

## ARIC MANUSCRIPT PROPOSAL FORM

Manuscript #398

1. Title: Neighborhood differences in diet

Abbreviated title: Neighborhoods and diet

2. Working Group:

(lead) Ana Diez-Roux, Al Tyroler, R Watson, M Szklo, FJ Nieto, L Caulfield

Correspondence: Johns Hopkins SOPH, 615 N. Wolfe St., Baltimore, MD 21205

Phone: (410) 614-3999 FAX: (410) 955-8086 email: adiez-ro@phnet.sph.jhu.edu

3. Rationale:

Over the past few years there has been growing interest in area differences in the distribution of cardiovascular risk factors (see for example *J Clin Epidemiol* 46:1141; *Soc Sci Med* 37:725). ARIC manuscript #180, recently approved by the Publications Committee, has suggested that neighborhood environments may partly shape the distribution of CHD and CHD risk factors within the ARIC cohort. Differences in diet, perhaps partly determined by differences in the availability and price of foods, may be one of the mechanisms through which area differences exert their effects. As far back as 1916, Goldberger and others showed that community differences in the availability and price of foods were related to rates of nutrition-related disease (pellagra in their study). If such area differences exist, intervening at the area level, perhaps through attempts to modify the availability and distribution of foods, may be an effective way to promote dietary change in individuals.

4. Study questions:

Is area of residence related to the diet of individuals within the ARIC cohort?

Are these effects independent of individual-level SES indicators?

Do neighborhood and individual-level indicators interact?

5. Variables:

The dietary outcomes to be explored will include:

- total calorie intake
- saturated fat intake
- cholesterol intake
- vitamin C intake
- Na intake

- Intakes of different food types expressed as servings per day of fruits, vegetables, meats, fish, dairy products, snacks (e.g. chips), and soft drinks.

In addition, individuals will be classified into two or three categories based on whether they fulfill the criteria for a "healthy" diet as suggested by the American Heart Association. This summary variable will also be used as an outcome in the analyses.

The areas investigated will be census tracts and block groups. Median household income will be used as an indicator of neighborhood socioeconomic environment.

Family income will be used as an indicator of SES at the individual-level.

6. Methods:

Because of small numbers, African American participants in Minneapolis and Washington, as well as all participants of race/ethnic groups other than black or white, will be excluded from the analyses. All analyses will be stratified by field center, gender, and race.

Initially, exploratory and stratified analyses will be used to investigate differences in diet across neighborhoods, as well as the interactions between neighborhood median income and individual-level income. Dietary outcomes will be adjusted for total energy intake. Appropriate regression models will be used to summarize the effects of neighborhood environment on the dietary outcomes mentioned above.

7. Timeline:

All variables are available and analyses could begin immediately. A draft could be ready by the coming fall.