

Abstract

Diet is a lifestyle factor that influences metabolic health. Recent studies indicate that substituting red or processed meat with whole grains may reduce risk for type 2 diabetes. **PURPOSE:** To investigate whether metabolic health, assessed by insulin sensitivity and abdominal adiposity, is associated with a higher animal-based and lower plant-based diet. **METHODS:** Intra-abdominal adipose tissue (IAAT) was measured via ultrasound in 31 normo-glycemic women (ages 20.9 ± 2.4 years, BMI 28.1 ± 3.5) who completed ASA24 diet recall and food frequency questionnaire. Insulin sensitivity was assessed using Matsuda Index from a 2-hour oral glucose tolerance test. A diet scoring system was created for consumption of plant-based and animal-based food. Saturated fat (SFAT) was used as a marker for consumption of animal-based foods, and subjects were divided by median into High SFAT or Low SFAT groups. One-way ANOVA was used to test mean differences and correlation analyses were used to determine associations. **RESULTS:** ANOVA revealed a lower IAAT (2.9 ± 1.1 vs. 3.4 ± 1.1), higher insulin sensitivity (15.7 ± 10.4 vs. 8.5 ± 4.4), and higher % body fat (0.41 ± 0.05 vs. 0.37 ± 0.06) in the Low SFAT group compared to the High SFAT group. When controlled for age and kcal, fiber ($r=0.43$), protein ($r=0.44$), and legumes ($r=0.45$, $p<0.05$ for all) had positive correlations with insulin sensitivity, while total plant foods ($r=0.19$) and total animal foods ($r=-0.27$, $p=ns$ for all) had non-significant associations. **CONCLUSION:** While overall plant-based food consumption was not associated with metabolic measures, insulin sensitivity was associated with an increase in fiber consumption, supporting the benefits of a higher plant-based diet. Though overall FFQ animal-based food consumption had no significant associations with metabolic measures, the Low SFAT group was more insulin-sensitive than the High SFAT group.

PLANT-BASED VS. ANIMAL-BASED DIET AND THEIR ASSOCIATION WITH
METABOLIC FUNCTION

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