Reviewer's report

Title: A one-year exercise intervention program in pre-pubertal girls does not influence hip structure

Version: 1 Date: 5 October 2007

Reviewer: Jose A L Calbet

Reviewer's report:

General

This is an excellent study on the effect of a school-based exercise intervention on femoral neck structure in pre-pubertal girls. The study is relevant and the paper is very well written. The only concern I have is that this study does not rule out the possibility that a different exercise program (i.e., composed by different exercises or having longer duration, for example 2-3 years) could elicit structural (geometrical) changes in the femoral neck. The latter is aggravated by the fact that DXA-resolution for these structural variables may be too small. I think that these limitations should be acknowledged in the discussion of this manuscript. In addition, it has been shown that some kinds of exercise like soccer enhance the accumulation of BMC and BMD in the femoral neck during growth in pre-pubertal boys (See Vicente-Rodriguez et al. Med Sci Sports Exerc. 2004 Oct;36(10):1789-95). A particularity of the latter study is that the follow-up period was 3 years and the control group was not participating in outside of the school sport activities.

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

Thus, another aspect that is also important is the level and type of physical activity of the control group, since it could be that the control group is already performing osteogenic exercises, masking some of the positive effects attributable to the exercise intervention. In fact, the control was doing 1.7 h/week of out-of-school physical activities against 0.3 h/week by the intervention group (although this difference in not statistically different). May be you have some information about the type and kind of these out-of-school physical activities performed by the control and intervention group to better outlined any potential confounding influence in your results.

How this study conciliates with other carried out in tennis players showing marked structural effects in the arm bones? May be the kind of exercise used in the intervention program are not ideal to elicit geometrical changes in the FN.

Finally I have a methodological issue. The lean and fat mass over the bone areas of interest may affect the DXA variables. This is a major limitation of DXA during growth. In your study the intervention group gained more lean mass and less fat...
mass than the controls. How this difference in lean tissues accrual could have affected your results? Some ideas in this regard can be found in Vicente-Rodriguez 2006 (Br J Sports Med).

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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)

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Discretionary Revisions (which the author can choose to ignore)

What next?: Accept after minor essential revisions

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

Quality of written English: Acceptable

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

Declaration of competing interests:

'I declare that I have no competing interests'