

Online Resource 4. Main effects and interactions from two-way ANOVAs for skeletal outcomes that were assessed at a single timepoint (2-, 4-, 8-, or 12-weeks), and for serum measurements.

OUTCOME	MAIN EFFECT	MAIN EFFECT	INTERACTION	TUKEY POST HOC
<i>Tibial Cancellous Histomorphometry</i>				
BV/TV %	Group: p < 0.001 SHAM: 7.5 ± 0.6 SCI: 3.5 ± 0.3	Time: p = 0.366 2 wk (a): 6.4 ± 0.8 1 mo (b): 5.6 ± 0.8 2 mo (c): 5.9 ± 1.0 3 mo (d): 4.7 ± 0.8	Interaction: p = 0.990 For Means ± SEM see Fig 1A	NS
Tb.N #/mm	Group: p < 0.001 SHAM: 1.20 ± 0.09 SCI: 0.67 ± 0.06	Time: p = 0.192 2 wk (a): 1.08 ± 0.10 1 mo (b): 0.98 ± 0.13 2 mo (c): 0.96 ± 0.14 3 mo (d): 0.77 ± 0.13	Interaction: p = 0.678 For Means ± SEM see Fig 1B	NS
Tb.Th µm	Group: p < 0.001 SHAM: 61.2 ± 1.6	Time: p = 0.001 2 wk (a): 53.5 ± 1.8 d*	Interaction: p = 0.065 For Means ± SEM	NS

	SCI: 52.6 ± 1.5	1 mo (b): 54.8 ± 1.7 d* 2 mo (c): 57.7 ± 1.9 3 mo (d): 65.2 ± 3.6	see Fig 1C	
Tb.Sp μm	Group: p < 0.001 SHAM: 924 ± 97 SCI: 2154 ± 369	Time: p = 0.061 2 wk (a): 953 ± 90 1 mo (b): 1980 ± 616 2 mo (c): 1710 ± 384 3 mo (d): 1527 ± 252	Interaction p = 0.050 For Means ± SEM see Fig 1D	SHAM 2 wk < SCI 1 mo ‡ SCI 2 wk < SCI 1 mo † SHAM 1 mo < SCI 1 mo ‡ SCI 1 mo > SHAM 2 mo † SCI 1 mo > SHAM 3 mo †
Oc.S/BS %	Group: p = 0.858 SHAM: 3.84 ± 0.32 SCI: 3.95 ± 0.41	Time: p = 0.001 2 wk (a): 5.12 ± 0.62 c*,d* 1 mo (b): 4.49 ± 0.47 2 mo (c): 2.85 ± 0.31 3 mo (d): 2.82 ± 0.31	Interaction: p = 0.778 For Means ± SEM see Fig 1E	NS
Ob.S/BS %	Group: p = 0.290 SHAM: 9.6 ± 1.0 SCI: 11.0 ± 1.7	Time: p < 0.001 2 wk (a): 1.7 ± 0.5 b*,c*,d* 1 mo (b): 13.2 ± 2.0	Interaction: p = 0.159 For Means ± SEM see Fig 1F	NS

		2 mo (c): 13.0 ± 1.7 3 mo (d): 12.9 ± 1.8		
MS/BS %	Group: p = 0.032 SHAM: 31.7 ± 1.2 SCI: 25.7 ± 2.3	Time: p < 0.001 2 wk (a): 19.8 ± 2.2 b*,c*,d* 1 mo (b): 30.9 ± 2.2 c 2 mo (c): 38.3 ± 2.1 3 mo (d): 31.0 ± 2.3	Interaction: p < 0.001 For Means ± SEM see Fig 1G	SHAM 2 wk > SCI 2 wk ‡ SHAM 2 wk < SCI 2 mo ‡ SCI 2 wk < <i>ALL OTHERS</i> ‡ SHAM 1 mo < SCI 2 mo † SCI 2 mo > SCI 3 mo ‡
MAR µm/day	Group: p = 0.896 SHAM: 0.94 ± 0.03 SCI: 0.90 ± 0.06	Time: p < 0.001 2 wk (a): 0.77 ± 0.05 1 mo (b): 1.13 ± 0.06 a*,c*,d* 2 mo (c): 0.91 ± 0.04 3 mo (d): 0.91 ± 0.04	Interaction: p < 0.001 For Means ± SEM see Fig 1H	SHAM 2 wk > SCI 2 wk † SHAM 2 wk < SCI 1 mo ‡ SCI 2 wk < SHAM 1 mo ‡ SCI 2 wk < SHAM 3 mo ‡ SCI 2 wk < SCI 1 mo ‡ SCI 2 wk < SCI 2 mo ‡ SHAM 1 mo < SCI 1 mo † SCI 1 mo > SHAM 2 mo ‡ SCI 1 mo > SHAM 3 mo ‡

