Reviewer's report

Title: Decrease of Activities Generating High Impact Forces in Adolescents with Limb Fractures: An Accelerometry-Based Activity Monitor Study

Version: 2 Date: 24 January 2011

Reviewer: Line Brinch B. Christensen

Reviewer's report:

Comments to the editors and authors

Though the results in this manuscript are not surprising the data are new and interesting and deserves publication.
The manuscript is in general clear, well written and answers the posed questions.
I do however have a few comments that may be taken into account by the authors, e.g. adding a few references. Please see below.

Minor issues not for publication are marked by a *

• Major Compulsory Revisions
  - Not applicable

• Minor Essential Revisions
  - Not applicable

• Discretionary Revisions

Title: The title focuses on High impact forces only, while the article seems to have a broader focus on PA reduction. High impact forces in specific are not mentioned in the conclusion, and only briefly in the abstract. Consider rephrasing either title or smaller parts of the abstract/main text.

Abstract:
* Background section: The abbreviation PA is not introduced at first appearance
* Methods section: Consider clarifying what you mean by "each level of intensity"
* Results section: Consider if four digits after the decimal point is necessary, and if p<0.0001 is sufficient

Introduction
* Last section: You should add a reference or two in the sentence "In adolescents, loss of bone ... of reduced PA, such as cast immobilization"
* In the last paragraph it is stated that "The objective of our study was ALSO to ..." It appear that this purpose is the main and only purpose, so "also" could be deleted.
Methods
- subjects section: How is it possible to recruit healthy cases in a hospital?
* subjects section: Double use of the word “for” in the sentence mentioning exclusion criteria
- anthropometric section: To what degree of precision did the scale and the stadiometer measure?
- PA section: The description of the starting time of data collection is a bit unclear. Should it be rephrased to "starting the data collection on the following DAY" or to "starting the data collection one of the following dayS"?
- PA section: How was the accelerometers attached?
- PA section: was accelerometers also worn at night?
- PA section: consider rephrasing the sentence describing the starting day of measurement. Did you want to ensure AT LEAST / NO MORE THAN / EXACTLY two weekend days? Unclear phrasing as it is.
* PA data interpretation: You should use another figure for multiplication than a period (.). Something like "*", "#", or "#" would be better. This accounts for all data presentation.
* statistics section: Are the brackets around SD needed?
* statistics section: The two lines describing funding, should be separated from the statistics section - unless the funding was only used on statistics.
* statistics section: There seem to be missing a word in the last part of the sentence. Maybe "...the funding source did not HAVE any role .."

Results
- Consider explaining why seasonal variation is an important match criteria. Different PA levels?, Vit D levels? Fracture risk?
- Consider rephrasing the two sentences "A statistical difference between patients with lower ... , p=0.028)" and "This difference was even more marked ... for time spent in moderate to vigorous PA"

Discussion
- Second part: “The reduction of PA in adolescents with fractures results in a decrease of energy expenditure … may be the starting point for children and adolescents to become overweight”. I think you should add a reference.

Background / discussion
- Consider mentioning briefly how quick or slow bone mineral are being lost and restored during recovery after a fracture, to give an idea of the consequences of wearing a cast for a certain time period.

Authors contributions:
- It appears you have performed bone analysis - that would be very interesting to
Tables

General:
* Are all digits necessary? I think one decimal would be enough in most cases.

1:
* You should add "mean +/- SD" in the table. It is only mentioned in the methods section.

2 & 3
- as 1 + mention the test performed.
* the unit of "time spent in ... activity" is not presented in the same way "min/day" vs "min.day (-1)"
* Consider adding the text "Time spent in" to the other intensity categories.
- Is it necessary to present both moderate, vigorous and "moderate to vigorous". Is it the same information/numbers?
* 3 digits are presented for the BMI p-value, but four for all the others (table 2)
* The p-value for number of valid days appear to be valid and should have a star (table 3)
- The % data should be clarified - I suppose it is "% of total daily wearing time"?

You could consider to present (some of) the PA differences between the two groups graphically instead of (only?) in the tables.

**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