Reviewer's report

Title: Dietary glycemic index, glycemic load and incidence of type 2 diabetes in Japanese men and women: the Japan Public Health Center-based Prospective Study

Version: 1 Date: 28 October 2013

Reviewer: Jennie Brand-Miller

Reviewer's report:

Review of Oba et al for Nutrition Journal

This paper describes a prospective observational study of diabetes risk in a large cohort (n ~65,000) of Japanese healthy men and women. The focus is on the quality of carbohydrate as assessed by the glycemic index (GI) and glycemic load (GL).

In women, but not men, the highest quartile of dietary glycemic load (a measure of both carbohydrate quantity and glycemic potential) was associated with a 52% increased risk of diabetes compared with the lowest quartile.

In men, however, dietary GI was associated with diabetes only in those with a higher fat intake.

Strengths
- The size of the cohort is impressive
- The cohort is representative of the general Japanese population
- The follow up period is 5 years
- Food intake was assessed by a 147-item food frequency questionnaire that has been “validated” for carbohydrate and rice intake against a 28-day food record (but we are not given any information about the validation of GI and GL).

Weaknesses
This study leaves so many questions unanswered. The authors should address carbohydrate nutrition much more broadly. Was %E carbohydrate intake related to diabetes risk? Was dietary fibre? Was there an interaction between fibre intake and GI?

Fat intake is said to be a risk factor for diabetes in this population but no data are shown to support this.

I found the Results section confusing to read. The authors report trends from one quartile to the next that are not statistically significant across all quartiles.

The second paragraph of the Results is not a sentence.
The authors refer to median to high fat intake in the Results but the graphs show only high and low fat intake. The definition of high and low fat intake is given.

In the Discussion page 12, lines 11-12 is repetition of an earlier statement.

Similarly, line 2 from the bottom is repetition.

Diabetes risk was assessed at the 10 year mark timepoint, but food intake was not assessed at baseline, only at the 5 year mark.

**Quality of written English:** Acceptable

**Statistical review:** No, the manuscript does not need to be seen by a statistician.

**Declaration of competing interests:**

Yes, I have a conflict of interest. I am the President of the Glycemic Index Foundation (www.gisymbol.com), a not for profit company that endorses low GI foods. I manage a GI testing service at the University of Sydney and I am the author of popular lay books about the GI of foods.