				SCI 1 mo > SCI 2 mo ‡ SCI 1 mo > SCI 3 mo ‡
BFR/BS $\mu\text{m}^3/\mu\text{m}^2/\text{day}$	Group: p = 0.084 SHAM: 30.2 ± 1.7 SCI: 22.7 ± 2.3	Time: p < 0.001 2 wk (a): 15.2 ± 2.6 b*,c*,d* 1 mo (b): 33.1 ± 2.5 2 mo (c): 35.5 ± 3.0 3 mo (d): 28.0 ± 3.0	Interaction: p < 0.001 For Means ± SEM see Fig 1I	SHAM 2 wk < SCI 2 mo † SCI 2 wk < <i>ALL OTHERS</i> ‡ SCI 2 mo > SCI 3 mo ‡
<i>Tibial Cortical Histomorphometry</i>				
Ct.Th μm	Group: p = 0.143 SHAM: 847 ± 16 SCI: 813 ± 16	Time: p < 0.001 2 wk (a): 755 ± 17 b,c*,d* 1 mo (b): 836 ± 22 2 mo (c): 873 ± 23 3 mo (d): 907 ± 18	Interaction: p = 0.685 For Means ± SEM see Fig 2A	NS
Ps.MS/BS %	Group: p = 0.278 SHAM: 44 ± 2 SCI: 38 ± 4	Time: p < .001 2 wk (a): 41 ± 3 1 mo (b): 29 ± 4 c*,d*	Interaction: p = 0.004 For Means ± SEM see Fig 2B	SHAM 1 mo > SCI 1 mo † SCI 1 mo < SHAM 2 wk ‡ SCI 1 mo < SHAM 2 mo ‡

		2 mo (c): 49 ± 5 3 mo (d): 50 ± 6		SCI 1 mo < SHAM 3 mo ‡ SCI 1 mo < SCI 2 mo ‡ SCI 1 mo < SCI 3 mo ‡
Ps.MAR $\mu\text{m}/\text{day}$	Group: p = 0.598 SHAM: 1.30 ± 0.04 SCI: 1.35 ± 0.06	Time: p < 0.001 2 wk (a): 1.50 ± 0.08 d* 1 mo (b): 1.35 ± 0.05 d* 2 mo (c): 1.27 ± 0.06 3 mo (d): 1.08 ± 0.05	Interaction: p = 0.543 For Means \pm SEM see Fig 2C	NS
Ps.BFR/BS $\mu\text{m}^3/\mu\text{m}^2/\text{day}$	Group: p = 0.620 SHAM: 58 ± 4 SCI: 51 ± 6	Time: p = 0.018 2 wk (a): 59 ± 6 1 mo (b): 39 ± 5 c 2 mo (c): 66 ± 8 3 mo (d): 57 ± 8	Interaction: p = 0.015 For Means \pm SEM see Fig 2D	SHAM 2 wk > SCI 1 mo ‡ SCI 1 mo < SCI 2 mo ‡ SCI 1 mo < SCI 3 mo †
<i>μCT Analysis of Femoral Cancellous Morphology</i>				
vBMD g/cm^3	Group: p < 0.001 SHAM: 0.20 ± 0.01	Time: p = 0.698 2 wk (a): 0.16 ± 0.01	Interaction: p = 0.856 For Means \pm SEM	NS

