ARIC MANUSCRIPT PROPOSAL FORM

Manuscript #505

1. Title:
The relationship of weight change and weight cycling with hypertension

2. Writing Group:
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Schreiner, Donna Arnett, Moyses Szklo, FJ Nieto, and other interested ARIC
investigators.

3. Timeline:
We plan to begin the data analyses in the Fall 1997. Data are available from ARIC study
visits 1, 2, and 3.

4. Rationale:
Although clinical studies have shown that weight change is directly associated with blood
pressure change, secular trends of overweight and hypertension have been conflicting.
The prevalence of overweight increased from the NHANESII to NHANES III
(Kuczmarski et al., 1991) but, over the same period of time, the prevalence of
hypertension decreased (Burt et al., 1994). The relationship between weight change and
change in a hypertensive status in a free-living population is unclear, and we know of no
studies examining this relationship.

There is some evidence that weight cycling has a negative effect on plasma lipids
(National Task Force on the Prevention and Treatment of Obesity, 1994); however,
effects on blood pressure and hypertension have not been studied.

To address the issue of weight change and weight cycling we will examine weight in visit
1, visit 2, and visit 3, and the incidence and remission of hypertension. Mixed model
analyses (Searle, 1971; Hocking, 1985; Zeger et al, 1988) will be usedto examine the
relationships of weight change and weight cycling with the incidence of hypertension and
the remission of hypertension.

From visit 1 to visit 3, the incidence of hypertension was approximately 19% and the
hypertension remission was approximately 12% (Dr. Gerardo Heiss, personal
communication).

5. Main Questions to be Addressed:
1. Among normotensive people, is weight change associated with the incidence of
hypertension?
2. Among hypertensive people is weight change associated with the remission of

hypertension?
3. Is weight cycling associated with the incidence of hypertension or the remission of hypertension?

6. Data Requirements:
Variables needed:

Exposure variables (visit 1-3):
  BMI

Outcome variables (visit 1-3):
  Blood pressure
  Hypertension status

Others (visit 1-3):
   Id
   Age
   Gender
   Ethnicity
   Education
   Smoking
   Physical activty
   Pre-existing illness
   Reported dieting