

human body in comparison to previous works.<sup>14</sup> Additionally, Herophilus was the first physician to dissect human bodies and is considered to be the founder of anatomy; he contradicted Aristotle's notion that the heart was the "seat of intelligence", arguing instead that it was the brain.<sup>10</sup> However, he was eventually accused by his contemporaries of dissecting live criminals. His disciple, Erasistratus, believed that the animal form was determined by environmental rather than innate factors, in line with Aristotle's views. Accordingly, Erasistratus introduced the diametric notions of heredity and environment (e.g. nature versus nurture), both at the level of the individual and the species as a whole.<sup>15</sup>

### The Ancient Romans (670 BCE–480 CE)

Ancient Roman physicians gained much of their anatomical knowledge of the human body by treating wounded gladiators. As the dissection of human bodies was forbidden, ancient Roman anatomists had to rely primarily on animal dissections to further their knowledge.<sup>16,17</sup> They were therefore limited in what they could learn about human anatomy. Galen was an experimentalist and investigator who was born in the Greek city Pergamon but later travelled to Rome in pursuit of knowledge, where he became a successful practicing physician.<sup>18</sup> He is known for his anatomical observations and experimental approaches in emphasising the interrelationships between function (i.e. physiology) and form (i.e. anatomy). The majority of his anatomical knowledge was based on his dissections of animals, especially monkeys. He noted the importance of the spinal cord, motor and sensory loss following the ligation of a peripheral nerve in the area of its distribution and experimentally demonstrated the function of the recurrent laryngeal nerve.<sup>19</sup> Galen also noted that blood must pass from the right side of the heart to the left side, although he was unaware of the concept of pulmonary circulation. Great credit is owed to Galen for explaining many of the mysteries of the human body during that period, as his beliefs were to last for a long time.<sup>20</sup>

### The Islamic Golden Age (701–1300 CE)

While Europe was in the midst of the Dark Ages, Arabia was a beacon of medical knowledge. Baghdad in particular was a noted haven for scholars who had scattered after the fall of Constantinople.<sup>21</sup> During this era, many notable Muslim scholars made discoveries

which provided greater anatomical insight, such as the contributions of Muhammad Al-Razi (862–930 CE) to the field of neuroanatomy, Ibn Al-Haytham (965–1040 CE) who provided new insight into optics, Avicenna or Abu ibn Sina (980–1037 CE) who famously wrote the *Canon of Medicine* and Ibn Al-Nafis (1210–1288 CE) who explained pulmonary circulation, paving the way for William Harvey (1578–1657 CE), many centuries later.<sup>22–24</sup>

### The Late Middle Ages (1000–1300 CE)

In approximately 1000 CE, an educational revival began in Europe with the foundation of the medical school Schola Medica Salernitana in Salerno. This southern Italian port became the main hub of medical knowledge in Europe, after having imported important translations of medical knowledge from Arab and Muslim scholars.<sup>25</sup> Two centuries later, the University of Bologna, which was initially a law school, incorporated medicine and other disciplines into its curriculum; it is believed that post-mortems were carried out here, possibly for medico-legal reasons, potentially leading to a revived interest in anatomical dissections to increase knowledge.<sup>26</sup> At that time, Thaddeus Alderoti (c. 1206–1295 CE) was the most active anatomist in this field.<sup>26</sup> The first human dissection manual ever written, the *Anathomia corporis humani*, was produced by one of Alderoti's students, Mondino de Luzzi (also known as Mundinus), in approximately 1316 CE.<sup>27</sup>

### The Renaissance Period (1301–1700 CE)

During the Renaissance period, various anatomical sketches of the human body were made by artists like Leonardo Da Vinci and, to a lesser extent, Michelangelo di Buonarroti, Rembrandt van Rijn, Albrecht Dürer and Raphael da Urbino [Figures 1–3]. These sketches contributed to anatomical knowledge, but were later disregarded with the production of newer updated anatomical drawings.<sup>28</sup> Artists were keen to gain accurate knowledge of the inner workings of the human body, which would allow them to paint and sculpt the body in many different positions. Even though it was banned by the Catholic church, many artists and scientists performed dissections to better understand the human body. However, dissection required readily available bodies and the most readily available subjects for dissection in those days were executed criminals.<sup>29</sup> During these dissection sessions,