Author's response to reviews

Title: Computer work and musculoskeletal disorders of the neck and upper extremity: A systematic review

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Author's response to reviews:

Dear Sir

We do appreciate that the reviewers once again have given thorough comments to our manuscript and we have revised the manuscript accordingly, as pointed out in our point-by-point response below. In our opinion we have been able to meet all the remaining points raised by the reviewers in this second round of peer-review. We thus do hope that our second revision of the manuscript is satisfactory and that the paper may be accepted for publication in the BMC Musculoskeletal Disorders.

Response to Reviewer Jane Frølund Thomsen:

General comment: The reviewer argues that our Table 3 is too lengthy and would profit from a more schematic presentation. In the revised version this table is substantially shortened by only keeping the most important issues, by giving the information in a more standardized and schematic way and by going less in detail. The table is also made easier to read by increasing the number of columns from 4 to 7.

Major point 1: Both reviewers argue that we should have included more search terms in our literature search. We have now done a new literature search for the whole period covered in our review, including the search terms deemed missing by the two reviewers and also extended the search string with a few extra search terms that we ourselves found appropriate. The search string consists of three components, the first specifying our interest in musculoskeletal disorders. Reviewer Thomsen argues that we should include specific diagnostic terms in addition to the more general terms we have use. In the revised search string this is done by including 30 new terms. The second component of our search string identifies the body region of interest. Here we have added the two search terms suggested by Reviewer Zhao (upper limb, arm) and also added forearm and upper back. The last component of the search string specifies that we are interested in computer work. Here we have added VDT and Visual Display Terminal, as this term was widely used in the early years of computer use, and also the terms computer mouse, input device and office work. It is, of course, in
practice impossible to include every key term that may have been used in a paper in this field, but we now think that we have done a very extensive and satisfactory search. In fact for most purposes this search is too extensive, as can be seen by the very high number of irrelevant hits, but in trying to find all relevant papers, we have decided that this is to prefer in preparing the review. We have also extended the search till present date (February 2010), in order to ensure that the review is as up to date as possible. We have identified 4 new studies fulfilling our inclusion criteria (Ryan 1988, Jepsen 2006, Baker 2008 and Turhan 2008). We included no studies published in 2009. The evidence from the new studies included did not substantially change the conclusions of the review.

Major point 3 (there is no Major point 2 in the reviewer’s report): The number of studies identified by search and from files are now stated in the manuscript. Only one study (Tornqvist) was not found in the search, due to the fact that the computer exposure as a risk factor was not highlighted (other occupational risk factors was of greater importance in this community based case-control study).

Major point 4: We do agree that sparse literature is no argument for including extra studies. We also agree that the studies of Aarås (2001) and Brisson do not contribute with results to this review. We have therefore modified the inclusion criteria, so that they are better suited to only include studies that may contribute to the aim of our review, stating: “The following inclusion criteria were applied: (i) the study should be peer reviewed and published in English (reports, abstracts and proceedings were not included), (ii) the study gave data on computer use in a working age population, (iii) the study had to include a relevant objective examination (e.g. a physical examination, scanning, or x-ray) of musculoskeletal disorders in the neck and upper extremity (except carpal tunnel syndrome), and (iv) the publication from the study had to relate the exposure for computer work to the findings of the objective examination. Results on the effect of treatment or other interventions on musculoskeletal disorders in computer users were not included.” With this wording, the two abovementioned studies no longer fulfill the inclusion criteria. One of the papers by Arvidsson is also excluded. However, this has no practical consequences as the study by Arvidsson and co-workers is still included in our review. The excluded paper focuses on gender differences, and was suggested excluded by Reviewer Thomsen in her first reviewer report from Sep 4th 2009.

Response to Reviewer Xing Zhao:

Major point 1: Both reviewers had an extension of the search string as their major point 1. See the comments given above in the reply to Reviewer Thomsen.

Major point 2: The discussion of the limitations of the study has been extended in the revised version of the manuscript.

Minor point: We have had our manuscript controlled for style of the written English in order to correct the minor faults still present in the previous version.