

## Publication

# Ideal Life's Simple 7 Score Relates to Macrovascular Structure and Function in the Healthy Population

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Cardiovascular health scores, such as Life's Simple 7 from the American Heart Association, and the assessment of arterial properties are independently used to determine cardiovascular risk. However, evidence of their association remains scarce, especially in healthy, middle-aged to older populations.; A healthy sample of the Swiss population aged 50-91 years as part of the COMplete cohort study was included. Carotid intima-media thickness (cIMT), carotid lumen diameter (cLD), carotid distensibility coefficient (DC), flow-mediated dilation (FMD), and brachial-ankle pulse wave velocity (baPWV) were used to determine arterial properties. The Life's Simple 7 cardiovascular health score was calculated using seven categories (body-mass index, cholesterol, systolic blood pressure, hemoglobin A1c, smoking status, physical activity, and diet). In accordance with the American Heart Association, for each category, two points were given for an ideal health metric level, intermediate scores one point, and poor scores zero points. Intermediate and ideal health scores corresponded to a total of 5-9 and 10-14 points, respectively.; A total of 280 participants (50.7% male) were included. After adjusting for age and sex, an ideal health score was associated with lower cIMT (-0.038 mm, 95% CI: -0.069 mm–0.007 mm,; p; = 0.017), lower cLD (-0.28 mm, 95% CI: -0.46 mm–0.11 mm,; p; = 0.002), and lower baPWV (-0.05 m/s, 95% CI: -0.08 m/s–0.02 m/s,; p; = 0.003). No differences were found for FMD and DC.; Even in a healthy sample of middle-aged and older adults, individuals with an ideal cardiovascular health score showed more favorable biomarkers of vascular aging than those with an intermediate score. This stresses the relevance of promoting an optimal lifestyle, even among the healthy population.

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