Reviewer's report

Title: A 12-week after-school physical activity programme improves endothelial cell function in overweight and obese children: a randomised controlled study

Version: 3 Date: 29 May 2012

Reviewer: Jeanie Tryggestad

Reviewer's report:

In the manuscript, "A 12-week after-school physical activity programme improves endothelial cell function in overweight and obese children: a randomised controlled study", Park and colleagues have shown that endothelial progenitor cells are increased in children who took part in a 12 week exercise program.

In the revised version of this manuscript, the English language is much improved and noted by this reviewer.

Major Compulsory Revisions:

1. In the methods section under the sub-heading "participants", the authors state that the children were assigned randomly to the control or exercise group; however, in response to reviewer 2, the authors state that they made some efforts to match the subjects for sex. This should be included in the methods section.

2. In the Methods section under the sub-heading "measurement of endothelial progenitor cells", the 8th sentence states that the endothelial progenitor cells were defined as "triple positive" events. While the authors did look at 3 categories of cells (CD34+, CD 133+, and CD34/CD133+), a third marker was not used that would make the cells triple positive. Only double positive cells were classified as endothelial progenitor cells.

3. In the Methods section under the subheading "other laboratory assays", it is still unclear exactly when the second round of testing took place. While it does state that the testing was done after a period of 48 hours without exercise, it does not give the average duration of time since the last exercise session. Were all the tests done 48 hours after the last exercise session?

4. In figure 1, a tight cloud of double positive cells are apparent with rather strong signal intensity; however, a group of cells is also included in the current gating scheme that is much lower in fluorescent intensity. It would be helpful to also see the isotype control to help with the justification of including these lower intensity fluorescent cells.

Minor Essential revisions:

1. In the first sentence in the background section please replace the word "clogged" with plaque or significant atherosclerosis.
2. In the same paragraph, please add a comma after the word 45-year-old.

3. In the results section, the paragraph describing changes in blood parameters, please remove the work trends in regards to HDL and adiponectin. Considering the p-values for these 2 blood parameters, chance could also explain the relationship 38% and 29% of the time respectively.

4. In the results section, the paragraph containing the endothelial progenitor cell data, please add (group x time) before the word interaction in the first sentence.

**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