Reviewer’s report

Title: Diet patterns and risk of sepsis in community-dwelling adults: a cohort study

Version: 1 Date: 9 January 2015

Reviewer: Henrik Carl C Schønheyder

Reviewer’s report:

Minor Essential Revisions

1. Ascertainment of outcome (page 7-8): What was the exact definition of a serious infection (as opposed to a non-serious infection)? (See additional question below).

2. Acquisition of data: How was vital status determined?

3. Discussion: The authors should be more critical when using very general terms like ‘a vital role in immune function’, ‘mediators of immune dysfunction’, ‘dysfunction of adaptive and innate immunity’, ‘key mediators of sepsis’ – almost everything can be put into these terms! The 3 experimental studies undertaken in mice are quoted once more – if done so, more explicit results from these studies should be highlighted.

Discretionary revisions

1. ‘Diet pattern’ is a key concept and although the term is searchable in e.g. Wikipedia, the introduction could be more informatively. The diet patterns have already been applied for the study of epidemiology of stroke, but more extensive explanation is warranted. The names of the patterns are not expiatory in themselves, and it would be helpful to have information similar to that presented in the introduction in reference [20], i.e. that they were ‘assigned on the basis of foods that contributed most highly to each pattern’. Some of this information is given in the first sentence of the Discussion, but it would be more helpful if included in the Introduction.

2. Animal studies are quoted (ref.s 9-11). It should be stated that they were all conducted in mice and indicated that animal studies are not directly applicable to man.

3. Statistical analysis: It is stated in Table 1 (bottom) that ‘linear test for trend’ was used. Test for linear trend can be somewhat controversial: Which trend was actually used?

4. Statistical analysis: How were the cut-points derived for covariates (page 10, model 2)?

5. Results: A list of the 970 incident cases of serious infection should be included
possibly as an appendix. This would make comparisons with subsequent studies more feasible.

6. Limitations (page 15-16): The exclusion of one third of the underlying REGARDS cohort due to lack of dietary information is a major concern. A way to mitigate this concern is to perform a subanalysis for the income stratum >20,000 $/year with the high(er) response rate; these results would be applicable at least to the higher income group.

7. The rather complex dietary patterns could be a limitation in itself, not the least because they were based on a “mental summary” of eating habits during an entire year. Moreover, they may lack external validity as they were constructed within the same cohort.

**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