Analysis

How can GPs get people moving more?

INTRODUCTION

British athletes winning medals at the Olympics are thought to inspire the public to become more physically active. There is, however, limited evidence that any Olympic Games is associated with population-level increases in physical activity (PA). While the UK might not have topped the medal table in Tokyo 2020, it was among the first countries globally to set out PA guidelines in 2010, which were recently updated in 2019 to include subgroup-specific guidance (Figure 1).[1]

Recently the emphasis has moved towards focusing on the importance of physical, mental, and social benefits of being physically active, rather than weight loss alone. Sitting for prolonged periods of time is harmful and is associated with worse all-cause mortality even in those achieving the recommended PA guidelines. It is estimated that 23% of adults and 45% of children and young adults[2] in the UK do not achieve the PA recommendations. General practice can provide a personalised source of lifestyle advice including PA, but 80% of GPs in England[3] are unfamiliar with the Chief Medical Officers' (CMO) PA guidelines. As GPs and primary care staff are busier than ever with the rising demand for appointments, there may be inadequate time to review existing literature on promoting PA. This analysis highlights the importance of encouraging PA in clinical practice during and after the COVID-19 pandemic, provides an overview of current PA guidelines, and outlines evidence-based strategies to aid PA promotion in primary care settings.

COVID, PHYSICAL ACTIVITY, AND HEALTH INEQUITY

There is emerging evidence that being physically active or reducing sedentary time has protective effects from COVID-19 disease. Pandemic-driven lockdowns and subsequent behavioural changes led to a decrease in activity levels.[4] The impact of the pandemic on PA levels has widened existing disparities in pre-pandemic PA levels among women, over-75s, people from lower socioeconomic and ethnic minority backgrounds, and people with disabilities.[5] Therefore, it is increasingly important that GPs are aware of the PA guidance specific for subgroups of the population (Figure 1).

