Table 2. Muscle, proximal tendon and musculotendinous junction lengths of the hamstring muscle

<table>
<thead>
<tr>
<th>Segment</th>
<th>Author(s), date (number of specimens; M, F)</th>
<th>Muscle length cm, mean ± SD* (including proximal and distal tendon)</th>
<th>Muscle belly length cm, mean ± SD* [as a % of total muscle length]</th>
</tr>
</thead>
<tbody>
<tr>
<td>Muscle</td>
<td></td>
<td>BFih</td>
<td>BFsh</td>
</tr>
<tr>
<td>BFlh</td>
<td>Wickiewicz et al., 1983 (3; no details)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>BFsh</td>
<td>Friederich and Brand, 1990 (2; 1M, 1F)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ST</td>
<td>Rab et al., 1997 35 (15M, 15F)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SM</td>
<td>Woodley &amp; Mercer, 2005 (6; 3M, 3F)</td>
<td></td>
<td></td>
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<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ST</td>
<td>Makihara et al., 2006 (6; 5M, 1F)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SM</td>
<td>Tate et al., 2006 a (10; 6M, 4F)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Ward et al., 2006 (27 from 21 cadavers; 9M, 12F)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Study</td>
<td>Year</td>
<td>Sample Size</td>
<td>Methods</td>
</tr>
<tr>
<td>------------------</td>
<td>------</td>
<td>-------------</td>
<td>---------</td>
</tr>
<tr>
<td>Kellis et al., 2012</td>
<td>8; 8M</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Evangelidis et al., 2015</td>
<td>30; no details</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Freitas et al., 2018</td>
<td>20; 10M, 10F</td>
<td></td>
<td></td>
</tr>
<tr>
<td>M: 26.2 ± 2.3</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Kellis et al., 2009</td>
<td>6; 3M, 3F</td>
<td>Dissection &amp; US</td>
<td>Dissection: 39.0 ± 2.6</td>
</tr>
<tr>
<td>Kellis et al., 2010</td>
<td>8; 4M, 4F</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Kumazaki et al., 2012</td>
<td>13; 8M, 5F</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Storey et al., 2015</td>
<td>(Dissection: 10; 10M)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Van der Made et al., 2015</td>
<td>56; no details</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vadgaonkar et al., 2018</td>
<td>46; 46M</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Proximal tendon</td>
<td>Length cm, mean ± SD* [as a % of total muscle length]</td>
<td>BFh</td>
<td>BFsh</td>
</tr>
<tr>
<td>-----------------</td>
<td>------------------------------------------------------</td>
<td>-----</td>
<td>------</td>
</tr>
<tr>
<td>Garrett et al., 1989 (5; no details)</td>
<td>[60%]</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Woodley &amp; Mercer, 2005 (6; 3M, 3F)</td>
<td>27.1 (range 23.4-30.2) [62%]</td>
<td></td>
<td>12.9 (range 8.5-17.7) [30%]</td>
</tr>
<tr>
<td>Kellis et al., 2010 (8; 4M, 4F)</td>
<td>24.0 ±1.0 [61%]</td>
<td></td>
<td>12.5 ± 1.2 [27%]</td>
</tr>
<tr>
<td>Storey et al., 2015 Dissection (10; 10M); MRI (20; 20M)</td>
