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GUIDANCE

Covid-19 public health road map: Sedentary behaviour

AIM OF THIS DOCUMENT

This roadmap aims to support health officials to consider changes to sedentary behaviour that may have occurred during the Covid-19 pandemic and to use psychologically-informed behaviour change approaches to optimise health improvement and mitigate an increase in time spent sitting or lying down. This guidance should be used alongside the *Achieving Behaviour Change (ABC) guide*[1] for local government and partners, and the *Improving People's Health behavioural and social science strategy*[2].

BEHAVIOURAL SCIENCE RECOMMENDATIONS

Limiting and breaking up sedentary behaviour throughout the waking day can benefit both physical and psychological health. Levels of sedentary behaviour can be influenced by what we know and what we can do (capability); the people around us and our physical environment (opportunity); and our beliefs, what we want, how we see ourselves, how we regulate our emotions, and our habits (motivation). To limit and break up sedentary behaviour that may have increased since Covid-19:

Increase awareness and educate about what is sedentary behaviour, and how to reduce it.

Consider whether any disruption to daily routines, physical environments (e.g. working from home/school closures), and/or social support may have influenced sedentary behaviour.

Where needed, develop strategies to mitigate influences on sedentary behaviour (e.g. changing the physical and social environment to enable more regular movement, setting prompts as a reminder to break up sitting time).

Facilitate planning of how to break up and limit levels of sedentary behaviour, especially during home schooling/working and/or in the event of unpredictable circumstances (e.g. needing to self-isolate/quarantine).

Promote standing for tasks or activities that may otherwise be performed while sedentary and regular movement to break up sitting time throughout the day, for the benefit of physical health and psychological wellbeing.

GUIDANCE

We recommend following the British Psychological Society's *Behavioural Science and Disease Prevention Psychological guidance*[3] to shape any policy and/or communications strategy.

TARGET BEHAVIOUR: LIMITING AND BREAKING UP SEDENTARY BEHAVIOUR

Sedentary behaviour is defined as any waking behaviour characterised by a low energy expenditure, <1.5 metabolic equivalents (METs), whilst in a sitting, laying or reclined posture[4]. When considering/measuring sedentary behaviour it is important to consider both: 1) the total amount of time spent sedentary in the waking day, and 2) the number of times that sedentary behaviour is broken with standing and light movement.

Sedentary behaviour should not be confused with physical inactivity. Physical inactivity is defined by Sport England[5] and the World Health Organisation[6] as not reaching 30 minutes of moderate to vigorous physical activity (MVPA) per week for adults, or per day for children and young people. An individual can meet the recommended guidelines for physical activity and still be considered as engaging in high levels of sedentary behaviour, therefore, we have created separate guidance on physical activity/inactivity.

WHY IS REDUCING SEDENTARY BEHAVIOUR IMPORTANT?

Sedentary behaviour has now emerged as an independent risk factor for poor cardiometabolic health that should be considered in addition to physical inactivity[7]. Daily sitting time increases the risk of type 2 diabetes, cardiovascular disease and mortality[8,9] independent of physical activity levels. Sitting for long periods of time can slow metabolism, affecting the ability to regulate blood sugar, blood pressure and break down fat[10]. Engaging in prolonged bouts of sedentary behaviour is adversely associated with cardiovascular health[11] and there is good evidence that breaking up sitting can benefit cardiometabolic health[12,13] and also improve mood and psychological wellbeing[13]. For example, breaking up sitting with two to five minutes of light or moderate-intensity walking every 20 to 30 minutes can attenuate postprandial glucose responses[9,14]. Consequently, limiting sedentary behaviour throughout the day, breaking up sitting time each hour, and engaging in light activity instead of prolonged sitting can have important physical and psychological health benefits.

