ARIC MANUSCRIPT PROPOSAL FORM

FOR ADMINISTRATIVE USE ONLY

Manuscript #:  548S

Publications Committee:  12/10/097      A                     N/A

Steering Committee:

1.a. Full Title:  Current weight and recent weight change as predictors of sleep apnea

b. Abbreviated Title (Length 26):  Weight change and sleep apnea

2. Writing Group (list individual with lead responsibility first):

   Lead:  F. Javier Nieto, M.D., Ph.D.
          Johns Hopkins University
          School of Hygiene & Public Health
          615 N. Wolfe Street, Room 6027
          Baltimore, MD  21205
          Email:  [nieto@jhsph.edu](mailto:nieto@jhsph.edu)
          Phone:  410/955-4380;  Fax:  410/955-8086

   Co-authors:  Dr. Anne Newman, Dr. Susan Redline, Dr. Thomas Welty, Sr. Terry Young,
                Coordinating Center-to be determined

3. Timeline:  As soon as the data on height and past trajectories of weight from the different cohorts is available, analyses could be initiated.  A draft of the manuscript could be ready by February 1998.

4. Rationale:  While the association between overweight and sleep apnea or its symptoms is well established (e.g. Young et al., 1995), there is little data documenting the association between weight change and the presence of symptomatic and asymptomatic sleep apnea.  Data from previous examinations in the parent cohorts of the SHHS will permit the study of the relation between recent weight changes and the presence and degree of sleep apnea at the baseline SHHS PSG exam.

5. Main Hypothesis:  Recent weight changes are associated with sleep apnea, independently of current weight.

6. Data (variables, time window, source, inclusions/exclusions):  Data from SHHS database:  Date of PSG, AHI, AI, weight, snoring, Epworth.  Data from parent studies:
- General: birth date, sex, ethnicity, standing height
- From each previous examination: date, weight, smoking, hypertension, alcohol intake.

Exclusions: poor quality PSG; missing one of the key variables (AHI, current weight).

7. Type of study: Historical cohort (data from sites with previous weight measurements)

8. Type of Publication: Abstract: SER or ATS
   Paper: Peer-reviewed journal

9. Analysis Responsibility: Coordinating Center

10. Introduction: The association between overweight and sleep apnea or its symptoms (e.g., snoring) is well established (e.g. Young et al., 1993; Honsberg et al., 1995). In addition, follow-up studies of sleep apnea patients have clearly documented that weight loss is associated with improvement of the sleep apnea syndrome (e.g., Liistro et al., 1995). To our knowledge, there is no population-based data documenting the association between measured weight change and the presence of symptomatic and asymptomatic sleep apnea.

11. Brief Analysis Plan (Include list of variables to be used, time frame of data, source of non-SHHS data, and probable statistical method.)

   Body mass index in the previous examinations from the parent studies for participating responding to the SHQ and SHHS will be obtained. Recent change in body mass index will be estimated as the participant-specific slope of the linear regression of body mass index versus time. Current body mass index will be obtained using the most recent height measurement and the weight measured at the night of the sleep exam. The relationship between current weight and weight change, and the presence of sleep apnea will be studied using contingency tables and logistic regression analyses (for categorical outcomes such as snoring) or by linear regression (for continuous outcomes such as RDI and Epworth sleepiness scale). Alternatively, categorical classifications of weight/weight change will be studied. The independent association of current weight and weight changes, while adjusting for potential confounders, will be explored in multivariate models.

12. Summary Section: We propose to study and compare recent weight change and current weight as predictors of sleep apnea or related symptoms. The potential confounding or modifying effect of other variables (particularly change in smoking status) will be studied in multivariate and stratified analyses.