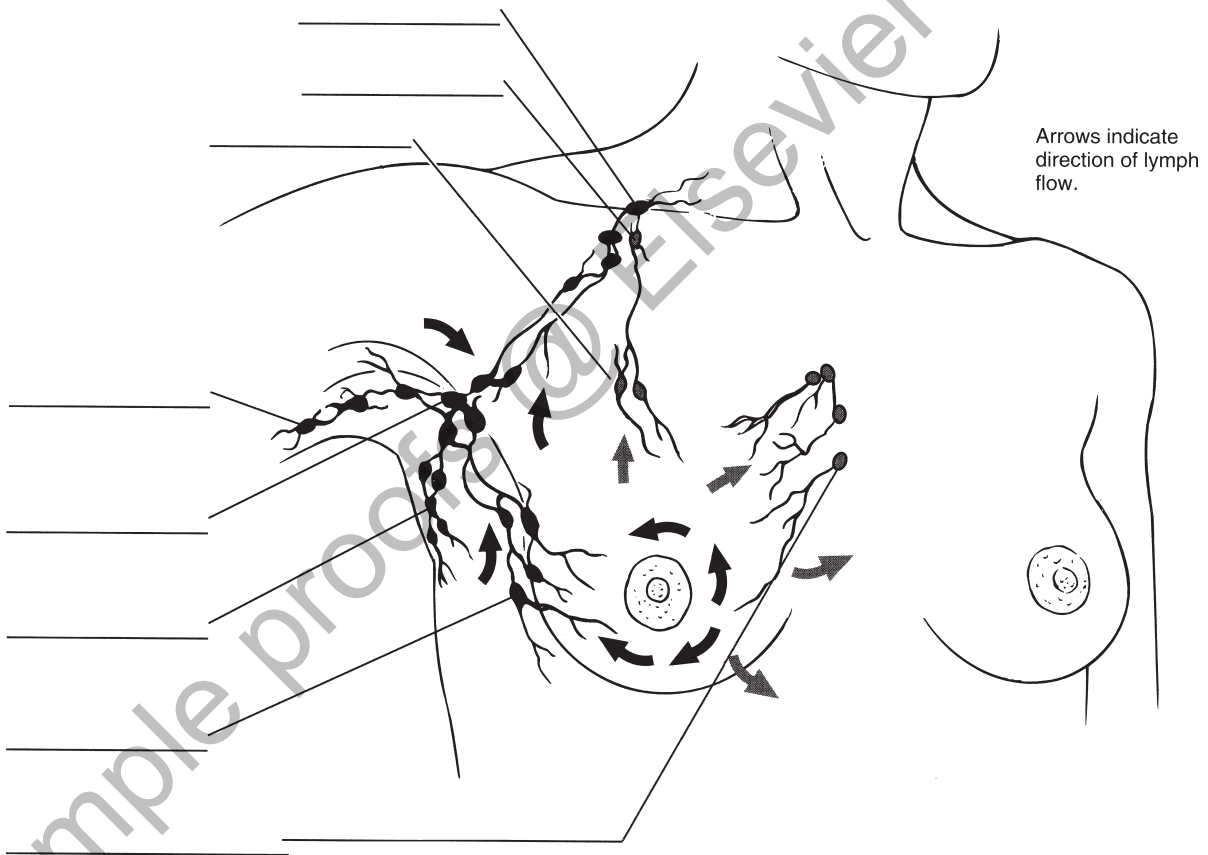


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6. Label the following figure.



7. Circle True or False to answer the following statements concerning the development of breasts. If the answer is false, state the correct answer.

- |   |      |       |
|---|------|-------|
| a. A supernumerary nipple may persist somewhere along the track of the mammary ridge as a remnant of embryonic development. | True | False |
| b. At birth, the breast structures present are the lactiferous ducts within the nipple and the alveoli.                     | True | False |
| c. At puberty the progesterone hormones stimulate breast changes.   | True | False |
| d. Breasts enlarge, mostly as a result of extensive fat deposition.   | True | False |
| e. The beginning of breast development precedes menarche by about 2 years.  | True | False |

8. Identify 5 appropriate history questions to ask regarding breast self-care behaviours.

- i. \_\_\_\_\_
- ii. \_\_\_\_\_
- iii. \_\_\_\_\_
- iv. \_\_\_\_\_
- v. \_\_\_\_\_

9. When would you recommend a patient who regularly performs breast self-examination should see their medical practitioner?

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10. Explain why women aged from 45 to 69 (in New Zealand) and 50 to 74 (in Australia) are recommended to have a free screening mammogram every 2 years.

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11. List the 8 risk factor areas for breast cancer.

- i. \_\_\_\_\_
- ii. \_\_\_\_\_
- iii. \_\_\_\_\_
- iv. \_\_\_\_\_
- v. \_\_\_\_\_
- vi. \_\_\_\_\_
- vii. \_\_\_\_\_
- viii. \_\_\_\_\_

12. Briefly describe each step, including positions and manoeuvres, used to examine the breast.

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13. List the 10 characteristics that should be noted if a breast lump is found on examination.

i. \_\_\_\_\_

ii. \_\_\_\_\_

iii. \_\_\_\_\_

iv. \_\_\_\_\_

v. \_\_\_\_\_

vi. \_\_\_\_\_

vii. \_\_\_\_\_

viii. \_\_\_\_\_

ix. \_\_\_\_\_

x. \_\_\_\_\_

Sample proofs @ Elsevier Australia

14. List key points to include in teaching breast self-examination.

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15. Differentiate between the female (any aspects additional to those listed above) and male examination procedure and findings. It should be noted that males also can get breast cancer and the examiner should consider this while undertaking the assessment.

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16. Circle True or False to answer the following statements about adolescent breast development. If the answer is false, state the correct answer.

- |  |      |       |
|--|------|-------|
| a. Adolescent breast development begins, on average, between 8 and 10 years of age.  | True | False |
| b. Delayed development of the breast occurs with thyroid dysfunction, stilboestrol ingestion or ovarian or adrenal tumour. | True | False |
| c. When palpating the breasts in maturing adolescents a mass is almost always a benign fibroadenoma or a cyst.             | True | False |
| d. There is no need to discuss breast self-examination techniques that the young woman can routinely practise.             | True | False |



17. Describe in detail each of the following pathological changes that may occur in the breast (include any subcategories and specific comments):

benign breast disease

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abscess

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acute mastitis

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fibroadenoma

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cancer

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Paget's disease

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## REVIEW QUESTIONS

This test is for you to check your own mastery of the content. Answers are provided in Appendix A.

- The reservoirs for storing milk in the breast are:
  - lobules
  - alveoli
  - Montgomery's glands
  - lactiferous sinuses
- The most common site of breast tumours is:
  - upper inner quadrant
  - upper outer quadrant
  - lower inner quadrant
  - lower outer quadrant
- During a visit for a school physical, a 13-year-old girl being examined questions the asymmetry of her breasts. The best response is:
  - 'One breast may grow faster than the other during development.'
  - 'I will give you a referral for a mammogram.'
  - 'You will probably have fibrocystic disease when you are older.'
  - 'This may be an indication of hormonal imbalance. We will check again in 6 months.'
- When teaching the breast self-examination, you would inform the woman that the best time to conduct the examination is:
  - at the onset of the menstrual period
  - on the 14th day of the menstrual cycle
  - on the 4th to 7th day of the cycle
  - just before the menstrual period
- This is the first visit for a woman, age 54, to the mammography centre. The nurse instructs her that a screening mammogram is recommended for women aged 45 (New Zealand) or 50 (Australia) to 69:
  - every year
  - every 2 years
  - twice a year
  - only the baseline exam is needed unless the woman has symptoms
- The nurse is going to inspect the breasts for retraction. The best position for this part of the examination is:
  - lying supine with arms at the sides
  - leaning forwards with hands outstretched
  - sitting with hand pushing onto hips
  - one arm at the side, the other arm elevated
- A bimanual technique may be the preferred approach for a woman:
  - who is pregnant
  - who is having the first breast examination by a healthcare provider
  - with pendulous breasts
  - who has felt a change in the breast during self-examination
- During the examination of a 70-year-old man, you note gynaecomastia. You would:
  - refer for a biopsy
  - refer for a mammogram
  - review the medications for drugs that have gynaecomastia as a side-effect
  - proceed with the exam. This is a normal part of the ageing process
- During a breast examination, you detect a mass. Identify the description that is most consistent with cancer rather than benign breast disease.
  - round, firm, well demarcated
  - irregular, poorly defined, fixed
  - rubbery, mobile, tender
  - lobular, clear margins, negative skin retraction
- During the examination of the breasts of a pregnant woman, you would expect to find:
  - peau d'orange
  - nipple retraction
  - a unilateral, obvious venous pattern
  - a blue vascular pattern over both breasts
- Which of the following women should **not** be referred to a physician for further evaluation?
  - a 26-year-old with multiple nodules palpated in each breast
  - a 48-year-old who has a 6-month history of reddened and sore left nipple and areolar area
  - a 25-year-old with asymmetrical breasts and inversion of nipples since adolescence
  - a 64-year-old with ulcerated area at tip of right nipple, no masses, tenderness or lymph nodes palpated
- Breast asymmetry:
  - increases with age and parity
  - may be normal
  - indicates a neoplasm
  - is accompanied by enlarged axillary lymph nodes

13. Any lump found in the breast should be referred for further evaluation. A benign lesion will usually have 3 of the following characteristics. Which one is characteristic of a malignant lesion?
- soft
  - well-defined margins
  - freely movable
  - irregular shape
14. Gynaecomastia is:
- enlargement of the male breast
  - presence of 'mast' cells in the male breast
  - cancer of the male breast
  - presence of supernumerary breast on the male chest
15. Which is the first physical change associated with puberty in girls?
- areolar elevation
  - breast bud development
  - pubic hair development
  - menarche

## PRACTICAL SKILLS IN THE LABORATORY/CLINICAL SETTING

As you have been made aware in the text, the breast may affect a woman's (or man's) body image and generate deep emotional responses. When you are taking the health history it is important to observe for any cues and behaviours concerning the person's self-esteem and body image. Some may be embarrassed and exhibit a lack of eye contact, give minimal responses, have nervous gestures or portray inappropriate humour. Some may joke about the size or development of their breasts, yet others may present with fear, high anxiety and even panic after finding a breast lump. While you are collecting the subjective data, tune in to these cues, as they call for a straightforward and reasoned attitude.

Because of the physiological relationship between the breasts and lymph glands, any assessment of a woman's breast must include an assessment of the axillary lymph glands.

Now that you have revised the structure, function and surface anatomy of the breasts and axillae and completed the study guide and review questions you should be ready for the clinical component of the breast assessment. The purpose of the clinical component is to practise sensitive health history taking, axillary and breast and regional lymphatic examination on a peer (or manikin) in the skills laboratory or a patient in the clinical setting.

### Clinical Objectives

At the completion of the clinical laboratory session, with further practice and self-directed learning you should be able to:

- demonstrate knowledge of the signs and symptoms related to the breasts and axillae by obtaining a health history
- perform inspection and palpation of the breasts, with the woman in sitting and supine positions, using proper technique and providing appropriate draping
- teach the breast self-examination to a woman and identify the key issues to include in teaching the examination to either adolescents or young women
- record the history and physical examination findings accurately, reach an assessment of the health state and develop a plan of care.

### PROFESSIONAL PRACTICE NOTE

- Be aware that many women are embarrassed to have their breasts examined irrespective of whether they have had a clinical breast examination performed before or not. Sensitivity to their body image, ensuring privacy and awareness of cultural norms and practices, should be considered throughout the examination.*
- As men may present with gynaecomastia, it is also important to consider their emotional responses, self-concept and body image, and complete the breast examination with respect and dignity.*
- Remember to ensure that the room in which you perform the examination is warm and well lit.*
- Most importantly, warm your hands before you commence. Use a sensitive but matter-of-fact approach with your examination technique.*

### Instructions

**Note:** Your peer may be uncomfortable with exposing their breasts, so adapt the examination appropriately and use a manikin to work through each of the steps.

1. Form pairs.
2. Prepare the examination setting and gather your equipment.
3. Wash your hands.
4. Gain consent to perform the examination from either your peer or the patient.
5. Practise conducting a sensitive health history interview.
6. Then practise the steps of the breast and lymphatic examination on a peer (or manikin) in the skills laboratory or on a woman in the clinical area, providing appropriate instructions as you proceed.
7. Record your findings using the regional write-up worksheet.
8. Swap roles and repeat steps 2–7.
9. Discuss your assessment techniques, findings and performance with your peer to develop a complete understanding of the process.
10. Document your findings using the SOAP format

Note the inclusion of the student performance checklist that follows the documentation sheets. It lists the essential behaviours you should display, and it may be used by your clinical instructor to evaluate your clinical teaching of breast self-examination.

## REGIONAL WRITE-UP WORKSHEET — BREASTS AND AXILLAE

Date \_\_\_\_\_

Interview conducted by \_\_\_\_\_

Designation \_\_\_\_\_

Patient \_\_\_\_\_ Age \_\_\_\_\_ Gender \_\_\_\_\_

Occupation \_\_\_\_\_ Medical Record Number \_\_\_\_\_

### I. Health history

Breast

1. Any **pain** or tenderness in breasts? \_\_\_\_\_ Where? \_\_\_\_\_  
 Localised or diffuse? \_\_\_\_\_ Characteristics? \_\_\_\_\_  
 Related to menstrual period? \_\_\_\_\_
2. Any **lump** or thickening in breasts? \_\_\_\_\_
3. Any **discharge** from nipples? \_\_\_\_\_  
 When noticed? \_\_\_\_\_ Colour? \_\_\_\_\_  
 Consistency? \_\_\_\_\_ Smell? \_\_\_\_\_
4. Any **rash** on breasts? \_\_\_\_\_
5. Any **swelling** in the breasts? \_\_\_\_\_  
 Isolated? \_\_\_\_\_ All over? \_\_\_\_\_  
 Related to periods? \_\_\_\_\_ Breast feeding? \_\_\_\_\_
6. Any **trauma** or injury to breasts? \_\_\_\_\_
7. Any **history** of breast disease? \_\_\_\_\_  
 Type? \_\_\_\_\_ When? \_\_\_\_\_  
 Diagnosis? \_\_\_\_\_ Treatment? \_\_\_\_\_  
 Family history? \_\_\_\_\_ Their age? \_\_\_\_\_  
 Type? \_\_\_\_\_ Treatment? \_\_\_\_\_
8. Ever had **surgery** on breasts? \_\_\_\_\_  
 Biopsy? \_\_\_\_\_ Results? \_\_\_\_\_  
 Mastectomy? \_\_\_\_\_ Mammoplasty? \_\_\_\_\_  
 Reconstruction? \_\_\_\_\_

## REGIONAL WRITE-UP WORKSHEET — BREASTS AND AXILLAE (continued)

9. Self-care behaviours

Breast self-examination? \_\_\_\_\_

When? \_\_\_\_\_ How often? \_\_\_\_\_

What to look for \_\_\_\_\_ Mammography? \_\_\_\_\_

When? \_\_\_\_\_ Results? \_\_\_\_\_

### Axilla

1. Any **pain** or tenderness in axilla? \_\_\_\_\_

2. Any **lump** or thickening in axilla? \_\_\_\_\_

3. Any **rash** in axilla? \_\_\_\_\_

## II. Physical examination

### Inspection

1. **Inspect both breasts in each of the following positions:** as the woman sits, raises arms overhead, pushes hands on hips, leans forwards, **for each of the following:**

Symmetry \_\_\_\_\_

Skin colour and condition \_\_\_\_\_

Oedema \_\_\_\_\_

Texture \_\_\_\_\_

Lesions \_\_\_\_\_

2. **Areolae and nipples:**

Shape \_\_\_\_\_

Direction \_\_\_\_\_

Surface characteristics \_\_\_\_\_

Discharge \_\_\_\_\_

Supernumerary nipple? \_\_\_\_\_

3. **Perform manoeuvres to screen for retraction** \_\_\_\_\_

4. **Observe supraclavicular and axillary lymphatic drainage areas** \_\_\_\_\_

bulging \_\_\_\_\_ discolouration \_\_\_\_\_

oedema \_\_\_\_\_

5. **Inspect and palpate the axillae**

Rash? \_\_\_\_\_ Swelling? \_\_\_\_\_

Infection? \_\_\_\_\_ Tenderness? \_\_\_\_\_

Enlarged nodes? \_\_\_\_\_

## REGIONAL WRITE-UP WORKSHEET — BREASTS AND AXILLAE (continued)

**Palpation: with woman supine, palpate each of the following:**

1. Breasts \_\_\_\_\_  
 Texture \_\_\_\_\_  
 Masses \_\_\_\_\_  
 Tenderness \_\_\_\_\_
2. Areolae and nipples  
 Subareolar masses? \_\_\_\_\_  
 Discharge? \_\_\_\_\_
3. Axillae and lymph nodes (including tail of Spence)  
 Size \_\_\_\_\_  
 Shape \_\_\_\_\_  
 Consistency \_\_\_\_\_  
 Mobility \_\_\_\_\_  
 Discrete or matted \_\_\_\_\_  
 Tenderness \_\_\_\_\_
4. If lump or mass found, document:  
 Location \_\_\_\_\_ Distinctness \_\_\_\_\_  
 Size \_\_\_\_\_ Nipple \_\_\_\_\_  
 Shape \_\_\_\_\_ Note the skin over the lump \_\_\_\_\_  
 Consistency \_\_\_\_\_ Tenderness \_\_\_\_\_  
 Movable \_\_\_\_\_ Lymphadenopathy \_\_\_\_\_

### III. Educate patient on breast awareness and breast self-examination



## DOCUMENTATION (SOAP) — BREASTS AND AXILLAE

Summarise your findings using the SOAP format.

