Reviewer's report

Title: The effects of twelve weeks knee-specific training on knee kinematics and kinetics during gait, step and hop in male former soccer players with a 16-year-old ACL injury.

Version: 1 Date: 17 November 2006

Reviewer: Greg D Myer

Reviewer's report:

General

The authors have performed an interesting study to evaluate the effects of knee-specific training on landing kinematics and isokinetic strength in a population of subjects that are sixteen years following an Anterior Cruciate Ligament injury. This topic of research is of interest to the readership of Biomedcentral, however without a power analysis it can not be determined if the failure to reject the null hypothesis was due to inadequate power or if 12 weeks of neuromuscular training does not change movement biomechanics or strength in 16 year post-ACL injured populations.

To improve my enthusiasm for publication of data from this project, I would suggest that the authors re-work the manuscript to present the differences in kinematics and kinetics of 16 year ACL injured population to that of a matched normal reference groups. However, after performing a literature search, it was evident that the suggested comparison has already been completed by the same group of authors and has been recently published.


The above article mentions the need for larger sample populations to determine potentially significant gait and movement analysis deviations in the long-term follow-up of ACL injured patients. With the published and current data analysis we cannot determine whether the gait and motion patterns are related to the previous ACL injury or if the study populations has adapted normal kinetics and kinematics. If gait deviations are determined there would then be an understandable impetus for undertaking a project to evaluate neuromuscular training in this population. However, without measurable gait or movement deviations from normal it is hard to determine the benefits of undertaking the described neuromuscular training program in populations with a 16 year old ACL injury.

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Major Compulsory Revisions (that the author must respond to before a decision on publication can be reached)

I would first recommend that the authors perform a power analysis to determine if the current sample size is appropriate to determine neuromuscular training effects on biomechanics in this population. If the sample size is adequate, then I would recommend the authors consider utilization of a Bonferroni correction to the alpha level of their current statistics. In addition, please clarify measures of knee flexion and why you report both landing and take-off during the crossover hop. Generally, this maximum value would be the same (or very similar time) for both phases of land and jump activities and you would not need to describe within two phases.

If the sample size is not adequate I would suggest that they target the appropriate study sample size with a more homogenous study group of either ACL reconstructed or ACL deficient subjects. I would also suggest that the authors use their matched reference group for both pre test and post test comparisons.

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Minor Essential Revisions (such as missing labels on figures, or the wrong use of a term, which the author can be trusted to correct)

PAGE 2
Line 1: change focusing to “which focuses”
Line 7: Add comma after activities
Line 18: Delete “significant”

PAGE 3
Line 1: Insert “subjects being” after despite
Insert “post-injury” after years
Remove “since injury”

Lines 2-3: Delete “and significantly so during more demanding activities”

Line 3: Add “Moreover, of clinical importance,” before “the biomechanical changes”
Delete “were” (before positively)

Line 4: Delete “which is clinically important”

Key Words: “knee-specific training, kinetics, kinematics, and ACL” are all in the title;
Select new key words.

PAGE 4
Lines 2-3: Confusing wording; reword.
Should be “Injuries…are”

Line 3: Add “bilateral symmetries in” after “of” and before “joint”

Line 5: Insert “Rehabilitation of” before “neuromuscular control”

Line 10: Change “moments” to “movements”

Line 16: Insert a comma after “parameters”

Line 17: Insert a comma after “subjects”

Line 18: Change “A decrease in” to “Decreased”

Line 19: Is the internal knee extensor moment higher or lower?

PAGE 5
Line 1: Delete “hypothetically”

PAGE 6
Line 7: What is the standard deviation of the mean age?
Change “weight” to “mass”

Line 13: Change “p=0.15-0.9” to “p>0.05”

Line 15: Insert a comma followed by “a” after “2/5 cases”
Insert a comma followed by “an” after “3/5 cases”

Line 16: Insert a comma after “ITB autograft”

PAGE 7
Line 2: Change “also” to “even”

Line 4: Delete “some”

Lines 13-17: Split this sentence into a couple sentences.

Line 17: Delete “some”

Line 21: Insert a comma after “showed”

Line 22: Insert a comma after “copers”

Page 16

Line 1: Delete “The tests used were”
Delete the comma after “Landing”
Insert “tests were used” after “Medial Drop Landing”

Line 2: Delete “The conclusion drawn was that”
Capitalize “both”

Line 6: Use of “functional”; “functional” is not clearly defined here

Line 17: Insert a comma after “study”

Line 19: Delete “also”

Page 17

Line 8: Change “; however” to “, and”

Discretionary Revisions (which the author can choose to ignore)

What next?: Unable to decide on acceptance or rejection until the authors have responded to the major compulsory revisions

Level of interest: An article of importance in its field

Quality of written English: Needs some language corrections before being published

Statistical review: No

Declaration of competing interests:
I declare that I have no competing interests