

Debate & Analysis

Exercise is medicine:

a case study of an exercise prescription clinic in the NHS

THE IMPORTANCE OF EXERCISE

The World Health Organization (WHO) describes physical activity (PA) as any bodily movement produced by skeletal muscles that requires energy expenditure.¹ This can comprise any routine activity, such as walking the dog or doing housework. Exercise is a subgroup of PA where activity is planned, structured, repetitive, and aims to improve or maintain one or more components of physical fitness.¹ Examples of exercise include any sport, dancing, or simply just walking. The health benefits of regular PA are irrefutable.² There is a risk reduction of at least 20–30% for more than 25 chronic medical conditions (such as osteoarthritis, depression, or hypertension) and of premature mortality.² Regular PA leads to reduced risk of developing several types of cancers, of fall-related injuries in older people, and of obesity in children and adults.³ PA is also associated with enhanced cognitive function and mental health across the lifespan, plus improved physical function.³ Conversely, sedentary behaviour is directly associated with an elevated risk of developing type 2 diabetes, as well as cardiovascular disease.³ Sedentary behaviour is defined as waking behaviour characterised by an energy expenditure ≤ 1.5 metabolic equivalents (METs), while in a sitting, reclining, or lying posture.⁴ This includes television viewing, videogaming, computer use, driving automobiles, and reading.⁴

One in two females and one-third of males in England are not achieving the targets of the UK government guidelines on PA⁵ and are damaging their health as a result.⁶ More than one in four females and one in five males are classified as 'inactive' by doing less than 30 minutes of PA per week.⁶ Apart from the obvious health benefits, disease and disability caused or perpetuated by the lack of PA is estimated to directly cost the NHS around £0.9 billion.⁷ Wider social costs are estimated at £6.5 billion, stemming from lost productivity and premature death resulting from sickness.⁸

THE ROLE OF THE EXERCISE PRESCRIPTION CLINIC

Assessment and advice about PA as a routine part of healthcare services has been identified as one of the best

"The exercise prescription clinic is designed to act as an adjunct to standard pharmacological management of disease that the patient is already receiving for their ailments, with an overarching aim of reducing some medications if possible and using the holistic approach to improve overall morbidity."

investments for increasing PA.⁹ However, with increasing time pressures on both primary and secondary care practitioners, it has become more difficult than ever before to impart meaningful advice on PA and other beneficial conservative interventions to improve the management of patient illness. As most GPs are not specifically trained in exercise prescription, there is now an increasing presence (and indeed need) for sport and exercise medicine consultants in the primary care setting. These physicians are specifically trained to prescribe exercise, manage nutrition, initiate behaviour modification, and treat musculoskeletal disorders in a holistic and systematic manner.

THE EXERCISE PRESCRIPTION CLINIC AT THE ROYAL NATIONAL ORTHOPAEDIC HOSPITAL NHS TRUST: AN EXAMPLE FOR OTHER TRUSTS AND CCGs

The Royal National Orthopaedic Hospital (RNOH) NHS Trust in London has led the way by becoming one of the first NHS trusts in the UK to open an 'exercise prescription clinic'. This was set up as a result of an audit, which showed that less than 40% of patients attending a rheumatology clinic were meeting government guidelines for PA. In this clinic, patients are counselled on the core tenets of their health: namely physical activity, nutrition, sleep, posture, and mental and emotional wellbeing. Thus far, patients have been referred only from the rheumatology department of the same trust but there are plans in motion to expand the service for other patients attending the trust (initially amputees and spinal injury patients). The exercise prescription clinic is designed to act as an adjunct to standard pharmacological management of disease that the patient is already receiving for

their ailments, with an overarching aim of reducing some medications if possible and using the holistic approach to improve overall morbidity. Patients are initially assessed for their baseline levels of physical activity, mental health, and wellbeing, and also their degree of motivation to make lifestyle changes, by use of four validated questionnaires (IPAQ,¹⁰ SF-36,¹¹ SEE scale,¹² and EBB scale¹³). Three modifiable personal lifestyle factors, which can affect the ability to be active, are also addressed prior to prescription of exercise: sleep, nutrition (including hydration levels), and stress. The goals that are set for the individual are determined by the SMART (specific, measurable, achievable, realistic, and time bound) doctrine and are formulated by the FITT (frequency, intensity, time, and type) principle. This is used to integrate purposeful movement into the daily schedule of the individual. The four areas of exercise that are addressed in the prescription are aerobic, strength and resistance, flexibility, and balance. The patient is then followed up periodically every 4–6 weeks, where certain quantitative key performance indicators (KPIs), such as blood pressure, weight, and hip and waist circumference, and qualitative KPIs, such as pain and mental health scores, are measured in order to quantify how the patient's health has changed secondary to the interventions prescribed. An updated prescription is given at the end of each consultation based on the KPIs. The ultimate aim is for the patient to achieve the age-specific guidelines on PA for the general population, which were set in 2011 by the UK Chief Medical Officer.⁵

Although this clinic has only been running for 2 years there have been several success stories already. This

“[Physical activity] is a vital primary treatment for several chronic diseases.”

has included a reduction in dosage or quantities of analgesics, optimisation of weight, blood pressure, and blood sugar levels, improvement in exercise capacity, and a generally more positive patient outlook on the management of their health care. Effective education and explanation are key tools in the consultation, as greater compliance with the interventions prescribed have been noted in those individuals who have felt empowered and have bought in to the holistic concept of their management.