**Subjective** (Reason for seeking care, health history)

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**Objective** (Physical exam findings)

Record findings on diagram

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**Assessment** (Assessment of health state or problem, diagnosis)

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**Plan** (Diagnostic evaluation, follow-up care, patient teaching)

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## STUDENT COMPETENCY CHECKLIST – TEACHING BREAST SELF-EXAMINATION (BSE)

Note: This student performance checklist lists the essential behaviours you should display when teaching your female patient. It may be used by your clinical instructor to evaluate your clinical teaching of breast self-examination.

	S	U	Comments
<b>A. COGNITIVE</b>			
<b>1. Explain:</b>			
a. when, where and why breasts are examined			
(1) in the shower			
(2) before a mirror			
(3) supine with pillow under side of breast being examined			
b. who should do breast examination			
c. frequency of breast examination			
d. best time of the month to do breast examination and rationale			
<b>2. State the area of breast where most lumps are found</b>			
<b>3. State common abnormal findings</b>			
<b>4. Give two reasons a person may not report significant findings to the healthcare provider and discuss with the woman</b>			
<b>B. PERFORMANCE</b>			
<b>1. Explains to the woman need for BSE</b>			
<b>2. Instructs woman on technique of BSE by:</b>			
a. inspecting and bilaterally comparing breasts in front of mirror			
b. inspecting for new or unusual rash, redness, dimpling or lumps on skin and areola of each breast			
c. palpating each breast in a systemic manner, using pads of three fingers and with woman's arm raised overhead			
d. palpating tail of Spence and axilla			
e. gently compressing nipples			
<b>3. Instructs woman to report unusual findings to the health professional at once</b>			
<b>4. Asks woman to do return demonstration</b>			
S: Satisfactory; U: Unsatisfactory			

## Chapter Twenty-Seven

# The pregnant woman

### PURPOSE

The purpose of this chapter is to introduce you to the changes in the woman's body that accompany pregnancy. While it is unusual for registered nurses to perform a comprehensive physical assessment during pregnancy, pregnant women often present with non-pregnancy related emergencies in ED, theatre and ICU. It is usual for a qualified midwife to conduct comprehensive pregnancy assessment; however, registered nurses in rural areas may need to conduct a health assessment if the woman is seeking healthcare for a non-pregnancy-related health issue and a midwife is unavailable.

This chapter will help you to begin to understand the function and changes of the female genitalia during pregnancy. Methods of inspection and palpation of the external structures and the maternal abdomen are covered. Documentation of the assessment is covered in general terms as most maternity institutions have their own specific forms for documentation.

### KEY CONCEPTS

- Pregnancy and the endocrine placenta
- Changes to structure and function that occur during normal pregnancy
- Circulatory changes
- Uterine growth and development
- Relevant health history questions
- General survey
  - Skin, mouth and neck
  - Breasts
  - Heart, lungs and peripheral vasculature
  - Reflexes
  - Abdomen
  - Leopold's manoeuvres
  - Fetal heart beat
  - Pelvic examination
- Fetal size for dates
- Routine laboratory and radiological imaging studies for the pregnant woman

While you are completing your reading assignment, ensure you understand each of the key concepts listed above.

### READING ASSIGNMENT

Jarvis, Forbes & Watt (JF&W): *Jarvis's Physical Examination & Health Assessment 2e*, Chapter 27, pp 751–790.

### GLOSSARY

<b>Amniocentesis</b> .....	the removal of a small amount of amniotic fluid to analyse genetic make; performed in the second trimester
<b>Attitude</b> .....	the position of fetal parts in relation to each other, may be flexed, military (straight) or extended
<b>Balloted</b> .....	on gentle palpation with the fingertips, the fetal head can be felt as not only hard when you push it away, but as hard when it bobs or bounces back against your fingers
<b>Blastocyst</b> .....	the fertilised ovum; a specialised layer of cells around the blastocyst becomes the placenta
<b>Chadwick's sign</b> .....	bluish/purple discolouration of the cervix during pregnancy due to venous congestion

<b>Chloasma</b> .....	the 'mask of pregnancy'; butterfly-shaped pigmentation of the face
<b>Chorionic villi sampling</b> .....	the removal of a small sample of chorionic villi, either abdominally or transvaginally, to analyse genetic make-up; performed in the first trimester
<b>Colostrum</b> .....	a thick yellow fluid, the precursor to milk; is higher in minerals, sodium and protein but lower in carbohydrate, fat and vitamins than mature milk; contains antibodies and immune cells
<b>Corpus luteum</b> .....	'yellow body'; a structure on the surface of the ovary that is formed by the remaining cells in the follicle; it acts as a short-lived endocrine organ that produces progesterone to help maintain the pregnancy in its early stages
<b>Diastasis recti</b> .....	separation of the abdominal muscles during pregnancy, returning to normal after pregnancy
<b>Engagement</b> .....	(also called 'lightening' or 'dropping') the process whereby the fetal head moves down into the pelvis
<b>Fetal lie</b> .....	orientation of the fetal spine to the maternal spine; may be longitudinal, transverse or oblique
<b>Funic soufflé</b> .....	blood rushing through the umbilical arteries at the same rate as the fetal heart beats
<b>Goodell's sign</b> .....	the softening of the cervix due to increased vascularity, congestion and oedema
<b>Hegar's sign</b> .....	when the uterus becomes globular in shape, softens and flexes easily over the cervix
<b>Hyperemesis gravidarum</b> .....	excessive vomiting; interferes with electrolytes, acid-base balance and nutritional status; dehydration and starvation may lead to fetal IUGR; may require home infusion therapy or hospitalisation
<b>Leopold's manoeuvre</b> .....	external palpation of the maternal abdomen to determine fetal lie, presentation, attitude, position, variety and engagement
<b>Linea nigra</b> .....	a median line of the abdomen that becomes pigmented (darkens) during pregnancy
<b>Mucus plug</b> .....	mucus that forms a thick barrier in the cervix and which is expelled at various times before or during labour
<b>Multigravida</b> .....	a pregnant woman who has previously carried a fetus to the point of viability
<b>Multipara</b> .....	a woman who has had two or more viable pregnancies and deliveries
<b>Nägele's rule</b> .....	a rule for calculating the estimated date of delivery; add 7 days to the first day of the last menstrual period and add 9 months
<b>Pelvimetry</b> .....	assessment of the maternal pelvis bones for shape and size
<b>Pica</b> .....	a craving for unnatural articles of food, such as cornstarch and ice chips
<b>Position</b> .....	the location of a fetal part to the right or left of the maternal pelvis
<b>Postpartum</b> .....	the period occurring after delivery
<b>Presentation</b> .....	the part of the fetus that enters the pelvis first
<b>Primigravida</b> .....	a woman pregnant for the first time
<b>Primipara</b> .....	a woman who has had one pregnancy and delivery
<b>Striae gravidarum</b> .....	('stretch marks') may be seen on the abdomen and breasts (in areas of weight gain) during pregnancy
<b>Variety</b> .....	the location of the fetal back to the anterior, lateral or posterior part of the maternal pelvis

### Some obstetric abbreviations

<b>EDD</b> .....	estimated delivery/due date
<b>LMP</b> .....	last menstrual period
<b>PTD</b> .....	preterm delivery
<b>PTL</b> .....	preterm labour
<b>VBAC</b> .....	vaginal birth after caesarean

### STUDY GUIDE

After completing the reading assignment, you should be able to answer the following questions in the spaces provided.

1. By filling in the gaps, describe the menstrual cycle up until fertilisation (assume a 28 day cycle):

The first day of the menses is \_\_\_\_\_ of the menstrual cycle.

During the secretory phase of the menstrual cycle, the \_\_\_\_\_ secretes large amounts of \_\_\_\_\_ to act on the endometrium to prepare for \_\_\_\_\_, which occurs \_\_\_\_\_ days after ovulation.

2. The fertilised ovum, or the blastocyst, continues to divide, differentiate and grow rapidly. With reference to the blastocyst, state:

the substance produced by specialised cells in the blastocyst

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when the blastocyst implants

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what structure the specialised cells surrounding the blastocyst becomes

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3. Describe the function of the placenta and the hormones it secretes.

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4. When can serum hCG be detected in maternal blood?

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5. Define each of the following types of signs of pregnancy.

probable: \_\_\_\_\_

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positive: \_\_\_\_\_

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6. Describe any 5 of the physical and physiological changes that are seen in the:

first trimester:

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second trimester:

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third trimester:

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7. Using Nägele's rule, calculate the estimated date of delivery (EDD) if the last menstrual period (LMP) is 22 August.

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8. Briefly discuss the contents and importance of colostrum.

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9. State the composition of weight gain during pregnancy.

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10. Identify major concerns for teenage maternal morbidity and mortality.

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11. Discuss the risk factors concerning pregnancy in women over 35 years of age.

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12. List causes of maternal death in women of advanced maternal age.

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13. Discuss the following screening processes available for women of advanced maternal age. Include the condition being screened for and how the procedure is performed.

chorionic villus sampling (CVS)

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amniocentesis

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second trimester, maternal serum

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carrier screening for cystic fibrosis (CF)

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14. Identify why an extensive health history is obtained at the first antenatal visit.

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15. Explain why exposure to, or the presence of, genital herpes is of concern.

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16. State 3 obstetric risks that relate to the mother having an STI.

i. \_\_\_\_\_

ii. \_\_\_\_\_

iii. \_\_\_\_\_

17. Briefly explain the risks associated with use of the following in pregnancy:

cigarettes

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alcohol

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cocaine

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18. List 4 signs of preeclampsia and state conditions that increase the risk of developing it.

i. \_\_\_\_\_

ii. \_\_\_\_\_

iii. \_\_\_\_\_

iv. \_\_\_\_\_

Conditions:

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19. On the following diagrams of Leopold's manoeuvres that are performed in the third trimester, describe the purpose of performing each manoeuvre and, very briefly, how it is performed.

**Leopold's first manoeuvre (fundal palpation)**



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**Leopold's second manoeuvre (lateral palpation)**



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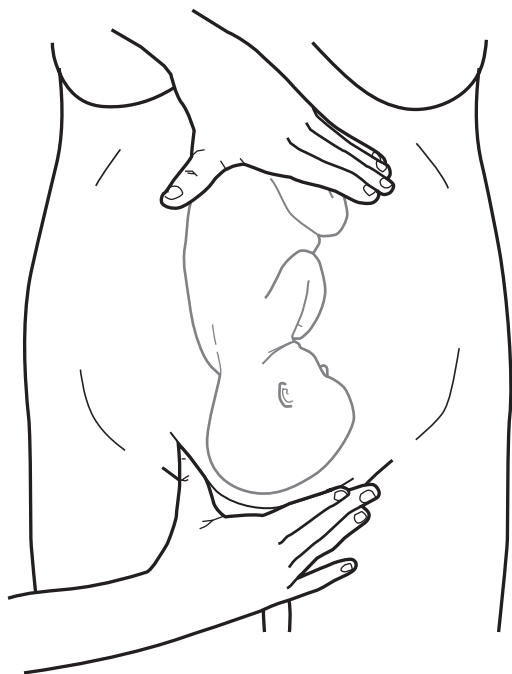
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Leopold's third manoeuvre (also called Pawlik's)



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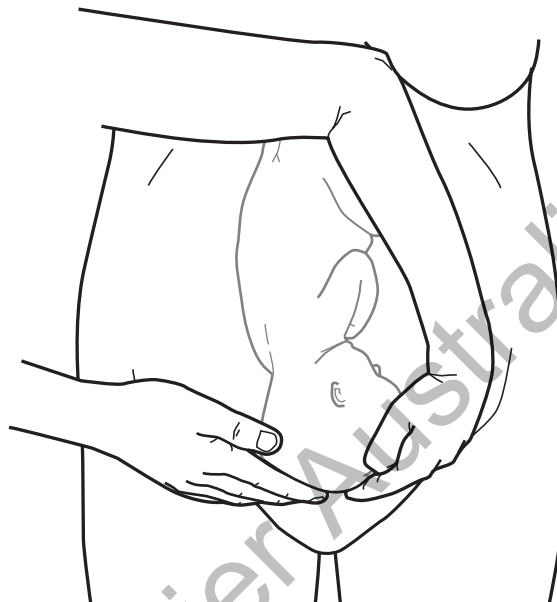
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Leopold's fourth manoeuvre (deep pelvic palpation)



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20. At what gestational age can the fetal heartbeat be heard, where is the best position to do this and what is a normal rate?

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21. Why is it important to ask a pregnant woman if she feels safe in her relationships and environment? Discuss.

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22. Identify 4 reasons for a small fundal height for gestational age.

- i. \_\_\_\_\_
- ii. \_\_\_\_\_
- iii. \_\_\_\_\_
- iv. \_\_\_\_\_

23. State at least 5 reasons why fundal height may be large for gestational age.

- i. \_\_\_\_\_
- ii. \_\_\_\_\_
- iii. \_\_\_\_\_
- iv. \_\_\_\_\_
- v. \_\_\_\_\_

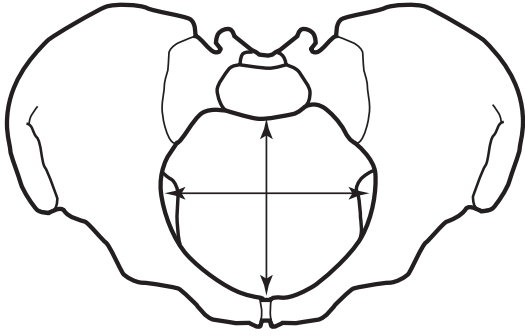
24. Briefly discuss intrauterine growth restriction (IUGR) or fetal growth restriction including fetoplacental, maternal and other factors.

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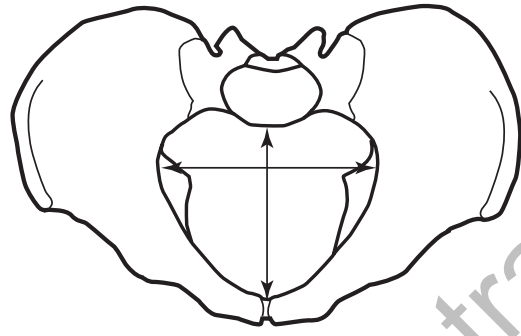
25. Label the following types of pelvis and state whether the type favours a vaginal delivery.




