

## Supplementary data

**Table 1.** After excluding subjects with KL=3, comparison of change in global, articular and bone layer T2 relaxation times (mean [95% confidence interval]) over 48 months of the cartilage compartments of the knees between the group with stable weight and both weight loss groups<sup>1,2</sup>. An increase in T2 values indicates a worsening of cartilage degradation.

Parameter	Compartment		stable weight group	5-10% weight loss group	P-value 5-10% weight loss vs. stable weight group	>10% weight loss group	P-value >10% weight loss vs. stable weight group
<b>Global ΔT2 (in ms)</b>	<b>all compartment ments</b>	Baseline mean T2 (ms)	32.5 [32.2, 32.7]	32.4 [32.1, 32.7]		32.7 [32.3, 33.2]	
		Change in mean T2 (ms)	1.0 [0.8, 1.3]	0.9 [0.6, 1.1]	0.7		0.4
	<b>LF</b>	Baseline mean T2 (ms)	36.3 [35.9, 36.7]	35.7 [35.2, 36.7]	0.06	36.3 [35.6, 37.0]	0.9
		Change in mean T2 (ms)	1.6 [1.2, 1.9]	1.4 [1.0, 1.8]	0.6	1.4 [1.2, 1.7]	0.8
	<b>LT</b>	Baseline mean T2 (ms)	27.1 [26.8, 27.3]	27.3 [26.9, 27.6]	0.4	27.1 [26.4, 27.9]	0.8
		Change in mean T2 (ms)	1.3 [1.0, 1.6]	1.0 [0.6, 1.2]	0.08	0.9 [0.6, 1.5]	0.6
	<b>MF</b>	Baseline mean T2 (ms)	39.7 [39.2, 40.1]	39.1 [38.6, 39.6]	0.1	40.2 [39.5, 40.5]	0.2
		Change in mean T2 (ms)	0.7 [0.3, 1.0]	0.7 [0.4, 1.2]	0.1	0.4 [0.2, 1.1]	0.4
	<b>MT</b>	Baseline mean T2 (ms)	29.1 [28.9, 29.4]	29.2 [28.8, 29.6]	0.8	29.3 [28.7, 29.9]	0.6
		Change in mean T2 (ms)	1.1 [0.8, 1.4]	0.7 [0.4, 1.1]	0.2	0.0 [-0.2, 0.4]	<0.001
	<b>PAT</b>	Baseline mean T2 (ms)	30.6 [30.1, 30.9]	30.6 [30.1, 31.0]	0.9	31.3 [30.5, 32.2]	0.1
		Change in mean T2 (ms)	1.0 [0.6, 1.5]	0.5 [0.01, 0.9]	0.08	0.4 [-0.2, 1.2]	0.2
<b>Articular Layer ΔT2 (in ms)</b>	<b>all compartment ments</b>	Baseline mean T2 (ms)	35.3 [35.0, 35.7]	35.2 [34.9, 35.6]	0.7	35.6 [35.0, 36.2]	0.4
		Change in mean T2 (ms)	1.2 [0.9, 1.5]	1.0 [0.7, 1.3]	0.4	0.7 [0.1, 1.2]	0.1
	<b>MT</b>	Baseline mean T2 (ms)	32.1 [31.7, 32.5]	32.2 [31.7, 32.7]	0.8	32.3 [31.5, 33.2]	0.6
		Change in mean T2 (ms)	1.1 [0.8, 1.4]	0.8 [0.9, 1.4]	0.2	0.0 [-0.4, 0.3]	<0.001
	<b>PAT</b>	Baseline mean T2 (ms)	33.2 [32.7, 33.7]	33.3 [32.7, 33.9]	0.2	34.0 [33.0, 35.0]	0.2
		Change in mean T2 (ms)	1.0 [0.5, 1.5]	0.5 [0.0, 1.0]	0.2	0.6 [0.0, 1.2]	0.1
<b>Bone Layer ΔT2 (in ms)</b>	<b>all compartment ments</b>	Baseline mean T2 (ms)	29.6 [29.3, 29.8]	29.6 [29.3, 29.8]	0.9	29.8 [29.3, 30.2]	0.4
		Change in mean T2 (ms)	1.0 [0.8, 1.2]	0.9 [0.6, 1.1]	0.5	0.3 [-0.2, 0.7]	0.006
	<b>MT</b>	Baseline mean T2 (ms)	26.4 [26.1, 26.7]	26.5 [26.1, 26.7]	0.8	26.5 [25.9, 27.0]	0.9
		Change in mean T2 (ms)	1.0 [0.6, 1.2]	0.8 [0.4, 1.0]	0.8	-0.2 [-0.7, 0.4]	<0.001
	<b>PAT</b>	Baseline mean T2 (ms)	27.8 [27.5, 28.2]	27.8 [27.4, 28.2]	0.9	28.6 [27.8, 29.4]	0.1
		Change in mean T2 (ms)	1.1 [0.7, 1.5]	0.5 [0.01, 0.9]	0.05	0.1 [-0.3, 1.6]	0.004

<sup>1</sup>The associations between changes of T2 relaxation times and weight loss (5-10% weight loss and >10% weight loss) over 48 months were assessed using linear regression models adjusting for age, sex, baseline BMI and baseline KL score.

<sup>2</sup>Results for KL=0, 1 and 2

BMI, body mass index; LF, lateral femur; LT, lateral tibia; MF, medial femur; MT, medial tibia; PAT, patella.