Reviewer’s report

Title: The effect of a sports chiropractic manual therapy intervention on the prevention of hamstring and lower limb injuries in semi-elite Australian Rule footballers: A randomized controlled trial

Version: 1 Date: 14 December 2009

Reviewer: Bernadette Murphy

Reviewer’s report:

1. Is the question posed by the authors well defined? Yes, it was “…to investigate whether a sports chiropractic manual therapy intervention protocol provided in addition to the current best practice management could prevent the occurrence of and weeks missed due to hamstring and other lower-limb injuries at the semi-elite level of Australian football..”

2. Are the methods appropriate and well described? The methods are well described. The authors have relied on previous work on the expected incidence of hamstring injuries to base their comparison of injury rates on in their current study, which is a reasonable comparison given that such data existed.

3. Are the data sound? Yes

4. Does the manuscript adhere to the relevant standards for reporting and data deposition? Yes

5. Are the discussion and conclusions well balanced and adequately supported by the data? Yes

6. Are limitations of the work clearly stated? Yes

7. Do the authors clearly acknowledge any work upon which they are building, both published and unpublished? Yes

8. Do the title and abstract accurately convey what has been found? Yes

9. Is the writing acceptable? Yes the manuscript is well written

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

The authors have based their power calculation as such “historical AFL data [3] the assumed hamstring incidence level for the null hypothesis is 15%. For a 5% significance level and 80% power, a sample size of at least 63 and less than 117
is required to detect a 50% reduction in the incidence of hamstring injuries." This is an appropriate way to base their calculation. However although they only had 59 subjects they then report that the chiropractic management “resulted in the prevention of primary lower limb muscle strain injuries, although no statistical significance was noted for hamstring injury and primary non-contact knee injury.” The level of significance for both of these was p=0.051. Given that they were short on the number of subjects required, I would like to see the authors acknowledge the strong likelihood of a type two error especially given how close each of these results were to p<0.05, but far more appropriately, I would like to see them provide effect size and power calculations based on these results for how many subjects would be required for further studies. Also they did not make it clear if their original power calculation was based on the size of single group compared to the AFL rate of 15% injury. If this is the case they in fact only had half the number of participants needed and still managed to show very strong effects.

This is a well written and carefully planned piece of work and I would like to see these changes made to more fully inform providers of evidence based practice.

Level of interest: An article of importance in its field

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.