

the gastroc-soleus complex and a return to high-level physical activities; the incidence of re-rupture should not be considered as the main outcome.⁸

In clinical practice, an increasing number of patients managed non-surgically have no re-rupture, but the healed Achilles tendon has elongated, thus altering its relationship with the gastroc-soleus muscle complex.⁹ These patients present with a more acute Achilles tendon resting angle,⁹ are not able to push off properly, and behave similarly to patients with chronic Achilles tendon rupture. Reconstructive surgery to correct this condition is possible,¹⁰ but it is more technically demanding than primary repair procedures, and probably much more expensive.

The musculoskeletal system thrives under load and motion, not immobilisation. Weight-bearing with functional bracing, which was originally developed for use after surgical management of acute Achilles tendon tears¹¹ and has been used in more than 1000 patients in the past 20 years, is at least as good as plaster cast immobilisation for patients being managed conservatively, and, as shown by the UKSTAR trial, probably cheaper. At this point, we should explore whether the application of other strategies could improve outcomes. For example, electrical stimulation of the gastroc-soleus complex could be introduced in the early phase of management of Achilles tendon rupture, together with isometric contractions of the same muscle group. Eccentric exercises might also be beneficial. Communication between orthopaedic surgeons, muscle physiologists, and rehabilitation specialists would greatly benefit patients with acute Achilles tendon ruptures.

We declare no competing interests.

Copyright © 2020 The Author(s). Published by Elsevier Ltd. This is an Open Access article under the CC BY 4.0 license.

*Nicola Maffulli, Giuseppe M Peretti
n.maffulli@qmul.ac.uk

Department of Musculoskeletal Disorder, Faculty of Medicine and Surgery, University of Salerno, Salerno, Italy (NM); Queen Mary University of London, Barts and the London School of Medicine and Dentistry, Centre for Sports and Exercise Medicine, Mile End Hospital, London E1 4DG, UK (NM); School of Pharmacy and Bioengineering, Keele University School of Medicine, Stoke-on-Trent, UK (NM); IRCCS Istituto Ortopedico Galeazzi, Milan, Italy (GMP); and Department of Biomedical Sciences for Health, University of Milan, Milan, Italy (GMP)

- Maffulli N. Rupture of the Achilles tendon. *J Bone Joint Surg Am* 1999; **81**: 1019–36.
- Olsson N, Nilsson-Helander K, Karlsson J, et al. Major functional deficits persist 2 years after acute Achilles tendon rupture. *Knee Surg Sports Traumatol Arthrosc* 2011; **19**: 1385–93.
- Costa ML, Achten J, Marian IR, et al. Plaster cast versus functional brace for non-surgical treatment of Achilles tendon rupture (UKSTAR): a multicentre randomised controlled trial and economic evaluation. *Lancet* 2020; **395**: 441–48.
- Nilsson-Helander K, Thomeé R, Silbernagel KG, et al. The Achilles tendon Total Rupture Score (ATRS): development and validation. *Am J Sports Med* 2007; **35**: 421–26.
- Ochen Y, Beks RB, van Heijl M, et al. Operative treatment versus nonoperative treatment of Achilles tendon ruptures: systematic review and meta-analysis. *BMJ* 2019; **364**: k5120.
- Ebinesan AD, Sarai BS, Walley GD, Maffulli N. Conservative, open or percutaneous repair for acute rupture of the Achilles tendon. *Disabil Rehabil* 2008; **30**: 1721–25.
- Del Buono A, Volpin A, Maffulli N. Minimally invasive versus open surgery for acute Achilles tendon rupture: a systematic review. *Br Med Bull* 2014; **109**: 45–54.
- Maffulli N, Peretti GM. Surgery or conservative management for Achilles tendon rupture? *BMJ* 2019; **364**: k5344.
- Carmont MR, Grävare Silbernagel K, Brorsson A, Olsson N, Maffulli N, Karlsson J. The Achilles tendon resting angle as an indirect measure of Achilles tendon length following rupture, repair, and rehabilitation. *Asia Pac J Sports Med Arthrosc Rehabil Technol* 2015; **2**: 49–55.
- Maffulli N, Spiezia F, Longo UG, Denaro V. Z-shortening of healed, elongated Achilles tendon rupture. *Int Orthop* 2012; **36**: 2087–93.
- Maffulli N, Tallon C, Wong J, Lim KP, Bleakney R. Early weightbearing and ankle mobilization after open repair of acute midsubstance tears of the achilles tendon. *Am J Sports Med* 2003; **31**: 692–700.



