

# Only 20 minutes less sitting per day is enough to maintain good health and muscle mass

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Finnish researchers conducted one of the largest and longest studies to find out if it is possible to reduce sedentary time and if the reduction will result in any health benefits during one year. A tailored counseling helped busy office workers with young children to decrease their sedentary leisure time 21 minutes per day, which was enough to improve some biomarkers and to maintain muscle mass during one year.

A total of 133 [office workers](#) with young children participated in the study conducted at the University of Jyväskylä, Finland. The participants were randomized in two groups. The participants of the intervention group were provided with tailored counseling in order to discuss strategies to reduce sitting at work and [leisure](#) time. The participants set personal goals that they found feasible for the everyday lives of their families. The most common goal for work time was to break up sitting periods while working and at coffee breaks. For leisure time, the most common goals were active commuting and an increase in active time with the family.

At the baseline, the participants were sedentary (assessed objectively by accelerometers) for 5.6 hours per day at work, and 3.8 hours per day during leisure time. After the counseling session, sedentary leisure time decreased by 21 minutes per day while light activity and breaks in [sedentary time](#) increased. At the end of the year, the intervention group still had 8 minutes less sedentary leisure time, whereas that of the control group tended to increase slightly. Women, but not men, were able to increase light activity time and breaks in sitting also at work.

Several health markers were monitored during the one-year period. After the counseling session, the intervention group's fasting glucose levels decreased slightly. The Apolipoprotein B-to-Apolipoprotein A-1 ratio, which is a novel biomarker of cholesterol transport capacity and related to cardiovascular risk, improved during the year. At the same time, leg muscle mass was maintained in the intervention groups, whereas the control group's [muscle mass](#) decreased by a half percent.

The first author, Doctor of Sport Sciences Arto Pesola finds the results preliminary but promising: "This study shows that it is possible to reduce the sedentary time of people in a busy phase of life. Even though the effect of tailored counseling diluted during the year, the intervention was effective in preventing an increase in sitting. This is important, because sedentary time tends to increase while we age. The effect was most visible during leisure time, where the sedentary time was already lower. This may reflect the demands of working life and that counseling targeted at individuals and their families is ineffective in changing the sitting time at work, at least in men. Instead, people may find more opportunities and freedom to reduce sedentary time and to participate in enjoyable family activities out of working hours. Parents may think at first that spending time with their children is away from their own physical exercise. However, that way they can reduce sitting time and show a good example to their offspring about a physically active lifestyle. This is motivating, and as shown in the study, may be beneficial for health in the long run."

Epidemiological studies have shown that increased sitting time is associated with type 2 diabetes, cardiovascular diseases and premature mortality.

The present study was among the first ones to show that it is possible to reduce sedentary time and that even a small decrease in sedentary time can be beneficial for initially healthy people. Reductions in sedentary

time may be easier to achieve when they are incorporated in common family activities and other everyday tasks during [leisure time](#). Future studies should investigate if it would be possible to reduce sitting at work by changing the physical or social environment, and what are the physiological mechanisms that explain the health benefits of reduced sitting time.

**More information:** Arto J. Pesola et al. Accelerometer-assessed sedentary work, leisure time and cardio-metabolic biomarkers during one year: Effectiveness of a cluster randomized controlled trial in parents with a sedentary occupation and young children, *PLOS ONE* (2017). [DOI: 10.1371/journal.pone.0183299](https://doi.org/10.1371/journal.pone.0183299)

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