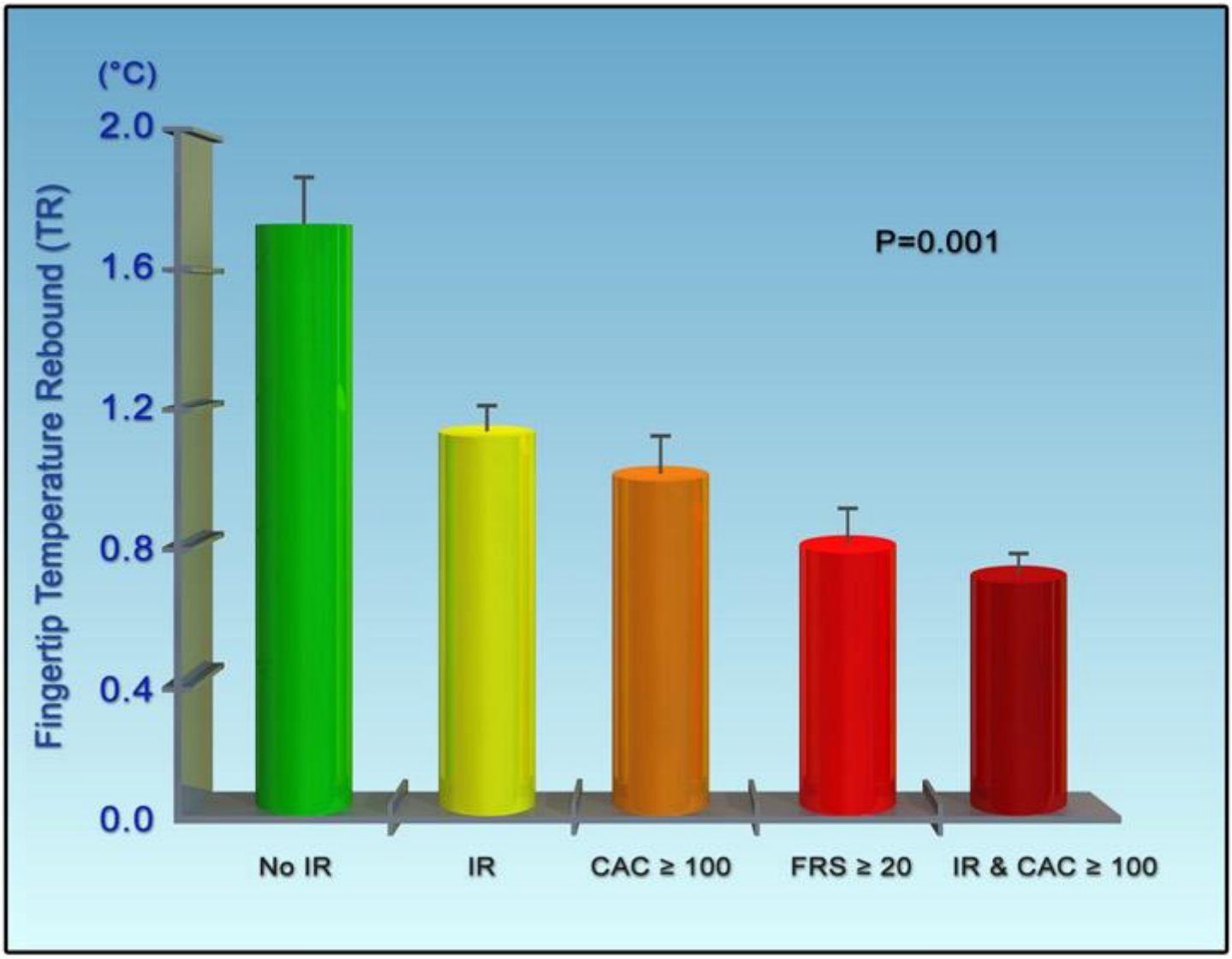
VENDYS for Asymptomatic Patients

Lower Fingertip Temperature Rebound is Associated with Increased Insulin Resistance, Coronary Calcification, and Framingham Risk Score



Digital Thermal Monitoring of Vascular Function is Impaired in Patients with Insulin Resistance

Endothelial dysfunction precedes atherosclerotic disease and is associated with insulin resistance, metabolic syndrome, and diabetes. Digital Thermal Monitoring (DTM) of vascular reactivity is a new test of vascular function that has been shown to correlate with Framingham Risk Score; sub-clinical coronary artery disease measured by coronary calcium score, and angiographically defined coronary artery disease. Present study tests whether DTM of vascular reactivity is impaired with insulin resistance (IR) defined as plasma triglyceride/high-density lipoprotein cholesterol ratio >3.5. 128 subjects (age 57±11 years, 65% male), without CHD, diabetes and NCEP metabolic syndrome were studied. Each underwent DTM during and after 5 minutes supra-systolic arm cuff inflation. Post-cuff deflation temperature rebound (TR) and Area Under the Curve, indices of vascular reactivity, was studied and correlated with insulin resistance. TR was lower in subjects with insulin resistance as compared to normal cohort. After adjustment for age, gender and conventional risk factors using logistic regression analysis , the odds of lowest vs. 2 upper tertile of TR was 1.3 (95% CI: 1.05-1.60, p=0.002) for insulin resistance compared to normal cohorts. Vascular dysfunction measured by DTM is associated with insulin resistance independent of age, gender and conventional risk factors. Current study suggests the potential clinical utility of Digital Thermal Monitoring of vascular reactivity during cuff-occlusive reactive hyperemia ,a new non-invasive operator- independent test of vascular endothelial function assessment, to evaluate severity of metabolic status and subclinical atherosclerosis.