

ARIC Manuscript Proposal # 1054

PC Reviewed: 12/03/04
SC Reviewed: 12/03/04

Status: A
Status: A

Priority: 2
Priority: 2

1.a. Full Title: The relationship between visceral fat measurement and torso level - is one level better than another?

b. Abbreviated Title (Length 26 characters): Visceral fat measurement

2. Writing Group:

Writing group members: Meghan Warren, Pamela Schreiner, James Gregory Terry

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3. Timeline: The manuscript is complete, and ready for submission. There was an oversight and the manuscript proposal was not submitted before the analysis and manuscript were completed.

4. Rationale: Overall body weight or body fat alone may not be as important a contributor to chronic disease risk as the regional distribution of body fat. A greater risk of chronic disease mortality and morbidity has been shown with increased level of abdominal adiposity, rather than gluteal and femoral adiposity.

 ist circumference is often used in population-based studies as a surrogate measure of IAF because of the impracticability of MRI in larger studies. Several studies have shown a relatively high correlation between IAF and waist circumference (0.75-0.91) in non-obese and mixed cohorts, but slightly lower in obese cohorts (0.65-0.69), suggesting that the location of waist circumference measurement may not be uniformly appropriate.

Studies using MRI have shown that increased area of IAF is associated with CVD risk factors. All of these studies have relied on the sum of IAF from multiple slices or a single MRI slice. Often, the single slice used is taken at a location that corresponds with an easily identifiable anatomical landmark, such as location along the vertebrae (L4-L5) corresponding to the umbilicus. It is not known what the effect of location within the torso has on the area of IAF.

5. Main Hypothesis/Study Questions: 1) To examine intra-abdominal fat (IAF) area as measured with magnetic resonance imaging (MRI) at four torso levels, 2) to determine if differences exist in area of IAF by location, and 3) to test if IAF distribution varies by gender.

6. Data (variables, time window, source, inclusions/exclusions): MRI data is from an ancillary study using 147 Forsyth County volunteer participants from the ARIC study. The data includes intra-abdominal fat, sub-cutaneous fat, and total abdominal from each of four MRI slices between the 2nd and the 4th lumbar vertebrae. This data is linked with ARIC Visit 2 data, including age, gender, and BMI as covariates, waist circumference, and menopausal status to exclude pre-menopausal women.

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 ICTDER02 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 ICTDER02 has been distributed to ARIC PIs, and contains the responses to consent updates related 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 ICTDER02 must be used to exclude those with value RES_DNA = "No use/storage DNA"? ☐ Yes ☐ No

9. The lead author of this manuscript proposal has reviewed the list of existing ARIC Study manuscript proposals and has found no overlap between this proposal and previously approved manuscript proposals either published or still in active status. ARIC Investigators have access to the publications lists under the Study Members Area of the web site at:
<http://www.csc.unc.edu/ARIC/search.php>

☒ Yes ☐ No

10. What are the most related manuscript proposals in ARIC (authors are encouraged to contact lead authors of these proposals for comments on the new proposal or collaboration)?

#195 – Gender differences in the body fat distribution assessed by magnetic resonance imaging

#656 – Association of visceral fat with asymptomatic carotid artery atherosclerosis: The Atherosclerosis in Communities Study

#195A – MRI for quantification of fat by spin echo and inversion recovery

11. a. Is this manuscript proposal associated with any ARIC ancillary studies or use any ancillary study data? ☒ Yes ☐ No

11.b. If yes, is the proposal

☐ **A. primarily the result of an ancillary study (list number* _____)**

☐ **B. primarily based on ARIC data with ancillary data playing a minor role (usually control variables; list number(s)* _____)**

This analysis is based on data from an ancillary study done by Robin Crouse. It is not listed on the web site. The PI at the University of Minnesota (Aaron Folsom) thought it was not because the ancillary study was completed before the list was started on the web site.

*ancillary studies are listed by number at <http://www.csc.unc.edu/aric/forms/>

12. Manuscript preparation is expected to be completed in one to three years. If a manuscript is not submitted for ARIC review at the end of the 3-years from the date of the approval, the manuscript proposal will expire.