Author's response to reviews

Title: The relationship between visceral fat thickness and bone mineral density in sedentary obese children and adolescents

Authors:

Ismael F Freitas Junior (ismael@fct.unesp.br)
Jefferson R Cardoso (jeffcar@uel.br)
Diego G Christofaro (diegochristoaro@yahoo.com.br)
Jamile S Codogno (jamile_sc@yahoo.com.br)
Augusto C Moraes (moraes82@yahoo.com.br)
Rômulo A Fernandes (romulo_ef@yahoo.com.br)

Version: 2 Date: 16 January 2013

Author's response to reviews: see over
Reviewer's report
Title: Relationship between visceral fat thickness and bone development in
Sedentary obese youths
Version: 1 Date: 27 October 2012
Reviewer: Gil Guerra-Junior

Reviewer's report:
General Comments
It is an interesting study about the relationship between visceral fat thickness and
bone mass in sedentary and obese children and adolescents.
Specific comments
Abstract
- it is well written with necessary informations.

Background
- well-written based on relevant and relatively up-to-date literature
- the purpose of the study is clearly stated

Methods
- the number of participants was adequate
- the methods was well used
- but, it is important to define the severity of the obesity and how to define
"sedentary" children and adolescents
Answer= Dear Reviewer, physical activity was assessed through a face-to-face
interview with the child/adolescent and their parents. Their engagement in sports
activities both at school and outside school over the previous three months was
analyzed. Obesity was identified according to cutoffs proposed by Cole et al.
(2000), which are used worldwide.

- the statistical analysis was complex and relevant

Results
- were clear and well presented
- but it would be important to analyse the results according to the severity of the
obesity
Answer= Dear Reviewer, this concern is relevant. Therefore, the multivariable
model has been adjusted by total body fatness. The inclusion of body fatness as
a potential confounder did not change the statistical significance of the
relationship between IAAT and BMD, indicating that it happens independent to
the severity of obesity.

Discussion
- well-written and well-documented with relevant literature
- but I suggest to include some data and informations of the recent literature:
1) Warodomwichit D et al. Causal inference of the effect of adiposity on bone
2) Bredella MA et al. Determinants of Bone Microarchitecture and Mechanical
Answer= Dear Reviewer, thank you for the suggestion. The references have
been inserted in the Discussion section.
Level of interest: An article of importance in its field
Quality of written English: Needs some language corrections before being published
Statistical review: No, the manuscript does not need to be seen by a statistician.
Declaration of competing interests:
I do not have any conflict of interests.
Reviewer's report
Title: Relationship between visceral fat thickness and bone development in sedentary obese youths
Version: 1 Date: 10 December 2012
Reviewer: Shilpa Bhupathiraju
Reviewer's report:
COMMENTS FOR THE AUTHOR:
Summary: Obesity has been associated with greater bone mineral density (BMD) due to the weight bearing effect of the tissue on the skeleton. However, in recent years, obesity and osteoporosis have both increased dramatically. Freitas Jr. et al. examined the cross-sectional associations between visceral fat thickness and bone health in a sample of sedentary obese youths. While their results are interesting there are major concerns with the respect to study design and the manuscript, in general, which threaten the internal validity of their findings. These are outlined below:
MAJOR COMPULSORY REVISIONS:

1. The manuscript itself was particularly difficult to read and is very poorly written. The authors should thoroughly reformat the manuscript per the journal guidelines.
Answer= The manuscript has been corrected by a native speaker and formatted according to the standards of BMC Pediatrics.

2. There are numerous spelling and grammatical mistakes throughout the manuscript. The manuscript needs to be written in concise, logical, and grammatically correct English.
Answer= The manuscript has been corrected by a native speaker.

3. Title: The term “bone development” is misleading as the authors are only looking at cross-sectional associations.
Answer= The title has been changed according to the reviewer’s comments. The term “bone development” has been excluded.

