Reviewer’s report

Title: Screening for type 2 diabetes in a high-risk population: study design and feasibility results of a population-based randomized controlled trial

Version: 2 Date: 23 January 2012

Reviewer: Sheena Mc Hugh

Reviewer’s report:

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

- Abstract: I don’t think it is clear from the abstract that this is targeted screening based on ‘at risk’ individuals, at risk being defined in terms of waist circumference. Screening in certain circumstances (e.g. presence of risk factors) is advocated however the opening sentence of the abstract gives the impression that this is screening of the general population.

- Background: suggest rearranging the flow of the argument. 2nd paragraph should deal with screening for diabetes (Wilson & Jungner, effectiveness hasn’t been proven etc), then go on to discuss waist circumference as a screening tool and how it has not been evaluated. This will lead on directly to the aim of your study.

- Final paragraph- 1st sentence is not clear. Suggest change: ‘The current RCT was set up to assess the performance of waist circumference measurement as a first step screening tool to identify individuals at high-risk of developing diabetes, to examine the effectiveness of screening for diabetes and to ascertain whether early detection and treatment of type 2 diabetes results in a reduction and/or prevention of the related morbidity and mortality compared to not offering screening’.

- Method: Are the intermediate endpoints the focus of this paper? If so make that explicit and perhaps state that future publications will deal with the primary end points.

- Results: (p11-12) specify the % and p values for the differences between attendees and non-attendees.

- Implications: (p12): The aim of the pilot should refer explicitly to examining the feasibility of using the waist circumference measurement as a first-line screening tool.

- Conclusion- I think it is necessary to state that while self-reported waist circumference was feasible to detect people at risk further work is necessary to increase the use/uptake of this first-line screening tool (low initial response rate). Also the last sentence should be more specific about how the results will inform the screening strategy.

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

Change term ‘subjects’ to individuals or participants throughout manuscript.

Abstract
• In method section, suggest change to “were approached to participate in screening”. And: ‘obesity is often associated with cardiovascular risk factors’.
• Opening sentence of results section would be better placed in the method section to explain how the final number of 10,609 people took part in randomization.
  o Include % in results section of abstract to show extent of differences between attendees and non-attendees.

Method
• Change to past tense in study population section, intervention
• P9: b) the proportion of high-risk individuals among the respondents and the proportion that consented (past tense) to randomisation.
• Move the explanation of one and two-step approach to section outlining recruitment. After 1st sentence (In 2006 and 2007, 79,142 inhabitants...), state that 2 approaches to consenting participants were piloted and include explanation followed by ‘All potential participants received an invitation letter etc...’

Results
• Separate section from discussion
• P11- typo ‘prevalence’
• P11- In total, 10,609 subjects were eligible and randomized as part of the RCT
• P12-The distribution of the detection rates of IFG and diabetes across males and females according to their waist circumference are presented in Figure 3.

Implications
• P12
  o 2 full-stops at the end of sentence ‘However an RCT is required to confirm this hypothesis and to assess whether screening is cost effective’.
  o Use of ‘large-scale’ to describe pilot and RCT.
  o Insert word: The feasibility of using abdominal obesity to detect...
• P13
  o When describing the Dutch Hoorn study, it is advisable not to start sentences with numbers.
  o Was the 26% response rate to the initial invitation to provide waist circumference measurements rather than the response rate to participate in the screening RCT?
  o Clarify that the delayed linguistic development RCT was also a screening study.
Discretionary Revisions (which are recommendations for improvement but which the author can choose to ignore)

Method section: Change ‘First Year’ sub-heading to Pilot Phase

Implications (p13) - ‘In the Netherlands, diabetes screening has previously been examined in at least two studies.’

**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.