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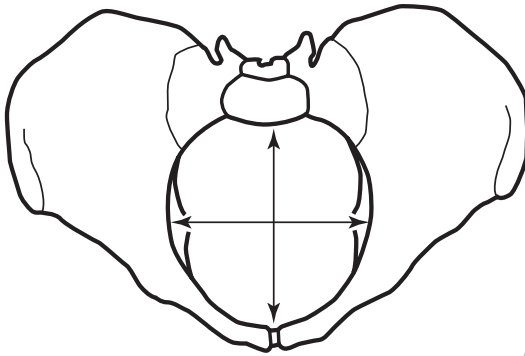
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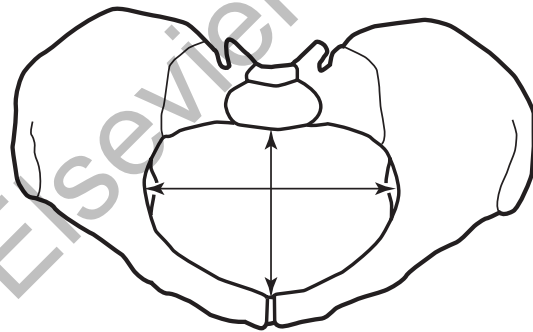
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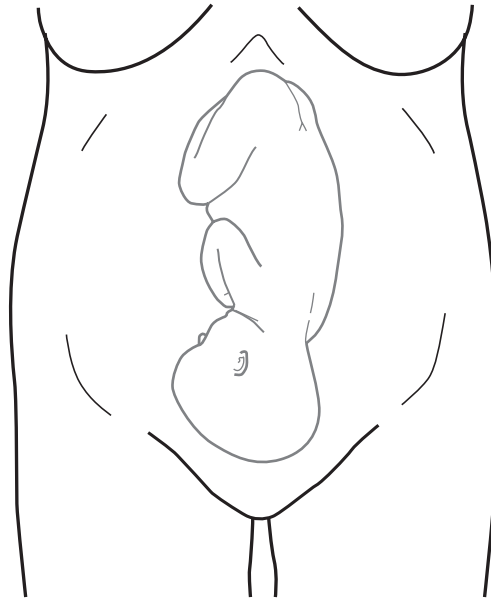


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26. Circle True or False to answer the following statements. If the answer is false, state the correct answer.

- |   |      |       |
|---|------|-------|
| a. A woman who has had a classical uterine incision is a good candidate for a vaginal birth after a caesarean section (VBAC). | True | False |
| b. During early fetal development, the corpus luteum plays no significant role.   | True | False |
| c. A woman who is pregnant for the first time is called a primipara.  | True | False |
| d. The fetal period begins after the 9th gestational week.  | True | False |
| e. Vaginal bleeding in pregnancy always indicates a miscarriage.  | True | False |
| f. Cervical incompetence is always accompanied by painful contractions.   | True | False |

27. Describe the fetal lie, presentation and position for the fetus in the following diagram:



Fetal lie: \_\_\_\_\_

Fetal presentation: \_\_\_\_\_

Fetal position: \_\_\_\_\_

## REVIEW QUESTIONS

This test is for you to check your own mastery of the content. Answers are provided in Appendix A.

1. Ovulation begins on the:
  - a. first day of the menstrual cycle
  - b. 28th day of the menstrual cycle
  - c. 14th day/approximately of the menstrual cycle
2. Using Nägele's rule, the estimated date of delivery (EDD) if a woman's last menstrual period started on January 13 is:
  - a.  $13 + 7 = 20$   
 $20 + 9$  months EDD = October  $\approx 20$
  - b.  $13 + 10 = 23$   
 $23 + 9$  months  
EDD = October  $\approx 18$
  - c.  $13 + 14 = 27$   
 $27 + 9$  months  
EDD = September  $\approx 31$
3. A woman comes to the clinic complaining of nausea, fatigue, breast tenderness, urinary frequency and amenorrhoea. These are:
  - a. probable signs of pregnancy
  - b. positive signs of pregnancy
  - c. presumptive signs of pregnancy
  - d. signs of stress
4. After implantation, what structure makes progesterone to support the pregnancy up until week 10?
  - a. corpus luteum
  - b. blastocyst
  - c. placenta
  - d. ovary
5. Approximately 2 to 3 weeks before labour the woman will experience:
  - a. extreme fatigue
  - b. Braxton-Hicks contractions
  - c. lightening
  - d. back pain

6. Cardiac output in a pregnant woman:
  - a. drops dramatically
  - b. remains the same
  - c. increases along with stroke volume
  - d. decreases along with stroke volume
  - e. none of the above
7. The pregnant adolescent is medically at risk for:
  - a. poor weight gain, preeclampsia, thyroiditis, miscarriage
  - b. poor weight gain, preeclampsia, sexually transmitted diseases
  - c. stress, abuse, inadequate housing, inadequate education
  - d. miscarriage, hypothyroidism, poor weight gain
8. Women over the age of 35 who desire a pregnancy are at increased risk for:
  - a. congenital anomalies
  - b. infertility
  - c. diabetes
  - d. hypertension
  - e. all of the above
9. Sexually transmitted infections place the pregnant woman at risk for:
  - a. infertility
  - b. premature rupture of membranes
  - c. preterm labour
  - d. preterm delivery
  - e. all of the above
  - f. b, c and d only
10. Abdominal pain in the first trimester may be indicative of:
  - a. preterm labour
  - b. ectopic pregnancy
  - c. appendicitis
  - d. urinary tract infection
  - e. all of the above
  - f. b, c and d
11. You are palpating the maternal abdomen at approximately 35 weeks. Your left hand is on the maternal right, and your right hand is on the maternal left. What manoeuvre is this?
  - a. Leopold's first manoeuvre
  - b. Leopold's second manoeuvre
  - c. Schmidt's third manoeuvre
  - d. Schmidt's second manoeuvre
12. Fetal heart tones are best auscultated over the fetal:
  - a. back
  - b. abdomen
  - c. shoulder
13. Chadwick's sign is:
  - a. softening of the cervix
  - b. rotation of the cervix to the left
  - c. fundus of the uterus tips forwards
  - d. a bluish colour of the cervix and vaginal walls during early pregnancy
14. An obstetric ultrasound is done to determine:
  - a. thickness of the uterine wall
  - b. fetal position
  - c. placental location
  - d. amniotic fluid volume
  - e. none of the above
  - f. b, c and d

## PRACTICAL SKILLS IN THE LABORATORY/CLINICAL SETTING

As has been mentioned previously, Australian and New Zealand general nurses *do not* routinely perform comprehensive assessment on pregnant women. Instead, midwives who are appropriately trained will examine the pregnant woman. However, you do need to be aware of the techniques associated with the examination of the pregnant woman, as you may have to examine a woman with another health complaint who is also pregnant.

After completing the readings, study guide questions and review questions you should be ready for the clinical component of the pregnant female examination. Because of the need to maintain personal privacy, it is unlikely you will practise this examination on a peer.

There are a number of skills for advanced practice that would not be performed by beginning practitioners, so these are not included in the laboratory session.

Some clinical settings may arrange for pregnant women to participate, or your practice setting may have available a pregnant teaching manikin that you may use to practise your skills. If you have a pregnant woman available, discuss with her, in the presence of your instructor, consent for performance of skills and the methods of examination that will be used. Maintain her comfort and adequate positioning to prevent maternal dizziness, nausea and hypotension and to maintain adequate uterine blood flow.

As it is unlikely that many of your peers would be pregnant, most components of this laboratory should be carried out on a pregnant manikin, except the history which, of course, may be taken from your peer to practise interviewing techniques.

### Clinical Objectives

At the completion of the clinical laboratory session, with further practice and self-directed learning you should be able to:

1. demonstrate the knowledge of the physical changes related to pregnancy in the first, second and third trimesters
2. demonstrate the knowledge and importance of obtaining an accurate comprehensive health history including aspects of menstrual, gynaecological, obstetric, pregnancy and medical histories
3. demonstrate cultural sensitivity during the examination
4. inspect and palpate the maternal abdomen for uterine size and fetal position
5. demonstrate obtaining fetal heart rate
6. record the history and physical examination findings accurately on the regional write-up worksheet
7. reach an assessment of the health state of the woman, estimated gestational age, fetal position (when appropriate) and develop a plan of care.

### Instructions

1. Form pairs.
2. Prepare the examination setting and gather equipment: stethoscope, BP cuff, measuring tape, reflex hammer, fetal Doppler, drapes and urine collection container, if required.
3. Wash your hands.
4. Gain consent to perform the examination from the patient.
5. Collect the comprehensive health history.
6. Explain the procedure for the following examination, then ask the patient to disrobe for the examination. (Provide a gown and drapes as required.) Request urine specimen if required.
7. Calculate the EDD.
8. Wash hands if visibly soiled or apply alcohol-based hand rub.
9. Practise the steps of the examination on a pregnant woman in the clinical setting, or a manikin in the laboratory, providing appropriate instructions and explanations as you proceed.
10. Record your findings using the regional write-up work sheet that follows.
11. Swap roles and repeat steps 2–10.
12. Discuss your assessment techniques, findings and performance with your peer to develop a complete understanding of the process.
13. Document your findings using the SOAP format.

### Advanced practice components not required for clinical laboratory

As noted in Chapter 25, you would not be expected to perform internal examinations. The following would also be regarded as skills for midwives or specialist clinicians. You will not need to perform these skills in the laboratory.

1. Pelvic examination
  - a. Genitalia
  - b. Bimanual examination
2. Bony pelvis assessment
3. Routine laboratory and radiological imaging studies



## REGIONAL WRITE-UP WORKSHEET — THE PREGNANT WOMAN

Date \_\_\_\_\_

Interview conducted by \_\_\_\_\_

Designation \_\_\_\_\_

Patient \_\_\_\_\_ Age \_\_\_\_\_ Gender \_\_\_\_\_

Occupation \_\_\_\_\_ Medical Record Number \_\_\_\_\_

### I. Comprehensive health history

#### 1. Menstrual history

**First day** of your last menstrual period? \_\_\_\_\_

**How often** are your periods? \_\_\_\_\_ Cycle? \_\_\_\_\_

How many **days** in your cycle? \_\_\_\_\_

How old were you at **menarche** (first period)? \_\_\_\_\_

#### 2. Gynaecological history

**Surgery** of the cervix or uterus? \_\_\_\_\_

Any known history of or exposure to **genital herpes**? \_\_\_\_\_

Last **Pap smear**? \_\_\_\_\_ **Abnormal** smear or a colposcopy? \_\_\_\_\_

**Fibroids** or uterine abnormalities? \_\_\_\_\_

Have you ever had:

**Gonorrhoea**? \_\_\_\_\_ **Chlamydia**? \_\_\_\_\_

**Syphilis**? \_\_\_\_\_ **Trichomoniasis**? \_\_\_\_\_

**Pelvic inflammatory disease (PID)**? \_\_\_\_\_

In a **relationship** with one person? \_\_\_\_\_

Were you born preterm? \_\_\_\_\_

Ever had:

**Mammogram**? \_\_\_\_\_ **Breast biopsy**? \_\_\_\_\_

**Breast implants**? \_\_\_\_\_ **Breast reduction**? \_\_\_\_\_

**Lumpectomy**? \_\_\_\_\_ **Mastectomy**? \_\_\_\_\_

#### 3. Obstetric history

History of **infertility**? \_\_\_\_\_

Used assisted reproductive technology? \_\_\_\_\_

Have you ever been **pregnant**? \_\_\_\_\_

Previous pregnancies and deliveries? \_\_\_\_\_

**Year** of the pregnancy? \_\_\_\_\_

## REGIONAL WRITE-UP WORKSHEET — THE PREGNANT WOMAN (continued)

**Labour** and birth outcome (including spontaneous miscarriages, elective abortions or ectopic pregnancies and postnatal outcomes)

Babies' weight? \_\_\_\_\_ Sex? \_\_\_\_\_

Born alive? \_\_\_\_\_ **Complications?** \_\_\_\_\_

**Caesarean section (CS)?** \_\_\_\_\_ Indication? \_\_\_\_\_

Centimetres of dilation, at which the surgery was performed? \_\_\_\_\_

Type of **uterine incision?** \_\_\_\_\_

Vaginal birth after a caesarean section (**VBAC**)? \_\_\_\_\_

**Breastfeed** your previous babies? \_\_\_\_\_

**How long?** \_\_\_\_\_

Breastfeeding **problems?** \_\_\_\_\_ Mastitis? \_\_\_\_\_

### 4. **Current pregnancy**

Method of contraception recently? \_\_\_\_\_ When discontinued? \_\_\_\_\_

Planned pregnancy? \_\_\_\_\_ How do you feel about it? \_\_\_\_\_

How does the baby's father feel? \_\_\_\_\_ Other family members? \_\_\_\_\_

Any **vaginal bleeding?** \_\_\_\_\_ When? \_\_\_\_\_

How much? \_\_\_\_\_ What colour? \_\_\_\_\_

**Pain?** \_\_\_\_\_

Nausea and/or vomiting? \_\_\_\_\_

**Abdominal pain?** \_\_\_\_\_ When? \_\_\_\_\_

Where? \_\_\_\_\_ Any **vaginal bleeding?** \_\_\_\_\_

**Illnesses** since being pregnant? \_\_\_\_\_ Recent **fever(s)?** \_\_\_\_\_

**Rash or infections?** \_\_\_\_\_

Any **x-rays?** \_\_\_\_\_

Any **visual changes?** \_\_\_\_\_ Blurred vision? \_\_\_\_\_

Spots? \_\_\_\_\_

Any **oedema?** \_\_\_\_\_ Where? \_\_\_\_\_

When? \_\_\_\_\_

Problems with **urination?** \_\_\_\_\_ Any **frequency?** \_\_\_\_\_

**Burning?** \_\_\_\_\_ Any **blood?** \_\_\_\_\_

Void in small amounts? \_\_\_\_\_ Any history of **UTIs?** \_\_\_\_\_

Pyelonephritis? \_\_\_\_\_ Kidney stones? \_\_\_\_\_

## REGIONAL WRITE-UP WORKSHEET — THE PREGNANT WOMAN (continued)

Any **vaginal burning** or itching? \_\_\_\_\_ Any foul-smelling or coloured **discharge**? \_\_\_\_\_

Fetal **movement**? \_\_\_\_\_

**Cats** in the home? \_\_\_\_\_

Plan to **breastfeed** this baby? \_\_\_\_\_

### 5. Medical history

**Allergies** to medications or foods? \_\_\_\_\_ **Type of reaction**? \_\_\_\_\_

History of **asthma**? \_\_\_\_\_

Had **rubella** (German measles)? \_\_\_\_\_ Had **chickenpox**? \_\_\_\_\_

Any injury to the back or another weight-bearing part of your body? \_\_\_\_\_

Tested for **HIV**? \_\_\_\_\_ When? \_\_\_\_\_

Result? \_\_\_\_\_

Blood **transfusion**? \_\_\_\_\_

Used intravenous drugs? \_\_\_\_\_

Had a sexual partner who had any **HIV risk factors**? \_\_\_\_\_

Smoked **cigarettes**? \_\_\_\_\_ How many? \_\_\_\_\_

How long? \_\_\_\_\_ Tried to quit? \_\_\_\_\_

Drink **alcohol**? \_\_\_\_\_ How many times per week? \_\_\_\_\_

Any **recreational drugs**? \_\_\_\_\_

Any **medications**? \_\_\_\_\_ Prescribed? \_\_\_\_\_

Over-the-counter? \_\_\_\_\_ Herbal? \_\_\_\_\_

Regular **exercise** program? \_\_\_\_\_ What do you do? \_\_\_\_\_

### 6. Family history

Anyone in your family have **hypertension**? \_\_\_\_\_

Anyone in your family have **diabetes**? \_\_\_\_\_

Onset? \_\_\_\_\_ Diet controlled? \_\_\_\_\_

Medication controlled? \_\_\_\_\_ Insulin? \_\_\_\_\_

Do you have **anxiety**? \_\_\_\_\_ **Depression**? \_\_\_\_\_

Any other **mental illness**? \_\_\_\_\_

Anyone in your family have **kidney disease**? \_\_\_\_\_

History of **multiple pregnancy** in the family? \_\_\_\_\_

## REGIONAL WRITE-UP WORKSHEET — THE PREGNANT WOMAN (continued)

Anyone in your family, or in the family of the baby's father, have:

