

Childhood socioeconomic status associated with arterial stiffness in adulthood

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A multicentre trial coordinated by the Research Centre of Applied and Preventive Cardiovascular Medicine at the University of Turku, Finland, shows that lower socioeconomic status in childhood is associated with arterial stiffness in adulthood. The socioeconomic gap in cardiovascular disease is a major health problem that has widened. Previous studies have shown that the development of atherosclerosis begins early in childhood and that childhood socioeconomic status predicts the risk of cardiovascular diseases far into adulthood.

"One of the indicators for cardiovascular health and arterial function is [arterial stiffness](#) which has been detected to predict the incidence of arterial events, such as heart attacks and strokes. However, the impact of [childhood socioeconomic status](#) on arterial stiffness in [adulthood](#) has not been previously studied with longitudinal data," says Elina Puolakka, who is conducting her doctoral dissertation on the topic at the Research Centre of Applied and Preventive Cardiovascular Medicine.

The study is part of the national Cardiovascular Risk in Young Finns Study coordinated by the Research Centre of Applied and Preventive Cardiovascular Medicine at the University of Turku. The study followed 2,566 persons who were three to 18 years old at the beginning of the study. Their arterial distensibility was measured 21 or 27 years later in adulthood.

The participants' socioeconomic status in childhood was measured by their parents' income. The researchers studied the association between

the subjects' childhood socioeconomic status and adulthood arterial stiffness by using the pulse wave velocity and carotid artery distensibility as indicators.

"Lower socioeconomic status in childhood predicts higher arterial stiffness in adulthood, as it was associated with both higher arterial pulse wave velocity and lower carotid artery distensibility in adulthood. The association remained after further adjustments for conventional cardiovascular risk factors in childhood and the socioeconomic status in adulthood," says Puolakka.

The study further supports the understanding that the differences in parents' socioeconomic status during childhood create the basis for differences in [cardiovascular disease](#) in adulthood. The study was published in *Hypertension* on 14 August.

More information: Elina Puolakka et al, Childhood Socioeconomic Status and Arterial Stiffness in Adulthood, *Hypertension* (2017). [DOI: 10.1161/HYPERTENSIONAHA.117.09718](#)

Provided by University of Turku

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