

Letter from the editor

Can exercise prevent the common cold?

Context: Randomised trials have suggested that moderate-intensity exercise may reduce the severity and duration of upper respiratory tract infections (URTIs). But these small, short term studies were unable to assess the effect of exercise on the incidence of URTIs. [2] [3] Chubak and colleagues wanted to know if a year-long exercise programme could decrease the risk of colds and other URTIs in a subgroup of postmenopausal women.

Summary: The investigators recruited 115 overweight, sedentary, postmenopausal women from Seattle and randomly assigned them to one of two groups: the 'exercisers' intervention group or the 'stretching' control group. The 53 women in the exercise group took part in 45 minutes of moderate-intensity exercise (such as brisk walking) either at home or at a gym for five days each week for one year. The 62 women in the control group attended once-weekly 45-minute stretching sessions. Before randomisation, the participants were taught to distinguish between the symptoms of colds, influenza, and allergies, and were asked to use this guidance to document any episodes of colds, influenza, or other URTIs at three-monthly intervals.

Findings: The risk of self-reported colds decreased in the exercise group and increased in the control group during the year of the study ($P = 0.02$). This difference was most marked in the last 3 months of the study: during this period, stretchers were three times more likely to report cold symptoms compared with exercisers (RR 0.32 95% CI 0.13–0.81). However, when the investigators looked at the total number of self-reported URTIs (colds, influenza, unknown cause, and other URTIs), they found no significant difference between exercisers and stretchers ($P = 0.16$).

Appraisal: The strengths of this trial are the important question it addresses, its long duration, relatively large size, and its high treatment adherence rates (exercisers attained 85% of their exercise time goal). However, the limitations of the trial (many appropriately acknowledged by the authors and also discussed in an accompanying commentary [4]) prohibit any definitive conclusions being drawn from the results. A key limitation of the trial is the subjective nature of the primary outcome. It is notoriously difficult to distinguish between the different causes of URTIs, and it was ambitious of Chubak and colleagues to have expected participants to distinguish accurately between these outcomes without clinical consultation. Clinical diagnostic confirmation of infective episodes would have been reassuring and may have improved the validity of the results. The increase in the risk of colds in the control group is also puzzling. Importantly, exercise did not significantly decrease the total number of URTIs compared with controls. Chubak and colleagues point out that more women in the stretching group were immunised against influenza, possibly decreasing the number of influenza cases in this group. However, in this unblinded trial, reporting bias by participants is a distinct possibility: participants are often as keen as researchers for a trial to be successful, and this (possibly subconscious) desire may have prompted women to selectively interpret their URTI symptoms. Finally, the trial population represents a very small proportion of the general population, and so the generalisability or external validity of the results is likely to be similarly restricted. It is crucial that future investigators learn from the successes and limitations of the Chubak trial to ensure that their data are as accurate and useful as possible, and that best use is made of the time and effort of trial volunteers.

Shannon Amoils

Clinical Editor, *BMJ Clinical Evidence*
samoils@bmjgroup.com

Karen Pettersen

Deputy Editor, *BMJ Clinical Evidence*
kpettersen@bmjgroup.com

Charles Young

Editor, *BMJ Clinical Evidence*
charles.young@bmjgroup.com

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