Author's response to reviews

Title: Total knee arthroplasty after high tibial osteotomy. A systematic review.

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Version: 2 Date: 9 April 2009

Author's response to reviews: see over
Dear editor,

We would like to thank you for the opportunity to revise our manuscript “MS: 2736552323486609 - Total knee arthroplasty after high tibial osteotomy. A systematic review.” We addressed the questions raised by the reviewer’s reports; please see below.

Sincerely yours,

Tom van Raaij.

**Reviewer’s report**

**Title:** Total knee arthroplasty after high tibial osteotomy. A systematic review.

**Version:** 1  
**Date:** 6 March 2009

**Reviewer:** Wilco Jacobs

**Reviewer’s report:**

I congratulate the authors for tackling a very relevant topic in the range of treatment options for knee problems. I was asked for statistical opinion regarding the systematic review methodology, leading to a few critical notes.

**Major Compulsory Revisions**

1. The rationale behind the choice for a cut-off of 50% should be given. In the reference of van tulder (ref 12), there are 5 options and van Tulder states that the reason behind the choice should be clearly described.

There are no strict guidelines for the use of methodologic quality assessment in systematic reviews, and the cut-off points remain arbitrary. The Cochrane Collaboration Back Review Group (BRG) recommends choosing from several options. We opted to use the methodologic quality instruments as an additional criterion to include high quality studies for final review. Van Tulder stated that high quality may be based on a summary quality score that fulfills 50% or more of the validity criteria. Your remark enabled us to provide a more thorough explanation of the cut-off used in our study. Please see page 7, lines 9 – 11.

2. The reference of van Raaij should have been assessed by another reviewer as this is the author’s own study.

We would like to thank the reviewer for this great remark, which gave us the opportunity to avoid any conflict of interest. The “van Raaij study” was re-assessed by two independent reviewers (Reinoud Brouwer and Duncan Meuffels) who were not (co)-authors on the aforementioned paper. We have acknowledged both independent reviewers. Please see methodology; page 7,
lines 2 - 4, results; page 9, lines 6 – 8, acknowledgement section; page 18, and Table 1.

3. The major problem with assessing the statistical quality of the paper is the lack of information about the group consisting of patients with TKP without prior HTO and sample sizes. In table 6 the number of knees with HTO and with no HTO are exactly equal for all levels, by design possible because caused by the matched pair design of the studies. However, in my experience in literature reviews, the lost-to-followup and missing data aspect is always present. In all other tables and in the text, the sample size is not mentioned. I therefore ask the authors to add sample sizes to the other tables and conform the numbers in table 6.

We do apologize for the fact that the sample sizes were not given in most tables, and thank the reviewer for this excellent observation. All included studies had a matched pair design for at least three characteristics. This resulted in almost identical study and control groups for each individual study. To provide sufficient information, however, we changed Tables 2 – 6, and added the characteristics for the control group (primary TKA without HTO) to Tables 2 – 5. Furthermore, we included the number of knees that were eligible for inclusion, knees that were lost to follow-up, and the number of patients that had missing data. Please see Tables 2 – 6. Please see also manuscript, section results; page 9, lines 15 – 19,

4. The authors choose not to perform quantitative analysis, as stated in the discussion, second paragraph. Information about age and gender, specifically for the non HTO group is not given, so this statement is not supported by data. Please add this information.

This very important remark, and your previous remark, enabled us to revise our tables to provide more accurate information on the studies characteristics (please see above). We felt that the heterogeneity between the studies (mainly caused by differences in gender, osteotomy techniques and time of follow-up) excluded a preferred meta-analysis. We revised the manuscript; please see section results; page 9, lines 16 – 18, section discussion; page 12, lines 16 – 19, and Table 2.

**Level of interest:** An article of importance in its field

**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

**Reviewer’s report**
**Title:** Total knee arthroplasty after high tibial osteotomy. A systematic review.

**Version:** 1  **Date:** 5 January 2009  
**Reviewer:** René Verdonk

**Reviewer’s report:**  
This paper is a very well commented review on potential reported problems of total knee arthroplasty after high tibial osteotomy.  
There is no point to be made regarding compulsory revisions  
It might be of interest to the casual reader that the authors may try to find from their literature investigation whether:  
- a patella replacement was used when total knee arthroplasty was performed and whether this had an influence on the findings.

Patella replacement in primary knee arthroplasty is still under debate. In this review on the effect of osteotomy on TKA, only four studies mentioned patellar replacement; in two studies all patients received patellar resurfacing, in one study about half of the patients, and in one study approximately 10% of the patients. At follow-up seven of nine studies commented on patellar revision because of loosening, and no differences were noticed between TKA with or without prior HTO. Only one study, in which approximately 50% of patients in each group had no initial patella replacement, reported on staged patellar re-surfacing (4 in each group). We added these findings on patellar re-surfacing to the results paragraph. Please see the manuscript, section results; page 10, lines 4 – 6, page 11, lines 11 - 12.  
The lack of information, however, made it difficult to comment properly on the influence of patellar re-surfacing. We kindly refer to the more general paragraph on exposure difficulties and alterations in knee anatomy after osteotomy, which states that no differences in revision or failure could be found between the index and control groups. Please see the section discussion, page 13, lines 17 – 23.

- The title presents… after high tibial osteotomy…..: would it make the title more precise if one would add: valgus high tibial osteotomy… ?

We changed the title, and added valgus. Please see page ?

- Could the authors confront with the findings that some surgeons suggest to insert a revision tibialplateau in any post valgus osteotomy setting. They do refer to a better fixation and less post-operative pain in the intramedulary callus of the osteotomy is perforated thus avoiding post-operative intramedulary pain.

Tibial component fixation may be an issue after osteotomy mainly due to the loss of metaphyseal bone stock. A revision tibial component with a canal filling stem increases the mechanical stability of tibial fixation [Conditt et al. J Arthroplasty 2004]. However, the asymmetric positioning of the medullary canal relative to the cut tibial surface, especially seen after HTO, may prevent accurate placement of a tray attached to a large central stem. Optimal coverage of the cut tibial surface
by the tibial tray is desired because the cortical rim withstands the largest axial load [Completo et al. Knee 2008].
The studies presented in our review did not describe the use of revision components, and all studies reported on primary knee prosthesis designs. Earlier a matched radiosteriometric study showed no difference in failure rate of primary knee components in patients with or without prior HTO after 10 years [Toksvig-Larsen et al. JBJS-Br 1997]. After a median follow-up of 5 years we also found no significant differences in TKA failure for the patients receiving TKA after previous osteotomy compared to primary TKA in all eight studies reporting on revision surgery. Please see the manuscript, section results; page 10, lines 1 – 2, discussion; page 13, lines 13 – 18, 20 – 25 and page 14, line 1.

Level of interest: An article of importance in its field
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'

Reviewer's report
Title: Total knee arthroplasty after high tibial osteotomy. A systematic review.
Version: 1 Date: 29 January 2009
Reviewer: Gunter PK Spahn
Reviewer’s report:
No revisions
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