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Supplementary Data

Table S.1. Quantitative values of individual AM, IM, and PL bundle lengths. Values are reported as mean \pm standard deviation [range] when data is available, unless otherwise noted. MRI sequences include the FIESTA (fast imaging employing steady state acquisition) sequence.

Study	AM Length (mm)	IM Length (mm)	PL Length (mm)	Number of knees	Sex (M:F)	Age (years)	Acquisition method	Ref
Rochcongar + 2016	35 \pm 5	32 \pm 4	29 \pm 5	12	–	[47-79]	Motion capture & stereo-radiograph (<i>ex vivo</i>)	1
Ahmed+ 2013	32 \pm 3.5	–	23 \pm 3	15	10:5	41.6 \pm 6.5	MRI (<i>in vivo</i>)	2
Belvedere+ 2012	30.1 \pm 4.6	–	25.7 \pm 4.7	10	6:4	63.5 \pm 19.1	Digitizer (<i>ex vivo</i>)	3
Iwahashi+ 2008	34 \pm 1	33 \pm 1	27 \pm 2	9	3:6	28.1 [20-33]	0.4T open MRI (<i>in vivo</i>)	4
Jordan+ 2007	37.6 \pm 3.1	–	30 \pm 2.8	7	4:3	[22-39]	3T MRI (<i>in vivo</i>)	5
Li+ 2004	32.5 \pm 2.8	–	27.6 \pm 5.2	5	–	25 \pm 5	1.5T MRI (FIESTA) (<i>in vivo</i>)	6
Boisgard+ 1999	44.4	29.7	28.5	1	–	–	1T MRI (T1) (<i>in vivo</i>)	7

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Hollis+ 1991	34.4 ± 1.0 (S.E.M.)	–	22.5 ± 1.2 (S.E.M.)	10	–	30 [22-44]	Kirchner wires <i>(ex vivo)</i>	8
Yao+ 2017							1.5T MRI	9
Male	39.3 ± 1.2	–	19.90 ± 1.2	54	54:0	32.6 ± 12.2	(T1, T2)	
Female	37.2 ± 2.1	–	19.28 ± 1.6	53	0:52	39.3 ± 15.1	<i>(in vivo)</i>	

Table S.2. Quantitative values of ACL length at 0°, 30°, 60°, and 90° of flexion. Values are reported as mean ± standard deviation [range] when data is available, unless otherwise noted. * indicates standard error of the mean.

Study		ACL Length (mm) at 0°	ACL Length (mm) at 30°	ACL Length (mm) at 60°	ACL Length (mm) at 90°	Ref
Guenoun+ 2017		32.5 ± 2.6	-	-	35.6 ± 1.6	10
Fujimaki+ 2016		31.1 ± 3.1	-	-	24.3 ± 3.2	11
Utturkar+ 2013		30.2 ± 2.6	27.1±2.2	-	-	12
Li+ 2005		30.1 ± 3.8	29.4 ± 3.3	27.4 ± 1.9	26.8 ± 1.9	13
Rochcongar+ 2016						1
	AM	35 ± 5	35 ± 4	34 ± 4	34 ± 4	
	IM	32 ± 4	32 ± 4	30 ± 4	29 ± 4	
	PL	29 ± 5	28 ± 5	26 ± 4	25 ± 3	
Hollis+ 1991						14
	AM	34.4 ± 1.0*	35.9 ± 0.9*	-	38.0 ± 0.8*	
	IM	-	19.3 ± 1.1*	-	-	
	PL	22.5 ± 1.2*	28.1 ± 1.1*	-	15.4 ± 1.2*	
Jordan+ 2007						5
	AM	37.6 ± 3.1	37.9 ± 2.7	-	35.4 ± 2.7	
	PL	30.0 ± 2.8	-	-	23.6 ± 2.9	
Li+ 2004						15
	AM	32.5 ± 2.8	32.5 ± 3.7	30.7 ± 1.8 24.1 ± 2.9	30.2 ± 2.0	
	PL	27.6 ± 5.2	26.3 ± 4.1		23.5 ± 2.3	
Takai+ 1993						16
	Anterior	30.6 ± 1.3	31.3 ± 1.3	-	33.9 ± 0.8	
	Posterior	26.0 ± 0.8	25.0 ± 0.6	-	24.5 ± 0.7	

Table S.3. Quantitative values of ACL volume. Values are reported as mean \pm standard deviation

[range] when data is available, unless otherwise noted. MRI sequences include FLASH (fast low angle shot), PD (proton density), WATSf (water selective fluid scan), and SPGR (spoiled gradient recalled acquisition) sequences. * indicates that some knees within a study are paired.

