

Reviewer's report

Title: Extremely short duration high intensity training substantially improves insulin action in young healthy males

Version: 1 **Date:** 8 October 2008

Reviewer: John J Nolan

Reviewer's report:

This is an interesting study, showing an improvement in insulin sensitivity in healthy subjects following high intensity exercise of very short duration. However, there are several problems with the study and the manuscript as presented:

1. The matching of subjects is questionable. In Table 1, there is a typographical error for height in the Training group - however they are 9-10 kg heavier than the control group. Fasting insulin data were not provided.
2. The OGTT results for the control group should also have been provided, for glucose, insulin and NEFA, as in Figure 1.
3. The fasting NEFA at baseline looks of borderline significance (and probably not significant) in Fig 1 C.
4. The study overall should be reviewed by a statistician.
5. No details are given for diet during the study. There is a strong possibility for a study effect - in that the intervention group are in an active study (with exercise) and the control group have no intervention. Dietary changes could have a significant impact
6. Insulin sensitivity was measured by the Cederholm model, which is not in common use. More commonly used models such as HOMA, OGIS, QUICKI, Matsuda should be tested for the same data.
7. The Discussion is too long, with too much speculation.
8. Much of the literature cited is out of date. Many recent relevant studies have not been cited.

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

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