4. Background:
a. What do the authors imply by the term “chronicle” comorbidities?
Answer= The word chronicle has been removed from the text. Comorbidities related to obesity in adulthood are hypertension, diabetes and dyslipidemia. Such information has been entered in the introduction.

b. Please replace terms like “increased” with “higher” in cross-sectional studies as this implies an actual change in the variable of interest.
Answer= The change has been made in the text.

5. Participants
a. Please list the name of the local institution  
**Answer:** The name of the institution and the location have been inserted in the text.

b. Second paragraph – Which measurements were taken at the campus  
**Answer:** All measurements were taken at the University, except for the ultrasound measures. This information has been inserted in the Methods section.

c. Please provide in complete detail the number of participants who responded, the number who were eligible, number excluded, number refused etc. Were there any systematic differences between those who chose to participate vs those who did not? A flow chart would be helpful.  
**Answer:** Dear Reviewer, the explanation for the inclusion criteria was inserted in television and newspaper advertisements and many obese children/adolescents were sent to the university by medical doctors. Therefore, there were no exclusions, because all the children/adolescents who contacted the University were obese.

d. Please describe briefly how obesity was defined in your study rather than pointing the readers to reference number 12.  
**Answer:** The diagnosis of obesity has been described briefly in the text.

e. How was physical activity assessed? Was it through a questionnaire? If so, was this validated?  
**Answer:** Physical activity was assessed through a face-to-face interview with the child/adolescent and their parents. Their engagement in sports activities both at school and outside school over the previous three months was analyzed.

f. The authors use the term children and adolescents throughout the manuscript. What age groups do these refer to?  
**Answer:** These terms were used because the sample in this study consisted of individuals who were a minimum of six years old and a maximum of sixteen years-old (childhood and adolescence).

6. Bone mineral content and density  
a. Please replace the term “bone development” with BMD  
**Answer:** The term “bone development” has been changed to bone mineral density.

7. Ultrasound measures  
a. Please provide more detail on how the thickness of the abdominal adipose tissue was measured. Which area constituted the abdominal area? What was the CV% for these measures?  
**Answer:** All ultrasound measurements were taken by a trained physician and
each morning, before any measurements were taken, the device was calibrated and, according to the reference values provided by the manufacturer, the tests presented high reliability. The description of the IAAT measures was inserted. The data have been inserted in the Methods section.

8. Pubertal stage  
a. Did the authors use a standardized questionnaire to assess pubertal stage? Was this questionnaire validated?  
**Answer:** The standardized series of drawings have been previously validated [references 13 and 14] and widely used.

9. Statistical analyses  
a. Did the authors consider adjusting for other important confounders like dietary intake (calcium and vitamin D), height (to adjust for skeletal size), parental income, physical activity (although only sedentary individuals were recruited, it is still important to adjust for this variable) etc.? It appears that the lack of complete adjustment for other important confounders makes their results less valid.  
**Answer:** There was no statistical adjustment to take into consideration calcium intake and vitamin D and this limitation has been included in the discussion of the manuscript. However, an additional adjustment for height has been made.

10. Results  
a. Please provide a justification for presenting both BMC and BMD results  
**Answer:** In this new version of the manuscript, only BMD is used as a dependent variable.

b. Second paragraph – Pubertal stage affected…..What do these numbers represent? Adjusted means? What does the P-value represent? Is it the P-value for a chi-square test?  
**Answer:** The second paragraph has been changed to give clarity (ANOVA P-value).

11. Discussion  
a. Second paragraph – relationship between IAAT and bone variables are mediated by factors, such as gender. The authors did not examine potential effect modification by gender and, therefore, cannot make this claim. If they tested for effect modification by gender, they should list in the methods and results section.  
**Answer:** The gender was considered as a potential confounder and in this new version it is more clearly presented in the Methods and Results section.

b. The discussion, in particular, is poorly written.  
**Answer:** Based on the reviewer’s comments the discussion has been improved.
Level of interest: An article whose findings are important to those with closely related research interests

Quality of written English: Not suitable for publication unless extensively edited

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