Reviewer’s report

Title: Waist circumference: as an indicator of risk for type 2 diabetes and cardiovascular disease

Version: 1 Date: 19 March 2012

Reviewer: Diewertje Sluik

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This cross-sectional study in 196 Finnish men investigated the predictive value of waist circumference to develop diabetes or CVD.

Major compulsory revisions:

My major point of concern is that this predictive value was not based upon the incidence of diabetes and CVD, but upon whether these individuals were classified as high risk according to a risk score, if I understood correctly because the methodology is not described very well. The diabetes risk score included waist circumference and the CVD risk score BMI as measure of adiposity. Therefore, it seems nothing but logical to me that waist circumference was found to be predictive of those risk scores. One can only say something about the predictive value of waist circumference on risk of diabetes or CVD if actual follow-up information on incidence was available, no matter how valid the used risk scores are. If this follow-up information is not available, I would like to know the predictive value of WC compared to the other risk factors included in the risk equations. If WC was predictive, independently from the other included risk factors, this would be a finding I would be interested in reading.

Other major comments:

It is unclear how the authors came to the analytic study sample. I recommend including a flow-chart with number of men invited # n provided data # n diabetes risk score # 7 and n CVD risk score # 4.5 # etc. Only show results of the men included in the main analyses.

Analysis (page 5): To me, this is very unclear. Please show the cross-tabulation of frequencies and categories. Please describe in more detail what you have done, please define positive test quantity. It was also not clear to me in the beginning the tests of prediction were based upon the risk score, not on actual incidence. Not only experts on prediction models and tests should be able to follow and understand this section.

Results (Page 7, Line 1): This information belongs to the methods section. (See also my comment on the study sample).

Table 1: Please provide general characteristics separate for all 196 participants, and for those with a diabetes risk score # 7 and n CVD risk score # 4.5

Minor comments:
Was WC also measured with light indoor clothing?
A WC # 94 was found to be most predictive. How was WC entered in the risk equation of the diabetes and CVD risk score? Continuously or in categories?
Conclusion (Page 10, line 1): Did you investigate whether WC was reliable? Don’t you mean to say that a WC # 94 was found to be most predictive of being classified of having a high risk to develop diabetes or CVD based on risk scores?

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

**Quality of written English:** Acceptable

**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.