Reviewer's report

Title: Are persons with rheumatoid arthritis deconditioned? A review of physical activity and aerobic capacity.

Version: 1 Date: 25 January 2012

Reviewer: Samuel Whittle

Reviewer's report:

Thank you for the opportunity to review this manuscript.

Major compulsory revisions:
Nil

Minor essential revisions:

1. I think the first line of the results section of the abstract would better reflect the results of the review if the phrase "physical activity energy expenditure" were used rather than just "physical activity".

2. Paragraph 2 of the conclusion states that "Patients with RA suffer a 60% greater risk of CVD, a risk that can be reduced by a moderately high or high anaerobic capacity". I'm not sure that this sentence, as it is currently worded, is supported by either the quoted reference (Turesson et al) or the literature in general. While aerobic capacity is protective against CVD in the general population, as far as I am aware there is no current evidence to suggest that an increased aerobic capacity attenuates the increased CV risk among those with RA (as this sentence implies).

3. The conclusion in the abstract is not really supported by the data. While there is evidence to suggest lower levels of PA in RA patients, this does not necessarily imply that 'patients with RA need to be motivated to increase their physical activity levels'. Such a claim would at least require evidence that exercise reduces the increased CV risk in RA patients (and that 'motivating' such patients would increase their activity levels).

Discretionary Revisions:

1. The search strategy seems a little idiosyncratic to me: was it reviewed by a librarian? Eg why not use a wildcard such as activit* rather than arbitrarily searching 'human activities' but not 'human activity'? I am also concerned that using the operator 'AND' with 'healthy' may compromise the sensitivity of the strategy - the presence of an appropriate comparator group could have been determined at the abstract review stage. The identification of only 152 studies in the initial search suggests that there may have been insufficient sensitivity. Were other search strategies tested and compared?
2. In general the risk of bias among the included studies appears to be relatively high (eg half the included studies did not provide information on recruitment of controls). This is well-described in the Quality Assessment section but perhaps the authors' impressions of how this influences the plausibility of the findings could be addressed in the discussion.

3. It may be worth noting that all but one of the studies that measured physical activity were published later than 2000 - i.e. in an era in which we have apparently achieved greater RA disease control and in which we encourage our patients to be much more active than in previous eras. The results were therefore a little surprising to me.

4. It is unclear to me why the aim of the study was explicitly to compare the RA population with both 'healthy controls' AND 'a healthy reference population'. Was this in order to include data from studies which used either comparison, or was there a specific hypothesis regarding differences between matched controls and population-level data?

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

**Quality of written English:** Acceptable

**Statistical review:** No, the manuscript does not need to be seen by a statistician.

**Declaration of competing interests:**

I declare that I have no competing interests.