Author’s response to reviews

Title: Study Protocol: Does isolated hip strengthening for Patellofemoral Pain Syndrome (Anterior Knee Pain) give better long term results than traditional quadriceps based training? A randomised controlled trial.

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Version: 4
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Author’s response to reviews: see over
**Answers to Reviewer 1**

**Title:** Study Protocol: Does isolated hip strengthening for Patellofemoral Pain Syndrome (Anterior Knee Pain) give better long term results than traditional quadriceps based training? A randomised controlled trial.

**Version:** 3  
**Date:** 22 December 2014

**Reviewer:** Simon Donell

**Comment 1:**  
L237: "[50]" should be placed immediately after "Loudon et al" and not at the end of the sentence

This is now corrected, thank you for pointing it out.

Regarding Comment 4 from previous review (Version: 1 Date: 2 July 2014)

4. I would exclude patients with severe trochlear dysplasia on imaging from the study as they have a direct mechanical cause for their AKP. The problem is that definition of “severe” is contentious, but is best described as “obvious” on plain lateral Xray. Subtle trochlear dysplasia is known to be associated with AKP.

We acknowledge that the occurrence of dysplasia in this population is a very important issue and appreciate you pointing this out. We had previously answered this comment (16.12.14) by including obvious trochlear dysplasia on MRI examination as one of the exclusion criteria. However, after further consideration and research, we find that it is very uncommon practice in similar intervention studies on PFPS/AKP to exclude patients on the basis of trochlear dysplasia. Further, as trochlear dysplasia is known to be associated with PFPS/AKP, it is likely that many patients in a normal clinical practice will have some degree of trochlear dysplasia. Thus, we believe that excluding these patients will reduce the external validity of our study.

Therefore, we propose to include patients with trochlear dysplasia but to carefully document the presence and type of dysplasia in the included patients. This will give valuable information as to the occurrence of trochlear dysplasia in this population. As well we will be able to examine the effect of dysplasia on treatment response in PFPS/AKP, a topic which currently has not been addressed in the literature, to our knowledge.

(Patients with recurrent patellar dislocations/subluxations are already excluded from the study by other exclusion criteria.)
Answers to reviewer 2:

**Title:** Study Protocol: Does isolated hip strengthening for Patellofemoral Pain Syndrome (Anterior Knee Pain) give better long term results than traditional quadriceps based training? A randomised controlled trial.

**Version:** 3  
**Date:** 27 December 2014  
**Reviewer:** Michael Skovdal Rathleff

**Comment 1:**  
Major Compulsory Revisions  
Background and methods  
You state that “Our hypothesis is that there is no difference between the three groups for primary or secondary outcomes measured at three months and one year”. This suggest that you expect there will be no difference between the three groups at your primary endpoint. However, your sample-size calculation is a superiority type. If you want to be able to conclude that there is no difference between groups, you need to conduct an equivalence sample-size calculation. This is an important part of the methods as it may determine what you will be able to conclude from your study.

Thank you for pointing this out, we see that we have stated this incorrectly. We have corrected this by specifying that this is our null-hypothesis.