Reviewer’s report

Title: Low-dose combined oral contraceptive use is associated with lower bone mineral content variation in adolescents over a 1-year period

Version: 2 Date: 11 February 2015

Reviewer: Jan Stepan

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Three minor comments remain to be discussed.

Comment 3. Please, state the short-term in-vivo precision errors for lumbar spine and total body BMC; state the long-term precision error using the Hologic phantom. Did daily scanning of a phantom show absence of machine drift during the study?

Response: The CV was estimated from repeated measurements for all regions mentioned (lumbar spine and total body). With the results in hand, CVs of 0.6 % and 1.3 % were obtained for the lumbar spine and for the whole body, respectively. (manuscript – line 158 to 161).

Suggestion: Please, make sure that the CV was estimated in the adolescent subjects according to the ISCD recommendation. Please, consider to state absence of machine drift during the study.

Comment 4. Was the sampling and storage done for the measurement of biochemical markers?

Response: Yes, they were stored for the measurement of bone biomarkers (OC, BAP and SCtx).

Suggestion: Please consider completing the article with biomarker data. This may provide an interpretation of the BMC data (expansion of the bony size).

Final comment (suggestion).

The subjects in this study were measured for height with a wooden height gauge with 0.1-cm accuracy. Therefore, it is quite surprising that in both groups height did not vary between the measurements taken at baseline and after 12 months. The authors argue that as the outcome is the evolution, baseline and final (after 12 months), BMC data were combined and the outcome that expresses evolution was thus created. Was the same statistical approach applied to change in body height? In subjects using COC reduced bone growth rather than lower BMD is expected.

Level of interest: An article whose findings are important to those with closely related research interests
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' below.