

## The Review

# Sport and exercise medicine:

a hot topic thanks to the Olympics

The recent London Olympic Games have seen an increase in the attention given to the area of sport and exercise science/medicine, particularly in the UK context. For example, the House of Lords Science and Technology committee have completed an inquiry into sports and exercise science and medicine,<sup>1</sup> considering how the legacy from the London Games can be used to improve understanding of the benefits of exercise for prevention and treatment of chronic conditions. Moreover, GPs are being encouraged to 'make every contact count' on the back of a report<sup>2</sup> recommending health professionals to ask patients about their lifestyle, smoking, alcohol consumption, diet and, for the point of this article, exercise at every contact.

The paramount questions appear to be around the evidence for the benefits of exercise (including sport), particularly specific training in athletic populations and how this may transfer to the general public, as well as the need to get people doing more exercise and how we go about doing this.

### THE EVIDENCE FOR EXERCISE

The evidence for the benefit of exercise goes back to ancient times. According to Plato (427–347 BC) medicine was the sister art of physical exercise. Hippocrates noted that in order to remain healthy 'the entire day should be devoted exclusively to ways and means of increasing one's strength and staying healthy, and the best way to do so is through physical exercise'. Asclepiades of Bithynia in the 2nd century BC founded as scientific theory the therapeutic effect of healing exercises, massage, and movement in water, all of which are used in modern health and sports medicine practice.

Jumping forward a few thousand years to our modern world of evidence-based approaches and published databases; there is a large body of quality evidence for the benefits of exercise and physical activity that spans over 20 health problems. There is also a growing body of evidence linking a sedentary lifestyle as a risk factor for early mortality irrespective of physical activity participation.

The importance of physical activity for national health was identified by seminal work in the 1950s. By comparing bus drivers to more physically active bus conductors and office-based telephonists

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with postmen, Jerry Morris demonstrated lower rates of coronary heart disease and smaller uniform sizes in the more physically active occupations.<sup>3</sup> Five decades of further research has revealed the benefits of exercise for patients with arthritis on pain and disability; in dementia progression; on risk of developing diabetes in high risk patients; in post-menopausal women and hip-fracture rates; reduction in symptoms in patients susceptible to anxiety and depression; as a treatment for chronic fatigue syndrome; and on quality of life across multiple patient groups.<sup>4</sup>

Recent focus has turned to the importance of increasingly sedentary lifestyles adopted by many in the developed world. According to the World Health Organization, physical inactivity is the fourth leading risk factor for global mortality, accounting for 6% of deaths globally.<sup>5</sup> Data from a large well conducted longitudinal study (Aerobic Centre Longitudinal Study) puts a lack of cardiorespiratory fitness (low fitness) above obesity, hypertension, diabetes, and other risk factors as the strongest predictor of death,<sup>6</sup> and improving fitness is better than a reduction in fatness for risk of death and cardiovascular disease.<sup>7</sup> While there are drugs for favourable improvement in many of the other risk factors, the only way to improve cardiorespiratory fitness is through physical activity and exercise. Moreover, numerous pharmacological agents are available that will effectively lower values for a variety of disease and mortality-related risk factors in lots

of people. However, they will not, by themselves, give the prescribed a sense of self-worth, achievement, belonging, friendship, challenge, adrenaline, better mood, sleep, functional capacity, a social network, and a potential new friend (dog walking). However, there is one form of medication that has the potential to give all of these benefits as well as improving risk factor scores; exercise.<sup>4</sup>

### HEALTHCARE PROFESSIONALS AND EXERCISE

The evidence then for the benefit of exercise and the harms caused by not doing it appears strong, robust, and credible. And even if some disagree, do we need a randomised controlled trial to convince us that 3 weeks in bed is bad for an otherwise healthy person? So what about healthcare practitioners themselves? The House of Lords committee cite a recent survey of 48 London GP practices where no GP was aware of the latest physical activity guidelines.<sup>1</sup> In those that are aware, there may be a blurring of the line between 'exercise advice' and 'exercise prescription'.<sup>8</sup> Moreover, some healthcare professionals may demonstrate confidence and enthusiasm for giving advice, but this may not be supported by the knowledge of what to actually recommend.<sup>9</sup> Arming healthcare professionals with more knowledge on what, when, and how much could result in significantly better results. As far back as 1982 Dr Domhnall MacAuley was encouraging GPs to at least 'know

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enough basic exercise physiology and its applications' and that the old advice 'to take more exercise' is simply not enough.<sup>10</sup> Others advocate that we should be 'prescribing' exercise, in much the same way we prescribe medications, to promote the ethos that 'exercise is medicine'.<sup>11</sup> Any increase in prescription of a treatment will see an increase in the number reporting side effects. In the case of exercise, these are most likely to be minor musculoskeletal injuries, with major side effects (for example, cardiac arrest) a very uncommon occurrence, at least in marathon running.<sup>12</sup> The GP is often the first port of call for an individual with a sports-related injury and they should therefore have sufficient expertise in management of sports-related injuries to ensure as quick a return to active sport as possible. I'd be interested to know how many GPs would still treat such patients with the ill-advice to 'rest up for a few days'?<sup>13</sup> Dr MacAuley asked whether we 'care enough for those who try to help themselves'?<sup>10</sup> Twenty years on and I'm not totally certain that we do.

An estimated 80% of the UK population visit their GP once a year.<sup>1</sup> Having hosted the biggest sporting event of all time, very successfully may I add, and with a legacy

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of increasing sport participation, GPs in the UK would do well to be armed with the knowledge and skills to prescribe exercise and deal with the minor risks associated with it. However, based on the current curriculum for GP qualification in Britain,<sup>14</sup> I'm not sure that it won't simply fall on those practicing doctors that like to go for a run.<sup>15</sup> Perhaps now is an opportune time for general medicine in Britain to take the practice of exercise prescription and sports medicine as seriously as the prescribing of drugs, the way some of our Australian peers seem to be doing.<sup>16</sup>

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##### Provenance

Freely submitted; not externally peer reviewed.

DOI: 10.3399/bjgp13X663163

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