	SCI: 0.14 ± 0.01	1 mo (b): 0.18 ± 0.01 2 mo (c): 0.18 ± 0.01 3 mo (d): 0.17 ± 0.01	see Fig 3A	
BV/TV % (whole ROI)	Group: p < 0.001 SHAM: 7.9 ± 0.5 SCI: 4.4 ± 0.4	Time: p = 0.067 2 wk (a): 4.9 ± 0.6 1 mo (b): 6.5 ± 0.8 2 mo (c): 7.3 ± 0.8 3 mo (d): 6.6 ± 0.5	Interaction: p = 0.750 For Means \pm SEM see Fig 3B	NS
BV/TV % (distal thirds, 2 wk)	Group: p < 0.001 SHAM: 6.3 ± 0.7 SCI: 3.0 ± 0.5	Location: p < 0.001 dist (a): 7.9 ± 0.8 b*,c* mid (b): 3.8 ± 0.5 a*,c* prox (c): 1.5 ± 0.3	Interaction: p = 0.003 For Means \pm SEM see Online Resource 5A	SHAM dist > <i>ALL OTHERS</i> ‡ SCI dist > SHAM prox † SCI dist > SCI prox ‡ SHAM mid > SHAM prox † SHAM mid > SCI prox ‡ SHAM prox < SCI distal †
BV/TV %	Group: p < 0.001 SHAM: 7.6 ± 0.8	Location: p < 0.001 dist (a): 9.4 ± 1.0 b*,c*	Interaction: p = 0.478 For Means \pm SEM	NS

(distal thirds, 1 mo)	SCI: 3.9 ± 0.7	mid (b): 5.7 ± 0.9 a*,c prox (c): 2.7 ± 0.5	see Online Resource 5B	
BV/TV % (distal thirds, 2 mo)	Group: p = 0.001 SHAM: 8.3 ± 1.0 SCI: 5.1 ± 0.8	Location: p < 0.001 dist (a): 10.8 ± 1.1 b*,c* mid (b): 6.4 ± 0.9 a*,c* prox (c): 2.9 ± 0.6	Interaction: p = 0.120 For Means \pm SEM see Online Resource 5C	NS
BV/TV % (distal thirds, 3 mo)	Group: p = 0.010 SHAM: 6.7 ± 0.9 SCI: 5.0 ± 0.6	Location: p < 0.001 dist (a): 10.1 ± 0.7 b*,c* mid (b): 5.1 ± 0.6 a*,c* prox (c): 2.4 ± 0.4	Interaction: p = 0.159 For Means \pm SEM see Online Resource 5D	NS
Tb.N #/mm	Group: p < 0.001 SHAM: 0.73 ± 0.04 SCI: 0.43 ± 0.04	Time: p = 0.315 2 wk (a): 0.52 ± 0.05 1 mo (b): 0.58 ± 0.07 2 mo (c): 0.67 ± 0.07	Interaction: p = 0.648 For Means \pm SEM see Fig 3C	NS

		3 mo (d): 0.59 ± 0.05		
Tb.Th mm	Group: p = 0.112 SHAM: 0.105 ± 0.001 SCI: 0.100 ± 0.002	Time: p < 0.001 2 wk (a): 0.094 ± 0.002 b*,c*d* 1 mo (b): 0.102 ± 0.002 2 mo (c): 0.109 ± 0.002 3 mo (d): 0.110 ± 0.002	Interaction: p = 0.159 For Means ± SEM see Fig 3D	NS
Tb.Sp mm	Group: p = 0.013 SHAM: 0.96 ± 0.04 SCI: 1.12 ± 0.05	Time: p = .324 2 wk (a): 1.02 ± 0.06 1 mo (b): 1.00 ± 0.07 2 mo (c): 1.01 ± 0.07 3 mo (d): 1.16 ± 0.06	Interaction: p = .714 For Means ± SEM see Fig 3E	NS
Tb.Pf #/mm	Group: p < 0.001 SHAM: 14.9 ± 0.4 SCI: 19.0 ± 0.7	Time: p < 0.001 2 wk (a): 20.1 ± 0.9 b*,c*,d* 1 mo (b): 16.9 ± 0.8 d 2 mo (c): 15.0 ± 0.7 3 mo (d): 13.8 ± 0.5	Interaction: p = 0.016 For Means ± SEM see Fig 3F	SHAM 2 wk < SCI 2 wk ‡ SCI 2 wk > SHAM 1 mo ‡ SCI 2 wk > SHAM 2 mo ‡ SCI 2 wk > SHAM 3 mo ‡ SCI 2 wk > SCI 1 mo †