**Congenital anomalies?** \_\_\_\_\_ **Genetic anomalies?** \_\_\_\_\_

Who? \_\_\_\_\_ What? \_\_\_\_\_

Ethnicity/cultural background? \_\_\_\_\_

### 7. General health history

Prepregnancy **weight?** \_\_\_\_\_ kg

Last see the **dentist?** \_\_\_\_\_

Oral care routine? \_\_\_\_\_

Any exposure to **tuberculosis (TB)?** \_\_\_\_\_ Had a positive PPD\* or chest x-ray? \_\_\_\_\_

Any **cardiovascular disease?** \_\_\_\_\_ **Vascular** disease? \_\_\_\_\_

**Heart murmur** or disease of a heart valve? \_\_\_\_\_

Ever had **anaemia?** \_\_\_\_\_ What kind? \_\_\_\_\_

When? \_\_\_\_\_ Treatment? \_\_\_\_\_

How? \_\_\_\_\_ Did it improve? \_\_\_\_\_

**Thrombophlebitis?** Pulmonary embolus (PE) or deep venous thrombosis (DVT)? \_\_\_\_\_

Hypertension or kidney disease? \_\_\_\_\_

Any history of **hepatitis B or C?** \_\_\_\_\_

History of **thyroid disease?** \_\_\_\_\_

**Seizures?** \_\_\_\_\_ Type? \_\_\_\_\_

Medications? \_\_\_\_\_

Past history of **UTIs?** \_\_\_\_\_ Management? \_\_\_\_\_

Do you have **diabetes?** \_\_\_\_\_ Previous gestational diabetes? \_\_\_\_\_

Do you feel **safe in your relationship** or home environment? \_\_\_\_\_

### 8. Nutritional history

**Diet?** \_\_\_\_\_ Special? \_\_\_\_\_

Food intolerance? \_\_\_\_\_

Cravings? \_\_\_\_\_ Nonfoods such as ice, paint chips, dirt or clay? \_\_\_\_\_

## REGIONAL WRITE-UP WORKSHEET — THE PREGNANT WOMAN (continued)

### 9. Environment/hazards

Occupation? \_\_\_\_\_ Physical demands of work? \_\_\_\_\_

**Exposed to** any strong odours, chemicals, radiation or other harmful substances? \_\_\_\_\_

Food and housing adequate? \_\_\_\_\_

How do you wear your **seat belt** when driving? \_\_\_\_\_

Any other questions or concerns? \_\_\_\_\_

\* Purified protein derivative is the same as TB skin test; tuberculin skin test; Mantoux test

### II. Gestational age

Determine EDD and current number of weeks of gestation \_\_\_\_\_

### III. Physical examination

#### a. Measurement

1. Urinalysis: SG \_\_\_\_\_ pH \_\_\_\_\_ Prot \_\_\_\_\_ Ket \_\_\_\_\_ Gluc \_\_\_\_\_ Blood \_\_\_\_\_

2. Weight \_\_\_\_\_ kg

3. Vitals: BP \_\_\_\_\_/\_\_\_\_\_ HR \_\_\_\_\_ RR \_\_\_\_\_ T \_\_\_\_\_

#### b. General physical appearance

Nourishment \_\_\_\_\_

Affect \_\_\_\_\_

Skin colour \_\_\_\_\_ Scars \_\_\_\_\_

Pigment changes \_\_\_\_\_ Chloasma \_\_\_\_\_ Linea nigra \_\_\_\_\_

Striae? \_\_\_\_\_

Other: \_\_\_\_\_

#### c. Inspect oral mucous membranes

\_\_\_\_\_

#### d. Palpate thyroid gland

\_\_\_\_\_

#### e. Inspect breast and note changes

Enlargement? \_\_\_\_\_

Pigmentation? \_\_\_\_\_

Blood vessel pattern? \_\_\_\_\_

Montgomery's tubercles \_\_\_\_\_

Express colostrum? \_\_\_\_\_

## REGIONAL WRITE-UP WORKSHEET — THE PREGNANT WOMAN (continued)

**f. Palpate breast for abnormalities**

Characteristics? \_\_\_\_\_

Supernumerary nipple? \_\_\_\_\_

Remind about breast awareness \_\_\_\_\_

**g. Auscultate heart**

Heart sounds? \_\_\_\_\_ Heart rate \_\_\_\_\_

Murmurs? \_\_\_\_\_

**h. Auscultate lungs**

Breath sounds \_\_\_\_\_ Dyspnoea? \_\_\_\_\_

**i. Inspect lower extremities**

Oedema \_\_\_\_\_

Varicosities \_\_\_\_\_

**j. Assess deep tendon reflexes**

Biceps \_\_\_\_\_ Patellar \_\_\_\_\_ Ankle \_\_\_\_\_

**k. Inspect and palpate the abdomen**

Size \_\_\_\_\_ Shape/contour \_\_\_\_\_

Diastasis recti? \_\_\_\_\_

Abdominal tenderness? \_\_\_\_\_

Measure fundal height \_\_\_\_\_ cm \_\_\_\_\_ Gestational age? \_\_\_\_\_

Perform Leopold's manoeuvres (if third trimester)

1. \_\_\_\_\_

2. \_\_\_\_\_

3. \_\_\_\_\_

4. \_\_\_\_\_

Auscultate fetal heart rate \_\_\_\_\_

Fetal heart sounds (using Doppler) \_\_\_\_\_

## REGIONAL DOCUMENTATION (SOAP) – THE PREGNANT WOMAN

Summarise your findings using the SOAP format.

**Subjective** (Reason for seeking care, health history)

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**Objective** (Physical exam findings)

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**Assessment** (Assessment of health state or problem, diagnosis)

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**Plan** (Diagnostic evaluation, follow-up care, patient teaching)

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### Chapter Twenty-Eight

## Risk and safety: screening for family violence and abuse

### PURPOSE

Family violence is an important health problem. As nurses are often on the frontline and the first to meet the patient it is important to have an understanding of, and be able to identify victims of, family violence and abuse. In this chapter you will increase your awareness of intimate partner violence (IPV), elder abuse and child abuse. You will be introduced to methods to enable you to screen for abuse, the cues to facilitate assessment and identification of possible abuse and the skills to assess the extent of the abuse. Assessment of the extent of physical and psychological harm, including injury and how to document evidence of abuse appropriately, are also discussed.

### IMPORTANT NOTE

As a beginning practitioner, if you suspect any form of abuse, it is your responsibility to notify your manager or a clinician experienced in this area of your findings and involve them in any further assessment. While you are still learning you should be communicating your suspected findings early in your assessment to those with expertise in this very sensitive area.

In Australia child abuse of any kind must be reported. Read the relevant fact sheets listed below to ensure you understand your responsibilities in this area.

The Mandatory Reporting of Child Abuse fact sheet outlines the legal provisions requiring specified people to report suspected child maltreatment to statutory child protection services in Australia. This fact sheet can be found at [www.aifs.gov.au/nch/pubs/sheets/rs3/rs3.html](http://www.aifs.gov.au/nch/pubs/sheets/rs3/rs3.html)

In New Zealand, reporting is not mandatory but is advised if deemed appropriate. The New Zealand Ministry of Health has a number of guidelines available including:

- Family Violence Intervention Guidelines: Elder Abuse and Neglect
- Family Violence Intervention Guidelines: Child and Partner Abuse
- Recognising and Responding to Partner Abuse

These documents can be found at [www.moh.govt.nz/moh.nsf/indexmh/familyviolence-guidelinesreports](http://www.moh.govt.nz/moh.nsf/indexmh/familyviolence-guidelinesreports)

### KEY CONCEPTS

- Definitions of:
  - family violence
  - intimate partner violence
  - child abuse and neglect
  - elder abuse and neglect
- Statistics concerning all types of violence, abuse and neglect
- Assessing for violence and abuse
- Relationship between violence, abuse and health problems
- Physical examination of the victim
- Forensic terminology (listed in JF&W, Table 28.10, p 800)
- Documentation and reporting

While you are completing your reading assignment, ensure you understand each of the key concepts listed above.



## READING ASSIGNMENT

Jarvis, Forbes & Watt (JF&W): *Jarvis's Physical Examination & Health Assessment 2e*, Chapter 28, pp 791–804.

## GLOSSARY

- Child abuse** ..... occurs when a person having the care of a child inflicts, or allows to be inflicted on the child, a physical injury or deprivation which may create a substantial risk of death, disfigurement or the impairment of either physical health and development or emotional health and development
- Elder abuse** ..... any single or repeated act, or lack of appropriate action, which causes harm or distress to an older person that occurs within a relationship where there is an implication of trust; includes physical, psychological/emotional, sexual, financial/material and social abuse and/or neglect
- Elder neglect** ..... occurs when another person fails to meet the physical and emotional needs of an older person; may be intentional (active neglect) or unintentional (passive neglect) caused by a carer's own condition or inadequate knowledge
- Family violence** ..... an ongoing pattern of behaviour aimed at controlling another person; violence against a person perpetrated by a family member, who may be an intimate partner, parent, sibling or an adolescent. Includes intimate partner violence, child abuse, sibling abuse and elder abuse or abuse of vulnerable people such as those with disabilities
- Intimate partner violence (IPV)** .... any behaviour within an intimate relationship that causes physical, psychological or sexual harm, or various controlling behaviours

## STUDY GUIDE

After completing the reading assignment, you should be able to answer the following questions in the spaces provided.

1. Define family violence. Why is this term preferred to domestic violence?

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2. Define intimate partner violence (IPV) and identify 4 of the most common physical and mental health/psychological problems that result from IPV.

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3. Define child abuse and identify some of the long-term consequences of child abuse and neglect.

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4. There are differences in legislative definitions of abuse or what constitutes abuse or maltreatment between states.

a. Research the legislation pertaining to the state or territory in which you live and define what constitutes abuse or maltreatment in your state/territory.

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b. Explain why the difference between states/territories legislation may cause problems for the nurse and what may be done to minimise these problems.

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5. Is it mandatory to report abuse? If so, to whom is suspected abuse reported?

Australia \_\_\_\_\_

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New Zealand \_\_\_\_\_

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6. Define elder neglect and explain the different types of elder neglect.

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7. Justify routine screening for abuse and neglect.

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8. Circle True or False to answer the following statements. If the answer is false, state the correct answer.

- a. The incidence of intimate partner violence has been found to be similar in same-sex relationships as that in heterosexual relationships. True False
- b. The majority of women who have been abused do tell someone and seek help from formal services. True False
- c. Indigenous women, women with disabilities, women from culturally and linguistically diverse backgrounds, younger and older women experience higher rates of violence than other women. True False
- d. Māori women have significantly lower rates of intimate partner violence compared to New Zealand European or Pacific women. True False
- e. Family violence is a significant contributing factor to homelessness among Australian women. True False
- f. Women who have experienced severe physical violence are more likely than women who are less severely injured to have told someone. True False

9. Explain why nurses often find it difficult to ask clients about the possibility of abuse.

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10. List 10 risk factors for child abuse and neglect.

- i. \_\_\_\_\_
- ii. \_\_\_\_\_
- iii. \_\_\_\_\_
- iv. \_\_\_\_\_
- v. \_\_\_\_\_
- vi. \_\_\_\_\_
- vii. \_\_\_\_\_
- viii. \_\_\_\_\_
- ix. \_\_\_\_\_
- x. \_\_\_\_\_



11. Briefly explain the Australian policy of 'the first door must be the right door'.

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12. In New Zealand the Standards Council proposed a three-step approach to screening and assessment for family violence. Explain each of the three steps.

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13. If IPV is suspected, assessment should be undertaken. One technique that may be used is 'funnelling'. Explain this technique and propose 4 questions you could use to begin your assessment.

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14. List 10 conditions that are associated with IPV. Why would recurrent presentations with any of these problems be of concern?

- i. 

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- ii. 

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- iii. 

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- iv. 

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- v. 

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- vi. 

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- vii. 

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- viii. 

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- ix. 

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- x. 

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15. State the most important communication skills that should be used when asking questions about family violence or abuse.

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16. During assessment of suspected family violence, why is it important to enquire about any prior episodes of head trauma and to perform a mental status assessment?

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17. Circle True or False to answer the following statements regarding elder abuse and neglect. If the answer is false, state the correct answer.

- |  |      |       |
|--|------|-------|
| a. There is no mandatory reporting of elder abuse in either Australia or New Zealand.  | True | False |
| b. Physical findings that are inconsistent with the history provided by the patient, family member or caregiver are significant red flags of possible abuse and neglect. | True | False |
| c. Start with direct questions then move to a more indirect inquiry if abuse is suspected.   | True | False |
| d. Do not include caregivers in the assessment.  | True | False |

18. Explain the physical appearance differences between a new bruise, one that is at least 24 hours old and one that is 1 week old.

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19. Identify 4 important elements of assessment for an abused person.

- i. 

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- ii. 

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- iii. 

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- iv. 

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20. Discuss the consideration of age and developmental stage in the assessment of children for child abuse.

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## REVIEW QUESTIONS

This test is to check your mastery of the content. Answers are provided in Appendix A.

1. All of the following are examples of intimate partner violence **except**:
  - a. an ex-boyfriend stalks his ex-girlfriend
  - b. marital rape
  - c. hitting a date
  - d. going out with your best friend's partner
2. Routine, universal screening for domestic violence means:
  - a. asking all women who come to the healthcare system if they are abused each time they come
  - b. asking women who have injuries if they are abused
  - c. asking women who have symptoms of depression and PTSD if they are abused
  - d. asking women ages 18 to 30 if they are abused
3. Barriers to disclosure of intimate partner violence have been identified as which of the following
  - a. fear, denial and self-blame
  - b. hope for change and 'normalisation' of violence
  - c. isolation and depression
  - d. feeling that the abused person will not be believed or that services will not be able to help
  - e. all of the above
4. Children who have witnessed family violence may exhibit which of the following:
  - a. sexualised or challenging behaviours
  - b. learning difficulties, low self-esteem, anxiety and distress
  - c. poor socialisation and lack of trust
  - d. problems with emotional attachment and parentified behaviours
  - e. all of the above
5. The HARK questionnaire focuses on four key areas of enquiry; of this list below what is *not* focused upon in the HARK questionnaire?
  - a. physical violence
  - b. mental health
  - c. sexual assault
  - d. humiliation
  - e. being afraid
6. When questioning a sufferer of IPV, it is *not* important to document which of the following;
  - a. prior intimate partner violence
  - b. number of relationships and whether opposite or same sex
  - c. childhood physical and sexual abuse
  - d. prior sexual assaults of all kinds (stranger, date, intimate partner)
7. Circle True or False to answer the following statements. If the answer is false, state the correct answer.
  - a. Nurses who suspect child abuse or neglect should continue to perform the assessment alone. True False
  - b. Bruising in 'atypical' places such as the buttocks, hands, feet and abdomen is exceedingly rare and should arouse concern. True False
  - c. A complete assessment and documentation of evidence should be completed prior to contacting authorities. True False
  - d. Developmental level and age are not important when assessing a child who is suspected of having suffered abuse. True False
  - e. If the child is verbal, a history should be obtained away from the parents/ caretakers through open-ended questions or spontaneous statements. True False
  - f. Questions should be short, contain age-appropriate language and familiar terminology should be used. True False
8. Documentation of IPV, child or elder abuse must include all of the following **except**:
  - a. detailed, nonbiased progress notes
  - b. exceptionally poignant statements made by the victim that identify the reported perpetrator and severe threats of harm made by the reported perpetrator
  - c. abuse history
  - d. general family history
  - e. injury map, photographic documentation and consent
9. The needs of persons suffering family abuse of culturally and linguistically diverse backgrounds differ for a range of reasons including which of the following?
  - a. cultural and religious beliefs
  - b. level of education, language skills and fluency
  - c. family relationships
  - d. length of time since migration and lack of understanding of Australian laws
  - e. misinterpretation about what family violence is
10. Child abuse includes which of the following?
  - a. shaken baby syndrome
  - b. witnessing intimate partner violence
  - c. impairment of either physical or emotional health and development
  - d. all of the above

## PRACTICAL SKILLS IN THE LABORATORY/CLINICAL SETTING

After completing the readings and associated questions you should now be ready for the clinical component that relates to identification and assessment of abuse and neglect.

