

Reviewer's report

Title: Effect of commercial breakfast fibre cereals compared with corn flakes on postprandial blood glucose, gastric emptying and satiety in healthy subjects: a blinded crossover randomized controlled trial

Version: 1 Date: 31 May 2007

Reviewer: Martin O. Weickert

Reviewer's report:

General

Hlebowitcz et al. investigated the effects of commercial fibre cereals on gastric emptying rates (GER), postprandial glucose responses, and satiety in healthy subjects. Authors conducted a randomized controlled cross-over study in 12 subjects and measured GER using real time ultrasonography after the intake of cornflakes, all bran flakes, and whole meal oat flakes. They found that a lower GER after consumption of cereal bran flakes was not associated with increased satiety or lower postprandial glucose responses, as compared to the other cereals.

Even though the results are interesting and potentially important, some points need to be addressed.

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

(1) The main critic point is that authors used Wilcoxon test in the present study to compare differences in GER, satiety, and blood glucose concentrations between test meals. This was a cross-over study with different test meals consumed by the same participants, and therefore the Student's T-test for paired samples is recommended for calculation of the results. Authors should show that there is at least a trend to different GERs between all bran flakes and whole meal oat flakes when using this test. This seems to be essential to justify the main conclusion of the paper (unchanged satiety despite different GER). However, even though there might be no significant difference using the Student's T-test, results would still remain to be interesting and further contribute to the understanding of physiological effects after dietary fiber consumption (i.e. no difference in satiety and postprandial glucose responses despite different sorts of cereal test meals).

(2) Recent data show that cereal fibers did not influence postprandial satiety scores versus control, even though different responses of postprandial gut "satiety hormones" were observed (Weickert et al. Br J Nutr 2006). This further supports the findings from the present study.

(3) No difference in postprandial glucose responses directly after the intake of insoluble fibers, but a delayed beneficial effect on markers of glucose metabolism in a second meal test has been shown by several groups (Granfeldt EJCN 2006, Weickert et al. Diabetologia 2005, Robertson et al. Diabetologia 2003). Authors should emphasise particularly in the conclusions of the manuscript that they did not measure second meal effects in the present study and therefore a lack of acute (postprandial) differences between test meals does not exclude potential differences in delayed (second meal) effects.

(4) line 63: please state "fibers" instead of "insoluble fibers"; a number of soluble fibers are also known to be fermented in the colon (i.e. Queenan et al. Nutr J 2007). In this context: even though there are studies showing that colonic contribution might contribute to the "second meal effect", other studies clearly show that fermentation of insoluble fibers (as measured with the hydrogen breath test) was not essential for improved glucose responses in the second meal test (i.e. Weickert et al. Diabetologia 2005).

Minor Essential Revisions (such as missing labels on figures, or the wrong use of a term, which the author can be trusted to correct)

(1) Some of the sentences are difficult to understand and authors might consider to rephrase these sentences.

(2) The information provided by the results from the unpublished study does not appear to be essential. Therefore this information could be deleted.

Discretionary Revisions (which the author can choose to ignore)

Please give exact p-values (rather than $p < 0.05$).

What next?: Unable to decide on acceptance or rejection until the authors have responded to the major compulsory revisions

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.