				SCI 2 wk > SCI 2 mo ‡ SCI 2 wk > SCI 3 mo ‡ SCI 1 mo > SHAM 2 mo † SCI 1 mo > SHAM 3 mo ‡
<i>μCT Analysis of Femoral Cortical Morphology</i>				
Distal Tt.Ar mm²	Group: p = 0.009 SHAM: 18.3 ± 0.3 SCI: 17.4 ± 0.3	Time: p = 0.003 2 wk (a): 17.0 ± 0.3 c*,d 1 mo (b): 17.8 ± 0.3 2 mo (c): 18.8 ± 0.4 3 mo (d): 18.3 ± 0.5	Interaction: p = 0.742 For Means ± SEM see Fig 4A	NS
Distal Ct.Ar mm²	Group: p < 0.001 SHAM: 7.1 ± 0.1 SCI: 6.7 ± 0.1	Time: p < 0.001 2 wk (a): 6.6 ± 0.1 c,d* 1 mo (b): 6.7 ± 0.1 c,d* 2 mo (c): 7.1 ± 0.1 3 mo (d): 7.3 ± 0.2	Interaction: p = 0.047 For Means ± SEM see Fig 4B	SHAM 2 wk < SHAM 2 mo † SHAM 2 wk < SHAM 3 mo ‡ SCI 2 wk < SHAM 2 mo ‡ SCI 2 wk < SHAM 3 mo ‡ SHAM 1 mo < SHAM 3 mo ‡ SCI 1 mo < SHAM 2 mo ‡

				SCI 1 mo < SHAM 3 mo ‡ SHAM 2 mo < SHAM 3 mo ‡ SCI 2 mo < SHAM 3 mo ‡ SHAM 3 mo > SCI 3 mo ‡
Distal Ma.Ar mm²	Group: p = 0.410 SHAM: 11.1 ± 0.2 SCI: 10.8 ± 0.2	Time: p = 0.014 2 wk (a): 10.3 ± 0.2 c* 1 mo (b): 11.1 ± 0.3 2 mo (c): 11.8 ± 0.4 3 mo (d): 11.0 ± 0.5	Interaction: p = 0.978 For Means ± SEM see Fig 4C	NS
Distal Ct.Ar/Tt.Ar %	Group: p = 0.006 SHAM: 0.39 ± 0.01 SCI: 0.37 ± 0.01	Time: p = 0.026 2 wk (a): 0.39 ± 0.01 1 mo (b): 0.37 ± 0.01 2 mo (c): 0.37 ± 0.01 3 mo (d): 0.40 ± 0.01	Interaction: p = 0.964 For Means ± SEM see Fig 4D	NS
Distal Ct.Th mm	Group: p < 0.001 SHAM: 0.511 ± 0.005	Time: p = 0.001 2 wk (a): 0.496 ± 0.005 d	Interaction: p = 0.548 For Means ± SEM	NS