The UK as a global centre for health and health science

Published Online
February 5, 2020

[https://doi.org/10.1016/S0140-6736\(20\)30236-1](https://doi.org/10.1016/S0140-6736(20)30236-1)

In 2015, the UK's All-Party Parliamentary Group on Global Health (APPG) mapped the UK's contribution to health globally, showing that it had world-class universities and research, was a global leader in health policy and international development, had strong life sciences and biomedical and biotech industries, and had a vibrant and diverse not-for-profit sector.¹

In 2019, the APPG looked at what had changed in the intervening time and in the context of understanding the likely impact of Brexit on the UK's global role in health. We gathered data from published and

unpublished sources and interviewed 78 health and academic leaders—half from the UK and half from other countries—about their perceptions of the UK's current and potential future role. On Feb 6, 2020, the APPG publishes its new report, *The UK as a Global Centre for Health and Health Science*.²

There have been considerable improvements in the past 5 years with, for example, big increases in funding for research, new regional collaborations between universities and National Health Service (NHS) bodies, and increased foreign investment in UK life sciences.

There have also been advances in genomics, mental health, artificial intelligence, and other areas.

The health and academic leaders from outside the UK who were interviewed saw the UK as a force for good in health in the world. They commented positively on the UK's track record in improving health globally and on its values, scientific and business standards, the strengths of its institutions, and its achievements in health and health science. They were, however, concerned about the UK becoming more inward looking and neglecting its global contribution, particularly at a time when other countries were already becoming more insular and protectionist. The UK health leaders largely had similar views and raised concerns about the potential loss of access to European collaboration and funding and the problems in staffing health services and research institutions.

Our new report proposes that the UK now needs to act decisively to maintain and strengthen its role as a global leader in health and health science.² The UK must grasp the many opportunities represented by the fast-growing health and health sciences sectors and at the same time recognise, plan for, and mitigate the difficulties and risks.

Our vision is for the UK to become a global centre for health and health science, a go-to place for all aspects of health globally. We propose a two-part strategy that maintains the UK's position as a trusted leader in health, with high standards and strong values, and at the same time invests in further development in and greater collaboration between all the UK organisations working in health and health science. The two parts of the strategy are shown in the panel.

The timing is perfect. The health sector is growing fast, science and technology promise new breakthroughs, and the UK has a well established core of expertise and institutions that are able, given the right support, to take advantage of them.

The new APPG report² makes 12 recommendations that address both the risks and the opportunities. Two are highlighted here. The first recommendation emphasises the importance of international partnerships and global solidarity in tackling health globally. This is not a zero-sum game. The APPG recommends that the UK should further strengthen and develop its existing global partnerships, collaborations, and

Panel: The UK as a go-to place for health globally

The UK needs to act decisively to seize the opportunities and manage the risks. We propose that it should:

- 1 Re-state its commitment to improving health globally, advocating for the right to health for all people everywhere, and working to the highest standards in science, business, and partnerships.
- 2 Bring together the combined strengths of its academic, government, commercial, and not-for-profit sectors to realise synergies and create a shared vision for the UK as a global centre for health and health science.

networks with international organisations, partners in high-income countries, and the fast-growing economies that are working to develop their health systems, as well as continuing to support low-income countries to improve the health of their populations. The second recommendation focuses on the importance of supporting and developing regional UK collaborations and institutions. It recognises the as yet untapped potential for growth and development, particularly in the Northern Health Sciences Alliance, Edinburgh BioQuarter, Life Sciences Hub Wales, GW4 Alliance in southwest England and southeast Wales, and MedCity in the southeast of England.

The UK is well known as a world financial sector. We believe it has the potential to be equally well known as a global centre for health and health science.

The APPG paid for the relevant research from its own resources. The APPG has received funding from the London School of Hygiene & Tropical Medicine, King's College London, University College London, Imperial College London, the University of Oxford, the University of Edinburgh, the Wellcome Trust, the National Institute for Health and Care Excellence (NICE), *The Lancet*, and the Bill & Melinda Gates Foundation. We declare no other competing interests.

*Nigel Crisp, Sarah Curran, Helena Legido-Quigley, Julia Spencer, Daniel Poulter
crisp@parliament.uk

House of Lords, Houses of Parliament, London SW1A 0PW, UK (NC); Director's Office, London School of Hygiene & Tropical Medicine, London, UK (SC, JS); Department of Global Health and Development, London School of Hygiene & Tropical Medicine, London, UK (HL-Q); Saw Swee Hock School of Public Health, National University of Singapore, Singapore (HL-Q); House of Commons, Houses of Parliament, London, UK (DP); and South London and Maudsley NHS Foundation Trust, London, UK (DP)

- 1 All-Party Parliamentary Group on Global Health. The UK's contribution to health globally: benefiting the country and the world. 2015. <http://www.appg-globalhealth.org.uk/reports/4556656050> (accessed Jan 16, 2020).
- 2 All-Party Parliamentary Group on Global Health. The UK as a global centre for health and health science. 2020. <http://www.appg-globalhealth.org.uk/> (accessed Feb 5, 2020).

For more on the **Northern Health Sciences Alliance** see <https://www.thenhsa.co.uk/>

For more on the **Edinburgh BioQuarter** see <https://edinburghbioquarter.com/>

For more on the **Life Sciences Hub Wales** see <https://lshubwales.com/>

For more on the **GW4 Alliance** see <https://gw4.ac.uk/>

For more on **MedCity** see <https://www.medcityhq.com>

Reproduced with permission of copyright owner. Further reproduction prohibited without permission.