POSSIBLE CHANGES TO SEDENTARY BEHAVIOUR SINCE COVID-19

Covid-19 has had a significant impact on daily routines that may have impacted the amount of time spent sedentary each day. Prior to Covid-19, active commuting and walking in workplace and educational settings provided opportunities to break up sitting time. It is likely that changes in routines since Covid-19 have reduced these natural interruptions to sedentary behaviour and new plans and habits need to be developed to fit this new context.

Additionally, it is likely that measures taken to contain Covid-19 may have resulted in increased sedentary behaviour, particularly for those in vulnerable or clinically at-risk groups asked to shield. Self-isolation and quarantine may also lead to greater time spent sedentary due to the requirement to stay at home. The short and long-term negative health effects of prolonged daily sedentary behaviour may exacerbate existing health issues and inequalities. For example, older adults, those living with long-term conditions[15] and those in recovery from Covid-19 may experience deconditioning (e.g. decline in muscle strength and bulk) due to increased sedentary behaviour.

WIDE-SCALE PUBLIC HEALTH INTERVENTION

Health officials have the opportunity to support national behaviour change through a number of policy levers. Table 1 highlights existing approaches and suggestions for future development. Using this document, alongside the ABC guide[1] and support from experts in behaviour change, such as health psychologists, can help to optimise reach and impact of public health efforts.

Table 1: Policy categories from the Behaviour Change Wheel[1, 13,14] that could support limiting and breaking up sedentary behaviour during the Covid-19 pandemic and beyond.

Policy categories	Definition	Examples and suggestions
Communication/ marketing	Using print, electronic, telephonic or broadcast media.	Use clear messaging about the benefits of reducing prolonged periods of sedentary behaviour and breaking up sitting each hour. Re-think marketing that is directed at a wanted positive behaviour, such as staying at home, but may have negative consequences on another unwanted behaviour, such as excessive sitting (e.g. the 'Britain! We Need Your Buttocks' campaign)
Guidelines	Creating documents that recommend or mandate practice. This includes all changes to service provision.	Promote existing guidance for workplace sitting, and provide more clarity and guidance in relation to leisure-time sedentary behaviour[18] This includes accumulating two to four hours per day of standing and light activity during working hours and regularly breaking up sitting time.
Fiscal measures	Using the tax system to increase or reduce the financial cost.	Reduce cost for things that will support a reduction in sedentary behaviour (e.g. active workstations).
Regulation	Establishing rules or principles of behavioural practice.	Regulate the amount of time sitting in highly sedentary environments (e.g. making codes of practice to ensure that active workstations and standing meetings/lessons are available in all workplace/educational settings).
Legislation	Making or changing laws.	Make it a legal requirement for workplaces and educational settings to provide opportunities to limit sedentary behaviour and access to workstations that allow tasks while standing (including when working from home).

Environmental/ social Planning	Designing and/or controlling the physical or social environment.	Provide access to active workstations in workplace and educational settings and remove a quota of chairs to facilitate tasks while standing, including standing meetings/lessons. Encourage a social norm to limit and break up sedentary behaviour.
Service Provision	Delivering a service.	Provide personalised assessment and support services (such as apps[13]) specifically to help people to change their behaviour to break up long periods of sitting. Service provision should include behaviour change techniques known to be effective in changing sedentary behaviour, such as those found here[12].

UNDERSTANDING INFLUENCES ON BEHAVIOUR USING A COM-B DIAGNOSIS

To assist in understanding behaviour and behaviour change, the COM-B model[16–17, 19–20], suggests that there must be considerations made for the target population in relation to their:

Capability to enact the Behaviour, that relies on both psychological (e.g. knowledge and skill) and physical (e.g. ability and strength) capability factors;

Opportunity to enable the Behaviour, that considers both social (e.g. norms, support) and physical (e.g. resources, environment) opportunity facilitators; and

Motivation to perform the Behaviour, that involves both reflective (e.g. attitudes, confidence, intentions, identity) and automatic (e.g. emotion, habit) motivational processes.