The nurse is most commonly the first point of contact that women (and other patients such as children and the older person) have when accessing the healthcare system. As such, it is up to us to be compassionate professionals, supportive of disclosure about abuse and able to respond in a knowledgeable and timely manner. Many nurses will have a degree of difficulty confronting these issues with people they do not know, so to provide you with an opportunity to practise the required communication and assessment skills, it is important to complete the following role-play exercise.

### Clinical Objectives

At the completion of the clinical laboratory session, with further practice and self-directed learning you should be able to:

- ensure confidentiality of all information obtained during the interview
- discuss referral to appropriate personnel with patient as required
- understand how to sensitively ask questions relating to abuse and neglect
- know when to request assistance from an experienced team member when abuse or neglect is suspected.

### PROFESSIONAL PRACTICE NOTE

*Nurses suspecting abuse of women, children or the older person have a duty of care to ensure confidentiality of the information obtained, to be supportive and to have the capacity to respond appropriately. As beginning nurses it is vital that you understand the importance of bringing in an expert clinician to assist you in the identification and assessment of the victim, if you suspect any form of abuse, or if abuse is disclosed. Because of the extreme sensitivity of this area of assessment, you must ensure privacy and confidentiality at all times.*

### Instructions for role-play exercise

#### SCENARIO

Candace is a 25-year-old receptionist for a large hotel chain. She lives with her partner in a unit in a city suburb. She has presented to Emergency with a badly broken wrist and states she had fallen getting out of the bath. She appears upset, anxious and afraid. Initial social history reveals her partner is a 38-year-old labourer who has a bad temper and did not want to accompany her to hospital.

You note Candace has tried to cover bruises on her face by using a lot of make-up.

X-rays show the wrist will need reduction and application of plaster in theatre.

1. Prior to attending the skills laboratory, write as many questions as you can think of after reading Table 28.2 (below), and as many validating statements after reading Table 28.3 (below) that may be useful in eliciting information from Candace in the scenario.
2. Form into pairs: one nurse becomes the patient and the other is the admitting nurse.
3. All pairs are to use the same scenario.
4. Practise IPV questioning techniques that you would use to approach this situation. Using strategies listed in Table 28.1 (below), your own strategies, the additional questions listed in Table 28.2 and your own statements, and the statements in Table 28.3 concerning validation of disclosure, elicit as much information as you can from the patient concerning their abuse history.
5. At the end of 15 minutes reverse roles for another 15 minutes using different questioning techniques.
6. Discuss with your peer your experience both of being questioned and of asking the questions.
7. Join the class group and your facilitator will lead a discussion.
8. At the completion of the exercise and the discussion, reflect on the exercise and write down your feeling and thoughts about how you could improve your techniques.

Table 28.1 Approaches to assessment and disclosure about abuse

**Before disclosure or asking questions about violence**

- Understand the problem, including knowing about the community services and appropriate referral options
- Create a welcoming, supportive non-threatening environment
- Provide assurance of privacy, safety and confidentiality
- Be alert to the signs of abuse and raise the possibility
- Build rapport using both verbal and non-verbal communication skills to develop trust
- Be compassionate, supportive and respectful

**When the topic of domestic violence is raised**

- Be non-judgmental, compassionate and caring when questioning about abuse
- Be confident and comfortable asking about domestic violence
- Do not pressure women to disclose abuse as simply raising the topic can be helpful
- Ensure that the environment is private and confidential and provide time

**Immediate response to disclosure**

- Be non-judgmental, compassionate, supportive, believe what you are being told
- Acknowledge the complexity of the problem, and respect the woman's unique concerns and decisions
- Respect the woman's wishes and do not pressure her into making any decisions
- Validate the experience, challenge assumptions and provide encouragement
- Be non-judgmental if a woman does not follow up referrals immediately
- Put the needs identified by the woman first and help to ensure that social and psychological needs are met
- Respond to any concerns about safety
- Take time to listen, provide information and offer referrals to specialist help

Source: Hegarty K, Taft A, Feder G: Violence between intimate partners: working with the whole family, *BMJ* 337:a839, 2008.

Table 28.2 Possible questions to ask if you suspect intimate partner violence

- Sometimes partners use physical force. Is this happening to you?
- Have you felt humiliated or emotionally abused by your partner (ex-partner)?
- Are you now or have you been afraid of your partner (ex-partner)?
- Has your partner ever physically threatened or hurt you? Or have you been kicked, hit, slapped or otherwise physically hurt by your partner (ex-partner)?
- In the past year have you been forced to have any kind of sexual activity by your partner (ex-partner)?

Source: Hegarty K, Taft A, Feder G: Violence between intimate partners: working with the whole family, *BMJ* 337:a839, 2008.

Table 28.3 Possible ways to validate disclosure

- Everybody deserves to feel safe at home.
- You don't deserve to be hit or hurt. It is not your fault.
- I am concerned about your safety and wellbeing.
- You are not alone. I will help you to get help.
- Whatever you decide, help is available.
- You are not to blame. Abuse is common and happens in all kinds of relationships. It tends to continue.
- Abuse can affect your health and that of your children in many ways.

Source: Hegarty K, Taft A, Feder G: Violence between intimate partners: working with the whole family, *BMJ* 337:a839, 2008.



**ADDITIONAL QUESTIONS**

**ADDITIONAL VALIDATION STATEMENTS**

**REFLECTION ON PERFORMANCE**

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## Chapter Twenty-Nine

# Risk and safety: screening for substance abuse

### PURPOSE

Harmful consumption of alcohol and illicit drug use are significant health issues and disease burden in Australian and New Zealand communities. Many people that health professionals routinely interact with may have underlying harmful substance use issues even if these are not the primary reason for seeking healthcare. Therefore, regardless of the reason for the health visit, health professionals have the opportunity to assess the patient and determine if a problem exists and if so to take necessary action to assist the individual in seeking additional specialised healthcare.

In this chapter you will be introduced to alcohol and illicit drug use issues and the assessment techniques utilised to determine if a substance abuse problem is present.

### KEY CONCEPTS

- Definitions of:
  - Alcohol abuse
  - At risk drinking
  - Illegal drug use
  - Pharmaceutical drug use
- Statistics concerning consumption of alcohol across Australia and New Zealand
- Assessing alcohol consumption using a standard drink chart
- Assessing alcohol use using the AUDIT questionnaire

While you are completing your reading assignment, ensure you understand each of the key concepts listed above.

### READING ASSIGNMENT

Jarvis, Forbes & Watt (JF&W): *Jarvis's Physical Examination & Health Assessment 2e*, Chapter 29, pp 805–811.

For further clarification on alcohol use please read the Australian Guidelines to Reduce Health Risks from Drinking Alcohol. Please see the attached link: [www.nhmrc.gov.au/\\_files\\_nhmrc/publications/attachments/ds10-alcohol.pdf](http://www.nhmrc.gov.au/_files_nhmrc/publications/attachments/ds10-alcohol.pdf)

### GLOSSARY

<b>Alcohol abuse</b> .....	one or more of the following events in a year: recurrent use resulting in failure to fulfil major role obligations; recurrent use in hazardous situations; continued use despite social or interpersonal problems caused or exacerbated by alcohol
<b>Alcohol use disorders</b> .....	two or more of the following events in a year: tolerance (increased amounts to achieve effect; diminished effect from same amount); withdrawal; a great deal of time spent obtaining alcohol, using it or recovering from its effect; important activities given up or reduced because of alcohol; drinking more or longer than intended; persistent desire or unsuccessful efforts to cut down or control alcohol consumption
<b>Illegal drug use</b> .....	the use of a drug that is prohibited from sale, possession or use in Australia or New Zealand. For example, cannabis, heroin, amphetamine-type stimulants
<b>Standard drink</b> .....	a standard drink is any alcohol beverage that contains 10 grams of alcohol. One standard drink always contains the same amount of alcohol regardless of container size or alcohol type

## STUDY GUIDE

After completing the reading assignment, you should be able to answer the following questions in the spaces provided.

1. What proportion of the population aged 14 and older report being current alcohol users?

Australia \_\_\_\_\_

New Zealand \_\_\_\_\_

2. Drinking alcohol is associated with a risk of developing health problems. Identify 4 health problems that can result from alcohol use.

i. \_\_\_\_\_

ii. \_\_\_\_\_

iii. \_\_\_\_\_

iv. \_\_\_\_\_

3. Define illicit drug use and identify the major types of illicit drugs commonly used in Australia and New Zealand.

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

4. Define pharmaceutical drug misuse.

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

5. The *Diagnostic and Statistical Manual of Mental Disorders*, 5th edition (DSM-5) is a diagnostic tool that measures substance abuse on a continuum from mild to severe. Identify the 4 clustered groupings of the DSM-5 and define the criteria that belong to each.

i. \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

ii. \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

iii. \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

iv. \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

6. Explain the difference in brain functioning between adolescents who abuse substances and those who do not.

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

7. Define fetal alcohol syndrome (FAS) and identify the associated problems that may occur in babies born with this condition.

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

8. Discuss the extra risk alcohol drinking poses to the ageing adult.

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

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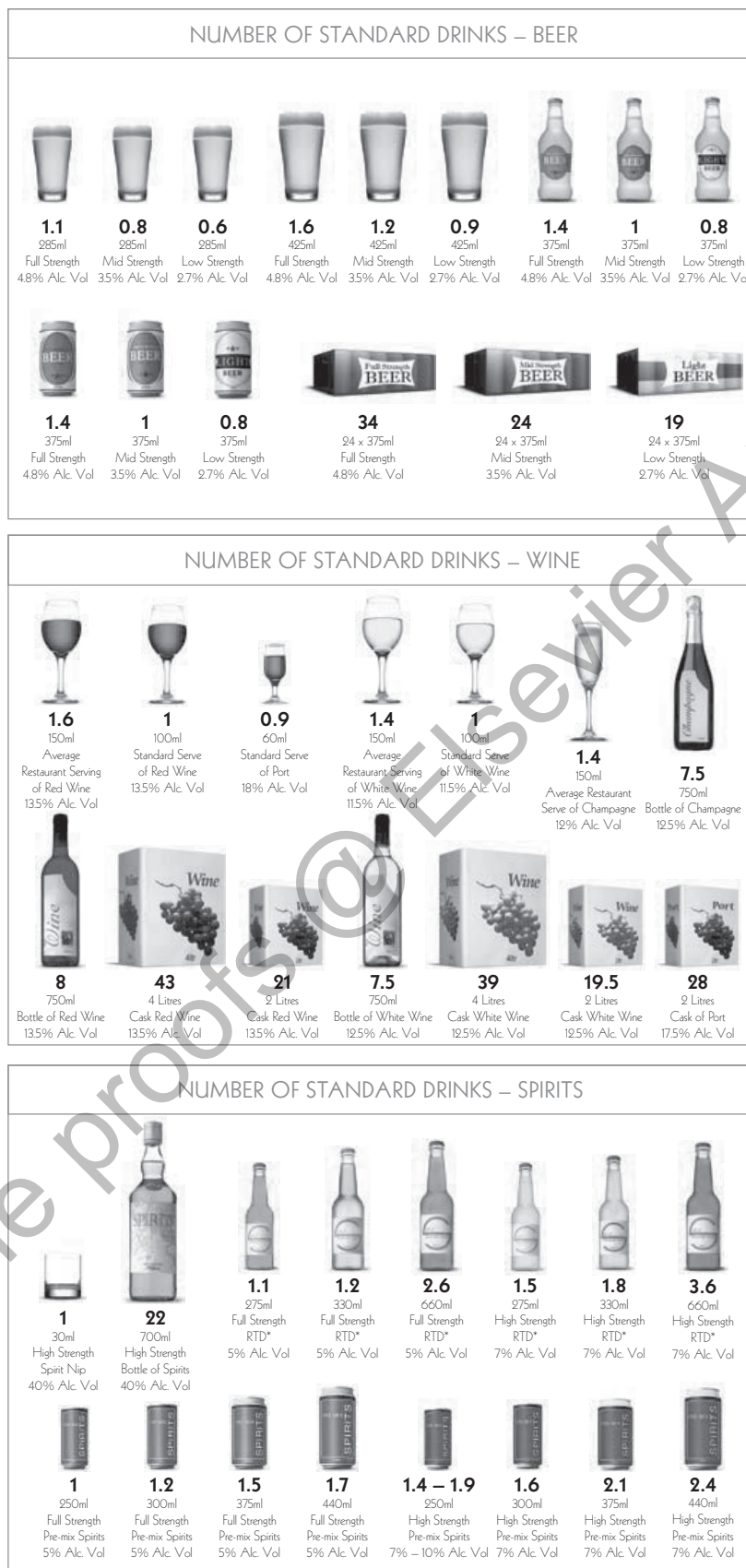


Figure 29.1

\*Ready-to-drink

Adapted from National Health and Research Council: *Alcohol guidelines: reducing health risk*. (Updated January 2015). [www.nhmc.gov.au/health-topics/alcohol-guidelines](http://www.nhmc.gov.au/health-topics/alcohol-guidelines), released under a Creative Commons Attribution 3.0 Australia Licence.

9. Examine Figure 29.1 Standard Drink Chart (above) and match the alcohol consumed (Column A) with the standard drink conversion (Column B).

<b>Column A</b>	<b>Column B</b>
a. A six-pack of full strength beer (cans)	1. 7.5
b. A bottle of white wine	2. 11
c. 3 average glasses of red wine	3. 3
d. A cocktail containing 1 nip of vodka, 1 nip of white rum and topped with pineapple juice	4. 1.4
e. Half a bottle of Scotch	5. 2
f. 1 serve of champagne	6. 4.8

10. Briefly describe the 3 major signs and symptom classes relating to alcohol withdrawal and list the appropriate signs and symptoms for each class.

- i. \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_
- ii. \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_
- iii. \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

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## REVIEW QUESTIONS

This test is to check your mastery of the content. Answers are provided in Appendix A.

- While assessing a man during a physical assessment you suspect alcohol use. Which assessment tool is appropriate in this situation?
  - AUDIT screening tool
  - rapid eye test
  - Mental Status Examination
  - CIWA-Ar
- You are assessing a patient's cardiac risk factors secondary to chronic alcohol use. Which condition might this patient exhibit?
  - bradycardia
  - ventral fibrillation
  - hypertension
  - hypotension
- You are assessing a patient's alcohol consumption. Which statement would alert you to investigate further?
  - 'I drink at weddings and on holidays'
  - 'I enjoy a few beers on the weekend'
  - 'No matter how much I drink I don't get drunk'
  - 'I drink a beer with dinner every day'
  - all of the above
- How many standard drinks does a person need to consume in one sitting for it to be considered binge drinking?
  - 3
  - 5
  - 7
  - 8
- Which health issue is *not* a result of prolonged heavy drinking?
  - kidney damage
  - damage to peripheral nervous system
  - increased risk of oral cancer
  - increased resistance to pneumonia and other infectious diseases
- What is the safe amount of alcohol (standard drinks) that can be consumed by a woman in her second trimester of pregnancy?
  - 0
  - 1
  - 2
  - 3
- The unpleasant effect that occurs when use of a drug is stopped is called:
  - potency
  - withdrawal
  - dependency
  - preoccupation
- What score on the Alcohol Use Disorders Identification Test (AUDIT) indicates hazardous alcohol consumption for women, adolescents and those over 60 years of age?
  - >2
  - >8
  - >6
  - >4
- What is *not* a sign of alcohol withdrawal?
  - tremor
  - anorexia
  - increased appetite
  - fever
  - poor concentration
- A male under the age of 60 receives a score of  $\geq 6$  on an AUDIT assessment. Is this an indication he consumes hazardous amounts of alcohol?
  - Yes
  - No

## PRACTICAL SKILLS IN THE LABORATORY/CLINICAL SETTING

After completing the readings and associated questions you should now be ready for the clinical component that relates to identification and assessment of substance abuse.

