Summary: The purpose of this study was to determine whether new body shape indices, ABSI and BRI are associated with type 2 DM. In order to make this assessment, the authors recruited a large cross-sectional representative sample in Liaoning Province in Northeast China over the age 35 years excluding individuals who were pregnant had cancer or had a mental disorder. The study sample size was large: 11345 subjects. All measurements required for both ABSI were directly measured by trained investigators. DM was measured by fasting plasma glucose > 7 mmol/L. The authors ran several analysis, linear regression with each index (BMI, WTHR, WC, ABSI, and BRI) to predict FPG, a ROC analysis using each index as a diagnostic tool to determine the presence of DM, and calculated the OR for each index to detect the presence of DM.

This was one of the most comprehensive carefully done studies the reviewer has ever had the pleasure to read. The reviewer thanks the authors for an articulate explanation. The reviewer has few comments since the study was extremely well done and the writing was excellent.

1. - Major Compulsory Revisions

The authors state in the discussion that BRI should be modified. BRI cannot be modified. It is not a statistical formula, but rather a geometrical formula. There is some literature that compares leg length and sitting height across races and perhaps BRI is not an optimal geometrical representation of body geometry in the population examined. The reviewer suggests rephrasing to determining new geometrical formulas that can capture body shape geometry across races.

2. One of the major problems in body composition research is a focus on Western populations. The authors can use this forum (probably in the discussion) to advocate for a more comprehensive global analysis especially since data from other countries is much more readily available than in the past.

- Minor Essential Revisions

1. DM is not just prevented, but DM is also treated through medication or managed. The reviewer suggests changing the sentence below:
2. Currently, DM is not curable, and DM prevention has been the focus of attention.

To: Currently, DM is not curable, and DM prevention and management has been the focus of attention.

3. On page 6, the formula for BRI is hanging on the bottom out of context. Probably should come with the definition of BRI.

Level of interest: An article of outstanding merit and interest in its field

Quality of written English: Acceptable

Statistical review: No, the manuscript does not need to be seen by a statistician.

Declaration of competing interests:

I declare that I have no competing interests.