

# Physical activity attenuates arterial stiffening in children

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According to a recent Finnish study, higher levels of moderate and vigorous physical activity can curb arterial stiffening already in childhood. However, sedentary time or aerobic fitness were not linked to

arterial health. The results, based on the ongoing Physical Activity and Nutrition in Children (PANIC) Study conducted at the University of Eastern Finland, were published in the *Journal of Sports Sciences*. The study was made in collaboration among researchers from the University of Jyväskylä, University of Eastern Finland, the Norwegian School of Sport sciences, and the University of Cambridge.

## **Arterial stiffening predisposes to heart diseases, but physical activity reduces the risk**

Stiffened arteries are one of the first signs of increased risk of cardiovascular diseases, and stiffening of the arteries has been observed even in children. High levels of physical activity, reduced sedentary time and good physical fitness form the basis for prevention of cardiovascular diseases in adulthood, but little is known about their role in promoting arterial [health](#) in [primary school children](#).

"Our study showed that increased levels of moderate and [vigorous physical activity](#) were linked to more elastic arteries and better dilatation capacity," says Dr. Eero Haapala from the Faculty of Sport and Health Sciences at the University of Jyväskylä. "However, our results also suggest that the positive effects of moderate and vigorous physical activity on arterial health are partly explained by their positive effects on body composition."

## **Moderate and vigorous physical activity are important for cardiovascular health**

The researchers found the healthiest arteries in children with the highest levels of moderate and vigorous physical activity, but similar associations were not observed with sedentary time or light intensity activity.

"The key message of our study is that, starting from childhood, increasing moderate and vigorous physical activity is central in the prevention of cardiovascular diseases," says Haapala. "However, it is worth remembering that every step is important, because reducing sedentary time and increasing light physical activity have various health effects, even though they may not have direct effects on the arteries."

The study investigated the association of [physical activity](#), [sedentary time](#), and aerobic fitness and changes in them over 2-year follow-up with arterial stiffness and dilatation capacity in 245 children aged 6 to 8 years at the beginning of the study. Physical activity was measured using a combined heart rate and movement monitor and arterial stiffness and dilatation capacity using pulse contour analysis. Body composition was measured using a DXA device.

**More information:** Marika Korhonen et al, Longitudinal associations of physical activity, sedentary time, and cardiorespiratory fitness with arterial health in children – the PANIC study, *Journal of Sports Sciences* (2021). [DOI: 10.1080/02640414.2021.1912450](https://doi.org/10.1080/02640414.2021.1912450)

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