

Cross-Sectional Associations of Fruit and Vegetable Intake with Coronary Artery Calcification and Pericardial Adiposity

Leigh Ann Richardson,¹ Arpita Basu,¹ Lung-Chang Chien,¹ Amy Alman,² and Janet Snell-Bergeon³

¹University of Nevada, Las Vegas; ²University of South Florida; and ³University of Colorado

Objectives: To examine the associations between fruit and vegetable (F&V) scores derived from the Mediterranean Diet (MedDiet) and Healthy Eating Index (HEI, 2015) with coronary artery calcification (CAC) and pericardial adiposity (PAT) in adults with and without type 1 diabetes (T1D).

Methods: We conducted a cross-sectional analysis of baseline data from the Coronary Artery Calcification in Type 1 Diabetes study [n = 1255; T1D: n = 563; non-DM: n = 692]. Participants completed a validated food frequency questionnaire, a physical examination, and fasting (12 h overnight fast) biochemical analyses. CAC and PAT were measured using electron beam computed tomography. Logistic regression models examined associations of F&V scores with CAC (presence or absence) and linear regression models were applied to PAT

analyses. Model 1 was adjusted for age, sex and diabetes status, model 2 added total calories, and model 3 added BMI and lipids (LDL and HDL-cholesterol).

Results: F&V scores had no associations with CAC in any of these models. In models 1 and 2, a one-point increase in the MedDiet-derived total fruit score was associated with a significant -1.79% (95% CI: $(-0.03, -0.01)$; p-value = 0.0001) decrease in PAT. In model 3, a one-point increase in the MedDiet-derived total fruit score was associated with a borderline significant decrease of -0.74% (95% CI: $(-0.01, 0.00)$; p-value = 0.054) in PAT. In models 1 and 2 for the HEI-derived total fruit score, a one-point increase in the total fruit score was associated with a significant -3.22% (95% CI: $(-0.05, -0.01)$; p-value = 0.0012) decrease in PAT. In model 3 for the HEI-derived total fruit score, there was no significant association between the HEI-derived total fruit score and PAT (p-value = 0.140).

Conclusions: Baseline analyses show MedDiet and HEI-derived total fruit scores maintained a significant to borderline significant inverse relationship with PAT, but F&V scores were not associated with presence of CAC.

Funding Sources: NIH and ADA.