	SCI: 0.483 ± 0.006	1 mo (b): 0.483 ± 0.007 d* 2 mo (c): 0.485 ± 0.010 d* 3 mo (d): 0.528 ± 0.012	see Fig 4E	
Distal vTMD g/cm³	Group: p = 0.159 SHAM: 1.346 ± 0.007 SCI: 1.338 ± 0.005	Time: p < 0.001 2 wk (a): 1.316 ± 0.005 c,d* 1 mo (b): 1.333 ± 0.006 d* 2 mo (c): 1.342 ± 0.007 d* 3 mo (d): 1.399 ± 0.009	Interaction: p = 0.235 For Means \pm SEM see Fig 4F	NS
Diaphysis Tt.Ar mm²	Group: p = 0.167 SHAM: 12.3 ± 0.2 SCI: 12.0 ± 0.2	Time: p = 0.010 2 wk (a): 11.8 ± 0.2 1 mo (b): 12.1 ± 0.2 2 mo (c): 12.7 ± 0.2 a* 3 mo (d): 12.2 ± 0.2	Interaction: p = 0.667 For Means \pm SEM see Fig 4G	NS
Diaphysis Ct.Ar mm²	Group: p = 0.002 SHAM: 7.8 ± 0.1 SCI: 7.4 ± 0.1	Time: p < 0.001 2 wk (a): 7.2 ± 0.1 b*,c*,d* 1 mo (b): 7.7 ± 0.1	Interaction: p = 0.012 For Means \pm SEM see Fig 4H	SHAM 2 wk < SHAM 2 mo ‡ SHAM 2 wk < SHAM 3 mo ‡ SCI 2 wk < SHAM 2 mo ‡

		2 mo (c): 7.9 ± 0.1 3 mo (d): 7.9 ± 0.2		SCI 2 wk < SHAM 3 mo ‡ SHAM 3 mo > SCI 3 mo †
Diaphysis Ma.Ar mm²	Group: p = 0.149 SHAM: 4.47 ± 0.09 SCI: 4.60 ± 0.09	Time: p = 0.101 2 wk (a): 4.57 ± 0.12 1 mo (b): 4.43 ± 0.12 2 mo (c): 4.81 ± 0.15 3 mo (d): 4.37 ± 0.11	Interaction: p = 0.043 For Means \pm SEM see Fig 4I	SCI 1 mo < SCI 2 mo † SCI 2 mo > SHAM 3 mo †
Diaphysis Ct.Ar/Tt.Ar %	Group: p = 0.001 SHAM: 0.64 ± 0.01 SCI: 0.62 ± 0.01	Time: p = 0.015 2 wk (a): 0.62 ± 0.01 d* 1 mo (b): 0.63 ± 0.01 2 mo (c): 0.62 ± 0.01 3 mo (d): 0.64 ± 0.01	Interaction: p = 0.001 For Means \pm SEM see Fig 4J	SHAM 2 wk < SHAM 3 mo † SCI 2 wk < SHAM 3 mo ‡ SCI 1 mo > SCI 2 mo † SHAM 2 mo > SCI 2 mo ‡ SCI 2 mo < SHAM 3 mo ‡
Diaphysis Ct.Th mm²	Group: p < 0.001 SHAM: 0.79 ± 0.01 SCI: 0.76 ± 0.01	Time: p < 0.001 2 wk (a): 0.74 ± 0.01 b,c*,d* 1 mo (b): 0.78 ± 0.01 2 mo (c): 0.79 ± 0.01	Interaction: p = 0.01 For Means \pm SEM see Fig 4K	SHAM 2 wk < SHAM 2 mo ‡ SHAM 2 wk < SHAM 3 mo ‡ SCI 2 wk < SHAM 2 mo ‡ SCI 2 wk < SHAM 3 mo ‡

		3 mo (d): 0.80 ± 0.02		SCI 1 mo < SHAM 3 mo † SHAM 2 mo > SCI 2 mo † SCI 2 mo < SHAM 3 mo ‡ SHAM 3 mo > SCI 3 mo †
Diaphysis vTMD g/cm³	Group: p = 0.001 SHAM: 1.515 ± 0.006 SCI: 1.497 ± 0.004	Time: p < 0.001 2 wk (a): 1.479 ± 0.004 b*,c*,d* 1 mo (b): 1.506 ± 0.004 d* 2 mo (c): 1.512 ± 0.009 d* 3 mo (d): 1.550 ± 0.009	Interaction: p = 0.027 For Means \pm SEM see Fig 4L	SHAM 2 wk < SHAM 2 mo ‡ SHAM 2 wk < SHAM 3 mo ‡ SHAM 2 wk < SCI 3 mo † SCI 2 wk < SHAM 2 mo ‡ SCI 2 wk < SHAM 3 mo ‡ SCI 2 wk < SCI 3 mo † SHAM 1 mo < SHAM 3 mo ‡ SCI 1 mo < SHAM 3 mo ‡ SCI 2 mo < SHAM 3 mo ‡
<i>Bone Mechanical Testing</i>				

