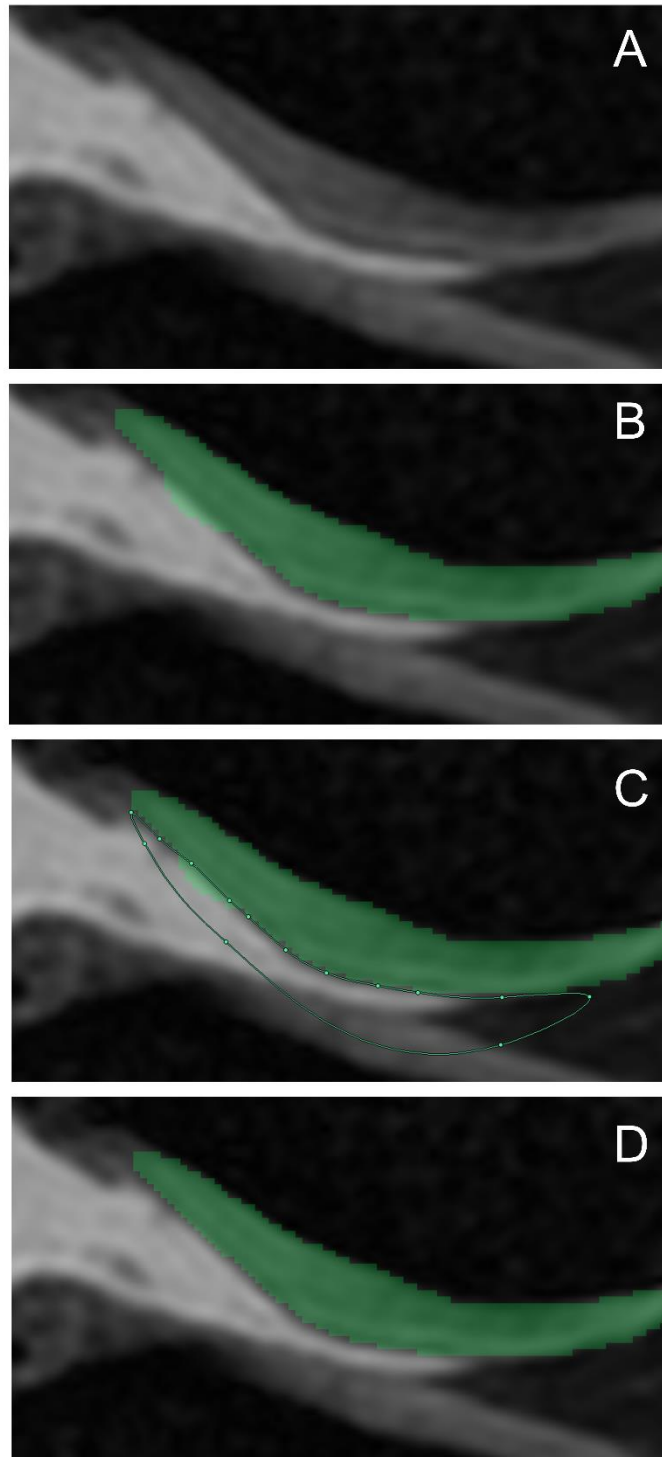


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**Supplementary Figure 1. Manual correction for misjudged cartilage.** A. Fat-suppressed spoiled gradient echo sequence image for cartilage. B. Femoral cartilage automatically selected by our software. Femoral cartilage is shown as a green area but the water-cartilage boundary is slightly misjudged. C. Manual correction. Misjudged area was selected along the water-cartilage boundary with a lasso tool. D. Cartilage area after manual correction.



**Supplementary Table 1.** The projected cartilage area ratio (%) (for cartilage thickness  $\geq 1.5$  mm) used to determine the measurement error. After the first MRI, the volunteers stepped off the MRI platform for a moment, and then the knee MRI scans were repeated.

	Anteromedial		Anterolateral		Posteromedial		Posterolateral	
	1st	2nd	1st	2nd	1st	2nd	1st	2nd
	MRI	MRI	MRI	MRI	MRI	MRI	MRI	MRI
Knee 1	89	88	97	97	67	68	97	97
Knee 2	96	96	97	96	91	91	99	99
Knee 3	99	99	93	95	86	88	99	99
Knee 4	99	98	99	99	89	88	98	96
Knee 5	97	97	95	97	91	90	99	99
Knee 6	93	91	93	91	73	72	97	98
Knee 7	99	98	92	92	92	92	98	98
Knee 8	99	99	100	100	91	89	99	99
Knee 9	98	98	100	100	97	97	100	100
Knee 10	95	97	96	95	87	85	100	99

**Supplementary Table 2.** Absolute value of the difference for the projected cartilage area ratio (%) (for cartilage thickness  $\geq 1.5$  mm) between the first and the second MRI determinations.

	Anteromedial	Anterolateral	Posteromedial	Posterolateral	4 segments
Knee 1	1	0	1	0	
Knee 2	0	1	0	0	
Knee 3	0	2	2	0	
Knee 4	1	0	1	2	
Knee 5	0	2	1	0	
Knee 6	2	2	1	1	
Knee 7	1	0	0	0	
Knee 8	0	0	2	0	
Knee 9	0	0	0	0	
Knee 10	2	1	2	1	
Average	0.7	0.8	1.0	0.4	0.7
SD	0.8	0.9	0.8	0.7	0.5