

Maintaining muscle mass supports women's arterial health from youth to middle age: Study

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Credit: University of Jyväskylä

A study conducted at the University of Jyväskylä found that women with larger muscle mass had lower arterial stiffness from youth to middle age.

The study also revealed that hypertension was the most significant predictive factor for arterial stiffness regardless of age. Researchers also found that even good aerobic fitness does not necessarily protect against age-induced arterial stiffness.

The compliant artery wall is a prerequisite for the normal functioning of the arteries and the entire circulatory system. The elasticity of the arteries is gradually reduced by aging. However, various risk factors for cardiovascular diseases may accelerate arterial aging and predispose arterial stiffening since childhood. Increased [arterial stiffness](#) predicts the development of cardiovascular diseases such as [coronary artery disease](#) and cerebrovascular disease.

The study examined the importance of aerobic fitness, body fat percentage, [muscle mass](#), and [blood pressure](#) for arterial stiffness in women aged 16 to 58. Based on the results, only higher muscle mass and [lower blood pressure](#) were associated with lower arterial stiffness regardless of age. Better aerobic fitness and lower body fat percentage were also linked to better arterial health, but age explained these associations.

"While age was the most important factor in explaining arterial stiffness, maintaining sufficient muscle mass and controlling blood pressure may protect against the adverse effects of aging on arterial health," says Dr. Eero Haapala from the Faculty of Sport and Health Sciences, University of Jyväskylä.

The study included 146 women aged 16 to 58 years. Maximum oxygen uptake as a measure of durability was measured using a maximum cycle ergometer or treadmill test. The researchers measured body composition with InBody or DXA device and arterial stiffness by pulse wave velocity analysis.

The results were published in *Scientific Reports*.

More information: Eero A. Haapala et al, Associations of cardiorespiratory fitness, body composition, and blood pressure with arterial stiffness in adolescent, young adult, and middle-aged women, *Scientific Reports* (2022). [DOI: 10.1038/s41598-022-25795-x](https://doi.org/10.1038/s41598-022-25795-x)

Provided by University of Jyväskylä

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