

Hamstring Assessment
Tests commonly used by physiotherapists to assess a hamstring strain – a survey of physiotherapists in practice

Physiotherapy Examination for Hamstring Strains

Thank you for taking the time to complete this questionnaire. Your response will be invaluable in helping us to establish a standardised assessment procedure for hamstring injuries. Please read the case scenario presented below then answer the questions relative to that case.

This survey is a collaborative effort between the Centre for Sports Medicine, Research and Education (CSMRE) and Sports Physiotherapy Australia (SPA), and has been approved by the University of Melbourne Human Research Ethics Committee. By returning this survey, you are giving consent to participate in the study. You are not required to provide your name as the results will be anonymous.

Please return all completed questionnaires to SPA by fax to **03-9534 9199** or by mail to **Sports Physiotherapy Australia, PO Box 6465, St Kilda Road Central, VIC 8008**

CASE SCENARIO :

A 22- year old footballer with no history of previous hamstring strain or low back pain describes a sudden onset of pain in the posterior thigh while accelerating to chase an opponent. He is unable to play on and limps off the field. Your subjective examination at Day 2 makes you suspect that he may have a Grade II hamstring strain.

Which tests would you include in your objective examination at (i) 2 days post injury and at (ii) 2 weeks post injury ? Please indicate your answer by filling in each box with the appropriate number shown in the box below, depending on how often you would use the tests when assessing such a patient. The numbers are :

<p>0 = Never 1 = Occasionally 2 = Often 3 = Always</p>	<p>For example, if you use the Straight Leg Raise occasionally at 2 days and always at 2 weeks :</p> <p style="text-align: right; margin-right: 20px;"><i>2 days 2 weeks</i></p> <p style="text-align: center;">Straight Leg Raise</p>	<table border="1" style="margin-left: auto; margin-right: auto;"> <tr> <td style="width: 30px; height: 30px; text-align: center; vertical-align: middle;">1</td> <td style="width: 30px; height: 30px; text-align: center; vertical-align: middle;">3</td> </tr> </table>	1	3
1	3			

You are also given some space at the end to include other tests that you might use that are not listed.

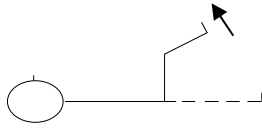

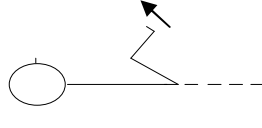
Abbreviations used :

IR = Internal Rotation	ER = External Rotation
Add = Adduction	Abd = Abduction
F = Flexion	E = Extension
EOR = End of Range	A _x = Assessment

Please indicate your answer by filling in each box with the appropriate number shown in the box below, depending on how often you would use the tests.

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- 3 = Always


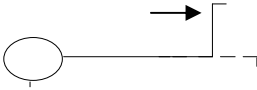
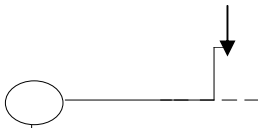
A. Length Tests

		2 days	2 weeks
1. Straight Leg Raise (SLR) - Passive		4% 5% 14% 77%	0% 4% 16% 81%
2. Straight Leg Raise (SLR) – Active		56% 33% 5% 5%	37% 37% 11% 16%
3. Passive SLR with hip IR/ER bias		23% 49% 21% 7%	11% 44% 30% 16%
4. Passive SLR with hip Add/Abd bias		40% 35% 16% 9%	25% 35% 25% 16%
5. Knee extension in supine with hip in 90° flexion (bent knee stretch) - Passive		14% 14% 23% 49%	9% 16% 21% 54%
6. Knee extension in supine with hip in 90° flexion (bent knee stretch) -Active		53% 37% 5% 5%	39% 39% 11% 12%
7. Knee extension in supine with hip fully comfortably flexed		35% 23% 16% 26%	26% 21% 19% 33%

Please indicate your answer by filling in each box with the appropriate number shown in the box below, depending on how often you would use the tests.

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B. Hamstring Static Strength Tests

		2 days	2 weeks
1. Prone Manual Muscle Test (MMT) with knee in 15° flexion		16% 23% 26% 35%	14% 9% 40% 37%
2. Prone MMT with knee in 30° flexion		18% 37% 26% 19%	18% 32% 25% 26%
3. Prone MMT with knee in 60° flexion		25% 33% 23% 19%	25% 32% 23% 21%
4. Prone MMT with knee in 90° flexion		14% 21% 25% 40%	11% 21% 21% 47%
5. Prone MMT with knee in 90° flexion (with tibial IR/ER)		60% 28% 7% 5%	47% 33% 12% 7%
6. Prone MMT with knee in 90° flexion (pushing heel to ceiling – resisted hip E)		51% 28% 16% 5%	40% 32% 16% 12%

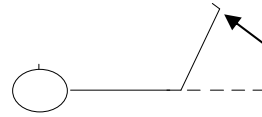
7. Prone resisted SLR (hip extension)



