ARIC MANUSCRIPT PROPOSAL FORM

Manuscript #354

1. Title: Does hyperinsulinemia predict reduced weight gain?

2. Authors: A. Folsom, L. Vitelli, P. Schreiner (I'd be willing to add up to three other co-authors.)

3. Timeline: Draft by 2/96.

4. Hypotheses:

People in CARDIA and ARIC with elevated fasting insulin have less weight gain over time than do normo-insulinemics.

5. Rationale:

Many people often lose weight when they develop NIDDM. Studies in Pimas and in Hispanics (Hoag et al., *Int J Obesity* 1995;19(3): 175-180) found that, among non-diabetics, hyperinsulinemics gained less weight over four years than normo-insulinemics. Hoag et al. speculate that this is a "common biologic characteristic": insulin resistance reduces insulin's ability to store energy, increasing fat oxidation, and hence reducing weight gain.

We ran some preliminary analyses using data on ARIC and CARDIA nondiabetics. The hypothesis seemed to be confirmed (although weaker than reported by Hoag et al.) in ARIC but not in CARDIA. In CARDIA, those with hyperinsulinemia gained the most weight.

It would therefore be interesting to present CARDIA and ARIC data together and suggest (1) there is an age interaction (maybe hyperinsulinemia reflects insulin resistance better in older adults) or (2) the theory is incorrect (insulin level does not greatly affect weight).

6. Data:

Parallel analysis: ARIC Visit 1 to Visit 2 (or 3, if closed) weight change (dependent variable) vs. Visit 1 insulin (independent variable), plus CARDIA Year 0 to Year 7 weight change vs. Year 0 insulin.

Covariates: age, race, sex, waist/hip.