Reviewer's report

Title: A bilberry drink with fermented oatmeal decreases postprandial insulin demand in young healthy adults

Version: 1 Date: 15 December 2010

Reviewer: Joanna Hlebowicz

Reviewer's report:

This is an article whose findings are important to those with closely related research interests.

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

1. Is the study underpowered? Analyses were performed on a relatively small number of volunteers and it may become significantly different with a larger sample size.
2. How is the sensitivity of the insulin measurement?
3. Statistically significant is statistically significant; once one has set one’s rule one should live with it (lines 187-189, 200-202, 227-234, Table 3-4).
4. Is the relationship between the insulin and glucose response sufficient to characterise the insulin demand? Is this method for calculating the insulin demand evaluated?
5. How was GI and II calculated? More detail required.
6. How was GI calculated according to digestible carbohydrates? More detail required. Is this method evaluated?
7. Is there any difference in fat, fiber and protein content between the test and reference meal? Please clarify how the difference in content may affect the insulin-lowering effect.
8. Is there any difference in fiber content between the BFOMB and BBFOMD drink? Please clarify how the difference in content may affect the insulin-lowering effect.
9. The authors suggest that the postprandial insulin changes observed are due to changes in increased uptake of glucose into the peripheral cells. In the discussion the authors state that “no differences in glucose- or insulin responses were seen compared with a white bread”. Indeed, there are numerous studies demonstrating that oat #-glucan reduces postprandial glucose and insulinaemic responses in type 2 diabetics and in non-diabetic subjects. A dose–response relation has also been observed between the amount of oat #-glucan and the decrease in glucose and insulin levels in healthy subjects and in type 2 diabetics.
Such work has not even been mentioned in the discussion.

10. There are sections in the "Introduction" (lines 59-65) and "Discussion" (lines 321-316) that have not been referenced sufficiently. This needs to be rectified.

11. The discussion should first address the main finding, explain this, and relate it to the hypothesis. The present version is not completely focused and addresses different results that are confusing (lines 229-234 and 245-253).

Discretionary Revisions

1. Use only standard abbreviations; use of nonstandard abbreviations can be confusing. The abbreviations C2C12 and AMPK are not explained (line 307 and 309).

2. When beginning a sentence with a number, spell out the number (line 134).

3. The small numbers, such as whole numbers smaller than ten, should be spelled out (line 90, 134).

Level of interest: An article of importance in its field

Quality of written English: Needs some language corrections before being published

Statistical review: Yes, but I do not feel adequately qualified to assess the statistics.

Declaration of competing interests:

I declare that I have no competing interests.