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## EVIDENCE FOR A RELATIONSHIP BETWEEN A COMPOSITE LIFESTYLE SCORE AND RISK OF HIGHER CAROTID INTIMA-MEDIA THICKNESS: IS THERE A LINK TO OXIDATIVE STRESS?

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Lifestyle behaviors have been closely linked to the progressive cell damage associated with oxidative stress (OS) and the development of cardiovascular disease (CVD). Early detection of lifestyle-linked OS may therefore be useful in the early identification of prodromal disease. To test this hypothesis, this study assessed the relationship between a comprehensive redox balance lifestyle score (RBLs) and carotid intima-media thickness (CIMT), a recognized marker for CVD, and plasma biomarkers of OS. In a cross-sectional study design, 100 apparently healthy middle-aged participants were asked to complete a comprehensive lifestyle questionnaire, followed by DXA scanning, CIMT ultrasonography, and blood collection. The RBLs was composed of lifestyle components with pro- and antioxidant properties with a higher score indicative of lower oxidative activity. Multiple linear regression and logistic regression analysis were performed for statistical analysis. The RBLs was significantly associated with

the risk for increased CIMT that was independent of conventional CVD risk factors ( $\chi^2(9) = 35.60, P \leq 0.001$ ). The adjusted model explained 42.4% of the variance in CIMT. Participants with RBLs below the median were at significantly increased risk of higher CIMT compared to participants with RBLs above the median (OR=3.60, 95% CI: 1.19–10.88,  $P = 0.023$ ). Significant associations were also observed between the RBLs, plasma total antioxidant capacity (TAC) ( $r = 0.28, P=0.006$ ), hydroperoxide (HPX) ( $r = -0.28, P=0.005$ ), TAC/HPX ratio ( $r = 0.41, P \leq 0.001$ ),  $\alpha$ -glutamyltransferase ( $r = -0.23, P=0.024$ ), uric acid ( $r = -0.20, P=0.045$ ), and inflammatory C-reactive protein ( $r = -0.25, P=0.012$ ) and interleukin-1 $\alpha$  ( $r = -0.21, P=0.040$ ). These findings highlight the importance of identifying the collective influence of lifestyle behaviors on OS activity and its potential to remodel the vascular endothelium.

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