**Author's response to reviews**

**Title:** Resting heart rate as predictor of metabolic dysfunctions in obese children and adolescents

**Authors:**

Ismael F Freitas Junior (ismael@fct.unesp.br)
Paula A Monteiro (paulinha_1003@hotmail.com)
Loreana S Silveira (loreana_loly@hotmail.com)
Suziani A Ungari (suziungari@yahoo.com.br)
Barbara M Antunes (bah_tunes@hotmail.com)
Karolynne N Bastos (karolynevoely@yahoo.com.br)
Jamile S Codogno (jamile_sc@yahoo.com.br)
João Paulo J Sabino (jpsabino@rfi.fmrp.usp.br)
Romulo A Fernandes (romulo_ef@yahoo.com.br)

**Version:** 2 **Date:** 7 October 2011

**Author's response to reviews:** see over
Editor's report

Title: Resting heart rate as predictor of metabolic dysfunctions in obese children and adolescents

Editorial comments:
- We recommend that you ask a native English speaking colleague to help you copyedit the paper. If this is not possible, you may need to use a professional language editing service. For authors who wish to have the language in their manuscript edited by a native-English speaker with scientific expertise, BioMed Central recommends Edanz (www.edanzediting.com/bmc1). BioMed Central has negotiated a 10% discount to the fee charged to BioMed Central authors by Edanz. Use of an editing service is neither a requirement nor a guarantee of acceptance for publication. For more information, see our FAQ on language editing services at http://www.biomedcentral.com/info/authors/authorfaqs#12.

As solicited by the Editor, a native Speaker reviewed the manuscript.

- Please reformat your abstract so that it contains the sections 'Background', 'Methods', 'Results' and 'Conclusions' and include the objectives of your study in the background section.

As solicited by the Editor, the abstract was formatted.
Reviewer’s report
Title: Resting heart rate as predictor of metabolic dysfunctions in obese children and adolescents
Version: 1 Date: 12 August 2011
Reviewer: Reizo Baba
Reviewer’s report:
The manuscript deals with the relation between resting heart rate and dyslipidemia. The message is interesting. However, many important things are left unstated in the study. I do not believe the manuscript is worthy of publication in the Journal. The authors did not fully mention the relationships with glucose metabolism or blood pressure, both of which being important factors of the metabolic syndrome.

In fact, elevated blood pressure constitutes a factor of metabolic syndrome. However, our study did not analyze the relationship between resting heart rate (RHR) and blood pressure, because this issue has been analyzed by previous study (Fernandes et al. 2011).

The relationship between glucose metabolism and RHR has been not fully mentioned due absence of statistical results. We believe that, in our sample, it is not correct to describe a hypothetical relationship without statistical evidences.

Also, they did not analyse effects of the severity of obesity on these metabolic components.

Severity of obesity has been not accessed because, in the scientific literature, there are not worldwide accepted cutoffs for body fatness. Thus, we believe that to use statistical criteria the describe obesity severity (e.g. quartile, quintile) does not improve significantly the quality of the manuscript.

Important relevant previous studies are not mentioned:

In fact, the study of Baba et al. (2007) presents important data and, therefore, has been inserted in the manuscript.

Level of interest: An article of limited interest
Quality of written English: Acceptable
Statistical review: Yes, and I have assessed the statistics in my report.
Reviewer’s report
Title: Resting heart rate as predictor of metabolic dysfunctions in obese children and adolescents
Version: 1 Date: 12 August 2011
Reviewer: Sharon E Fleming
Reviewer’s report:
See attached.

This paper reports an interesting analysis of data and makes an important contribution to our understanding of the relationships of resting heart rate to fasting blood concentrations of glucose and blood lipids in obese adolescents.
More detailed comments follow:

1. There is an ample literature reporting on the limitations of glucose as a screening tool for glucose dysregulation in youth. Thus, this reviewer wonders whether insulin concentrations were (or could be) determined in the collected specimens and used to calculate HOMA-IR. Several reports have suggesting a HOMA-IR value of ~2.5 represents a cutoff coincides with other factors associated with the metabolic syndrome. If available, the HOMA-IR parameter would replace the insensitive glucose parameter.

   **We agree with this Reviewer’s comment. However, in this sample, we have not insulin measures to estimate insulin resistance. On the other hand, due the relevance of this Reviewer’s appointment, the absence of insulin measures has been inserted as limitation of the study.**

2. P.7, second paragraph. Include the “data not shown” directly in Table 2 and eliminate this phrase in the text.

   **As solicited, these modifications were done.**

3. P.7, third paragraph. First sentence – reword to state that bivariate correlations are being referred to. What is meant by “but LDL-C was inserted…”?

   **As solicited, this modification was done.**

4. Tables 1 & 2. State statistical tests used within footnotes.

   **As solicited, these modifications were done.**

5. Figure 1B. Use superscripts to show where the differences are statistically different.

   **As solicited, panel B of the Figure has been modified.**

6. An overall edit for English usage is recommended.

   **As solicited by the Reviewer, a native Speaker reviewed the manuscript.**

**Level of interest:** An article of outstanding merit and interest 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:** I declare that I have no competing interests
Reviewer’s report
Title: Resting heart rate as predictor of metabolic dysfunctions in obese children and adolescents
Version: 1 Date: 7 September 2011
Reviewer: D A Caranti

Reviewer's report:
The authors provide an attractive set of the original data, suggesting that resting heart rate is a predictor of metabolic dysfunctions in young obese. This is certainly interesting and significant for the publication in this Journal. The conclusion is in accordance with its aims but I would like to suggest some topics to develop the quality of this research.

-When the authors describe the body composition assessment they use DEXA. I suggest more details and data about this method, not only fat percent in the table. This way, the authors could better explain the results of the body composition in the Discussion Session considering the contribution these variables. It is really interesting if have a total fat distribution in the DEXA assessment to elucidate more about the central obesity physiology in this population and a possible correlation with a pubertal stage.

**Data about central obesity discriminated by DXA were inserted in the Table 2 and Discussion. Additionally, correlations between pubertal stage and DXA were inserted in the Results.**

- The reference of the pubertal stage is needed to include because is very important to explain a body composition changes in this period. I suggest for the authors to show the Tanner stage according the scientifically literature.

**As solicited by the Reviewer, the pubertal stage was inserted in the study, as well as the analyses were adjusted by it.**

- In respect to biochemical profile and metabolic syndrome factors, I would like to know if the authors have more information about the prevalence of metabolic syndrome in this population and if is possible to explain in this way with a major description in the discussion session.

**Metabolic syndrome prevalence is overestimated in this obese sample, because obesity constitutes a metabolic syndrome factor. Statistical analyzes involving overestimated outcomes prejudice the robustness of the findings.**

- The authors used a ROC analysis, I suggest more information about this analise.

**As solicited, additional information about ROC curve were inserted in the Methods section.**

- In respect about the limitation of this study, I propose to describe future directions in the Discussion Session.

**As solicited, future directions for other studies were described.**

- I suggest improving the discussion session, to emphasize a lipid metabolism and obesity physiology not only the results obtained.

**As solicited, additional information were inserted.**