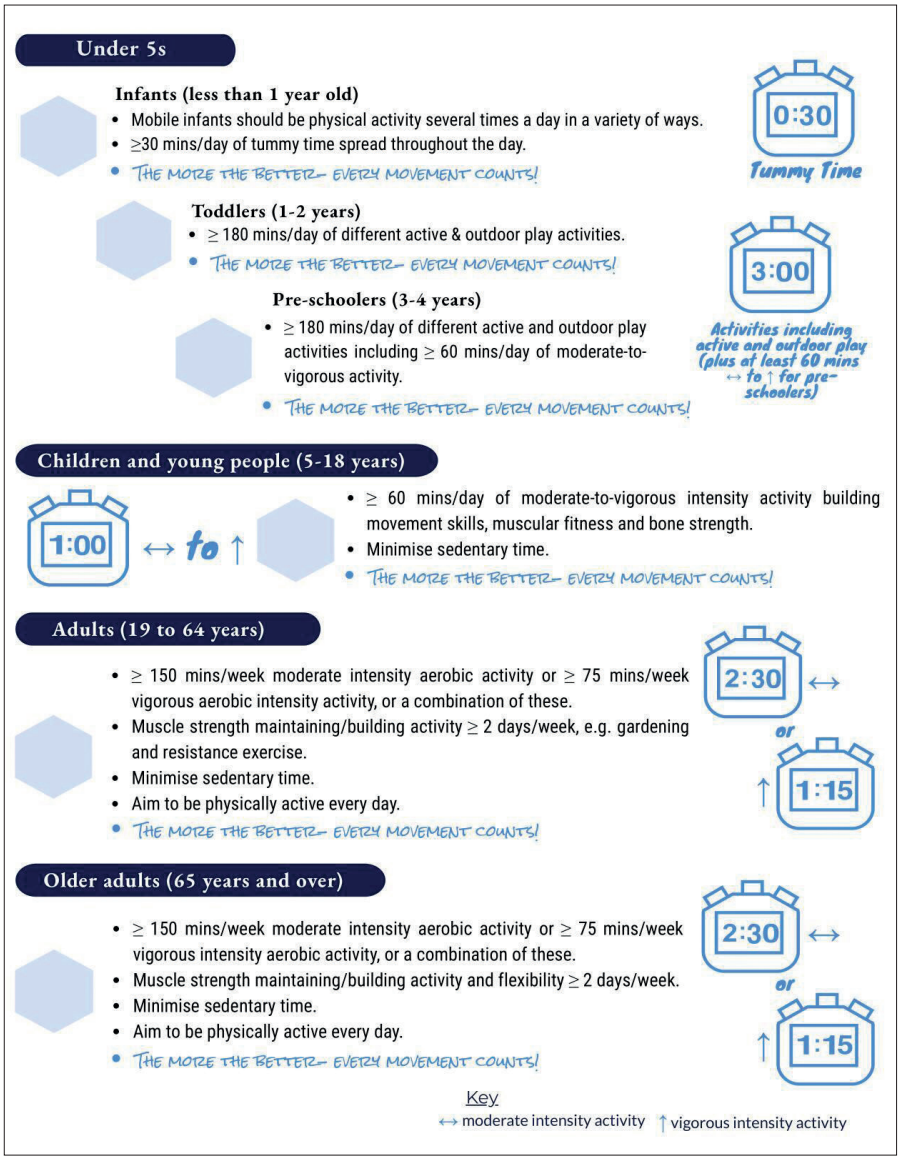

Figure 1. UK guidelines on recommended physical activity for all ages.[a]

[a]Pregnant women and those in the postpartum period (birth to 12 months) should aim for at least 150 minutes (2.5 hours) of moderate-intensity activity every week. Inactive patients should start gradually and include muscle-strengthening activities twice a week. Pelvic floor exercises are important and should be encouraged. Adults with a disability should aim for at least 150 minutes of moderate-intensity activity each week with strength and balance activities at least 2 days a week. Any myths about physical activity being harmful for people with a disability should be dispelled.

TOOLS TO MEASURE PA IN PRIMARY CARE

Some argue that PA should be considered as a vital sign to be measured alongside blood pressure and heart rate given its importance to health, especially in patients with long-term health conditions (LTCs). Most British GPs are aware of the general practice physical activity questionnaire (GPPAQ) through the NHS Health Check, but there are other tools to assess PA including the Physical Activity Vital Sign (PAVS) and the Exercise Vital Sign (EVS).[6] While National Institute for Health and Care Excellence (NICE) guidance recommends that PA is assessed via validated tools, a systematic review[7] found that tools including the GPPAQ are not well validated or reliable. Despite

Table 1. Guidelines for exercise prescription[8]

Frequency	Cardiorespiratory: moderate-intensity activity done at least 5 days a week, or vigorous intensity activity done at least 3 days a week, or a combination over 3–5 days per week Strength: major muscle groups trained 2–3 days per week with 48 hours between sessions involving the same muscle groups
Intensity	Cardiorespiratory: moderate (40-60% of heart rate reserve) to vigorous (60–90% of heart rate reserve) intensity. Use 'the talk test' to measure intensity: • light intensity: can talk and sing during activity; • moderate intensity: can talk but cannot sing during activity; and • vigorous intensity: cannot talk unless activity is paused. Strength: 2–4 sets of 8–12 repetitions per set with 2–3 minutes' rest between sets will help to develop muscular strength, mass, and endurance
Time	Cardiorespiratory: the aim is to achieve a weekly total of 150 minutes (2.5 hours) of moderate- or 75 minutes (1 hour, 15 minutes) of vigorous-intensity activity. The exercise session durations are not prescriptive, and patients can be advised that any duration counts towards their daily and weekly total
Type	Cardiorespiratory: rhythmic aerobic exercise (running, swimming, walking, cycling, dancing, and so on) Strength: multi-joint exercises targeting both agonistic and antagonistic muscles

Box 1. Absolute contraindications to physical activity[8]

- Recent acute cardiac event.
- ECG changes suggestive of significant ischaemia.
- Unstable angina.
- Uncontrolled dysrhythmia causing symptoms or haemodynamic compromise.
- Severe symptomatic aortic stenosis.
- Uncontrolled symptomatic heart failure.
- Acute pulmonary embolism or pulmonary infarction.
- Acute myocarditis or pericarditis.
- Suspected or known dissecting aneurysm.
- Acute systemic infection.

this, the GPPAQ includes a question about 'walking pace', and self-reported walking pace may be an important prognostic marker of all-cause and cardiovascular mortality.[9] Furthermore, another systematic review[10] identified in 20% of included studies that measuring PA alone without giving PA advice was associated with a ≥10% increase in PA.

