

What is the effect of the interventions for reducing sedentary behaviour in people with stroke? A Cochrane Review summary with commentary

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Abstract.

BACKGROUND: Many stroke survivors are both sedentary and physically inactive, even those who have adequate mobility. This increases cardiometabolic risk and has impacts on physical and other functions.

OBJECTIVE: The aim of this Cochrane Review summary is to discuss from a rehabilitation perspective the results of the Cochrane review investigating the effects of the interventions designed to reduce sedentary behavior after stroke on mortality, secondary vascular events, cardiovascular risk, adverse events and sedentary behavior.

METHODS: The review authors searched for randomized controlled trials that had been published up to December 2019, comparing the effects of the interventions aimed to reduce sedentary behavior in patients after stroke with usual care, no intervention, sham intervention.

RESULTS: The results of the review showed that the interventions included did not affect the number of deaths or the incidence of recurrent cardiovascular or cerebrovascular events, falls or other adverse events in stroke patients. Evidence for their impact on sedentary behavior is currently inconclusive.

CONCLUSIONS: The evidence about reducing sedentary behavior in patients after stroke is incomplete, since research in this field is relatively new. Practitioners may also encourage reduction in sitting during daytime by considering interventions for other therapeutic targets (e.g. increasing physical activity and mobility), besides the studied interventions that proved to be safe and harmless.

Keywords: Sedentary behavior, stroke

The aim of this commentary is to discuss from a rehabilitation perspective the Cochrane Review “Interventions for reducing sedentary behaviour in people with stroke” by Saunders, D. H., Mead, G. E., Fitzsimons, C., Kelly, P., van Wijck, F., Verschuren,

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Rehabilitation with views* of the review summary authors in the “implications for practice” section.

1. Background

Stroke is the second leading cause of death and third leading cause of disability adjusted life years (WHO, 2016). Many stroke survivors are both sedentary and physically inactive. This increases cardiometabolic risk and has impacts on physical and other functions.

Interventions for reducing sedentary behaviour in people with stroke

(Saunders, D. H., Mead, G. E., Fitzsimons, C., Kelly, P., van Wijck, F., Verschuren, O., Backx, K., English, C., 2021)

2. Objective

The aim of this Cochrane Review was to determine whether interventions designed or with potential to reduce sedentary behavior after stroke, can reduce the risk of death or secondary vascular events, modify cardiovascular risk, and reduce sedentary behavior.

2.1. What was studied and methods

The population addressed in this review was stroke survivors, 18 years of age or over, with any degree of stroke severity, at any stage of care, and at any time since the stroke. The interventions studied were interventions to reduce sedentary time. The intervention was compared to usual care, no intervention or waiting-list control and attention control, sham or adjunct intervention. The outcomes studied were death, recurrent cardiovascular or cerebrovascular events, adverse events, sedentary behavior. The review authors searched for studies that had been published up to December 2019.

3. Results

The review included 10 randomized controlled trials with 753 participants with stroke, who participated in physical activity or multicomponent lifestyle

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

interventions, or interventions to reduce or interrupt sedentary time. In all studies the risk of bias was high or unclear in two or more domains and the certainty of observed effects reduced due to imprecision, indirectness, poorly reported data and inconsistency.

The review shows that:

- Death (Low certainty of evidence, 10 RCT, 753 participants): no reported group difference (RD 0.00, 95% CI -0.02 to 0.03); control group 25 per 1,000/ intervention group 30 per 1,000.
- Recurrent cardiovascular or cerebrovascular events (Low certainty of evidence, 10 RCT, 753 participants): no effect at the end of intervention (RD -0.01, 95% CI -0.04 to 0.01); control group 85 per 1,000/ intervention group 101 per 1,000.
- Adverse events: falls (Low certainty of evidence, 10 RCT, 753 participants): no effects at the end of intervention (RD -0.00, 95% CI -0.02 to 0.02); control group 20 per 1,000/ intervention group 23 per 1,000.
- Other adverse events (Moderate certainty of evidence, 10 RCT, 753 participants): no difference between the groups: 50 other adverse events in the control group, 51 other adverse events in the intervention group.
- Sedentary behaviour - time (Very low certainty of evidence, 7 RCT, 300 participants): no effect of the intervention on sitting time (MD 0.13 hours per day, 95% CI -0.42 to 0.68).
- Sedentary behaviour - pattern (Very low certainty of evidence, 3 RCT, 188 participants): effects on reducing prolonged sitting time and increasing interruptions to sitting are inconclusive.

4. Conclusions

This review suggests that the interventions included did not affect the number of deaths or the incidence of recurrent cardiovascular or cerebrovascular events, falls or other adverse events in stroke patients. Evidence for their impact on sedentary behavior is currently inconclusive.

4.1. Implications for practice in neurorehabilitation

The evidence in stroke patients is currently not strong enough to guide practice on how to reduce

sedentariness and cardiometabolic risk. However, the interventions studied in the review may be delivered without causing harm. The recent World Health Organization advice suggests it is beneficial to reduce the amount of sedentary time in people with disabilities, and replace it with physical activity (WHO, 2020). Therefore, practitioners may still achieve reductions in sitting during daytime in patients after stroke, through use of interventions for other therapeutic targets (e.g. increasing physical activity and mobility).

Conflict of interest

The authors declare no conflicts of interest.

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