

Reducing sitting and increasing light physical activity lower the risk of diabetes in abdominally obese older people

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Waist circumference can have an effect on the type of exercise most beneficial for glucose metabolism of an older person. According to a recent study conducted in Oulu, Finland, increasing light physical

activity and reducing sitting are linked to improved glucose metabolism among abdominally obese older people. On the other hand, brisk physical activity is most effective for the glucose metabolism of lean older people.

The study is part of the population-based Oulu1945 survey conducted by the University of Oulu and ODL Department of Sports and Exercise Medicine, consisting of more than 700 participants aged 67–70 taking part in the study in 2013–2015. Physical activity and sedentary time were monitored with a wrist-worn accelerometer for a period of two weeks. Glucose [metabolism](#) was measured by an oral [glucose](#) tolerance test. The participants were classified according to [waist circumference](#) into three groups (lean, normal, obese). The associations between sitting time, [physical activity](#) and glucose metabolism were separately examined in each group.

In the abdominally obese group, light physical activity was associated with lower fasting insulin levels and lower body insulin resistance. High sitting time was associated with poorer glucose tolerance. Among lean older people, brisk and heavy exercise were associated with lower insulin levels.

"Our study shows for the first time that the link between physical activity and [glucose metabolism](#) among older people is dependent on the waistline. The risk of type 2 diabetes increases rapidly with aging and abdominal obesity is the most significant risk factor. Current physical activity recommendations for health are too demanding for many older people and more individualized guidelines, taking into account the individual's functional capacity, are needed. The population-based data on older people are unique, and similar studies based on accelerometer measurements have not been conducted before. Based on this study, older people, especially those who are overweight, can be encouraged to reduce sitting and increase light forms of exercise, as these can have

significant health benefits," says Researcher Miia Länsitie. The study is part of Länsitie's doctoral dissertation at the University of Oulu.

Around a half-million Finns are estimated to have type 2 diabetes, and the disease is particularly prevalent among older people. Obesity is a major risk factor for type 2 diabetes and low physical activity is one of the main causes of obesity.

More information: Miia Länsitie et al, Association between accelerometer-measured physical activity, glucose metabolism, and waist circumference in older adults, *Diabetes Research and Clinical Practice* (2021). [DOI: 10.1016/j.diabres.2021.108937](https://doi.org/10.1016/j.diabres.2021.108937)

Provided by University of Oulu

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