PRESCRIBING PA IN PRIMARY CARE

Before prescribing PA, consideration should be given to a person's perceived capability, their motivation, and opportunity to change long-term behaviour. These are interlinked: opportunity can in turn change motivation, which in turn can alter behaviour.[11] Improving PA in primary care can occur in four ways: clinician led, digital interventions, referral schemes, and via community programmes.

Clinician led

A brief intervention for PA in primary care is a verbal discussion with patients to offer encouragement and support for them to be more active. There are no established criteria as to what constitutes brief advice, so its effectiveness is difficult to measure. A systematic review of reviews[12] found that brief interventions delivered in primary care improved short-term self-reported PA outcomes. Despite this, brief interventions tend to exceed a typical 10-minute consultation in general practice.

A narrative review[13] recommended an ABC approach to overcome barriers to PA:

- *'A — Assessment of physical activity: asking about physical activity, barriers and risks to undertaking an exercise prescription.*
- *B — Brief intervention: advice or written prescription detailing frequency, intensity, timing and type of exercise.*
- *C — Continue support: ongoing monitoring, accountability and progression of the prescription.*

Motivational interviewing techniques and clinician-focused resources such as 'Moving Medicine', designed by the Faculty of Sport and Exercise Medicine (https://movingmedicine.ac.uk/), or 'Couch to 5K' (https://www.nhs.uk/live-well/exercise/running-and-aerobic-exercises/get-running-with-couch-to-5k/) are useful adjuncts.

A systematic approach to prescribing PA uses the Frequency, Intensity, Time, and Type (FITT) principle, which typically encompasses cardiorespiratory fitness, strength training, flexibility, and coordination (Table 1).[8] It is equally important to consider individual patients' goals, the type of activities they enjoy, and barriers to exercise.

In the absence of any absolute contraindications to PA (Box 1), a recent consensus statement[14] highlighted that the benefits of PA outweigh the risks in those with LTCs, and medical clearance using the Physical Activity Readiness Questionnaire (PAR-Q), for example, is unnecessary. The risk of sudden death during moderate/vigorous exertion is very low[15,16] and the risk can be mitigated by building up levels of PA gradually. Individuals should be advised to monitor their symptoms as they increase their PA levels and seek medical attention should they experience a significant increase in their breathlessness, new or worsening chest pain, increase in pre-existing glyceryl trinitrate requirement, rapid palpitations, irregular heartbeats, dizziness, a reduction in exercise capacity, or sudden change in vision.[14]

Digital interventions

The effectiveness of behaviour change interventions such as self-monitoring and behaviour feedback in promoting PA is well established. Mobile-health interventions including activity trackers and smartphone applications can contribute positively towards the World Health Organization

Box 2. Useful resources

- RCGP Physical Activity Hub: https://elearning.rcgp.org.uk/course/view.php?id=536
- Moving Medicine: https://movingmedicine.ac.uk/
- NHS free fitness ideas: https://www.nhs.uk/live-well/exercise/free-fitness-ideas/
- NHS Couch to 5K and Active 10 Apps: https://www.nhs.uk/better-health/get-active/
- Parkrun: https://www.parkrun.com/
- Jog Scotland: https://jogscotland.org.uk/
- Ramblers Wellbeing Walks: https://www.walkingforhealth.org.uk
- Goodgym: https://www.goodgym.org/

Box 3. Key points

- The recent pandemic, with associated lockdowns and subsequent behavioural change, has meant that many people have become less active and disparities in physical activity among women, ethnic minorities, and people with disabilities have worsened.
- Existing tools to measure physical activity in primary care such as the general practice physical activity questionnaire (GPPAQ) are poorly validated and not reliable.
- The World Health Organization's message that 'every move counts' is important: patients can be advised that any duration counts towards their daily and weekly total.
- The benefits of physical activity outweigh the risks in those with long-term health conditions, and medical clearance is unnecessary except for those with absolute contraindications.

