Making movement matter

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The positive benefits of exercise and physical activity (PA) on various health determinants cannot be emphasised enough. From prevention of non-communicable diseases (NCDs), reducing morbidity from infectious diseases and in the management of mild to moderate mental health conditions, PA and regular exercise may well be the panacea so often sought in a pill. This edition of BJSM explores the role of PA across a spectrum of contexts.

EXERCISE AND PA IMPROVE OUTCOMES IN COMMUNICABLE DISEASES AND NCDs

Exercise training is highly recommended in the primary and secondary prevention of cardiovascular disease (CVD) because of its circulatory benefits, which improve quality of life, reduce CVD and overall mortality. The narrative review by D’Ascenzi et al (see page 1180) established that a personalised approach to exercise prescription represents a cornerstone for successful intervention. Cardiopulmonary exercise testing may help in the personalising of exercise prescription. In particular, the use of ventilatory thresholds for defining exercise intensity should be preferred as a ventilatory threshold-based definition of exercise intensity identifies the appropriate level that is associated with proven benefits.

The advantages of exercise and PA extend to other NCDs, notably breast cancer. Greater PA and less sedentary time are associated with lower breast cancer risk in observational studies, with associations strongest for vigorous activity. Sedentary time has, however, been less well studied, with conflicting results. This issue includes a systematic mendelian randomisation study (see page 1157), which explored the association between physical inactivity and breast cancer risk in more than 130 000 women of European ancestry. Greater genetically predicted PA was associated with lower risk of invasive breast cancer and greater sedentary time was associated with higher risk of hormone-receptor-negative tumours (OR 1.77; 95% CI 1.07 to 2.92 per 7% time spent sedentary).

We also include a systematic review by Ezzatvar et al, which evaluated 16 studies (2 million participants) and demonstrated that those who engaged in regular PA had a lower risk of infection, severe COVID-19 illness and COVID-19-related death compared with their inactive peers (see page 1188). The greatest benefit was provided by achieving at least 500 MET-min per week of PA, which is equivalent to 150 min of moderate-intensity or 75 min of vigorous-intensity PA per week, providing further supportive evidence for the WHO PA guidelines. This paper collates evidence recently published in BJSM on the benefits of regular PA in mitigating the effects of communicable disease.

Surely then we should be teaching about the benefits of PA? Our service spotlight is on the VANGUARD project in Lithuania, which integrated PA and exercise into the curricula of undergraduate clinical modules of various university healthcare programmes (see page 1199). This presents a significant opportunity to embed PA and exercise into routine healthcare practice and improve its prescription.

WITH PA AND EXERCISE, MAY COME INJURY

With increased participation in PA, sport and exercise pursuits, comes the risk of sustaining injuries, and researchers are seeking ways of preventing these. In an original research article, Jones et al (see page 1171) explored the validity and feasibility of four instrumented mouthguard (iMG) systems, which are used to quantify head acceleration events (HAEs). Their results showed differences in detection of HAEs among the iMG systems. This is likely because of different trigger thresholds that lead to false-positives or false-negatives being captured. Such data variations ought to be considered when using iMG data in practice and policy development.

Also included is an infographic which analysed moderate to severe hamstring injuries in German men’s football (see page 1194). The analysis showed that 48% of injuries were sprint related, of which 56% were in the acceleration phase. Stretch-related hamstring injuries accounted for 52% of total hamstrings injuries, with 59% of stretch-related injuries occurring during closed chain braking. Additionally, the featured Ph.D. Academy Award (see page 1196) sought to develop and validate a wearable impact reduction system, which used real time music-based feedback to reduce impact loading during running. Impact loading was reduced by 26% without changing running cadence. These different motor adaptations may warrant caution for practitioners who use biofeedback on impact loading, which may have implications for running-related injury risk.

While sports and exercise medicine (SEM) care continues to evolve, there is a further need to improve care decisions and provide trustworthy information for all stakeholders. In their editorial, Bullock et al (see page 1143), champion the value of open science that accounts for the competitive nature of sport as one way of improving SEM research quality and, consequently, clinical care. Efforts to improve clinical SEM care also mean our systems of classifying illness and injury in sport must continue to evolve to reflect the realities of the discipline, the diversity of its stakeholders and the global circumstances under which we operate, as seen in version 14 and Italian translation of the Orchard Sports Injury and Illness Classification System (see page 1144), an expansion on Dr Orchard’s previous work.

This issue highlights that increasing PA and reducing sedentary time should be encouraged to not only promote health and well-being, but to prevent NCDs such as cancer. The integration of PA and

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Warm up

prescription of exercise in general health practice could be improved by integrating PA into the undergraduate curricula of healthcare professionals and improving access to SEM information to improve research and clinical care.

Keep moving. It matters!

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Contributors Both authors contributed to writing the manuscript.

Funding The authors have not declared a specific grant for this research from any funding agency in the public, commercial or not-for-profit sectors.

Competing interests NSM and JP are both editors for the British Journal of Sports Medicine.

Patient consent for publication Not applicable.

Provenance and peer review Commissioned; internally peer reviewed.

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Accepted 14 August 2022
doi:10.1136/bjsports-2022-106216

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