Distal Maximum Load N	Group: p < 0.001 SHAM: 99 ± 2 SCI: 81 ± 3	Time: p = 0.001 2 wk (a): 81 ± 5 c*,d* 1 mo (b): 86 ± 4 2 mo (c): 99 ± 3 3 mo (d): 96 ± 3	Interaction: p = 0.390 For Means ± SEM see Fig 5A	NS
Distal Displacement mm	Group: p = 0.001 SHAM: 1.45 ± 0.07 SCI: 1.15 ± 0.05	Time: p = 0.321 2 wk (a): 1.17 ± 0.11 1 mo (b): 1.36 ± 0.11 2 mo (c): 1.31 ± 0.08 3 mo (d): 1.38 ± 0.07	Interaction: p = 0.475 For Means ± SEM see Fig 5B	NS
Distal Energy to Fracture N*mm	Group: p < 0.001 SHAM: 84 ± 4 SCI: 58 ± 4	Time: p = 0.023 2 wk (a): 58 ± 7 c,d 1 mo (b): 70 ± 7 2 mo (c): 78 ± 6 3 mo (d): 78 ± 5	Interaction: p = 0.439 For Means ± SEM see Fig 5C	NS

Distal Stiffness N/mm	Group: p = 0.352 SHAM: 66 ± 4 SCI: 70 ± 3	Time: p = 0.605 2 wk (a): 65 ± 6 1 mo (b): 66 ± 4 2 mo (c): 73 ± 4 3 mo (d): 68 ± 4	Interaction: p = 0.399 For Means ± SEM see Fig 5D	NS
Midshaft Maximum Load N	Group: p < 0.001 SHAM: 250 ± 7 SCI: 217 ± 7	Time: p < 0.001 2 wk (a): 193 ± 5 b*,c*,d* 1 mo (b): 253 ± 10 2 mo (c): 254 ± 8 3 mo (d): 238 ± 14	Interaction: p = 0.148 For Means ± SEM see Fig 5E	NS
Midshaft Displacement mm	Group: p = 0.501 SHAM: 0.82 ± 0.03 SCI: 0.78 ± 0.05	Time: p = 0.707 2 wk (a): 0.86 ± 0.03 1 mo (b): 0.76 ± 0.06 2 mo (c): 0.80 ± 0.05 3 mo (d): 0.79 ± 0.09	Interaction: p = 0.502 For Means ± SEM see Fig 5F	NS

Midshaft Energy to Fracture N*mm	Group: p = 0.001 SHAM: 118 ± 5 SCI: 93 ± 6	Time: p = 0.462 2 wk (a): 102 ± 5 1 mo (b): 115 ± 10 2 mo (c): 104 ± 7 3 mo (d): 102 ± 10	Interaction: p = 0.316 For Means ± SEM see Fig 5G	NS
Midshaft Stiffness N/mm	Group: p = 0.202 SHAM: 367 ± 13 SCI: 335 ± 18	Time: p = 0.002 2 wk (a): 288 ± 14 b*,c* 1 mo (b): 386 ± 15 2 mo (c): 387 ± 15 3 mo (d): 358 ± 32	Interaction: p = 0.708 For Means ± SEM see Fig 5H	NS
<i>Serum Measurements</i>				
TRAP5b % Δ from baseline	Group: p = 0.415 SHAM: -0.03 ± 0.05 SCI: 0.03 ± 0.05	Time: p < 0.001 2 wk (a): 0.01 ± 0.06 c,d* 1 mo (b): 0.07 ± 0.04 d* 2 mo (c): 0.20 ± 0.07 d* 3 mo (d): -0.31 ± 0.04	Interaction: p = 0.005 For Means ± SEM see Fig 6A	SHAM 2 wk < SHAM 2 mo ‡ SHAM 2 wk < SCI 2 wk † SCI 2 wk > SHAM 3 mo ‡ SCI 2 wk > SCI 3 mo ‡ SHAM 1 mo > SCI 3 mo †