There are four main ways of improving physical activity:

1. Clinician-led ABC approach: (A)ssessing physical activity, using a (B)rief intervention, and (C)ontinuing support. A physical activity prescription can be provided by being specific about the Frequency, Intensity, Time, and Type (FITT).
2. Digital interventions such as a pedometer, activity tracker, or mobile app with goal setting can increase step counts.
3. Physical activity referral schemes (PARS) have the highest patient-to-physical activity connection rate. Barriers to PARS include lack of time, long travel distances, and worries about safety for women. Facilitators include, for example, flexible scheduling and women-only spaces.
4. Community interventions such as volunteer-led weekly 5 km runs via Parkrun or outdoor walking groups. These are likely to be the cheapest options.

(WHO) aim of reducing physical inactivity by 10% by 2025 given their highly scalable nature. The WHO message that 'every move counts' is reinforced by data showing that 1000 additional steps per day, independent of intensity, are associated with a 13% reduction in all-cause mortality.[17] Even just a 5-minute brisk walk of 500 steps daily is associated with decreases in cardiovascular and all-cause mortality.[18] This is significant since mobile-health interventions can result in sustained increases in PA, and simple pedometer-based interventions alone can achieve 434 additional steps/day at 3–4 years' follow-up.[19] Signposting patients determined to make a behavioural change to a pedometer, activity tracker, or app with added goal setting could have a significant long-term impact.

Via a physical activity referral scheme (PARS)

The most well studied and most acceptable intervention to patients and primary care clinicians are physical activity referral schemes (PARS),[20] with the highest connection rate of patient to PA, of all studied referral pathways. Exercise referral schemes were first developed in the 1990s to allow GPs to facilitate PA promotion among physically inactive patients. These schemes run in non-clinical settings and offer different modes of exercise (for example, group classes, gym-based exercises), dependent on local resources. Patients may need to pay an initially subsidised fee to join these schemes. A systematic review[21] found that those who participated in PARS were 12% more likely to be achieving moderate-intensity weekly PA targets compared with those who did not participate. Average adherence to PARS is 78% with positive physical and mental health outcomes, but overall outcome recording is incomplete.[22] Barriers to PARS include lack of time due to work and family commitments, long distances to travel, lack of support, and cost after the end of subsidised PARS.[23] Other barriers included feeling uncomfortable in the gym environment and encountering difficulties operating gym equipment. Non-English speakers had communication difficulties and safety was a concern for women. Facilitators to PARS include scheduling outside peak hours or being given a choice of PA such as dance or swimming alongside peer support on the scheme. Other facilitators include women-only activities, consideration of religious holy days, and adequate family support.

Community-based interventions

Community-based interventions are likely to be the cheapest intervention compared with clinician-led PA prescription or PARS. One example is 'Parkrun' (https://www.parkrun.com/), a collection of timed, volunteer-led, 5-kilometre running or walking events that occur weekly. It started in 2004 as a single event in Bushy Park, London (England), but has since expanded to more than 2000 locations in 22 different countries. A scoping review[24] found that regular Parkrun participation was associated with improved physical fitness and mental health, particularly in participants who were previously inactive. In 2018, the Parkrun practice initiative in collaboration with the Royal College of General Practitioners (RCGP) was launched in the UK that allows practices to link up with local Parkrun events to promote PA in the community. A mixed-methods study[25] found that Parkrun practices viewed the initiative positively and getting practice staff engaged with the Parkrun events helped drive success of the initiative, but lack of personal and consultation time for GPs was the main challenge.

There is evidence[24] that interventions to promote walking in groups are efficacious at increasing PA and behaviour change. There is also evidence that outdoor walking groups are safe and have wide-ranging health benefits including reduction in blood pressure and risk of depression. 'Ramblers Wellbeing Walks' (https://www.walkingforhealth.org.uk) is an English public health initiative with local schemes that offer low-impact, moderate-intensity PA to support inactive people or those with LTCs. Like Parkrun, GPs can signpost patients to this scheme or set one up at their practice with support.

