1.a. Full Title: A prospective study of dietary fat and incident stroke: The Atherosclerosis Risk in Communities (ARIC) Study

b. Abbreviated Title (Length 26 characters): Dietary fat and stroke

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

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3. Timeline: By December 2001

4. Rationale: Saturated fat has been shown to increase low-density lipoprotein (LDL) cholesterol levels (Grundy 1982). The major randomized clinical trials have shown that substantial reduction in the risk of stroke, especially ischemic, resulted from the Study suggested that saturated fat was associated with reduced risk of ischemic stroke in men (Gillman 1997). Another cohort study of Japanese men living in Hawaii also showed an inverse association between saturated fat and cerebrovascular mortality (McGee 1985).

In light of the conflicting results from above, it is necessary to further explore the effect of dietary fat on stroke incidence. The previous studies used 24-hour recall dietary fat assessments taken at baseline only. Furthermore, the number of cerebrovascular events was small. Finally, the association between dietary fat and stroke has not been well addressed in women.
The proposed study, with a large, diversified, communities-dwelling population, will provide essential information about mechanism of dietary fat and stroke, which may offer bases for prevention of stroke.

5. Main Hypothesis/Study Questions: We hypothesize that a low saturated fat and high unsaturated fat diet is a protective factor in stroke, with blood cholesterol levels on the causal pathway.

6. Data (variables, time window, source, inclusions/exclusions):

The ARIC study is a prospective study conducted in four U.S. communities, Forsyth County; North Carolina; Jackson, Mississippi; Suburban Minneapolis, Minnesota; and Washington County, Maryland. A total of 16,000 persons aged 45-64 years at initial recruitment (1987-1989), were randomly selected from each community. Since 1987, annual follow-up interviews and clinical examinations per three years were performed.

The ARIC dietary questionnaire was a 66-item modified version of the 61-item questionnaire used by Willet et al. The dietary assessment is the food frequency questionnaire. Frequency of each food at certain portion size in past year was determined for each participant. Nutrient values of foods were computed by Willet et al. primarily on the basis of data from the US Department of Agriculture (Tell 1994). Participants high energy intake (<600 and >4,000 kcal/day for men and <500 and >3,600 kcal/day for women) or with previously diagnosed myocardial infarction, stroke, or diabetes will be excluded. Animal fat, vegetable fat, saturated fatty acids, polyunsaturated fatty acids, monounsaturated fatty acids, cholesterol, and Key’s score from both baseline and third clinical examination (during 1993 and 1994) will be attained.

Stroke incidence in the ARIC Study was ascertained by contacting participants annually, identifying hospitalizations and deaths occurring during the previous year, and surveying discharge lists from local hospitals and death certificates from state vital statistics offices for potential cerebrovascular events. Each eligible case was classified by computer algorithm and by expert reviewer, according to criteria adapted from the National Survey of Stroke. The definition of stroke in this study will include validated definite or probable hospitalized strokes. The criteria of classification were based on combinations of symptom type, duration, and severity, results of neuroimaging and other diagnostic procedures, and autopsy evidence.

Baseline characteristics distributions according to presence of stroke will be presented. Each measurement of dietary fat will be utilized as categorical (quartiles). The univariate associations between dietary fat and stroke will be explored with Cox proportional hazard model. Finally, the associations between dietary fat and stroke will be assessed, after adjusting for other risk
factors of stroke. Because of repeated measurements of dietary fat in the proposed study, dietary fat will be assessed as a time dependent variable.

7.a. Will the data be used for non-CVD analysis in this manuscript? ____
Yes _____ No

b. If Yes, is the author aware that the file ICTDER01 must be used to exclude persons with a value RES_OTH = “CVD Research” for non-DNA analysis, and for DNA analysis RES_DNA = “CVD Research” would be used? ____
Yes _____ No
(This file ICTDER01 has been distributed to ARIC PIs, and contains the responses to consent updates to stored sample use for research.)

8.a. Will the DNA data be used in this manuscript? ____ Yes _____ No

8.b. If yes, is the author aware that either DNA data distributed by the Coordinating Center must be used, or the file ICTDER01 must be used to exclude those with value RES_DNA = “No use/storage DNA”?