Manuscript #312

1. Title: Passive smoking and change in respiratory function

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3. Timeline:
   Analysis will be done immediately. A draft of the manuscript will be ready by fall 1995.

4. Rationale:

   Studies of the association of exposure to environmental tobacco smoke (ETS) and pulmonary function are scarce. Most of the studies available are in children. Studies in adults are mostly cross-sectional. We are only aware of 2 longitudinal studies in adults, none of which found an association. However, both studies had very small sample sizes and were limited to young adults: one study followed 57 women for 17 years (Brunekreef et al., Int J Epidemiol 1985;14:227-30); another recently published study (Jaakkola et al., J Clin Epidemiol 1995;48:317-27) followed 117 young never smokers for 8 years.

5. Hypothesis:

   (1) Non-smokers exposed to ETS have lower FEV$_1$ and FVC than non-exposed non-smokers, but higher than smokers.
   (2) After adjusting for visits 1-2 mean FEV$_1$/FVC, change in FEV$_1$/FVC between visit 1 and visit 2 is associated with exposure to ETS in a dose-response fashion.
   (3) The association between exposure to ETS and FEV$_1$/FVC level and change is independent of the presence of clinical chronic bronchitis or asthma, and is not explained by BMI, or SES indicators.

6. Visit one and visit 2 data for the following variables: observed FEV$_1$ and FVC, predicted FEV$_1$ and FVC, smoking status, number of hours a week around smokers, height, BMI, educational and income level, history of chronic bronchitis, asthma, respiratory symptoms.

   The main analytical approach will include exploring the association between exposure to ETS and the decrease on FEV$_1$ and FVC, after adjustment for baseline predicted FEV$_1$ or FVC, respectively, and follow-up time.

   **Note:** Complementary analyses on 2,880 ARIC participants from Washington County on whom estimates of exposure to ETS at home are available from the 1975 private census will also be conducted.