The nurse is most commonly the first point of contact that patients have when accessing the healthcare system. As such, it is up to us to be compassionate professionals, supportive of disclosure about abuse and able to respond in a knowledgeable and timely manner. Many nurses will have a degree of difficulty confronting these issues with people they do not know, so to provide you with an opportunity to practise the required communication and assessment skills, it is important to complete the following role-play exercise.

### Clinical objectives

At the completion of the clinical laboratory session, with further practice and self-directed learning you should be able to:

- ensure confidentiality of all information obtained during the interview
- discuss referral to appropriate personnel with patient as required
- understand how to ask questions relating to substance abuse

### Instructions for role-play exercise

#### SCENARIO

John is a 48-year-old sales executive. He lives with his wife and two teenage daughters. When John returns from work each evening he has 2 beers while watching the evening news and most evenings has 4 scotch and colas in the lead-up to bedtime. John has arrived at your facility for a general check-up.

1. Prior to attending the skills laboratory, consider how you may work an AUDIT into a general check-up.
2. Form pairs: one nurse becomes John and the other is the nurse.
3. All pairs are to use the same scenario.
4. Using your prior planning for how to work an alcohol assessment into a general check-up perform a full AUDIT assessment using Table 29.1 (below).
5. At the end of 10–15 minutes reverse roles for another 10–15 minutes and repeat step 4.
6. Compare AUDIT results and discuss with your peer your experience both of being questioned and of asking the questions.
7. Join the class group and your facilitator will lead a discussion.

At the completion of the exercise and the discussion, reflect on the exercise and write down your feeling and thoughts about how you could improve your technique.



Table 29.1 The Alcohol Use Disorders Identification Test – AUDIT					
Questions	0	1	2	3	4
1. How often do you have a drink containing alcohol?	Never	Monthly or less	2–4 times a month	2–3 times a week	4 or more times a week
2. How many drinks containing alcohol do you have on a typical day when you are drinking?	1 or 2	3 or 4	5 or 6	7 to 9	10 or more
3. How often do you have 6 or more drinks on one occasion?	Never	Less than monthly	Monthly	Weekly	Daily or almost daily
4. How often during the last year have you found that you were not able to stop drinking once you had started?	Never	Less than monthly	Monthly	Weekly	Daily or almost daily
5. How often during the last year have you failed to do what was normally expected of you because of drinking?	Never	Less than monthly	Monthly	Weekly	Daily or almost daily
6. How often during the last year have you needed a first drink in the morning to get yourself going after a heavy drinking session?	Never	Less than monthly	Monthly	Weekly	Daily or almost daily
7. How often during the last year have you had a feeling of guilt or remorse after drinking?	Never	Less than monthly	Monthly	Weekly	Daily or almost daily
8. How often during the last year have you been unable to remember what happened the night before because of your drinking?	Never	Less than monthly	Monthly	Weekly	Daily or almost daily
9. Have you or someone else been injured because of your drinking?	No		Yes, but not in the last year		Yes, during the last year
10. Has a relative, friend, doctor or other healthcare worker been concerned about your drinking or suggested that you cut down?	No		Yes, but not in the last year		Yes, during the last year
					<b>Total</b>

Note that the AUDIT covers three domains: alcohol consumption (questions 1 to 3); drinking behaviour or dependence (questions 4 to 6); and adverse consequences from alcohol (questions 7 to 10). Record the score at the end of each line and total; the maximum total is 40. A score of  $\geq 8$  points for men or  $\geq 4$  points for women, adolescents, and those older than 60 years indicates hazardous alcohol consumption. World Health Organization (WHO) 2001 AUDIT: the Alcohol Use Disorders Identification Test. Guidelines for use in primary health care. Second Edition [http://whqlibdoc.who.int/hq/2001/who\\_msd\\_msb\\_01.6a.pdf](http://whqlibdoc.who.int/hq/2001/who_msd_msb_01.6a.pdf)

## Chapter Thirty

# Focused assessment

### PURPOSE

In healthcare settings, not all patients require a complete physical examination at each assessment. However, the majority of hospitalised patients in Australia require a focused assessment at least every 8 hours (Australian Commission on Safety and Quality in Health Care, 2010). A focused health assessment concentrates on the specific patient concerns, reviewing their signs and symptoms, observing for indications of deteriorating health status, as well as monitoring responses to treatments and care.

Monitoring patients is a core skill for all nurses in the recognition and response to clinical deterioration. Detecting change that may indicate a deteriorating health status is the most frequent clinical decision made by nurses in hospital settings.

By the end of the chapter, with much more clinical practice and self-directed learning you should be able to conduct an accurate focused assessment on a body system or systems in the clinical setting.

### READING ASSIGNMENT

Jarvis, Forbes & Watt (JF&W): *Jarvis's Physical Examination & Health Assessment* 2e, Chapter 30, pp 812–820.

### GLOSSARY

**Early Warning System (EWS)** ..... a physiological scoring system suitable for bedside application to identify patients at risk of catastrophic deterioration

**Focused assessment** ..... a highly specific assessment of a body system or systems

**Medical Emergency Team (MET)** ... a team which provides an emergency response to stabilise a deteriorating patient until the patient can be cared for by the home team or is transferred to a higher level of care

**Primary survey** ..... used to immediately identify and treat life-threatening conditions

## STUDY GUIDE

After completing the reading assignment, you should be able to answer the following questions in the spaces provided.

1. Explain focused assessment.

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2. What are the 3 main reasons for conducting a focus assessment?

- i. 

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- ii. 

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- iii. 

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3. Outline the benefits of repeating a focused assessment regularly.

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4. Describe the type of assessment a patient will have on admission to a healthcare setting.

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5. What is the aim of a focused assessment?

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6. How often should a nurse complete a focused assessment on a patient?

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7. Identify 5 assessment tools used during a focused assessment.

i. 

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ii. 

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iii. 

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iv. 

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v. 

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8. Identify 6 surveillance areas.

i. 

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ii. 

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iii. 

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iv. 

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v. 

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vi. 

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## Chapter Thirty-One

# The complete health assessment: putting it all together

### PURPOSE

Throughout their stay, patients require regular assessments, which vary in frequency and depth. Initially, on admission, they may need a complete assessment, then, as their condition changes, you need to be able to modify your assessment to suit the patient's ever-changing condition and to align with the assessments done by the nurses who look after the patient on other shifts. The patient does not require a complete head-to-toe examination every day; however, they *do* require an examination at least every 8 hours that focuses on certain parameters, usually in response to current symptoms, signs, potential risks to health or responses to treatment.

Measurements, such as vital signs, daily weights, abdominal girth measures, neurological observations or the circumference of a limb, must be taken very carefully, as the validity of these measurements depends entirely on the consistency of the procedure from nurse to nurse.

You will also find that many assessments must be done frequently throughout the course of a shift with the purpose of detecting subtle changes in the patient's health state that could indicate deterioration of their condition (e.g. frequent postoperative observations).

The framework in this final chapter provides you with a sequence for the initial assessment that will allow you to get to know your patient when you first greet them at the start of a shift. It may also be used as a brief focused assessment that will facilitate quickly appraising the patient's current health situation.

Always take note of anything that needs continuous monitoring, such as a change in level of consciousness, increased wound drainage, blood pressure or pulse oximetry readings that are not what you expected. Remember, once you qualify as a registered nurse, it will be up to you to use your clinical reasoning skills to determine the frequency of some observations, the possible causation of unexpected findings, necessary changes to nursing management and the communication of findings to appropriate team members.

As with all the other assessments you have studied, this version of the head-to-toe assessment requires a great deal of practice before you will feel really confident with it. You will be able to apply this brief format to almost any inpatient clinical setting. When you do attend clinical placement, use any available time to practise your assessment skills on patients.

Practise integrating the regional examinations you have already covered in the previous chapters in the manner that suits the inpatient setting (e.g. in a cardiac setting you may combine a cardiovascular and a respiratory examination).

The selection and sequencing of the techniques included here are structured to provide a general assessment that is efficient, thorough and consistent with the assessments performed by other nurses in the course of 24-hour care.

### READING ASSIGNMENT

Jarvis, Forbes & Watt (JF&W): *Jarvis's Physical Examination & Health Assessment 2e*, Chapter 31, pp 821–826.

### Clinical objectives

At the completion of the clinical laboratory session, with further practice and self-directed learning you should be able to:

1. establish a therapeutic relationship and communicate effectively with the patient
2. perform a comprehensive health history, based on the patient's presenting problems, signs and symptoms
3. demonstrate skills of inspection, percussion, palpation and auscultation
4. demonstrate correct use of instruments, including assembly and manipulation of component parts
5. position the patient appropriately for each procedure undertaken during the examination
6. communicate effectively and empathetically with the patient throughout the examination
7. use appropriate terminology and correctly pronounce medical terminology with clinical instructor and with patient
8. provide appropriate explanations as required, in terms the patient can understand
9. choreograph the complete examination in a systematic manner, including integration of certain regional assessments throughout the examination (e.g. skin, musculoskeletal)

10. coordinate procedures to limit excessive position changes for examiner and patient
11. describe accurately the findings of the examination, including normal and abnormal findings for that patient
12. demonstrate appropriate infection control measures
13. maintain professional standards and conduct
14. recognise and maintain the privacy and dignity of the patient
15. adequately explain what is being done
16. consider patient's anxiety and fears
17. consider your own facial expression and comments
18. demonstrate confidence, empathy and gentle manner
19. acknowledge and apologise for any discomfort caused
20. provide for privacy and warmth at all times
21. determine comfort level, pausing if patient becomes tired
22. wash hands and use personal protective equipment appropriately
23. allow adequate time for each step
24. briefly summarise findings to patient in terms they can understand, and thank patient for their time
25. complete all procedures with attention to specifics of technique, which allows clear and consistent replication of the procedures by others assessing the same patient
26. document findings accurately. Use sketch diagrams to illustrate your findings
27. develop or modify the plan of care based on findings
28. communicate findings appropriately.

### Instructions

Always prepare any equipment you may require before you enter the room to begin your focused assessment. You may need some of the following depending on the purpose of the examination:

1. water (in a cup)
2. watch with a second hand
3. stethoscope
4. blood pressure cuff
5. sphygmomanometer
6. penlight
7. pulse oximeter
8. oxygen equipment
9. ruler in millimetres
10. bladder scanner
11. Doppler
12. documentation forms
13. standardised forms for skin breakdown and falls risk

## FOCUSED ASSESSMENT

Date \_\_\_\_\_

Interview conducted by \_\_\_\_\_

Designation \_\_\_\_\_

Patient \_\_\_\_\_ Age \_\_\_\_\_ Gender \_\_\_\_\_

Occupation \_\_\_\_\_ Medical Record Number \_\_\_\_\_

### Introduction and general survey

1. Check for alerts or markers at doorway. \_\_\_\_\_
2. Introduce yourself as the patient's nurse for the shift. \_\_\_\_\_
3. Gain consent. \_\_\_\_\_
4. Perform hand hygiene. \_\_\_\_\_
5. Make eye contact. \_\_\_\_\_
6. Ask how they are feeling, how they spent the previous shift, and whether they are currently having any pain or discomfort (including chest pain). \_\_\_\_\_
7. Offer water (if appropriate). \_\_\_\_\_
8. Check name band. \_\_\_\_\_
9. Elevate the bed to appropriate height. \_\_\_\_\_
10. Perform a general check of equipment attached to the patient:
  - a. the IV bag/s against the medical orders including the solution type and rate of infusion and any additives \_\_\_\_\_
  - b. the IV site for redness and swelling \_\_\_\_\_
  - c. oxygen/suction administration and equipment \_\_\_\_\_
  - d. drains/catheters and drainage equipment/containers \_\_\_\_\_
  - e. location and function of emergency equipment \_\_\_\_\_

### General appearance

1. Facial expression \_\_\_\_\_
2. Body position \_\_\_\_\_
3. Level of consciousness \_\_\_\_\_
4. Skin colour \_\_\_\_\_ mucous membrane colour \_\_\_\_\_
5. Nutritional status \_\_\_\_\_
6. Speech: articulation \_\_\_\_\_ pattern \_\_\_\_\_ content appropriate \_\_\_\_\_
7. Hearing \_\_\_\_\_
8. Personal hygiene \_\_\_\_\_

## FOCUSED ASSESSMENT (continued)

### Measurement

*Check previous measurements and observe for changes or trends.*

1. Temperature \_\_\_\_\_
2. Pulse \_\_\_\_\_
3. Respiration \_\_\_\_\_
4. Blood pressure \_\_\_\_\_
5. Pulse oximetry \_\_\_\_\_
6. Weight on admission or if daily weight is indicated \_\_\_\_\_
7. Rate pain level on 1 to 10 scale; note ability to tolerate pain \_\_\_\_\_
8. Pain reassessment, if appropriate to scenario \_\_\_\_\_

### Mental status assessment

1. General appearance and demeanour \_\_\_\_\_
2. Behaviour \_\_\_\_\_
3. Thought processes and perceptions \_\_\_\_\_

### Neurological system

May be recorded separately using the Glasgow Coma Scale on a neurological observation chart.

1. Eyes open: \_\_\_\_\_
  - a. Spontaneously \_\_\_\_\_
  - b. Name \_\_\_\_\_
2. Motor response \_\_\_\_\_
3. Verbal response \_\_\_\_\_
4. Pupil size: L \_\_\_\_\_ mm; R \_\_\_\_\_ mm      Reaction: L \_\_\_\_\_ R \_\_\_\_\_
5. Muscle strength: Upper
  - R \_\_\_\_\_ L \_\_\_\_\_
6. Muscle strength: Lower
  - R \_\_\_\_\_ L \_\_\_\_\_
7. Any ptosis? \_\_\_\_\_ Facial droop? \_\_\_\_\_
8. Sensation? \_\_\_\_\_
9. Communication \_\_\_\_\_
10. Ability to swallow? \_\_\_\_\_



## FOCUSED ASSESSMENT (continued)

### Respiratory

1. Oxygen? \_\_\_\_\_
2.  $FiO_2$ ? \_\_\_\_\_
3. Respiratory effort \_\_\_\_\_
4. Auscultate breath sounds:
  - a. Right with left \_\_\_\_\_
  - b. Anterior lobes \_\_\_\_\_
  - c. Posterior lobes \_\_\_\_\_
  - d. Middle lobe \_\_\_\_\_
5. Cough and deep breathe: \_\_\_\_\_ Any mucus? \_\_\_\_\_  
Check colour \_\_\_\_\_ Amount? \_\_\_\_\_

### Cardiovascular system

1. Auscultate rhythm at apex: Regular? \_\_\_\_\_ Irregular? \_\_\_\_\_
2. Check apical versus radial pulse \_\_\_\_\_
3. Assess heart sounds in apical area \_\_\_\_\_
4. Check capillary refill \_\_\_\_\_
5. Check pretibial oedema \_\_\_\_\_
6. Palpate posterior tibial pulse: right \_\_\_\_\_ left \_\_\_\_\_
7. Palpate dorsalis pedis pulse: right \_\_\_\_\_ left \_\_\_\_\_
8. Pulses by Doppler, if required \_\_\_\_\_
9. IV fluid and rate, if present \_\_\_\_\_
10. Assess fluid intake and output balance \_\_\_\_\_

### Skin (may be integrated throughout examination)

1. Colour \_\_\_\_\_
2. Temperature \_\_\_\_\_
3. Mobility and turgor? \_\_\_\_\_
4. Skin integrity? \_\_\_\_\_ Any lesions? \_\_\_\_\_ Wound/dressings? \_\_\_\_\_
5. Complete any standardised scales for risk of skin breakdown \_\_\_\_\_
6. Verify pressure reducing equipment is properly applied and operating at the correct settings, if present \_\_\_\_\_

## FOCUSED ASSESSMENT (continued)

### Abdomen

1. Inspect abdomen: Flat? \_\_\_\_\_ Round? \_\_\_\_\_ Protuberant? \_\_\_\_\_
2. Auscultate bowel sounds in all four quadrants \_\_\_\_\_
3. Check tube placement \_\_\_\_\_
  - a. Drainage? \_\_\_\_\_ Type? \_\_\_\_\_ Amount? \_\_\_\_\_
  - b. Insertion site integrity? \_\_\_\_\_
4. Assess bowel or urinary stoma (if applicable)
  - a. Colour? \_\_\_\_\_
  - b. Moisture? \_\_\_\_\_
  - c. Size and shape? \_\_\_\_\_
  - d. Oedema? \_\_\_\_\_
  - e. Peristomal skin integrity? \_\_\_\_\_
  - f. Protrusion (spouting)? \_\_\_\_\_
  - g. Output? \_\_\_\_\_
5. Passing flatus? \_\_\_\_\_
6. Stool? \_\_\_\_\_ Rate according to the Bristol Stool Form Scale: \_\_\_\_\_

### Renal/bladder function

1. Assess fluid intake and output in the last 24 hours \_\_\_\_\_
2. Check progressive fluid balance \_\_\_\_\_
3. Voiding? \_\_\_\_\_ Frequency? \_\_\_\_\_ Amount? \_\_\_\_\_
4. Inspect urine: Colour? \_\_\_\_\_ Clarity? \_\_\_\_\_ Amount? \_\_\_\_\_
5. If low urine output perform a bladder scan, if indicated \_\_\_\_\_
  - a. Decreased urine output? \_\_\_\_\_
  - b. Retention? \_\_\_\_\_

### Musculoskeletal function

1. Assist patient to sitting up, move to chair \_\_\_\_\_
2. Any assistance needed? \_\_\_\_\_ Tolerates movement? \_\_\_\_\_  
Distance walked to chair? \_\_\_\_\_ Ability to turn? \_\_\_\_\_
3. Any ambulatory aid or equipment? \_\_\_\_\_
4. Complete falls risk assessment \_\_\_\_\_
5. Need for rest/sleep? \_\_\_\_\_ Presence of fatigue? \_\_\_\_\_

## FOCUSED ASSESSMENT (continued)

### Closure

1. Inform patient of findings.
2. Return bed to an accessible level for patient if necessary.
3. Verify that brakes are locked.
4. Ensure call bell is available.
5. Ask if anything required.
6. Thank the patient for their attention and cooperation.

