Reviewer's report

Title: Association of calcaneal quantitative ultrasound parameters with metabolic syndrome in middle-aged and elderly Chinese: A large population-based cross-sectional study

Version: 2 Date: 8 July 2013

Reviewer: Karen M Knapp

Reviewer's report:

Major Compulsory Revisions

The OR need looking at and checking for the SOS. These are in stark contrast to most other QUS studies which demonstrate the Hologic Sahara can discriminate those with and without fractures - adv to look at the work fo M L Frost et al. A statistician should check these OR

The hypothesis in the discussion regarding MS reducing BMD, but not fracture should be reviewed. This is not working from the current evidence-base and there are plenty of data demonstrating the strong correlation between bone breaking strength and bone density (which account for around 80% of bone breaking strength)

Minor Essential Revisions

Please ensure all acronyms are outlined in full the first time they are used throughout the paper. It is also not good practice to start sentences with an acronym and these should be amended for the full version.

Page 2, line 4 - what criteria were used?

Page 2, para 2, line 4, Ostalgia - this is not a common English term. Please amend

2. Outline how many were excluded prior to analysis.

2.6 - t test and 2-test - please define the latter

The other measurements analysed ie alcohol, smoking etc. should be defined in the data collection part of the methodology as well.

Discussion - you should reference the papers regarding obesity and vitamin D metabolism and the fact that this is reduced in obesity. I believe J Compston wrote this up some years ago.

Discretionary Revisions

Page 2, para 2, line 6 - should read "the Chinese population over 40.....
Page 2, Para 3, line one - remove "and more....."

Page 2, para 3, line 2. It is not good practice to start a sentence with But - amend

Pge 2, Para 3, line 12 change Till to Until

Page 2, Para 3, Line 15 change detection to investigation

Page 2 - final line, separate the following into the following

Page 3, line 1 - remove in Chinese population - you have already said this

2. Subjects - amend to participants, which is a generally more accepted term now

Line 2 - community-based project would be more elegant.

**Level of interest:** An article of importance in its field

**Quality of written English:** Needs some language corrections before being published

**Statistical review:** Yes, and I have assessed the statistics in my report.

**Declaration of competing interests:**

None to declare