CONCLUSION

An understanding of the PA guidelines is a good starting point for primary care staff to

have conversations about PA with patients. A detailed clinician-led PA prescription may be more suitable for GPs who have a specialist interest in exercise medicine. If time allows, primary care staff can measure PA and recommend PA in clinics alongside established tools such as Moving Medicine and Couch to 5K. Generally, this will require regular follow-up appointments to check progress rather than a single one-off intervention. PA referral schemes are effective in the short term but not necessarily in the long term, and availability of these schemes is variable throughout the country. Signposting patients to a pedometer, activity tracker, or app could have a longer-lasting impact. Box 2 lists some useful resources. Furthermore, clinicians should be aware of the cultural and pragmatic barriers such as timing during caring or working hours and need for women-only spaces. Staff with the motivation and time can set up, join, or signpost to a local Parkrun or walking scheme, which may have benefits for practice staff as well as patients. Of course, PA need not heed to stereotypes and energy could be put to good use through volunteering organisations such as the 'Goodgym' (https://www.goodgym.org/), which will have benefits in the wider community.

Raymond Leung,
Consultant in Sport and Exercise Medicine, Sports and Musculoskeletal Medicine Department, Homerton University Hospital NHS Foundation Trust, London.

Katherine Marino,
GPST1 Speciality Trainee & Academic Clinical Fellow in General Practice, University Hospitals of North Midlands NHS Trust, Royal Stoke University Hospital, Stoke-on-Trent.

David Whittaker,
ST5 Specialist Registrar in Sport and Exercise Medicine, Institute of Sport, Exercise and Health, London.

Dionisio Izquierdo,
ST5 Specialist Registrar in Sport and Exercise Medicine, Charing Cross Hospital, Imperial NHS Trust, Fulham Palace Road, London.

Dipesh P Gopal,
GP & NIHR In-Practice Fellow, Wolfson Institute of Population Health, Barts and The London School of Medicine and Dentistry, London.

Provenance
Freely submitted; externally peer reviewed.

Competing interests
Dipesh Gopal is an In-Practice Fellow supported by the Department of Health and Social Care and the National Institute for Health and Care Research (NIHR). The views expressed are those of the author(s) and not necessarily those of the NHS, the NIHR, or the Department of Health.

DOI: https://doi.org/10.3399/bjgp22X719753

ADDRESS FOR CORRESPONDENCE

Dipesh P Gopal
Wolfson Institute of Population Health, Barts and The London School of Medicine and Dentistry, Yvonne Carter Building, 58 Turner Street, London E1 2AB, UK.