### Documentation

- Document your findings on the appropriate institutional forms and in patient notes.
- Ensure you communicate findings appropriately, and pass on findings and information to the nurses on the next shift.
- Update nursing care plan as necessary.

# Appendix A

## SUMMARY OF INFANT GROWTH AND DEVELOPMENT

### Chapter 1: The context of health assessment in nursing practice

---

- |      |       |      |
|------|-------|------|
| 1. a | 3. b  | 5. c |
| 2. d | 4. iv | 6. d |

### Chapter 2: Critical thinking in health assessment

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- |       |  |   |
|-------|--|---|
| 1. c  | 5. a. True   | c. True   |
| 2. b  | b. False: Always eliminate any extraneous variables that could influence results | d. False: Find the missing pieces, as identifying missing information is an essential critical thinking skill |
| 3. c  |  |   |
| 4. iv |  |   |

### Chapter 3: Developmental tasks and health promotion across the life span

---

- |                               |  |   |
|-------------------------------|--|---|
| 1. c                          | the way we value our own competence. It may affect the way we behave in the future | f. False: Middle school children further develop self-esteem, adolescents search for identity |
| 2. b                          |  |   |
| 3. a                          |  |   |
| 4. d                          | c. True  | 8. d  |
| 5. c                          | d. True  | 9. c  |
| 6. d                          | e. False: Pre-schoolers' bones are developing so they need highly nutritious food  | 10. a   |
| 7. a. True                    |  | 11. c   |
| b. False: Self-esteem becomes |  | 12. b   |

### Chapter 4: Cultural safety: cultural considerations

---

- |   |  |  |
|---|--|--|
| 1. c  | gender, gender identity, sexual orientation, citizenship/ migrant/refugee status, values, disability and power relations.  | influence on a person's decision making concerning acceptable treatment, choice of healer and how illness is perceived in times of stress or crisis. |
| 2. b  |  |  |
| 3. a. False. Culture is not static. This was the criticism of Leininger's work on transcultural nursing where the focus is on 'other' cultures — about difference. The approach taken with cultural capability and cultural safety is to present the viewpoint of 'how people are treated rather than how they are different'. Cultures are dynamic and adapt to new circumstances; and they are learned. | d. True  |  |
| b. True   | e. True  | c. True  |
| c. False. Culture incorporates more than ethnicity, customs, dress and religion. It addresses socioeconomic status, age,  | 4. d   | d. True  |
|   | 5. a   | 9. a. True   |
|   | 6. c   | b. False: Focus is on the past   |
|   | 7. e   | c. True  |
|   | 8. a. True   | d. False: Nurses focus on the present  |
|   | b. False. Where religion and/ or spirituality is an integral component of a person's culture their beliefs may influence the person's explanation of the cause of illness, their perception of its severity and their choice of healer. Religious and spiritual healers may exert considerable | 10. a. 2   |
|   |  | b. 3   |
|   |  | c. 1   |
|   |  | 11. d  |

**Chapter 5: The health assessment interview**

- |      |       |       |
|------|-------|-------|
| 1. a | 6. b  | 11. c |
| 2. a | 7. a  | 12. a |
| 3. d | 8. a  | 13. b |
| 4. c | 9. b  |       |
| 5. d | 10. d |       |

**Chapter 6: The health history**

- |      |      |      |
|------|------|------|
| 1. d | 4. c | 7. d |
| 2. a | 5. c | 8. b |
| 3. b | 6. a |      |

**Chapter 7: Physical assessment techniques**

- |  |   |       |
|--|---|-------|
| 1. a. True   | palpation technique for nurses  | 3. c  |
| b. True  | f. True   | 4. b  |
| c. False: Natural light is the best but, if not available, use two light sources to minimise shadowing | g. False: The quality of the percussion is affected by the thickness of the body wall | 5. a  |
| d. False: To continue if the patient complains of pain may cause further damage to the area            | h. False: It excludes external or environmental sounds                                | 6. d  |
| e. False: It is the least utilised   | i. True   | 7. c  |
|  | 2. d  | 8. a  |
|  |   | 9. b  |
|  |   | 10. c |

**Chapter 8: General survey, measurement and vital signs**

- |      |   |   |
|------|---|---|
| 1. d | 8. b: Only count for 60 seconds if pulse is irregular, 30 seconds and multiply by 2 is accurate if the pulse is regular | 14. a. False: Temperature is <i>not</i> a reliable index of the older person's true health state. Sweat gland activity <i>is</i> diminished |
| 2. c |   | b. True   |
| 3. b | 9. b  | c. False: Respirations. Ageing causes a <i>decrease</i> in vital capacity and a decreased inspiratory reserve volume                        |
| 4. c | 10. d   | d. True   |
| 5. a | 11. a   |   |
| 6. b | 12. d   |   |
| 7. a | 13. c   |   |

**Chapter 9: Mental health assessment**

- |             |   |       |
|-------------|---|-------|
| 1. d        | c. False: Sensory impairments such as vision loss may result in apathy, social isolation and depression   | 2. i  |
| 2. a        |   | 3. d  |
| 3. d        |   | 4. b  |
| 4. c        |   | 5. g  |
| 5. b        | d. False: Recent memory, which requires some processing (e.g. medication instructions, 24-hour diet recall, names of new acquaintances), is somewhat decreased with ageing. Remote memory is not affected | 6. f  |
| 6. d        |   | 7. a  |
| 7. c        |   | 8. e  |
| 8. b        |   | 9. h  |
| 9. c        |   | 13. b |
| 10. a. True | 11. a   |       |
| b. True     | 12. 1. c  |       |

**Chapter 10: Neurological function**

- |      |          |       |
|------|----------|-------|
| 1. a | 9. a     | 5. h  |
| 2. d | 10. b    | 6. c  |
| 3. c | 11. b    | 7. l  |
| 4. c | 12. c    | 8. d  |
| 5. b | 13. 1. f | 9. i  |
| 6. b | 2. b     | 10. e |
| 7. c | 3. g     | 11. j |
| 8. b | 4. k     | 12. a |

**Chapter 11: Pain assessment**

- |                                   |                                    |  |
|-----------------------------------|------------------------------------|--|
| 1. c                              | the abdomen), it is rarely         | c. incorrect. Observation is <i>very</i> |
| 2. b                              | justified to defer analgesia       | important                                |
| 3. c                              | until a diagnosis is made. In      | d. incorrect. Behaviours such            |
| 4. d                              | fact, a comfortable patient is     | as restlessness, frowning and            |
| 5. d                              | better able to cooperate with      | grimacing or sounds such as              |
| 6. b.                             | diagnostic procedures              | grunting or groaning can be              |
| and c are both correct, and       | 8. d                               | used to assess pain but may not          |
| would depend on the child         | 9. c                               | always be valid indicators of            |
| 7. b. False: According to the     | 10. d                              | pain in non-verbal adults                |
| American Pain Society             | 11.                                | 12. Match                                |
| (1992:3): In cases in which the   | a. incorrect. Self-assessment pain | a. Neonatal postsurgery use 3.           |
| cause of acute pain is uncertain, | scales can be used reliably in     | CRIS                                     |
| establishing a diagnosis is a     | most patients with mild-to-        | b. 2-year-old child with broken          |
| priority, but symptomatic         | moderate cognitive impairment      | arm use 1. Baker-Wong Scale              |
| treatment of pain should be       | although dementia and              | c. Middle-aged man following             |
| given while the investigation     | delirium can limit a person's      | melanoma removal use 4.                  |
| is proceeding. With occasional    | ability to report pain             | Numeric rating scale                     |
| exceptions, (e.g. the initial     | b. correct                         | d. Aged person with cognitive            |
| examination of the patient        |                                    | decline use 2. Abbey pain scale          |
| with an acute condition of        |                                    |  |

**Chapter 12: Eye function**

- |      |       |       |
|------|-------|-------|
| 1. b | 7. a  | 13. b |
| 2. c | 8. c  | 14. b |
| 3. a | 9. a  | 15. b |
| 4. b | 10. c | 16. d |
| 5. d | 11. a | 17. a |
| 6. b | 12. c |       |

**Chapter 13: Ear function**

- |      |       |       |
|------|-------|-------|
| 1. c | 7. c  | 13. a |
| 2. a | 8. c  | 14. b |
| 3. b | 9. d  | 15. b |
| 4. d | 10. b | 16. a |
| 5. b | 11. d | 17. d |
| 6. a | 12. b |       |

**Chapter 14: Peripheral vascular assessment**

- |       |   |   |       |
|-------|---|---|-------|
| 1. a  |   | and right upper section of the liver.   | 8. a  |
| 2. c  |   |   | 9. d  |
| 3. a. | The right lymphatic duct empties into the right subclavian vein.  | c. The thoracic duct drains the rest of the body. It empties into the left subclavian vein. | 10. b |
|       | b. It drains the right side of the head and neck, right arm, right side of thorax, right lung and pleura, right side of the heart |   | 11. d |
|       |   | 4. c  | 12. a |
|       |   | 5. a  | 13. c |
|       |   | 6. c  | 14. a |
|       |   | 7. d  | 15. c |

**Chapter 15: Cardiac function**

- |           |  |   |
|-----------|--|---|
| 1. c      | 5. b   | b. False: The overall size of the heart does not increase with age, but left ventricular wall thickness increases. This is an adaptive mechanism to accommodate the vascular stiffening mentioned earlier that creates an increased workload on the heart |
| 2. b      | 6. d   |   |
| 3. c      | 16. Liver to right atrium via inferior vena cava, head and neck to right atrium via superior vena cava, through tricuspid valve to right ventricle, through the pulmonic valve to the pulmonary artery, is oxygenated in the lungs, returns to left atrium, to left ventricle via mitral valve, through aortic valve to aorta, and out to the body | c. False: There is no change in resting heart rate with ageing  |
| 4. b      |  | d. True.  |
| 5. d      |  | e. True.  |
| 6. d      |  | f. False: Supraventricular and ventricular arrhythmias increase with age as do ectopic beats and these are usually asymptomatic in healthy older people, but they may compromise cardiac output and blood pressure when disease is present.               |
| 7. b      | 17. The major modifiable risk factors for heart disease and stroke are high blood pressure, smoking, high cholesterol levels, obesity, physical inactivity and diabetes. Family history of heart disease, age and for some women, the use of oral contraceptives and postmenopausal hormones are other risk factors                                |   |
| 8. b      |  | g. True.  |
| 9. a      | 18. a. True.   |   |
| 10. a     |  |   |
| 11. a     |  |   |
| 12. b     |  |   |
| 13. c     |  |   |
| 14. c     |  |   |
| 15. Match |  |   |
| 1. e      |  |   |
| 2. c      |  |   |
| 3. f      |  |   |
| 4. a      |  |   |

**Chapter 16: Upper airways**

- |         |                |       |
|---------|----------------|-------|
| 1. c    | 6. a           | 4. h  |
| 2. d    | 7. a           | 5. g  |
| 3. b    | 8. b           | 6. i  |
| 4. a. 3 | 9. Lymph nodes | 7. j  |
| b. 1    | 1. c           | 8. b  |
| c. 2    | 2. e           | 9. d  |
| 5. c    | 3. f           | 10. a |

**Chapter 17: Lower airways**

- |      |         |       |
|------|---------|-------|
| 1. a | 6. b    | c. 2  |
| 2. b | 7. b    | d. 5  |
| 3. b | 8. d    | e. 1  |
| 4. a | 9. a. 4 | 10. d |
| 5. c | b. 3    | 11. b |

- |          |          |      |
|----------|----------|------|
| 12. a    | e. 2     | d. 6 |
| 13. a. 5 | 14. a    | e. 3 |
| b. 1     | 15. a. 5 | f. 2 |
| c. 3     | b. 1     |      |
| d. 4     | c. 4     |      |

### Chapter 18: Musculoskeletal function

---

- |   |  |       |
|---|--|-------|
| 1. d  | 12. b  | 2. e  |
| 2. b  | 13.  | 3. g  |
| 3. d  | a. True  | 4. i  |
| 4. c  | b. False: Chronic pain is often associated with degenerative musculoskeletal disorders                         | 5. d  |
| 5. d  | c. True  | 6. a  |
| 6. a  | d. False: Rheumatoid arthritis pain is worse in morning when arising; osteoarthritis is worse later in the day | 7. j  |
| 7. a  | e. True  | 8. m  |
| 8. c  | f. True  | 9. k  |
| 9. b. (It could also be argued that d is correct, but most 2-year-olds will have a pronounced lumbar lordosis which is normal.) | 14. Match  | 10. n |
| 10. c   | 1. b   | 11. l |
| 11. b   |  | 12. h |
|   |  | 13. f |
|   |  | 14. c |

### Chapter 19: Nutritional and metabolic assessment

---

- |      |       |       |
|------|-------|-------|
| 1. c | 7. a  | 13. d |
| 2. d | 8. b  | 14. c |
| 3. c | 9. c  | 15. b |
| 4. c | 10. c | 16. b |
| 5. b | 11. d | 17. c |
| 6. b | 12. b | 18. d |

### Chapter 20: Skin, hair and nails

---

- |       |                       |          |
|-------|-----------------------|----------|
| 1. b  | 14. c                 | 17. 1. c |
| 2. d  | 15. a. True           | 2. a     |
| 3. a  | b. False: An increase | 3. b     |
| 4. d  | c. True               | 4. d     |
| 5. b  | d. False: It is       | 18. 1. b |
| 6. d  | e. True               | 2. a     |
| 7. c  | 16. 1. a              | 3. g     |
| 8. c  | 2. c                  | 4. c     |
| 9. a  | 3. b                  | 5. f     |
| 10. d | 4. c                  | 6. d     |
| 11. d | 5. a                  | 7. e     |
| 12. c | 6. a                  |          |
| 13. c | 7. b                  |          |



