

Appendix 1

Table S1 Search strategy

Search strategy	Records2011/2015
<p><u>Pubmed</u></p> <p>(hamstring injur*[tw] OR hamstring muscle injur*[tw] OR hamstring muscle strain*[tw] OR hamstring rupt*[tw] OR hamstring strain*[tw] OR hamstring tear*[tw]) AND ("therapeutics"[mesh] OR "therapy"[subheading] OR therapy[tw] OR therapeut*[tw] OR rehabil*[tw] OR treat[tw] OR treated[tw] OR treatment*[tw] OR manag*[tw] OR intervent*[tw])</p>	139/240
<p><u>EMBASE</u></p> <p>((hamstring* OR thigh OR semitendin* OR semimembran* OR "femoral biceps" OR "biceps femoris") ADJ3 (injur* OR tear* OR rupt* OR strain*).ti,ab,de AND (exp therapy/ OR therapy.fs OR therap*.ti,ab,de OR rehabil*.ti,ab,de OR treat*.ti,ab,de OR manag*.ti,ab,de OR intervent*.ti,ab,de)</p>	336/1138
<p><u>Web of Science core collection</u></p> <p>(TI=((hamstring* OR semitendin* OR semimembran* OR "biceps femoris" OR "femoral biceps") SAME (injur* OR tear* OR rupt* OR strain*)) AND TS=(therap* OR rehabil* OR treat* OR manag* OR intervent* OR physiother*)) OR (TS=((hamstring* OR semitendin* OR semimembran* OR "biceps femoris" OR "femoral biceps") SAME (injur* OR tear* OR rupt* OR strain*)) AND TI=(therap* OR rehabil* OR treat* OR manag* OR intervent* OR physiother*))</p>	352/433
<p><u>Cochrane library</u></p> <p>((hamstring* OR thigh* OR semitendin* OR semimembran* OR 'femoral biceps' OR 'biceps femoris') NEAR/3 (injur* OR tear* OR rupt* OR strain*)) AND (therap* OR rehabil* OR treat* OR manage* OR intervent*))</p> <p>In all text. Restricted to clinical trials.</p>	22/40
<p><u>CINAHL</u></p> <p>TX (((hamstring* N3 injur*) OR (hamstring* N3 tear*) OR (hamstring* N3 rupt*) OR (hamstring* N3 strain*) OR (thigh* N3 injur*) OR (thigh* N3 tear*) OR (thigh* N3</p>	377/548

rupt*) OR (thigh* N3 strain*) OR (semitendin* N3 injur*) OR (semitendin* N3 tear*) OR (semitendin* N3 rupt*) OR (semitendin* N3 strain*) OR (semitemembran* N3 injur*) OR (semitemembran* N3 tear*) OR (semitemembran* N3 rupt*) OR (semitemembran* N3 strain*) OR (femoral biceps N3 injur*) OR (femoral biceps N3 tear*) OR (femoral biceps N3 rupt*) OR (femoral biceps N3 strain*) OR (biceps femoris N3 injur*) OR (biceps femoris N3 tear*) OR (biceps femoris N3 rupt*) OR (biceps femoris N3 strain*) AND (therap* OR rehabil* OR treat* OR manage* OR intervent*)))

Sportdiscus

388/550

TX (((hamstring* N3 injur*) OR (hamstring* N3 tear*) OR (hamstring* N3 rupt*) OR (hamstring* N3 strain*) OR (thigh* N3 injur*) OR (thigh* N3 tear*) OR (thigh* N3 rupt*) OR (thigh* N3 strain*) OR (semitendin* N3 injur*) OR (semitendin* N3 tear*) OR (semitendin* N3 rupt*) OR (semitendin* N3 strain*) OR (semitemembran* N3 injur*) OR (semitemembran* N3 tear*) OR (semitemembran* N3 rupt*) OR (semitemembran* N3 strain*) OR (femoral biceps N3 injur*) OR (femoral biceps N3 tear*) OR (femoral biceps N3 rupt*) OR (femoral biceps N3 strain*) OR (biceps femoris N3 injur*) OR (biceps femoris N3 tear*) OR (biceps femoris N3 rupt*) OR (biceps femoris N3 strain*)) AND (therap* OR rehabil* OR treat* OR manage* OR intervent*)))