PROVISIONS AVAILABLE TO THE CLINICIAN TO HELP PRESCRIBE EXERCISE

The financial and healthcare benefits of increased PA have resulted in a number of initiatives being launched by Public Health England and the Faculty of Sport & Exercise Medicine, and endorsed by the Royal College of General Practitioners. These include 'Moving Medicine' and the 'PA Clinical Champions service'. Moving Medicine is an online resource (<https://movingmedicine.ac.uk/>) that provides clinicians and allied health professionals with accessible, evidence-based, condition-specific information to help give advice on physical activity at all stages of a patient's treatment pathway. The peer-to-peer PA Clinical Champions teaching programme provides free structured training to health professionals by health professionals, to improve the understanding of PA in clinical practice so they can integrate very brief advice into their day-to-day clinical practice.⁶ These two initiatives have

allowed the clinicians who run the exercise prescription service to have the necessary expertise and tools to deliver an effective service.

CONCLUSION

PA is a vital primary treatment for several chronic diseases. Patient counselling in either the primary or secondary care setting is one of the most cost-effective and feasible means of promoting PA in the NHS. Studies have shown that the positive effect of prescription of exercise can be analogous to that of smoking cessation counselling.¹⁴ Consideration of the associated health factors such as diet and sleep, together with patient education, can help to improve compliance with the prescription and therefore the overall health of the individual. The RNOH model is an illustration of how an exercise prescription clinic can be effective and should be replicated elsewhere.

Robin Chatterjee,

Sport & Exercise Medicine Physician, Royal National Orthopaedic Hospital, Brockley Hill, Stanmore.

Roger Wolman,

Consultant in Sport & Exercise Medicine and Consultant in Rheumatology, Royal National Orthopaedic Hospital, Brockley Hill, Stanmore.

Provenance

Freely submitted; externally peer reviewed.

Competing interests

The authors have declared no competing interests.

DOI: <https://doi.org/10.3399/bjgp19X704033>

ADDRESS FOR CORRESPONDENCE

Robin Chatterjee

Royal National Orthopaedic Hospital, Brockley Hill, Stanmore HA7 4LP, UK.

Email: r.chatterjee1@nhs.net

REFERENCES

1. World Health Organization. Physical activity. 2018. <http://www.who.int/mediacentre/factsheets/fs385/en/> [accessed 7 May 2019].
2. Warburton DE, Bredin SS. Reflections on physical activity and health: what should we recommend? *Can J Cardiol* 2016; **32**(4): 495–504.
3. Powell KE, King AC, Buchner DM, *et al*. The Scientific Foundation for the Physical Activity Guidelines for Americans, 2nd edition. *J Phys Act Health* 2019; **16**: 1–11.
4. Tremblay MS, Aubert S, Barnes JD, *et al*. Sedentary Behavior Research Network (SBRN) — Terminology Consensus Project process and outcome. *Int J Behav Nutr Phys Act* 2017; **14**(1): 75.
5. Department of Health. *Start active, stay active: report on physical activity in the UK*. 2011. https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/216370/dh_128210.pdf [accessed 7 May 2019].
6. Chatterjee R, Chapman T, Brannan MGT, Varney J. GPs' knowledge, use and confidence in national physical activity and health guidelines and tools: a questionnaire-based survey of general practice in England. *Br J Gen Pract* 2017; <https://doi.org/10.3399/bjgp17X692513>.
7. Scarborough P, Bhatnagar P, Wickramasinghe KK, *et al*. The economic burden of ill health due to diet, physical inactivity, smoking, alcohol and obesity in the UK: an update to 2006–07 NHS costs. *J Public Health* 2011; **33**: 527–535.
8. National Statistics, NHS Digital. *Statistics on obesity, physical activity and diet. England: 2018. Information and technology for better health and care*. 2018. <https://files.digital.nhs.uk/publication/0/0/obes-phys-acti-diet-eng-2018-rep.pdf> [accessed 7 May 2019].
9. World Health Organization. *Global action plan on physical activity 2018–2030: more active people for a healthier world*. 2018. <https://www.who.int/hcds/prevention/physical-activity/global-action-plan-2018-2030/en/> [accessed 7 May 2019].
10. Booth ML. Assessment of physical activity: an international perspective. *Res Q Exerc Sport* 2000; **71**(2): s114–s120.
11. Brazier JE, Roberts J, Deverill M. The estimation of a preference-based measure of health from the SF-36. *J Health Econ* 2002; **21**(2): 271–292.
12. Resnick B, Jenkins LS. Testing the reliability and validity of the Self-Efficacy for Exercise scale. *Nurs Res* 2000; **49**(3): 154–159.
13. Farahani LA, Parvizi S, Mohammadi E, *et al*. The psychometric properties of exercise benefits/barriers scale among women. *E Physic* 2017; **9**(7): 4780–4785.
14. Bartsch AL, Harter M, Niedrich J, *et al*. A systematic literature review of self-reported smoking cessation counseling by primary care physicians. *PLoS One* 2016; **11**: e0168482.