**Chapter 21: Abdominal assessment**

- |      |          |      |
|------|----------|------|
| 1. c | 9. d     | 2. e |
| 2. c | 10. d    | 3. g |
| 3. a | 11. a    | 4. f |
| 4. d | 12. d    | 5. b |
| 5. c | 13. a    | 6. i |
| 6. a | 14. c    | 7. h |
| 7. d | 15. b    | 8. a |
| 8. d | 16. 1. c | 9. d |

**Chapter 22: Urinary function**

- |   |          |  |
|---|----------|--|
| 1. 1. True  | 2. c     | 7. a   |
| 2. False: The decrease in function puts the older person more at risk for health problems with rapid changes to blood volume or other insults | 3. d     | 8. d   |
| 3. True   | 4. c     | 9. c   |
| 4. False: The prostate gland increases in size leading to obstruction of urine flow   | 5. Match | 10. c  |
|   | 1. b     | 11. a is incorrect as prostate cancer is the <b>most common</b> cancer that occurs in men and the second leading cause of cancer deaths in men |
|   | 2. d     |  |
|   | 3. a     |  |
|   | 4. c     |  |
|   | 6. b     |  |

**Chapter 23: Bowel function**

- |      |   |   |
|------|---|---|
| 1. a | 6. d  | imperforate anus there will be no passing of the meconium     |
| 2. c | 7. b  |   |
| 3. a | 8. a. False: Confirm a <b>patent</b> rectum and anus by noting the first meconium stool passed within 24 to 48 hours of birth. If | b. True   |
| 4. b |   | c. False: They are due to an increased portal venous pressure |
| 5. a |   |   |

**Chapter 24: Female sexual and reproductive function**

- |      |      |       |
|------|------|-------|
| 1. d | 5. c | 9. b  |
| 2. a | 6. d | 10. a |
| 3. d | 7. d | 11. c |
| 4. c | 8. b | 12. b |

**Chapter 25: Male sexual and reproductive function**

- |      |       |       |
|------|-------|-------|
| 1. c | 6. c  | 11. a |
| 2. c | 7. d  | 12. a |
| 3. c | 8. b  | 13. b |
| 4. d | 9. a  | 14. e |
| 5. d | 10. d |       |

**Chapter 26: Breast assessment**

---

- |      |       |       |
|------|-------|-------|
| 1. d | 6. c  | 11. c |
| 2. b | 7. c  | 12. b |
| 3. a | 8. c  | 13. d |
| 4. c | 9. b  | 14. a |
| 5. b | 10. d | 15. b |

**Chapter 27: The pregnant woman**

---

- |      |       |       |
|------|-------|-------|
| 1. c | 6. c  | 11. b |
| 2. a | 7. b  | 12. c |
| 3. c | 8. e  | 13. d |
| 4. a | 9. f  | 14. f |
| 5. c | 10. f |       |

**Chapter 28: Risk and safety: screening for family violence and abuse**

---

- |      |             |         |
|------|-------------|---------|
| 1. d | 6. b        | e. True |
| 2. a | 7. a. False | f. True |
| 3. e | b. True     | 8. d    |
| 4. e | c. True     | 9. e    |
| 5. b | d. False    | 10. d   |

**Chapter 29: Risk and safety: screening for substance abuse**

---

- |      |      |  |
|------|------|--|
| 1. a | 5. d | 9. c   |
| 2. c | 6. a | 10. b: Indication a male under 60 is consuming hazardous amounts of alcohol is $\geq 8$ on the AUDIT |
| 3. c | 7. b |  |
| 4. b | 8. d |  |

# Appendix B

## Summary of infant growth and development

### General notes

---

All infants develop at their own pace.

Some developmental achievements — the milestones — have a relatively fixed normal timeframe. Example: lifting the head off the bed.

Other achievements have a more fluid timeframe and may not ever occur. Example: crawling.

A delay in a single milestone is unlikely to be clinically significant.

Parental concerns about possible delays should always be taken seriously.

Early referral is required whenever there are concerns about delays.

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Age (mths)	Physical skills	Intellectual skills	Emotional-social skills	Nutrition	Play	Safety
1 to 2	Can lift the head off the bed; eyes move to follow moving people.	Neonatal reflexes become less marked; 'talks' back.	Cries to indicate hunger or discomfort and settles when needs are met; smiles back at people.	Breast milk or formula.	Enjoys massage; likes large coloured objects; should spend time in a variety of positions; should be talked to and cuddled.	Must sleep on their back; head must be appropriately supported when baby is moved; must use appropriate restraints, e.g. car seats; never leave alone in the car or the bath, even if in a restraint.
2 to 4	Can turn from the back to the side; can lift the head and chest off the bed; can support weight on arms; reaches for objects; follows objects past the midline.	Tries to copy what caregivers do; looks intently at interesting objects including own hands; turns to sounds; coos.	Responds more strongly to the primary caregiver than to others; prefers faces to objects; excited by familiar pleasurable activities, e.g. bath.	As for 1 to 2 months.	Enjoys a range of toys, e.g. rattles and mirrors.	Cannot be left unattended on heights, e.g. change tables (falls risk); remove choking hazards.
4 to 6	Birth weight has doubled; may teethe; can sit when propped; can roll from tummy to back; can take most of their weight when held in a stand; picks up objects using palmar grasp.	Some intentional actions, e.g. reaching; some sense of object permanence; babbles.	Prefers to interact with the primary caregiver; laughs; smiles at self in the mirror.	As for 1 to 2 months.	Give space to move; give objects to grasp.	Keep the environment free of hazards (baby is more mobile and wants to put objects in their mouth); check objects for pieces that may break (choking hazard).
6 to 8	Can roll from back to tummy; can sit without being propped; crawls; transfers objects from hand to hand.	Some recognisable syllables and may respond to own name.	'Stranger' or 'separation' anxiety.	Solids are introduced.	Give stackable toys.	Keep environment free of hazards (baby can be very mobile): consider electrical wires and sockets, stairs, pools and other water sources, poisons and fragile objects.

8 to 10	Can get from lying to sitting; can pull to a stand; uses a pincer grasp.	Can solve simple problems; actively searches for an object that disappears.	As for 6 to 8 months.	Can feed self biscuits and drink from a bottle unaided.	Wider variety of games, e.g. hide and seek, peek-a-boo, pat-a-cake; likes looking at picture books.	As for 6 to 8 months; hazards include bins, cords and tablecloths.
10 to 12	Birth weight has tripled; stands unaided; cruises using furniture; may use a spoon.	Understands simple commands; may say up to 4 words; has clear intentions.	Separates briefly from the primary caregiver.	Consumes more solids than liquids; can use a cup.	Wider variety of games, e.g. being read to, water play, sand play, ball play; likes to throw things on the ground.	As for 10 to 12 months.

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## Summary of toddler growth, development and health maintenance

Age	Physical competency	Intellectual competency	Emotional-social competency	Nutrition	Play	Safety
General: 1 to 3 yrs	Gains 5 kg; grows 20 cm; has 20 teeth.	Learns by exploring, experimenting and imitating; vocabulary increases.	Erikson's stage 2 (autonomy versus doubt and shame); independent behaviours; strong sense of attachment; fears of strange people, objects and places; parallel play; imitates everyday parental activities.	Wants to feed self; needs a range of nutritious snacks and limited access to 'empty' calories (e.g. juice, chips).	Enjoys books at all stages; not yet old enough for 'screen time'; needs a range of more intense and quieter activities.	Not yet old enough to leave alone in bath or near water; still requires a car restraint; store poisons out of reach.
15 mths	Legs appear bowed; walks alone; goes down stairs backwards; can stack two blocks; 'writes'; uses a spoon with one hand but a cup with two; can take off shoes.	Learns by trial and error; says at least three words; may make up words; points to objects they want.	Shows independence, e.g. tries to feed self, wants to choose clothes.	Can eat most adult foods.	Enjoys plush, musical, rolling and stackable toys.	Hard foods may still pose a choking risk; mobile children can trip adults.
18 mths	Can run with frequent falls, walk upstairs with help, climb onto a lounge, stack three to four blocks, throw a ball, unzip large zippers and take off simple clothes.	Object permanence fully develops; can speak 5-20 words; uses one word to express a whole sentence.	Afraid of water; temper tantrums, negativism and dawdling begin; gender awareness begins; carries a favourite toy.	Negativism, easy distractibility and playing with food may affect intake.	Enjoys nesting, shape-sorting, ball, puzzle and pull-along toys; 'draws'; enjoys running, chasing and rough-housing.	Risk of falls, e.g. when running or climbs; dangerous objects must be stored higher up.

24 mths	Runs well; can kick a ball; can walk sideways and down stairs with a hand rail; can stack six blocks and turn knobs and pages; can feed self and put on simple clothes.	Capable of symbolic thinking and play; egocentric thinking; uses about 20-50, words naming some toys and body parts; uses 2-3 word sentences; talks to self.	Afraid of the dark and animals; may not want to go to sleep; ready to begin potty training; can brush teeth with help; plays with own genitals; can give own name.	Asks for favourite foods.	Enjoys pouring, stacking, clay modelling, painting and singing; capable of pretending.	Risk of falls from outdoor play equipment; may be interested in knives, razors and matches.
36 mths	Full set of milk teeth by about 30 months; runs well; can ride a tricycle. Can stack eight to ten blocks, pour liquids and dress with minimal help (cannot tie shoes).	Large vocabulary; uses complete sentences; may put clothes on backwards.	Fewer temper tantrums and less negativism.	Can sit in a booster seat at the table; expresses likes and dislikes.	Likes playing with other children and may enjoy kits, e.g. doctor kits.	Needs protective gear when riding a tricycle.

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## Growth, development and health promotion for pre-schoolers

Age (yrs)	Physical competency	Intellectual competency	Emotional-social competency	Nutrition	Play	Safety
General: 3 to 5	Gains 4.5 kg; grows 15 cm; has 20 teeth.	Increasingly aware of self and others; vocabulary increases substantially; is in Piaget's preoperational stage.	Erikson's stage 3 (initiative versus guilt); Freud's phallic stage (Oedipus complex in boys, Electra complex in girls).	Needs regular tooth brushing; carers should model good eating habits.	Naps may be replaced by quiet periods; toys must be sturdy.	Never leave pre-schoolers alone near water including the bath; keep poisons locked up.
3	Can run and stop suddenly, walk backwards, climb steps and pedal a tricycle; can undo buttons.	Knows own sex; has a sense of humour; wants to please; follows simple directions; can use plurals, adjectives and adverbs.	Imaginative play, e.g. dressing up; believes that anything that moves is alive.	Needs about 5200 kJ/day; different food colours and shapes can stimulate interest.	Cooperates in simple games; takes turns; can use scissors.	Can be taught about safety, e.g. getting out of the bath safely, not drinking bottles labelled poison.
4	Can run, hop, walk heel-toe and jump; can walk up and down stairs; can skip clumsily; can get dressed and undressed and bathe self; draw more recognisable pictures.	May tell lies to get out of trouble; can be bossy and call others names; uses about 1500 words; can recite nursery rhymes and count to 5.	Still unable to see other's points of view; sexual curiosity.	Needs about 5900 kJ/day of quality foods with snacks between meals; mealtimes should be enjoyable and not a source of conflict.	Can participate for longer in group activities; playacting becomes more dramatic; likes to 'help' around the house.	Teach them how to handle scissors.
5	Begins to dance; can tie shoelaces; can hit a nail on the head with a hammer; can draw a person with 6 parts; can write their first name.	More independent; knows own name, telephone number and address; can name family relationships; can draw a rectangle and copy a triangle; knows at least 4 colours; can count to 10.	Fantasises; may not want private body parts touched.	Needs about 6700 kJ/day; can learn to use a knife and fork.	Wider range of toys played with; can play matching games.	Teach them to cross streets safely and not talk to strangers; can learn to swim.



# Appendix E

## Competency development of the school-age child

Age (yrs)	Physical competency	Intellectual competency	Emotional-social competency
General: 6 to 12	On average, gains to 3.2 kg and grows 5.5 cm taller each year, in spurts; milk teeth are replaced by permanent teeth; gross and fine motor skills continue to improve.	Has a large vocabulary and can speak in complex sentences; learns to see other viewpoint; is better at identifying emotions; becomes increasingly aware of the difference between fantasy and reality.	Erikson's stage 4 (industry versus inferiority); wants friends; may enjoy competitions; will need to learn about sex and puberty; may struggle with anxiety.
6 to 7	Gross motor skills are still better than fine motor skills but balance improves.	Learns to read and write; starts to understand concepts such as numbers and money, right and left, morning and afternoon; likes games to have rules.	Can use a telephone; can be given regular chores; at age 7, can stop using a child restraint in the car.
8 to 10	Fine motor skills are well established; short-sightedness may become apparent; girls may enter puberty.	Learns grammar; may like to read alone; understands jokes; does detailed drawings; interested in how things work.	Prefers same-sex friends; has a strong sense of humour; may enjoy group activities, e.g. Scouts/Girl Guides; wants more privacy; learns manners; can be involved in discussions about rules and punishments.
11 to 12	Boys may enter puberty.	Increasingly able to engage in abstract thinking.	Wants more independence; may have a best friend; may masturbate.

## Characteristics of adolescents

<b>Early adolescence (12 to 14 yrs)</b>	<b>Middle adolescence (15 to 16 yrs)</b>	<b>Late adolescence (17 to 21 yrs)</b>
<p>Fluctuates between wanting more privacy and independence and wanting to be looked after; can be moody and argumentative; easily frustrated; forms a peer group.</p>	<p>Conflict between parents and teens peaks with their increasing independence, ability to argue and need for peer approval; thinks in the present and believes they are invulnerable, leading to increased risk-taking, e.g. substance misuse and unprotected sex; worries about body image and symptoms of depression and anxiety are common; curious about sex and may question own sexuality.</p>	<p>Puberty is complete; has a value system and relies less on peers; can estimate own strengths and limitations; less impulsive; makes decisions about the future, including study and employment; may have more economic independence; has a sexual identity and may have an intimate partner, possibly needing contraception/STI protection; may move out of home; has a more mature relationship with parents.</p>

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# Appendix G

## Functional health patterns guide

The following table is a general guide for programs employing a functional health patterns approach to assessment.

<b>Functional health patterns</b>	<b>Potential correlating chapters in the text</b>
Health Perception — Health Management	Chapter 3, Developmental tasks and health promotion across the life span Chapter 5, The health assessment interview Chapter 6, The health history Chapter 31, The complete health assessment: putting it all together
Nutritional — Metabolic	Chapter 8, General survey, measurement and vital signs Chapter 16, Upper airways Chapter 19, Nutritional and metabolic assessment Chapter 20, Skin, hair and nails Chapter 21, Abdominal assessment
Elimination	Chapter 21, Abdominal assessment Chapter 23, Bowel function Chapter 24, Female sexual and reproductive function Chapter 26, Male sexual and reproductive function
Activity — Exercise	Chapter 14, Peripheral vascular system Chapter 16, Upper airways Chapter 17, Lower airways Chapter 18, Musculoskeletal function
Sleep — Rest	Chapter 6, The health history
Cognitive — Perception	Chapter 9, Mental health assessment Chapter 10, Neurological function Chapter 11, Pain assessment Chapter 12, Eye function Chapter 13, Ear function Chapter 16, Upper airways Chapter 31, The complete health assessment: putting it all together
Self-Perception — Self-Concept	Chapter 3, Developmental tasks and health promotion across the life span Chapter 9, Mental health assessment Chapter 31, The complete health assessment: putting it all together

Role – Relationship	Chapter 3, Developmental tasks and health promotion across the life span Chapter 4, Cultural safety: cultural considerations Chapter 28, Risk and safety screening for family violence and abuse Chapter 31, The complete health assessment: putting it all together
Sexuality – Reproductive	Chapter 24, Female sexual and reproductive function Chapter 25, Male sexual and reproductive function Chapter 26, Breast assessment Chapter 27, The pregnant woman
Coping – Stress Tolerance	Chapter 3, Developmental tasks and health promotion across the life span Chapter 31, The complete health assessment: putting it all together
Value – Belief	Chapter 3, Developmental tasks and health promotion across the life span Chapter 4, Cultural safety: cultural considerations

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