

**SUPPLEMENTARY Table 2:** Summary of results from SAXS analysis from the full tendon and the separate regions of interest.

Data is represented as mean (standard deviation).

		Week 1		Week 2		Week 4	
		Normal loading	Unloading	Normal loading	Unloading	Normal loading	Unloading
	N	7	8	6	7	6	7
D-spacing (nm)	Full tendon	64.63 (0.03)	64.54 (0.02)	64.88 (0.02)	64.80 (0.06)	65.04 (0.04)	65.09 (0.19)
	Lateral	64.57 (0.06)	64.54 (0.05)	64.89 (0.02)	64.73 (0.07)	65.05 (0.07)	65.07 (0.19)
	Centre	64.70 (0.02)	64.60 (0.06)	64.86 (0.04)	64.86 (0.06)	65.07 (0.03)	65.06 (0.10)
	Medial	64.70 (0.02)	64.60 (0.06)	64.86 (0.06)	64.86 (0.04)	65.07 (0.03)	65.06 (0.10)
Intrafibrillar order (AU)	Full tendon	0.017 (0.001)	0.016 (0.002)	0.022 (0.005)	0.018 (0.005)	0.048 (0.016)	0.038 (0.020)
	Lateral	0.016 (0.002)	0.016 (0.004)	0.020 (0.004)	0.015 (0.005)	0.041 (0.014)	0.033 (0.017)
	Centre	0.014 (0.002)	0.012 (0.001)	0.022 (0.004)	0.013 (0.001)	0.039 (0.011)	0.037 (0.024)
	Medial	0.020 (0.003)	0.020 (0.005)	0.026 (0.008)	0.023 (0.002)	0.063 (0.027)	0.044 (0.021)
Degree of orientation (AU)	Full tendon	0.42 (0.01)	0.44 (0.01)	0.45 (0.02)	0.45 (0.02)	0.46 (0.01)	0.46 (0.02)
	Lateral	0.42 (0.02)	0.43 (0.02)	0.45 (0.01)	0.45 (0.02)	0.46 (0.01)	0.46 (0.02)
	Centre	0.42 (0.01)	0.43 (0.02)	0.44 (0.02)	0.45 (0.02)	0.46 (0.04)	0.46 (0.04)
	Medial	0.43 (0.01)	0.45 (0.02)	0.47 (0.03)	0.46 (0.04)	0.45 (0.01)	0.47 (0.02)
FWHM (nm)	Full tendon	7.60 (0.23)	7.60 (0.23)	8.17 (0.40)	8.86 (0.47)	8.32 (0.25)	8.05 (0.45)
	Lateral	7.77 (0.31)	7.39 (0.37)	8.17 (0.48)	8.85 (0.36)	8.35 (0.28)	8.22 (0.49)
	Centre	8.03 (0.42)	8.40 (0.35)	8.62 (0.41)	9.79 (0.77)	8.60 (0.27)	8.45 (0.44)
	Medial	6.98 (0.24)	7.38 (0.60)	7.69 (0.55)	7.88 (0.48)	8.02 (0.24)	7.46 (0.50)
Anisotropy (degrees)	Full tendon	138.2 (4.5)	135.6 (4.9)	142.8 (7.0)	134.0 (3.2)	125.0 (16.4)	127.7 (10.6)
	Lateral	134.7 (8.8)	133.3 (8.0)	143.8 (2.7)	143.2 (5.2)	128.3 (15.0)	131.1 (9.8)
	Centre	136.6 (6.4)	136.3 (5.2)	144.6 (6.9)	140.4 (8.0)	137.6 (17.9)	133.9 (17.8)
	Medial	142.6 (7.8)	137.0 (6.5)	139.7 (15.2)	120.1 (10.5)	109.4 (22.4)	117.7 (17.8)