Study	ACL Volume (mm ³)	Number of knees	Sex (M:F)	Age (years)	Acquisition method	Ref
Lee+ 2017	1857.6 \pm 459.2 [958.2-2871.5]	80	61:19	34.4 \pm 9.8	3T MRI (<i>in vivo</i>)	17
Biercevicz+ 2015	Median 1382.5 CI [1087.6-1605.3]	15	10:5	[24-76]	3T MRI (FLASH) (<i>ex vivo</i>)	18
Whitney+ 2014, Sturnick+ 2015	1169.0 \pm 321.0	88	27:61	High school/college	3T MRI (T1, PD) (<i>in vivo</i>)	19, 20
Hashemi+ 2005	854 \pm 321	15*	–	–	Photographic 3D scanner (<i>ex vivo</i>)	21
Chaudhari+ 2009, Simon+ 2010					1.5T MRI (WATSf)	22
	Male 2256.5	34	34:0	–	(<i>in vivo</i>)	
	Female 1880.3	20	0:20	–		
Fayad+ 2008					1.5T MRI	23
	Male 1070 \pm 460	33	33:0	38.6 \pm 12.3 46.5 \pm 13.0	(T2, PD)	
	Female 770 \pm 260	30	0:30		(<i>in vivo</i>)	
Chandrashekar+ 2005, 2006, Hashemi+ 2011					Photographic 3D scanner (<i>ex vivo</i>)	24- 26
	Male 2967 \pm 886	10	10:0	39 [26-50]		
	Female 1954 \pm 516	10	0:10	37.7 [17-50]		

Charlton+ 2002					0.2T MRI (<i>in vivo</i>)	27
Male	781	52*	28:0	26.3 [21–34]		
Female	700	39*	0:20	27.8 [20–34]		
Jamison+ 2010					1.5T MRI	28
Right	1907.7 ± 432.7 [1342.6-2986.0]	28	17:11	35.0 ± 12.2	(SPGR) (<i>in vivo</i>)	
Left	1881.6 ± 367.7 [1248.7-2990.2]	28	17:11	35.0 ± 12.2		

Table S.4. Quantitative values of ACL angle reported in the sagittal and coronal planes, as well as relative to the Blumensaat's line. Values are reported as mean \pm standard deviation [range] when data is available, unless otherwise noted. MRI sequences include PD (proton density), STIR (short T1 inversion recovery), T2 fat sat (T2 fat saturation), DESS (double echo steady state), and FIESTA (fast imaging employing steady state acquisition) sequences.

Study	ACL Sagittal Angle (°)	ACL Coronal Angle (°)	ACL-Blumensaat's Line Angle (°)	Number of knees	Sex (M:F)	Age (years)	Acquisition method	Ref
Saxena+ 2012	51.3 \pm 4.0	73.5 \pm 6.8	7.1 \pm 1.4	24	–	[18-74]	0.5T MRI (<i>ex vivo</i>)	29
Ahn+ 2007	58.7 \pm 3.8 [50.4-67.5]	65.9 \pm 4.4 [57.7-75.2]	8.6 \pm 3.6 [2.6-18.1]	50	39:11	28.3 \pm 9.9	1.5T MRI (T2, PD) (<i>in vivo</i>)	30
Abebe+ 2011	57 \pm 7	78 \pm 7	–	22	16:6	[19-49]	3T MRI (DESS) and fluoroscopy (<i>in vivo</i>)	31
Stanford+ 2009	57.4	68.1	–	5	–	–	Marker tracking (<i>ex vivo</i>)	32
Guenoun+ 2017	45.1 \pm 4.4	–	13.4 \pm 9.7	20	9:11	32 [24-47]	1T MRI (STIR, T2 fat sat) (<i>in vivo</i>)	33
Cvjetko+ 2011	47.5 \pm 15.8 [22-44]	–	–	28	–	[7-18]	MRI (<i>in vivo</i>)	34
Li+ 2005	64.9 \pm 10.7	–	–	5	–	25 \pm 5	1.5T MRI (FIESTA) (<i>in vivo</i>)	35

