Reviewer's report

Title: Age-Related Fat Free Mass Loss in Older Americans: Rate of Decline is Higher in African American Men and Women than White Men and Women

Version: 1 Date: 20 December 2004

Reviewer: Claude Pichard

Reviewer's report:

General

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Major Compulsory Revisions (that the author must respond to before a decision on publication can be reached)

This cross-sectional study determined whether age-related loss of FFM and FFMI vary by gender and ethnicity, using representative data from NHANES III (n=5803).
The study confirms that African American (AA) men women have higher FFM and FFMI than non-Hispanic Whites, and found that FFM decline begins earlier in AA than in whites.
However, in comparison to previous published papers by Siervogel et al, Arterioscler Thromb Vasc Biol 1998; 18:1759-1764; Chumlea et al. Int J Obesity Rel Metab Disord 2002; 26:1596-1609 and Chumlea et al. Kidney Int 1999; 56:244-252, we suspect that FFM is overestimated by about 1 to 4 kg in most of your subjects. Although we cannot prove this, use of the skinfold thickness equation used in this study might be responsible. The skinfold equation of Jackson and Pollock (Med Sc Sports Exerc 1980; 12:175-181) was developed in 249 women, age 18 to 55 y. The abstract states that “valid generalized body composition equations could be derived for women varying in age and body composition, but care need to be exercise with women over an age of forty.”

Can you verify that the assumptions about density and skinfold measurements made in white versus AA, and young versus older hold true? Please justify the use of this equation in men and in women over 40 yr and up to age 80 yrs. Was ever it validated in men, African American and older subjects? If the equation was not validated in these subjects, how do you know that the differences noted between older and younger subjects and African American and white subject is not due to methodological errors.

Discussion (page 10, second paragraph).
Your discussion about mortality in the introduction and discussion is out of context. Your data does not include mortality data. There is insufficient evidence to state that the onset or rates of decline in FFM or FFMI might affect mortality. As far as we know, FFM only affects morbidity and mortality when FFM is in the below normal range, i.e. is below a certain threshold (we do not know the exact threshold at this time). Your subjects all fall way beyond the minimum threshold. Please delete reference to mortality in paragraph 2 on page 10.

Please compare your results (weight, FFM and FFMI) to other studies that report these parameters in population studies, e.g. NHANES, Fels data.

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Minor Essential Revisions (such as missing labels on figures, or the wrong use of a term, which the author can be trusted to correct)
Page 15, line 2: changes in FFM with advancing ?? may have been underestimated.

References

Ref 7, 11,13 should give the name of the publisher, rather than state “publisher.”

Discretionary Revisions (which the author can choose to ignore)

What next?: Accept after minor essential revisions

Level of interest: An article whose findings are important to those with closely related research interests

Quality of written English: Acceptable

Statistical review: No

Declaration of competing interests:
I declare that I have no competing interests.