The likely influences to consider when developing policies, campaigns or messaging to support physical activity based on a COM-B behavioural diagnosis are presented in Table 2.

DIFFERENT AUDIENCES TO CONSIDER

WHO NEEDS THIS INFORMATION

World Health Organisation, International partners and public health teams, Public Health England, Public Health Scotland, Public Health Wales, Public Health Agency Northern Ireland, Local Authorities, commissioners, Clinical Commissioning Groups, primary care, schools, Sport England, Sport Scotland, Sport Wales, Sport Northern Ireland, Active Partnerships, Football Community and Education trusts, relevant charities (e.g. British Heart Foundation, Versus Arthritis, Macmillan Cancer Support, Diabetes UK), mental health services, all agencies and organisations with a remit of physical activity and sedentary behaviour.

WHO WILL BE INFLUENCED MOST BY COVID-19

There is a need for researchers and policy makers to address how these barriers and facilitators differ based on occupation, role and employment status, gender/sex, socio-economic group, ethnic group, experience of physical and/or learning disabilities, age group, differing levels of risk for Covid-19 and those in Covid-19 recovery.

USING A BEHAVIOURAL SCIENCE APPROACH

This document provides considerations for the initial stages of intervention development using the Behaviour Change Wheel[13,14] approach described in the ABC guide[1] to support behaviour change. For further support on the full development and evaluation of interventions and the translation of this into practice using the whole system approach, you can contact the BPS Division of Health Psychology (with the subject title Covid-19). We would also encourage you to contact your local university or one with expertise in behaviour change, and/or find a psychologist via the Society's website.

Table 2: COM-B behavioural diagnosis of the likely influences on sedentary behaviour.

Capability psychological/physical	Opportunity social/physical	Motivation reflective/automatic
Knowledge of what sedentary behaviour is and why it is important to limit and break up sedentary time. (Psychological)	Social support from family, friends or workplace to limit and break up sedentary behaviour. (Social)	Belief that limiting and breaking up sedentary behaviour would be beneficial to health and/or a good thing to do. (Reflective)
Having the cognitive and interpersonal skills (e.g. able to negotiate standing during a meeting) to limit and break up sedentary behaviour. (Psychological)	Other people influencing the amount of time spent sedentary. (Social)	Perceived risk of injury from moving to a standing position to break up sedentary behaviour. (Reflective)
Remembering to limit and break up sedentary behaviour when routines have changed. (Psychological)	Family commitments influencing ability to limit and break up sedentary behaviour (e.g. home schooling). (Social)	Having the confidence to limit and break up sedentary behaviour despite challenges since Covid-19. (Reflective)
Knowing how to limit and break up sedentary behaviour. (Psychological)	Social and cultural norms to limit and break up sedentary behaviour. (Social)	Having strong intentions and goals to limit and break up sedentary behaviour. (Reflective)
Ability to plan to limit and break up sedentary behaviour. (Psychological)	Having appropriate resources (e.g. workstations) to limit and break up sedentary behaviour. (Physical)	Holding an identity of someone who is not sedentary. (Reflective)
Having the skill to limit and break up sedentary behaviour while doing other tasks. (Physical)	Having access to the physical space to limit and break up sedentary behaviour (e.g. due to physical-distancing). (Physical)	Overcoming emotion that may influence limiting and breaking up sedentary behaviour, such as anxiety (e.g. worried about infection), sadness, boredom. (Automatic)
Strength and stamina to stand or move about in order to limit and break up sedentary behaviour. (Physical)	Financial restrictions to limit and break up sedentary behaviour (e.g. if reduction in productivity). (Physical)	Overcoming the habit to be sedentary. (Automatic)

RESOURCES

- NHS
- British Heart Foundation
- Sedentary behaviour research network
- Measurements
- Sport England: Covid-19 briefing: Exploring attitudes and behaviours in England during the Covid-19 pandemic

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