Supplement

Site	Scanner Model	Table Height	Kernel	Recon-struction	Slice Thickness	Incre-ment
A Coruña	GE Lightspeed VCT	126	Standard	FBP	0.625	0.3
Leiden	Toshiba Aquilion One	126	FC08	FBP	0.5	0.3
Oslo	Philips Brilliance 64	119	B	FBP	0.8	0.4
	Toshiba Aquilion Prime	130	FC08	FBP	0.5	0.3
Paris	Siemens Somatom	143	B40	FBP	0.6	0.3
Utrecht	Philips IQon Spectral CT	154	C	FBP	0.67	0.34

Table S1. CT reconstruction parameters. FBP: filtered back projection.

Sequence	COR IW 2D FS TSE	TRA IW 2D FS TSE	SAG IW 2D FS TSE	COR T1 2D SE
Plane	Coronal	Transversal	Sagittal	Coronal
FS	FS	FS	FS	FS
Matrix (phase)	256	256	256	307
Matrix (frequency)	256	256	256	384
No. of slices	32	32	32	24
FOV (mm)	150	150	150	150
Slice thickness/gap (mm/mm)	3/0.3	3/0.3	3/0.3	3/0.3
Flip angle	180	180	180	180
TE/TR (ms/ms)	29/3700	30/3600	30/3600	12/360
No. excitations averaged	1	1	1	1
ETL	8	8	8	1

Table S2. Sequence parameters of MR protocol.

Lateral	KL	Femur			Tibia		
		Mean [mg/cm^3]	SD	p-value	Mean [mg/cm^3]	SD	p-value
Cort	No ROA (KL 0/1)	425.30	51.41	REF	395.22	56.00	REF
	ROA (KL 2-4)	428.55	69.17	0.33	412.63	71.00	**0.01**
	0	429.00	47.51	REF	395.64	52.82	REF
	1	422.58	54.26	1.00	394.92	58.59	1.00
	2	408.96	55.65	0.81	393.17	52.13	1.00
	3	440.77	77.62	1.00	423.19	79.16	0.16
	4	451.22	47.28	1.00	446.44	78.59	0.17
Sub	No ROA (KL 0/1)	263.26	46.09	REF	208.73	44.64	REF
	ROA (KL 2-4)	246.32	51.44	**<0.01**	210.79	50.86	0.36
	0	270.10	41.60	REF	209.98	38.00	REF
	1	258.25	48.80	1.00	207.81	49.19	1.00
	2	239.06	49.76	**0.01**	196.92	43.59	1.00
	3	254.61	52.11	0.76	219.44	54.45	1.00
	4	227.72	49.26	0.09	226.88	47.76	1.00
Mid	No ROA (KL 0/1)	219.54	46.04	REF	133.35	35.80	REF
	ROA (KL 2-4)	201.56	50.87	**<0.01**	128.12	41.18	0.14
	0	223.27	39.26	REF	136.66	30.12	REF
	1	216.80	50.53	1.00	130.92	39.48	1.00
	2	201.38	51.49	0.17	123.69	42.25	0.77
	3	205.64	49.01	0.43	132.11	41.24	1.00
	4	173.24	56.15	**0.02**	124.50	34.50	1.00
Juxta	No ROA (KL 0/1)	175.90	38.68	REF	100.59	32.15	REF
	ROA (KL 2-4)	163.83	46.15	**0.01**	94.64	36.78	0.08
	0	178.48	32.76	REF	103.85	27.21	REF
	1	174.01	42.62	1.00	98.21	35.33	1.00
	2	164.15	48.92	0.77	93.19	37.97	1.00
	3	166.90	42.96	1.00	97.68	36.43	1.00
	4	139.95	49.61	0.07	80.92	31.40	0.48

Table S3. BMD at the cortical bone plate (Cort) and at the epiphysis at three different locations (subchondral epiphysis (Sub), mid-epiphysis (Mid) and juxtaphysis (Juxta)) at the lateral femur and at the lateral tibia separated according to Kellgren-Lawrence grade (KL). REF = reference. ROA = radiological osteoarthritis. P-values are representative for the comparison of KL0/1 with KL2-4 and KL0 to KL grades 1, 2, 3 or 4 for each anatomic location at the lateral femur and at the lateral tibia.

BMD	Lateral Femur					Lateral Tibia				
	Varus		Normal alignment			Varus		Normal alignment		
	Mean [mg/cm^3]	SD	Mean [mg/cm^3]	SD	p-value	Mean [mg/cm^3]	SD	Mean [mg/cm^3]	SD	p-value
Cort	425.4	59.2	426.4	63.9	**0.90**	395.7	60.5	424.9	67.0	**0.45**
Sub	256.4	48.5	245.0	49.5	**0.10**	208.1	42.1	213.2	56.7	**0.43**
Mid	214.8	49.1	194.6	45.9	**0.002**	131.2	35.8	126.2	41.5	**0.34**
Juxta	174.2	42.2	156.0	42.9	**0.002**	99.1	32.2	90.6	36.5	**0.07**

Table S4: BMD at the cortical bone plate (Cort) and at the epiphysis at three different locations (subchondral epiphysis (Sub), mid-epiphysis (Mid) and juxtaphysis (Juxta)) at the lateral femur and at the lateral tibia for participants with varus alignment and with normal knee alignment. P-values are representative for the comparison of BMD between different anatomic locations within the lateral femur or lateral tibia. Significant p-values are emboldened.

Regression	Lateral Femur				Lateral Tibia			
	adjusted R2		regression coefficient	p-value	adjusted R2		regression coefficient	p-value
Cort	0.08	Age		-1.1	**0.03**	0.12	Age	-2.2	**<0.001**
		Sex		-36.3	**<0.001**		Sex	-38.1	**<0.001**
		BMI		0.9	0.20		BMI	0.2	0.75
Sub	0.11	Age		-0.8	0.06	0.11	Age	-1.5	**<0.001**
		Sex		-28.5	**<0.001**		Sex	-23.1	**<0.001**
		BMI		1.7	**<0.001**		BMI	1.2	**0.02**
Mid	0.12	Age		-0.9	**0.02**	0.09	Age	-0.7	**0.02**
		Sex		-26.5	**<0.001**		Sex	-20.1	**<0.001**
		BMI		2.0	**0.001**		BMI	1.1	**0.01**
Juxta	0.11	Age		-0.6	0.07	0.13	Age	-0.6	**0.04**
		Sex		-20.9	**<0.001**		Sex	-22.5	**<0.001**
		BMI		1.9	**<0.001**		BMI	1.3	**0.001**

Table S5: Multiple regression analyses at each anatomic location (Cort, Sub, Mid, Juxta) at the lateral femur and lateral tibia for age, sex and BMI. Negative regression coefficients for sex imply a decrease of BMI for women. Significant p-values are emboldened.