

## ARIC MANUSCRIPT PROPOSAL FORM

Manuscript #095

1. Title:

Comparison of the Relationship of Carotid Wall Thickness to Hypertension in Black and White ARIC Examinees

2. Writing Group:

(lead) Al Tyroler, Lori Carter, Sabrina Walton, Richard Hutchinson, George Howard, Gene Bond, Woody Chambless, Gerardo Heiss

3. Timeline: Current

The data from visit 1 will be analyzed to prepare an abstract by 1 February 1991 for the August 1991 meeting of the International Society for Hypertension in Blacks.

4. Rationale:

In addition to a much greater prevalence and severity of hypertension in blacks than whites, black males and females in the US are at greater risk of pressure sequelae of hypertension (e.g. CVA, CHF, renal failure) and black females are at greater risk of CHD, while black males may be at less risk of CHD than are whites at comparable levels of blood pressure. Case control analyses within ARIC have already demonstrated an association between carotid artery wall thickness and blood pressure levels for the aggregate of blacks and whites.

In relation to ongoing ARIC analyses, ARIC manuscript 002 is specifically designed to analyze the association of CVD risk factors with carotid artery wall thickness, and several other investigators with general interest in the distribution of thickness, atherosclerosis and risk factors will be addressing issues potentially overlapping the question raised by this proposal. Although none of the other proposals is specifically focused on the question of different responsiveness of the arterial wall between black and white hypertensives, we shall collaborate with each of the related analysis groups to prevent redundancy.

5. Main Hypothesis:

The objective of this proposal is to assess whether blacks have different carotid artery atherosclerosis response to blood pressure elevations than whites. This will be assessed by comparing the nature and strength of the relation of hypertension status to carotid artery wall thickness in blacks and whites.

6. Data & Method:

The functional relation of maximal carotid wall thickness to categorically defined hypertension, history of antihypertensive therapy, and blood pressure level will be determined by multivariate regression analysis for each black and white gender group, utilizing all examinees with acceptable ultrasound examinations in visit 1. This will be performed in stages, first for the Forsyth clinic where numbers of examinees are large enough for clinic, race and gender specific estimates, permitting comparisons of blacks and whites. Next, the functional relation of hypertension with wall thickness for blacks in Forsyth will be compared with that for the black participants of Jackson, and whites in Forsyth compared with whites in Minnesota and Washington. If the

race specific relationships across clinics are not dissimilar, black-white comparisons for the aggregate of examinees across all clinics will be carried out. The potential confounders to be controlled for will be age, weight, and smoking history.

Keywords: Artery, hypertension, race, BP