

ARE INTERVENTIONS OUTSIDE THE WORKPLACE TO REDUCE SEDENTARY BEHAVIOR IN ADULTS EFFECTIVE? - A COCHRANE REVIEW SUMMARY WITH COMMENTARY

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The aim of this commentary is to discuss, from a rehabilitation perspective, the Cochrane Review, "Interventions outside the workplace for reducing sedentary behaviour in adults under 60 years of age" by Murtagh et al. (2020)^a, published by Cochrane Public Health. This Cochrane Corner is produced in agreement with Journal of Rehabilitation Medicine by Cochrane Rehabilitation with views* of the review summary author in the "implications for practice" section.

J Rehabil Med 2023; 55: jrm00384

DOI: 10.2340/jrm.v55.9645

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BACKGROUND

Sedentary behavior (sitting or lying during waking hours) is strongly associated increased risk of type 2 diabetes, cardiovascular disease, metabolic syndrome, and all-cause mortality. Some research has suggested that sedentary behavior and physical activity are independent risk factors – in other words, increasing amounts of moderate to high intensity physical activity does not necessarily mitigate the risk of sustained sedentary behavior. Many interventions to reduce sedentary time in adults have focused on activity in the workplace (e.g. standing desks). However, it is estimated that approximately 70% of non-work time is spent engaged

^a This summary is based on a Cochrane Review previously published in the Cochrane Database of Systematic Reviews 2020, Issue 7, Art. No.: CD012554, DOI: 10.1002/14651858.CD012554.pub2 (see www.cochranelibrary.com for information). Cochrane Reviews are regularly updated as new evidence emerges and in response to feedback, and Cochrane Database of Systematic Reviews should be consulted for the most recent version of the review.

* The views expressed in the summary with commentary are those of the Cochrane Corner author (different than the original Cochrane Review authors) and do not represent the Cochrane Library or Journal of Rehabilitation Medicine.

in sedentary behavior – watching TV or on phones, computer or other devices. Interventions to interrupt prolonged periods of sedentary behavior have therefore been recommended as a subject of investigation. These interventions are of interest to rehabilitation professionals as secondary prevention is often included in rehabilitation programs.

INTERVENTIONS OUTSIDE THE WORKPLACE FOR REDUCING SEDENTARY BEHAVIOUR IN ADULTS UNDER 60 YEARS OF AGE (MURTAGH EM, MURPHY MH, MILTON K, ROBERTS NW, O'GORMAN CSM, FOSTER C, 2020)

What was the aim of this Cochrane review?

The aim of this Cochrane Review was to assess effects of non-occupational interventions for reducing sedentary behavior in adults under 60 years of age.

WHAT WAS STUDIED IN THE COCHRANE REVIEW?

The population addressed in this review was adults aged 18 to 59 years with no pre-existing medical conditions that might limit activity levels. The interventions studied were any strategies outside of the workplace that were designed to reduce sedentary behavior. This included counselling, education, limits on screen time, environmental changes, multi-component lifestyle interventions, and community-level interventions. The interventions were compared to no intervention or attention controls. The primary outcomes studied were total duration of sedentary time and breaks in sedentary behavior. Secondary outcomes of interest included energy expenditure, body composition, cholesterol, markers of insulin resistance, inflammatory markers, carotid intima media thickness, endothelial function, mental health,

adverse events (e.g. injuries, cardiovascular events), and unintended consequences (e.g. social approval/disapproval).

WHAT WAS THE SEARCH METHODOLOGY AND HOW UP-TO-DATE IS THE COCHRANE REVIEW?

The review authors searched for studies that had been published up to 14 April 2020 in seven databases: Cochrane Central Register of Controlled Trials, MEDLINE, Embase, Cochrane Database of Systematic Reviews, CINAHL, PsychINFO, SportDiscus. The review authors also searched the Clinicaltrials.gov trial register, websites of relevant organizations reporting on research regarding sedentary behavior, and contacted authors of relevant studies and systematic reviews.

WHAT ARE THE MAIN RESULTS OF THE COCHRANE REVIEW?

The review included 13 studies (1770 participants in total; mean age range in studies 20 to 41 years), all undertaken in high-income countries. Interventions to reduce sedentary behavior in these studies included personal monitoring devices, information, education, counselling, and prompts to reduce sedentary behavior.

The review shows that:

- There is moderate-certainty evidence that interventions outside the workplace probably have little to no effect on device-measured sedentary time in the short term (mean difference (MD) -8.4 min/d, 95% confidence interval (CI) -27.1 to 10.4 min/day).
- There is uncertainty about the effect of interventions outside the workplace on device-measured sedentary time in the medium term (MD -51.4 min/d, 95% CI -126.3 to 23.6 min/day) or self-reported sitting time in the short term (MD -64.1 min/d, 95% CI -260.9 to 132.7 min/day)
- There is low-certainty evidence that interventions outside the workplace may have little to no effect on self-reported TV viewing time in the medium (MD -12.5 min/d, 95% CI -50.4 to 25.5 min/day) or long term (MD 0.30 min/d, 95% CI -0.63 to 1.23).
- There is moderate certainty that interventions outside the workplace probably have little to no effect on body mass index and glucose level, and no compelling evidence for any favorable effect on waist circumference, device measured moderate-to-vigorous physical activity, self-reported light intensity physical activity, or step count.

- No data on adverse events or symptoms were reported in the included studies.

WHAT DID THE AUTHORS CONCLUDE?

The authors were not able to draw conclusions about the effectiveness of individual interventions to reduce sedentary behavior. They could not comment on the balance of benefits or harms of these interventions, because no studies reported on adverse events, quality of life or cost-effectiveness.

WHAT ARE THE IMPLICATIONS OF THE COCHRANE EVIDENCE FOR PRACTICE IN REHABILITATION?

Reducing sedentary time outside of the workplace is probably important for the health and wellbeing for adults, but this review was unable to provide compelling evidence regarding which types of interventions are likely to positively change non-work sedentary time in adults. When reading this review it is important to consider the types of interventions under investigation in the included studies. Most interventions focused solely on education, information provision or feedback on activities level. Only two studies appear to involve the development of an action plan to change activity levels. The results reflect these types of interventions only. From a rehabilitation perspective, it is important to note that the included studies did not involve participants with disabilities or chronic health conditions. Nor were adverse effects included in the study reports.

DISCLOSURES

The author declares no conflicts of interest.

ACKNOWLEDGEMENTS

The author thanks Cochrane Rehabilitation and Cochrane Public Health for reviewing the contents of the Cochrane Corner.

REFERENCES

1. Murtagh EM, Murphy MH, Milton K, Roberts NW, O’Gorman CSM, Foster C. Interventions outside the workplace for reducing sedentary behaviour in adults under 60 years of age. Cochrane Database of Systematic Reviews 2020, Issue 7. Art. No.: CD012554. DOI: 10.1002/14651858.CD012554.pub2. Accessed 29 April 2022.