Email: d.gopal@qmul.ac.uk

REFERENCES

1. Davies SC, Atherton F, McBride M, Calderwood C. *UK Chief Medical Officers' physical activity guidelines*. 2019. https://www.gov.uk/government/publications/physical-activity-guidelines-uk-chief-medical-officers-report (accessed 2 May 2022).
2. Public Health England. Fingertips: physical activity. 2021. https://fingertips.phe.org.uk/profile/physical-activity/data (accessed 2 May 2022).
3. 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; DOI: https://doi.org/10.3399/bjgp17X692513.
4. Tison GH, Avram R, Kuhar P, *et al*. Worldwide effect of COVID-19 on physical activity: a descriptive study. *Ann Intern Med* 2020; **173(9):** 767–770.
5. Sport England. *Active Lives Adult Survey May 2020/21 report*. 2021. https://www.sportengland.org/know-your-audience/data/active-lives?section=access_the_reports (accessed 2 May 2022).
6. Golightly YM, Allen KD, Ambrose KR, *et al*. Physical activity as a vital sign: a systematic review. *Prev Chronic Dis* 2017; **14:** E123.
7. Smith TO, McKenna MC, Salter C, *et al*. A systematic review of the physical activity assessment tools used in primary care. *Fam Pract* 2017; **34(4):** 384–391.
8. Pescatello LS, Arena R, Riebe D, Thompson PD, eds. *American College of Sports Medicine's guidelines for exercise testing and prescription*. 9th edn. Baltimore, MD: Lippincott Williams & Wilkins, 2014.
9. Argyridou S, Zaccardi F, Davies MJ, *et al*. Walking pace improves all-cause and cardiovascular mortality risk prediction: a UK Biobank prognostic study. *Eur J Prev Cardiol* 2020; **27(10):** 1036–1044.
10. Freene N, Davey R, Sathiyakumar R, McPhail SM. Can physical activity measurement alone improve objectively-measured physical activity in primary care? A systematic review and meta-analysis. *Prev Med Rep* 2020; **20:** 101230.
11. Michie S, van Stralen MM, West R. The behaviour change wheel: a new method for characterising and designing behaviour change interventions. *Implement Sci* 2011; **23(6):** 42.
12. Lamming L, Pears S, Mason D, *et al*. What do we know about brief interventions for physical activity that could be delivered in primary care consultations? A systematic review of reviews. *Prev Med Rep* 2017; **99:** 152–163.
13. O'Regan A, Pollock M, D'Sa S, Niranjan V. ABC of prescribing exercise as medicine: a narrative review of the experiences of general practitioners and patients. *BMJ Open Sport Exerc Med* 2021; **7(2):** e001050.
14. Reid H, Ridout AJ, Tomaz SA, *et al*. Benefits outweigh the risks: a consensus statement on the risks of physical activity for people living with long-term conditions. *Br J Sports Med* 2022; **56(8):** 427–438.
15. Albert CM, Mittleman MA, Chae CU, *et al*. Triggering of sudden death from cardiac causes by vigorous exertion. *N Engl J Med* 2000; **343(19):** 1355–1361.
16. Whang W, Manson JE, Hu FB, *et al*. Physical exertion, exercise, and sudden cardiac death in women. *JAMA* 2006; **295(12):** 1399–1403.
17. Sheng M, Yang J, Bao M, *et al*. The relationships between step count and all-cause mortality and cardiovascular events: a dose–response meta-analysis. *J Sport Health Sci* 2021; **10(6):** 620–628.
18. Rowlands A, Davies M, Dempsey P, *et al*. Wrist-worn accelerometers: recommending ~1.0 mg as the minimum clinically important difference (MCID) in daily average acceleration for inactive adults. *Br J Sports Med* 2021; **55(14):** 814–815
19. Chaudhry UAR, Wahlich C, Fortescue R, *et al*. The effects of step-count monitoring interventions on physical activity: systematic review and meta-analysis of community-based randomised controlled trials in adults. *Int J Behav Nutr Phys Act* 2020; **17(1):** 129.
20. Cunningham KB, Rogowsky RH, Carstairs SA, *et al*. Methods of connecting primary care patients with community-based physical activity opportunities: a realist scoping review. *Health Soc Care Community* 2021; **29(4):** 1169–1199.
21. Campbell F, Holmes M, Everson-Hock E, *et al*. A systematic review and economic evaluation of exercise referral schemes in primary care: a short report. *Health Technol Assess* 2015; **19(60):** 1–110.
22. Albert FA, Crowe MJ, Malau-Aduli AEO, Malau-Aduli BS. Functionality of Physical Activity Referral Schemes (PARS): a systematic review. *Front Public Health* 2020; **8:** 257.
23. Morgan F, Battersby A, Weightman AL, *et al*. Adherence to exercise referral schemes by participants — what do providers and commissioners need to know? A systematic review of barriers and facilitators. *BMC Public Health* 2016; **16:** 227.
24. Grunseit AC, Richards J, Reece L, *et al*. Evidence on the reach and impact of the social physical activity phenomenon *parkrun*: a scoping review. *Prev Med Rep* 2020; **20:** 101231.
25. Fleming J, Bryce C, Parsons J, *et al*. Engagement with and delivery of the 'parkrun practice initiative' in general practice: a mixed methods study. *Br J Gen Pract* 2020; DOI: https://doi.org/10.3399/bjgp20X710453.