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Mellado+ 2004	53.5	–	–	50	31:19	41.5 ± 13.1	1T or 1.5T MRI (T1, T2, T2*, PD) (<i>in vivo</i>)	36
	95% CI: [52.4-54.5]							
Reid+ 2017					98:90	–	1.5T MRI (T2 fat sat, PD) (<i>in vivo</i>)	37
Open Physes	44.7 ± 5.5	71.8 ± 6.1	–	36				
Closed Physes	47.4 ± 4.7	75.3 ± 4.7	–	152				
Kim+ 2008							1.5T MRI (T2), 3.0T MRI (T2) (<i>in vivo</i>)	38
Open Physes	53.2 ± 6.2 [36.1-74.8]	59.2 ± 9.4 [34.4-85]	7.5 ± 5.0 [0.1-30.2]	237	156:168	[1-20]		
Closed Physes	58.8 ± 4.9 [43.5-71.2]	69.1 ± 7.4 [52.5-84.4]	7.8 ± 4.8 [0.2-22.8]	87				
Breitenseher+ 2007						26.9 [18-60]	1.5T MRI (PD) (<i>in vivo</i>)	39
Males	68.3 ± 3.5	80.0 ± 2.7	–	12	12:0			
Females	71.5 ± 4.2	79.4 ± 2.8	–	13	0:13			

Table S.5. Quantitative values of individual ACL bundle insertion site CSA. Values are reported as mean \pm standard deviation [range] when data is available, unless otherwise noted. MRI sequences the DESS (double echo steady state) sequence. * denotes that some knees were paired.

Study	Femoral Insertion [mm ²]	Tibial Insertion [mm ²]	Number of knees	Sex (M:F)	Age (years)	Acquisition method	Ref
Tashiro+ 2018			50	33:17	21.4 \pm 6.8	3T MRI (DESS)	40
	AM -	98.0 \pm 22.8				(<i>in vivo</i>)	
	PL -	76.0 \pm 24.4					
Suruga+ 2017			23	7:16	Median 83 [69-96]	Digital photograph (<i>ex vivo</i>)	41
	AM 64 \pm 23	-					
	PL 63 \pm 25	-					
Iriuchishima+ 2016			14	6:8	Median 82.5 [69-96]	Digital camera (<i>ex vivo</i>)	42
	AM 53 [39-97]	-					
	PL 49 [36-109]	-					
Katuoda+ 2011			50	32:18	79 [48-103]	Digital camera (<i>ex vivo</i>)	43
	36 \pm 10	60.9 \pm 21.8					
	AM 32.1 \pm 10.2	52.2 \pm 17.3					
	PL						
Ferretti+ 2007			16*	4:4	75 [57-94]	Laser scanner (<i>ex vivo</i>)	44
	AM 120 \pm 19.8 [155.3-103.5]	-					
	PL 76.8 \pm 15.6 [118.7-54.5]	-					
Takahashi+ 2006			32	18:14	[68-97]	Digital camera (<i>ex vivo</i>)	45
	AM 66.9 \pm 2.3	67.0 \pm 18.4					
	PL 66.4 \pm 2.3	52.4 \pm 17.6					

Siebold+			50*	9:18	-	Digital	46,
2008, 2008						camera	47
Male AM	53 ± 14	72 ± 30				(<i>ex vivo</i>)	
Female AM	39 ± 10	65 ± 31					
Male PL	45 ± 13	55 ± 16					
Female PL	39 ± 9	51 ± 22					

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