Total: 2949

Appendix 2: Modified Downs and Blacks list

Modified Downs and Black checklist

Allocate 1 point per question answered with "Yes"	Points
<i>REPORTING</i>	
1. Is the hypothesis/aim/objective of the study clearly described?
2. Are the main outcomes to be measured clearly described in the Introduction or Methods section? <i>If the main outcomes are first mentioned in the Results section, the question should be answered no.</i>
3. Are the characteristics of the patients included in the study clearly described? <i>In cohort studies and trials, inclusion and/or exclusion criteria should be given</i>
4. Are the interventions of interest clearly described? <i>Treatments and placebo (where relevant) that are to be compared should be clearly described.</i>
5. Are the distributions of principal confounders in each group of subjects to be compared clearly described? <i>A list of principal confounders is provided.</i>
6. Are the main findings of the study clearly described?

Simple outcome data (including denominators and numerators) should be reported for all major findings so that the reader can check the major analyses and conclusions.

7. Does the study provide estimates of the random variability in the data for the main outcomes?

In non-normally distributed data the inter-quartile range of results should be reported. In normally distributed data the standard error, standard deviation or confidence intervals should be reported. If the distribution of the data is not described, it must be assumed that the estimates used were appropriate and the question should be answered yes.

8. Have all important adverse events that may be a consequence of the intervention been reported?

This should be answered yes if the study demonstrates that there was a comprehensive attempt to measure adverse events. (A list of possible adverse events is provided)

9. Have the characteristics of patients lost to follow-up been described?

This should be answered yes where there were no losses to follow-up or where losses to follow-up were so small that findings would be unaffected by their inclusion. This should be answered "no" where a study does not report the number of patients lost to follow-up

10. Have actual probability values been reported (e.g. 0.035 rather than <0.05) for the main outcomes except where the probability value is less than 0.001?

EXTERNAL VALIDITY

11. Were the subjects asked to participate in the study representative of the entire population from which they were recruited?

The study must identify the source population for patients and describe how the patients were selected. Patients should be representative if they comprised the entire source population, an unselected sample of consecutive patients, or a random sample. Random sampling is only feasible where a list of all member of the relevant population exists. Where a study does not report the proportion of the source population from which the patients are derived, the question should be marked as no.

12. Were those subjects who were prepared to participate representative of the entire population from which they were recruited?

The proportion of those asked who agreed should be stated. Validation that the sample was representative would include demonstrating that the distribution of the main confounding factors was the same in the study sample and the source population.

13. Were the staff, places, and facilities where the patients were treated, representative of the treatment the majority of patients receive?

For the question to be answered yes the study should demonstrate that the intervention was representative of that in use in the source population. The question should be answered no if, e.g. the intervention was undertaken in a specialist center unrepresentative of the hospitals most of the source population would attend.

14. Was an attempt made to blind study subjects to the intervention they have received?

For studies where the patients would have no way of knowing which intervention they received, this should be answered yes.

15. Was an attempt made to blind those measuring the main outcomes of the intervention?

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16. Was an attempt made to blind those treating the patient?

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17. If any of the results of the study were based on “data dredging”, was this made clear?

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Any analyses that had not been planned at the outset of the study should be clearly indicated. If no retrospective unplanned subgroup analyses were reported, then answer yes.

18. In trials and cohort studies, do the analyses adjust for different lengths of follow-up of patients?

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Where follow-up was the same for all study patients the answer should be yes. If different lengths of follow-up were adjusted for by, e.g., survival analysis the answer should be yes. Studies where differences in follow-up are ignored should be answered no.

19. Were the statistical tests used to assess the main outcomes appropriate?

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The statistical techniques used must be appropriate to the data. E.g. non-parametric methods should be used for small sample sizes. Where little statistical analysis has been undertaken but where there is no evidence of bias, the question should be answered yes. If the distribution of data (normal or not) is not described, it must be assumed that the estimates used were appropriate and the question should be answered yes.

20. Was compliance with the intervention/s reliable?

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Where there was non compliance with the allocated treatment or where there was contamination of one group, the question should be answered no. For studies where the effect of any misclassification was likely to bias any association to the nul, the question should be answered yes.

