

May 6, 2015

Dr. Ji,

Please find enclosed the edited manuscript in Word format (file name: Physical activity after total knee arthroplasty A critical review Revisions 05052015.doc).

**Title:** Physical activity after total knee arthroplasty: A critical review

**Author:** Roger J. Paxton, Edward L. Melanson, Jennifer E. Stevens-Lapsley, Cory L. Christiansen

**Name of Journal:** *World Journal of Orthopedics*

**ESPS Manuscript NO:** 17654

The manuscript has been improved according to the suggestions of reviewers. Alterations in the manuscript have been highlighted.

1. Article which would be strengthened by being a thorough systematic review and meta analysis.  
-A meta analysis would undoubtedly be a superior situation. The wide variety of study designs and outcome measures to quantify physical activity casts doubt on the meaningfulness of the results of such a meta analysis. These aspects, in combination with the relatively small amount of literature available, also make a meta analysis impractical if not impossible.
2. More detail regarding the methodology with respect to what search engines were used, what phases/words/statements were searched, time span of search.  
-A brief description of the search strategy utilized is now present at the end of the Introduction section (line 79).
3. The use of accelerometers measures steps/output etc but is this equal to improved function? The authors need to convincingly argue this or refute this statement. Some patients will declare an excellent result following their TKR if a single aspect of their life style which was a major problem preoperatively has been rectified eg ability to drive car, toileting etc all of which would be called low outputs if an accelerometer was used to measure the output.  
-Although physical activity can influence functional performance, physical activity does not directly represent functional performance. This has been clarified in the Potential Benefits of Increasing Physical Activity after TKA section (line 71).
4. Between 30 % and 60 % of patients undergoing primary TKA have major comorbidities (Hypertension, Obesity, Diabetes, Heart Disease, Pulmonary disease). This fundamental issue has not been take into account by the authors in any section of the paper. Please, address this in the Patient Characteristics section  
-Comorbidities are now addressed in the Patient Characteristics section as well as Table 1.
5. Authors stated that only 75% of patients are satisfied after TKA Introduction, line 9). This is true: many studies have been published on patient satisfaction after TKA. Please address this issue in the paper.

-Clarification was added to the Introduction to note that TKA is successful in decreasing pain and increasing function, but less is known about the influence of TKA on physical activity (line 63).

6. It is hard to compare level of activities in healthy individuals with individuals undergoing TKA who have many comorbidities too (page 4, lines 1012). Any study comparing "unhealthy" individuals undergoing or not undergoing primary TKA for primary OA? Authors should compare "apple to apple".....

-This is an excellent point. Unfortunately, the studies that did group matching dealt only with age and sex.

7. The manuscript in its current format is very confusing to read. It starts as a review of the literature based on topic, then changes to review of the literature by type of investigation. Please work to make the flow more logical.

-The Introduction has been restructured to better establish expectations for the ensuing structure of the paper.

8. Please make it clear to the reader what the purpose of the paper is and what the type of article is so they know what to expect while reading it. \*The purpose wasn't clearly addressed within the manuscript. The info is in the paper, but in its current format leaves the reader to synthesize info and it is cumbersome to read through. The purpose statement consists of 3 components 1. Benefits of physical activity, 2. effect of TKA on physical activity, 3. Potential sources of variability. It would be very helpful to organize the paper in this manner, addressing each of the 3 components.

- The paper has been reformatted to clearly identify these three main points in a deliberate manner. A purpose statement is present at the end of the first paragraph of the Introduction (line 67).

9. Overall, the paper is very long. I suggest trying to condense, particularly the intro and benefits sections.

-The Introduction and Benefits sections are now condensed. The word count for the body of this manuscript has been reduced from 4768 to 4074 words.

10. The goal of the paper was to critically review the literature, yet sections on longitudinal and cross sectional investigations were a relatively small part of the paper in comparison to the preceding sections.