46%
30%
16%
9%

33%
33%
16%
18%

8. Supine resisted hip extension at EOR SLR



56%
19%
12%
12%

42%
19%
19%
19%

9. Supine resisted hip extension at EOR SLR minus 5°-10°

60%
18%
14%
9%

53%
16%
14%
18%

10. Test 8 or 9 with hip IR/ER bias


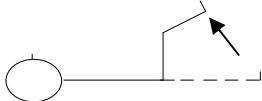
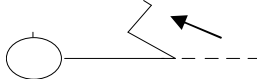
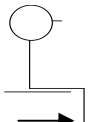
70%
18%
12%
0%

60%
21%
16%
4%

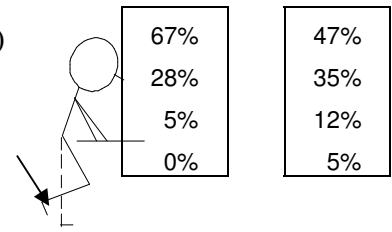
Please indicate your answer by filling in each box with the appropriate number shown in the box below, depending on how often you would use the tests.

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B. Hamstring Static Strength Tests (continued)

		2 days	2 weeks
11. Supine resisted knee flexion at hip and knee 90°		51% 18% 9% 23%	44% 23% 9% 25%
12. Supine resisted knee flexion at hip and knee 90° with tibial (IR/ER) bias		70% 19% 11% 0%	63% 25% 12% 0%
13. Supine resisted knee flexion - (90° hip flexion and EOR knee extension)		61% 19% 14% 5%	47% 21% 23% 9%
14. Supine resisted knee flexion - (EOR hip flexion and EOR knee extension)		72% 19% 7% 2%	56% 26% 12% 5%
15. Supine resisted knee flexion - (EOR hip flexion and EOR knee extension minus 5°-10°)		74% 23% 4% 0%	65% 25% 5% 5%
16. Sitting with hip in 90° flexion resisting active knee flexion at 90° through heel		72% 23% 2% 4%	68% 26% 4% 2%



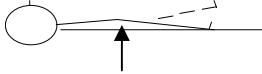
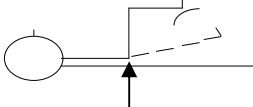
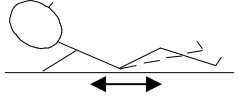
17. Standing leaning forward over table (hip 20°-60° F/ 90° knee F)
resisting active knee flexion at 90° through heel



Please indicate your answer by filling in each box with the appropriate number shown in the box below, depending on how often you would use the tests.

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C. Dynamic Strength Tests

		2 days	2 weeks
1. Single leg bridge (hip 45° F/ knee 90° F)		54% 14% 26% 5%	19% 25% 28% 28%
2. Modified single leg bridge with knee 30° -60° F		68% 19% 12% 0/57	60% 16% 16% 9%
3. Modified single leg bridge with full knee E		77% 19% 4% 0/57	68% 19% 5% 7%
4. Repetitions of Tests 1,2 or 3		67% 16% 14% 4%	40% 19% 23% 18%
5. Single leg bridge with hip flexed at 90° and heel on therapist's shoulder or chair and other leg off table		79% 7% 12% 2%	65% 7% 7% 21%
6. Moving trunk forward and back with weight on hands and heels		95% 5% 0% 0%	89% 5% 4% 2%

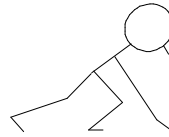
7. Standing Hamstring Drag Test – Knee 10° -20° flexion



75%
11%
9%
5%

72%
9%
11%
9%

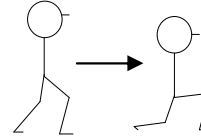
8. 'Sprint Start' functional loading



91%
9%
0%
0%

60%
25%
12%
4%

9. Standing single leg lunge with quick push back to neutral standing



75%
18%
7%
0%

35%
35%
19%
11%

10. Standing hamstring flicks (rapid knee extension – kicking heel to floor) repetitions



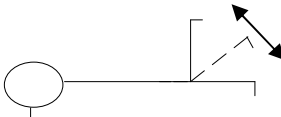
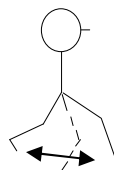
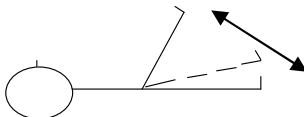
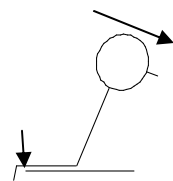
68%
28%
2%
2%

28%
21%
28%
23%

Please indicate your answer by filling in each box with the appropriate number shown in the box below, depending on how often you would use the tests.

