



**Arterial stiffness and risk factors for cardiovascular disease
in young adults**

av

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Abstract

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Atherosclerosis is a complex, chronic vessel wall disease that often leads to severe and acute cardiovascular diseases (CVD), such as myocardial infarction and stroke. CVD are the most common cause of death, both globally and in Sweden. Since most of the risk factors for atherosclerosis are preventable, it is of great importance to highlight the benefits of a healthy lifestyle to young adults who are about to create their own habits.

A general concern about physical inactivity, low cardiorespiratory fitness (CRF), and high body mass are supported by reports of an increased incidence and prevalence of obesity worldwide. In addition to this, the proportion of Swedish adults with low CRF almost doubled the last 20 years and the decline in CRF is more pronounced in the youngest age group.

The scientific work presented in this thesis was carried out to investigate the impact of different lifestyle related factors on vascular status, especially arterial stiffness, in young Swedish adults. In total 840 young adults in the age range 18-25 years were recruited to the cross-sectional Lifestyle, Biomarkers, and Atherosclerosis (LBA) study, to examine vascular status, biomarkers, and lifestyle related factors.

In the LBA study population of young adults in Sweden, 12% were classified as being at risk of future CVD. A high CVD risk was associated with low CRF and less physical activity. In the total study population 24% had unhealthy food habits, and 24% did not spend the recommended 30 minutes per day at moderate or vigorous intensities of physical activity. Low CRF, less physical activity, and overweight and obesity, were associated with stiffer arteries.

The results raises concerns about future CVD risk and highlights the health enhancing possibilities of high CRF and physical activity on vascular status in young Swedish adults.

Keywords: Cardiovascular disease, atherosclerosis, arterial stiffness, pulse wave analysis, intima media thickness, cardiorespiratory fitness, physical activity, body composition, young adults.

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