-This is an excellent point. Per this and several other reviewer suggestions, the preceding sections have been condensed. The brevity of the section dealing directly with the studies of interest is due to the relative few studies at hand and the straightforward nature of their results.

11. Metabolic benefits section. The last sentence is not referenced and evidence supporting this statement is not clear.

-A reference is now present and greater explanation has been added (line 95).

12. Functional performance section: the first sentence should reference literature supporting this statement. Same section: "relation" should be "relationship".

-Relevant references were added (line 98). "Relation" now reads "relationship" (line 104).

13. The example of the TUG is a nice addition, but the sentence doesn't read smoothly. Please rework this.  
-This sentence has been removed to condense the manuscript.
14. The comment in line 11 about patients with OA having undergone TKA is confusing...they don't still have OA in the knee that was replaced...can you please clarify?  
-This sentence has been removed to condense the manuscript.
15. Line 14 "...as they may actually...". This comment should be referenced if this has already been shown to be true, or should be stated as "...it is not known whether treatments aimed to increase...". The way it is currently stated is with the use of "may".  
-This statement is now referenced (line 107).
16. Orthopaedic benefits: please elaborate on the Roger's study.  
-This reference has been replaced by a systematic review of the literature regarding the protective effect of physical activity with regard to osteoarthritis. XXX
17. Orthopaedic benefits summary paragraph: This paragraph should be reworked. The first sentence discusses "increased risk", while the preceding section headings were all related to "benefit"...this conflicting language is confusing. Additionally, there are some strongly worded statements in this paragraph that could be interpreted as the opinion of the authors; please consider toning down.  
-The potentially polarizing portion of this paragraph has been removed. The remainder of the paragraph uses the more positive frame of reference.
18. The section on characterization of physical activity levels doesn't seem to fit as a category on its own...there is an intro, benefits section, previous investigations section, discussion... It would be helpful to incorporate the characterization of physical activity levels section elsewhere. In addition, this is a single paragraph that stands alone so should be incorporated elsewhere.  
-The Characterization of Physical Activity Section is now incorporated as a portion of the Introduction Section.
19. Please consider a table(s) to summarize findings including outcomes measures, duration of follow up, and the activity level findings.  
-Table 2 has been added summarizing these findings.
20. Please work to condense info in the investigations sections as well...good info but should be able to state more concisely.  
-The investigations section has been condensed.
21. The authors mention multiple types of outcomes measures. It would be helpful to include reliability and validity data for them.  
-Reliability and validity data for outcome measures are now found in Table 3.

22. Outcomes measures are described both within the :”investigations” sections and in the “discussion” section of the paper. I suggest putting this info into only one section.  
-Descriptions of outcome measures are now confined to the Discussion section.

23. In the discussion section authors indicate that self report measures lack accuracy. Please provide reference.  
-The references of note are now present.

Thank you again for publishing our manuscript in the *World Journal of Orthopedics*.

Sincerely,

A handwritten signature in black ink, appearing to read 'Roger J. Paxton', with several overlapping strokes.

Roger J. Paxton, Ph.D  
Department of Physical Medicine and Rehabilitation  
Aurora, CO 80045  
Office: 303.724.9590  
roger.paxton@ucdenver.edu

June 12, 2015

Dr. Cui,

Please find enclosed the edited manuscript in Word format (file name: Physical activity after total knee arthroplasty A critical review Revisions2 06122015 Final.doc).

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The manuscript has been improved according to your suggestions.

1. The paper is now better organized to include methods, results, and discussion sections
2. The introduction section has been condensed.

Thank you again for publishing our manuscript in the *World Journal of Orthopedics*.

Sincerely,

A handwritten signature in black ink, appearing to read 'Roger J. Paxton', with a horizontal line extending to the right.

Roger J. Paxton, Ph.D  
Department of Physical Medicine and Rehabilitation  
Aurora, CO 80045  
Office: 303.724.9590  
roger.paxton@ucdenver.edu