

C-Reactive Protein Is Associated With Subclinical Epicardial Coronary Calcification in Men and Women

Wang Thomas J, Larson Martin G., Levy Daniel, Benjamin E J, Kupka Michelle J, Manning W J, Clouse Melvin E, D'agostino Ralph B, Wilson Peter w. f. W, O'donnell Christopher J,
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Background— High C-reactive protein (CRP) levels are associated with an increased risk of cardiovascular events, even in apparently healthy individuals. It has not been established whether elevated CRP reflects an increased burden of subclinical coronary atherosclerosis.

Methods and Results— We studied a stratified random sample of 321 men and women (mean age 60 years) from the Framingham Heart Study who were free of clinically apparent cardiovascular disease. Subjects underwent electron-beam computed tomography to assess the number of coronary calcifications and the coronary artery calcification (CAC) Agatston score. Spearman correlation coefficients between CRP and CAC score were calculated and adjusted for age, age plus individual risk factors, and age plus the Framingham coronary heart disease risk score. For both sexes, CRP was significantly correlated with the Agatston score (age-adjusted Spearman correlation: 0.25 for men, 0.26 for women; both $P < 0.01$). After adjustment for age and Framingham risk score, the correlation remained significant ($P = 0.01$) for both sexes. Further adjustment for body mass index attenuated the correlation coefficient for women (0.14, $P = 0.09$) but not for men (0.19, $P < 0.05$).

Conclusions— High CRP levels are associated with increased coronary calcification. Among individuals with elevated CRP, subclinical atherosclerosis may contribute to an increased risk for future cardiovascular events.