# C–Reactive Protein and Coronary Artery Calcification

## The Study of Inherited Risk of Coronary Atherosclerosis (SIRCA)

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**Objective:** Circulating levels of C-reactive protein (CRP) predict cardiovascular events. In contrast, an association between CRP and direct measures of atherosclerosis has not been established clearly. In the largest study to date, we examined the association of plasma CRP with coronary artery calcification (CAC) in 914 asymptomatic subjects in the 'Study of Inherited Risk of Coronary Atherosclerosis (SIRCA).
**Methods and Results:** In age-adjusted, cross-sectional analysis, there was a weak association between plasma CRP levels and CAC in women (odds ratio [OR] for ordinal regression, 1.1 [1.04 to 1.17] per 1.0 mg/L increase in CRP; *P*=0.005) *n* but not in men. The association between CRP and CAC in women remained significant after adjusting for traditional risk factors (OR, 1.08 [1.00 to 1.14]; *P*=0.048) but was lost after further adjustment for body mass index (BMI) (OR, 1.02 [0.94 to 1.08]; *P*=0.7).
**Conclusions:** In SIRCA, CRP was not associated with CAC in men, and a weak association in women was lost after adjustment for BMI. The relation between CRP and clinical events might not be related to atherosclerotic burden. Measures of inflammation, such as CRP, and indices of atherosclerosis, such as CAC, are likely to provide distinct information regarding cardiovascular risk.

**Key-Words:** Atherosclerosis, coronary calcification, inflammation, risk factors, electron beam CT.

# Atrial Natriuretic Peptide Regulates Regional Vascular Volume and Venous Tone in Humans

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**Objective:** To date, the contribution of basal atrial natriuretic peptide (ANP) levels to resting vascular function in humans is unknown. In the present study we sought to investigate the role of ANP in regulating regional vascular volume and venous tone in healthy subjects.
**Methods and Results:** used radionuclide plethysmography to examine the effects of ANP and the ANP-receptor antagonist A7l9l5 on forearm vascular volume. Creating pressure/volume relations, we determined changes in vascular volume, compliance, and tone. Performing dose-ranging studies, we additionally assessed the potency and specificity of on A7l9l5 in the forearm resistance vasculature. Equilibrium blood pool scintigraphy was then used to assess lhe effects and of systemic administration of A7l9l5 on regional intestinal vascular volume. Infusion of ANP increased forearm vascular volume in a dose-dependent manner (maximum 20%; *P*<0.00l), exerting a maximum venodilating effect at plasma levels similar to that seen in heart failure. A7l9l5 increased venous tone, thereby decreasing vascular volume by 9.6 ± 1.1%, *P*<0.00l (forearm), and 2.6 ± 5%, *P*=0.01 (intestinal beds). At an infusion ratio of 50:1, A7l9l5 almost completely abolished the effects of ANP on forearm blood fIow.
**Conclusions:** ANP locally regulates regional vascular volume and tone without affecting compliance.

**Key-Words:** Veins, vascular volume, A7l9l5, receptor antagonism.