<td>Dissection: 25.7 ± 2.9 [56.5 ± 5.5%] MRI: 26.1 ± 2.6</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Van der Made et al., 2015 (56; no details)</td>
<td>19.6 ± 4.1 [47%]</td>
<td></td>
<td>12.4 ± 3.6 [28%]</td>
</tr>
<tr>
<td>Proximal free tendon</td>
<td>Woodley &amp; Mercer, 2005 (6; 3M, 3F)</td>
<td>6.3 [15%]</td>
<td></td>
</tr>
<tr>
<td>Kellis et al., 2009 Dissection (6; 3M, 3F)</td>
<td>9.9 ± 2.7 [25.7 ± 7.0 %]</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Kellis et al., 2010 (8; 4M, 4F)</td>
<td>4.9 ± 0.3 [12%]</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Study</td>
<td>Participants</td>
<td>Dissection</td>
<td>MRI</td>
</tr>
<tr>
<td>-------------------------------------------</td>
<td>--------------</td>
<td>------------</td>
<td>-----</td>
</tr>
<tr>
<td>Batterman et al., 2010 (101; 39M, 62F)</td>
<td>5.7 ± 1.5</td>
<td>2.1 ± 0.4</td>
<td></td>
</tr>
<tr>
<td>Kellis et al., 2012 (8; 8M)</td>
<td>5.0 ± 0.4 [12.9 ± 2.1%]</td>
<td>1.4 ± 0.3 [3.0 ± 0.6%]</td>
<td>8.2 ± 1.4 [20.3 ± 3.2%]</td>
</tr>
<tr>
<td>Storey et al., 2015 Dissection (10; 10M); MRI (20; 20M)</td>
<td>Dissection: 7.4 ± 1.1 MRI: 6.4 ± 1.6</td>
<td>Dissection: 2.2 ± 0.9 MRI: 1.1 ± 0.5</td>
<td>Dissection: 11.1 ± 1.6 MRI: 11.2 ± 1.7</td>
</tr>
<tr>
<td>Van der Made et al., 2015 (56; no details)</td>
<td>5.0 ± 3.4 [12%]</td>
<td>0.2 ± 0.7 [0.4%]</td>
<td>9.4 ± 2.6 [24%]</td>
</tr>
<tr>
<td>Proximal MTJ Woodley &amp; Mercer, 2005 (6; 3M, 3F)</td>
<td>20.6 (range 17.4-26.1) [47%]</td>
<td>11.7 (range 7.5-15.8) [27%]</td>
<td>20.8 (range 17.6-28.6) [47%]</td>
</tr>
<tr>
<td>Kellis et al., 2010 (8; 4M, 4F)</td>
<td>19.1 ± 0.8 [48%]</td>
<td>11.26 ± 1.0 [24%]</td>
<td></td>
</tr>
<tr>
<td>Evangelidis et al., 2015 (30; no details)</td>
<td>16.7 ± 2.8 (range 10.5-22) [43-75%]</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Storey et al., 2015 Dissection (10; 10M); MRI (20; 20M)</td>
<td>Dissection: 18.4 ± 2.5 [40.3 ± 4.9%] MRI: 19.7 ± 2.6</td>
<td>Dissection: 12.8 ± 2.0 [27.9 ± 3.6%] MRI: 10.8 ± 3.6</td>
<td>Dissection: 22.5 ± 1.2 [49.4 ± 2.7%] MRI: 20.5 ± 2.2</td>
</tr>
<tr>
<td>Van der Made et al., 2015 (56; no details)</td>
<td>14.6 [35%]</td>
<td>12.2 [28%]</td>
<td>14.9 [39%]</td>
</tr>
</tbody>
</table>
All studies are dissection-based except for Tate et al., (2006) and Evangelidis et al., (2015) which use MRI, Freitas et al., (2018) who use ultrasound; Kellis et al., (2009) which incorporates dissection and ultrasound; and Storey et al., (2015) which incorporates both dissection and MRI
*Unless stated otherwise

a Data reported for dominant limb. Differences in data between dominant and nondominant limbs were reported for BFlh (females) and BFsh (males and females)
b Number of specimens differs from the total number examined. Data derived from 19 specimens for all hamstring muscles, except for BFlh (18 specimens)
c Not clear if these data represent free tendon or MTJ length

Abbreviations: F, female; M, male; MRI, magnetic resonance imaging; MTJ, musculotendinous junction; US, ultrasound; BFlh, biceps femoris long head; BFsh, biceps femoris short head; ST, semitendinosus; SM, semimembranosus