21. Were the main outcome measures used accurate (valid and reliable)?

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For studies where the outcome measures return to play and re-injury rate are clearly described, the question should be answered yes.

INTERNAL VALIDITY

22. Were the patients in different intervention groups (trials and cohort studies)?

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E.g., patients for all comparison groups are selected from the same hospital.

23. Were study subjects in different intervention groups (trials and cohort studies) recruited over the same time?

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For a study which does not specify the time period over which patients were recruited, the question should be answered as no.

24. Were study subjects randomised to intervention groups?

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Studies which state that subjects were randomised should be answered yes except where method of randomisation would not ensure random allocation. E.g. alternate allocation would score no because it is predictable.

25. Was the randomised intervention assignment concealed from both patients and health care staff until recruitment was complete and irrevocable?

If assignment was concealed from patients but not from staff, it should be answered no.

26. Was there adequate adjustment for confounding in the analyses from which the main findings were drawn?

This question should be answered no for trials if: the main conclusions of the study were based on analyses of treatment rather than intention to treat; the distribution of known confounders in the different treatment groups was not described; or the distribution of known confounders differed between the different treatment groups but was not taken into account in the analyses.

27. Were losses of patients to follow-up taken into account?

If the numbers of patients lost to follow-up are not reported, the question should be answered as no. If the proportion lost to follow-up was too small to affect the main findings, the question should be answered yes.

POWER

28. Did the study have sufficient power to detect a clinically important effect where the probability value for a difference being due to chance <5%?

Sample sizes have been calculated to detect a difference of x% and y%.

TOTAL

Appendix 3

Table S3 D&B scores for the 28 questions of the included RCTs

Author	Question number																												Total	
	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	<u>6</u>	<u>7</u>	<u>8</u>	<u>9</u>	<u>10</u>	<u>11*</u>	<u>12*</u>	<u>13*</u>	<u>14</u>	<u>15</u>	<u>16</u>	<u>17</u>	<u>18</u>	<u>19</u>	<u>20</u>	<u>21</u>	<u>22</u>	<u>23</u>	<u>24</u>	<u>25</u>	<u>26</u>	<u>27</u>	<u>28</u>		
Sherry & Best ²⁰	1	0	1	1	0	1	1	0	1	1	0	0	0	0	0	0	1	1	1	1	1	1	1	1	0	0	1	0	16	
Silder et al. ²¹	1	1	1	1	0	1	1	0	1	1	1	0	1	0	0	0	1	1	1	1	1	1	1	1	0	0	0	0	18	
Reynolds et al. ¹⁸	1	1	0	1	0	1	1	1	0	0	0	0	0	1	1	1	1	1	1	0	0	1	1	1	1	0	0	0	16	
Malliaropoulos et al. ¹⁹	1	1	0	1	0	1	1	0	0	1	1	0	0	0	0	0	1	1	1	0	0	1	1	1	0	0	0	1	14	
Cibulka et al. ¹⁷	1	1	0	1	0	1	1	0	1	0	0	0	1	0	0	0	1	1	1	1	0	1	1	1	0	0	1	0	15	
Askling et al. ²²	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	1	0	1	0	1	1	1	1	0	1	0	1	15	
Askling et al. ²³	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	1	0	1	0	1	1	1	1	0	1	0	1	15	
Reurink et al. ²⁵	1	1	1	1	1	1	1	1	1	1	1	0	1	1	1	1	1	1	1	1	0	1	1	1	1	1	1	1	0	25
Reurink et al. ²⁵ scored by independent assesor (AS)	1	1	1	1	1	1	1	1	1	1	1	0	0	1	1	1	1	1	1	1	1	1	1	0	1	1	1	1	1	25
Hamid et al. ²⁴	1	1	1	1	1	1	1	1	0	1	0	0	1	0	1	0	1	1	1	0	0	1	1	1	0	1	0	1	19	
Hamilton et al. ²⁶ PRP versus no injection	1	1	1	1	1	1	1	1	1	1	1	0	1	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	24	
Hamilton et al. ²⁶ PRP versus PPP	1	1	1	1	1	1	1	1	1	1	1	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	27	

*Questions 11-13 were found to be highly subjective by all the assessors and interpretations varied greatly. Consensus was most often reached through the third assessor (JT).