

## ARIC MANUSCRIPT PROPOSAL FORM

Manuscript #305

1. Title: Active and Passive Smoking as a Risk Factor for Progression of Carotid Atherosclerosis

2. Authors:

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3. Background:

Cross-sectional analysis of ARIC Visit 1 data has implicated smoking history as one of the strongest predictors of carotid IMT, finding a graded response from never smokers, to ETS smokers, to past smokers, to current smokers in all four race-gender groups.<sup>1</sup> In addition, smoking history taken more than a decade in the past proved to be highly related to wall thickness in the Washington County cohort within ARIC.<sup>2</sup> However, the epidemiologic link between smoking (both active and passive) would be greatly strengthened by evidence relating smoking to thickening of IMT in a longitudinal, rather than cross-sectional, analysis.

4. Timeline:

Both the data and the analytic approach are available. Work can begin as soon as this proposal is approved.

5. Analytic Method:

Using an approach similar to the cross-sectional analysis of smoking and IMT, this paper proposes to examine changes in mean IMT of the common carotid artery between Visit 1 and Visit 2 (defined as proposed by Greg Evans) and: (1) smoking status category (never smoker, ETS smoker, past smoker, and current smoker) for all ARIC participants, (2) pack-years of exposure for current and past smokers, (3) time since quitting for past smokers, (4) historic ETS exposure for ETS smokers, and (5) smoking exposure during the interval between visits (current packs per day and current exposure to passive smoke, both assessed at Visit 2) for current and ETS smokers.

Note that only the last of these proposed analyses was not included in the cross-sectional analyses. Like the cross-sectional paper, standard general linear models will be used to estimate the effects of smoking both unadjusted, and after adjustment for: (1) demographic factors (age, ethnicity, and gender), (2) traditional cardiovascular risk factors (HDL, LDL, hypertension, diabetes, etc.), and (3) life-style factors (measures of physical activity, adiposity, diet, and socio-economic status as measured by education and income, etc.).

6. Data Needed:

IMT measures at the CCA in visits 1 & 2. Risk factor data on major covariates, already in the distributed data set (see previous paper for details).

### REFERENCES

1. Howard G, Burke GL, Szklo M, Tell GS, Eckfeldt J, Evans GW, Heiss G. Active and passive smoking are associated with increased carotid wall thickness: The Atherosclerosis Risk in Communities (ARIC) Study. *Arch Int Med* 1994; 154:1277-1282.
2. Diez-Roux AV, Nieto FJ, Comstock GW, Howard G, Szklo M. The relationship of active and passive smoking to carotid atherosclerosis 12-14 years later. *Prev Med* 1995;24:48-55.