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C. Dynamic Strength Tests (continued)

		2 days	2 weeks
11. Prone lying hamstring flicks (rapid knee extension) repetitions		65% 28% 7% 0%	11% 28% 35% 26%
12. Hip-knee flexion/extension repetitions in standing (sprint drill)		82% 14% 2% 2%	39% 25% 25% 12%
13. Supine SLR kicks with rapid repetitions through full range		96% 2% 2% 0%	75% 18% 5% 2%
14. Upright kneeling, lean trunk forward to 10° -20° with ankles anchored		95% 5% 0% 0%	63% 19% 14% 4%

Please indicate your answer by filling in each box with the appropriate number shown in the box below, depending on how often you would use the tests.

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D. Tests involving proximal structures

	2 days	2 weeks
1. Slump Test – Passive	23% 28% 25% 25%	9% 7% 40% 44%
2. Slump Test – Active	35% 39% 16% 11%	19% 23% 40% 18%
3. Slump Test with hip abd/add bias	56% 30% 9% 5%	42% 26% 23% 9%
4. Reassessment of length or strength parameters after slump assessment Ax/ treatment Rx	23% 35% 16% 26%	12% 23% 30% 35%
5. Reassessment of length or strength parameters after lumbar spine Ax/Rx	19% 19% 28% 33%	5% 21% 23% 51%
6. Reassessment of length or strength parameters after sacro-iliac Ax/Rx	33% 25% 21% 21%	23% 26% 19% 32%
7. Reassessment of length or strength parameters after gluteal trigger point Ax/Rx	28% 21% 25% 26%	14% 19% 32% 35%

8. Reassessment of length or strength parameters
after unloading with tape

67%
11%
4%
19%

54%
18%
5%
23%

9. Reassessment of length or strength parameters
after core stability Ax/Rx

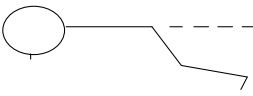
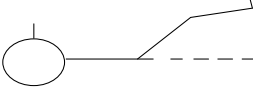
61%
21%
4%
14%

37%
30%
11%
23%

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E. Palpation

	2 days	2 weeks								
1. Prone – hip neutral, knee extended	<table border="1"> <tr><td>7%</td></tr> <tr><td>11%</td></tr> <tr><td>7%</td></tr> <tr><td>75%</td></tr> </table>	7%	11%	7%	75%	<table border="1"> <tr><td>5%</td></tr> <tr><td>7%</td></tr> <tr><td>12%</td></tr> <tr><td>75%</td></tr> </table>	5%	7%	12%	75%
7%										
11%										
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75%										
5%										
7%										
12%										
75%										
2. Prone – hip neutral, knee 15° flexed	<table border="1"> <tr><td>7%</td></tr> <tr><td>16%</td></tr> <tr><td>28%</td></tr> <tr><td>49%</td></tr> </table>	7%	16%	28%	49%	<table border="1"> <tr><td>11%</td></tr> <tr><td>18%</td></tr> <tr><td>26%</td></tr> <tr><td>46%</td></tr> </table>	11%	18%	26%	46%
7%										
16%										
28%										
49%										
11%										
18%										
26%										
46%										
3. Prone – hip 60° -90° flexion (over edge of couch), knee 30-60 flexion	 <table border="1"> <tr><td>86%</td></tr> <tr><td>5%</td></tr> <tr><td>5%</td></tr> <tr><td>4%</td></tr> </table>	86%	5%	5%	4%	<table border="1"> <tr><td>74%</td></tr> <tr><td>9%</td></tr> <tr><td>9%</td></tr> <tr><td>9%</td></tr> </table>	74%	9%	9%	9%
86%										
5%										
5%										
4%										
74%										
9%										
9%										
9%										
4. Supine – hip 60° -90° flexion, knee 30° -60° flexion	 <table border="1"> <tr><td>68%</td></tr> <tr><td>23%</td></tr> <tr><td>5%</td></tr> <tr><td>4%</td></tr> </table>	68%	23%	5%	4%	<table border="1"> <tr><td>53%</td></tr> <tr><td>32%</td></tr> <tr><td>7%</td></tr> <tr><td>9%</td></tr> </table>	53%	32%	7%	9%
68%										
23%										
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9%										

F. Other hamstring objective tests

Please describe any other objective hamstring test that you routinely use that has not been described in this list. Feel free to use diagrams if desired.

General Information

Year of Graduation : _____

Higher degrees (Type and year) : _____

Memberships : APA SPA SMA

Are you an APA Sports Physiotherapist title holder ? Yes No

Where are you currently employed ?

- Public hospital
- Private hospital
- General private practice
- Sports Injuries private practice
- Sports Injuries Clinic
- Others (pls describe) _____

What percentage of your total consultations seen would involve hamstrings ?

- < 10%
- 10-<30%
- 30-<50%
- 50%
- 50-<70%
- 70-<90%
- >90%

Are you currently working with a sporting team ? Yes No

If Yes, which sport and what level ? _____

Once again, thank you for your participation in this survey.
Your confidentiality and anonymity is completely ensured.