

Influence of Diet on Metabolic Physiology in People with and without a Family History of Type 2 Diabetes

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ABSTRACT

Type 2 diabetes (T2D) prevalence in the Rio Grande Valley is ~27% versus the 9% national average. Simply having a family history (FH+) of type 2 diabetes (T2D) increases T2D prevalence by ~40 over those with no family history (FH-). We have shown that FH+ display early markers of cardiometabolic impairment vs FH-, such as blunted microvascular reactivity, and impaired metabolic flexibility. What is not yet known is the degree to which environment vs genetics may contribute to these impairments. **PURPOSE:** This pilot study seeks to examine normal dietary patterns between FH groups to identify potential patterns in macro- and micro-nutrient consumption that may help explain differences in metabolic function.

METHODS: Thirty-three healthy individuals, including 10 FH+ and 23 FH- (26 ± 7; 24 ± 5 yrs respectively) participated in this study. Anthropometrics were assessed at rest. One-way ANOVA was used to determine group differences. Three-day food questionnaires were given to subjects prior to testing. Amino acid, Vitamin B3 & B6, water, and caffeine levels were measured. **RESULTS:** Compared to FH-, FH+ had higher ($p < 0.05$) consumption of caffeine (151.54 ± 44.0mg vs 34.83 ± 11.63mg), water (1264.76 ± 713.30g vs 770.08 ± 504.16g), Vitamin B3 (30.35 ± 22.35mg vs 19.99 ± 12.92mg), B6 (2.43 ± 1.45mg), Histidine (2.56 ± 2.18g), Lysine (6.60 ± 5.84 vs 3.72 ± 2.72g), and Methionine (2.18 ± 1.77 vs 1.33 ± 0.94 compared to FH-, with no differences noted in total energy intake between groups. **CONCLUSION:** Differing nutritional intake noted between FH groups is a potential confounding factor in the development of T2D in FH+ of the RGV and warrants further study.