				SCI 1 mo > SHAM 3 mo ‡ SCI 1 mo > SCI 3 mo ‡ SHAM 2 mo > SHAM 3 mo ‡ SHAM 2 mo > SCI 3 mo ‡ SCI 2 mo > SHAM 3 mo † SCI 2 mo > SCI 3 mo ‡
Leptin % Δ from baseline	Group: p < 0.001 SHAM: 0.43 ± 0.10 SCI: -0.13 ± 0.05	Time: p < 0.001 2 wk (a): -0.28 ± 0.03 c*,d* 1 mo (b): -0.21 ± 0.06 c*,d* 2 mo (c): 0.64 ± 0.12 3 mo (d): 0.57 ± 0.18	Interaction: p < 0.001 For Means ± SEM see Fig 6B	SHAM 2 wk < SHAM 2 mo ‡ SHAM 2 wk < SHAM 3 mo ‡ SCI 2 wk < SHAM 2 mo ‡ SCI 2 wk < SHAM 2 mo ‡ SCI 2 wk < SCI 2 mo ‡ SHAM 1 mo < SHAM 2 mo ‡ SHAM 1 mo < SHAM 3 mo ‡ SCI 1 mo < SHAM 2 mo ‡ SCI 1 mo < SHAM 3 mo ‡ SCI 1 mo < SCI 2 mo †

				SHAM 2 mo > SCI 2 mo ‡ SHAM 2 mo > SCI 3 mo ‡ SCI 2 mo < SHAM 3 mo ‡ SHAM 3 mo > SCI 3 mo ‡
Testosterone ng/ml	Group: p < 0.001 SHAM: 2.8 ± 0.2 SCI: 1.7 ± 0.2	Time: p = 0.015 2 wk (a): 1.8 ± 0.2 b,d* 1 mo (b): 2.5 ± 0.2 2 mo (c): 2.2 ± 0.3 3 mo (d): 3.0 ± 0.7	Interaction: p = 0.367 For Means ± SEM see Fig 6C	NS
Sclerostin % Δ from baseline	Group: p = 0.153 SHAM: -0.17 ± 0.02 SCI: -0.11 ± 0.03	Time: p < 0.001 2 wk (a): -0.07 ± 0.03 c* 1 mo (b): -0.24 ± 0.03 2 mo (c): -0.17 ± 0.05 3 mo (d): -0.16 ± 0.03	Interaction: p = 0.818 For Means ± SEM see Fig 6D	NS
P1NP	Group: p = 0.972 SHAM: -0.64 ± 0.03	Time: p < 0.001 2 wk (a): -0.53 ± 0.03 c*,d*	Interaction: p = 0.078 For Means ± SEM	NS

% Δ from baseline	SCI: -0.65 ± 0.03	1 mo (b): -0.46 ± 0.04 c*,d* 2 mo (c): -0.74 ± 0.02 3 mo (d): -0.82 ± 0.01	see Fig 6E	
Osteocalcin % Δ from baseline	Group: p = 0.213 SHAM: -0.29 ± 0.04 SCI: -0.23 ± 0.04	Time: p < 0.001 2 wk (a): -0.20 ± 0.04 c 1 mo (b): -0.11 ± 0.06 c,d* 2 mo (c): -0.31 ± 0.05 3 mo (d): -0.39 ± 0.04	Interaction: p = 0.617 For Means \pm SEM see Fig 6F	NS

Values reported are Means \pm SEM. P-values for main effects and interactions are listed in the respective columns. Tukey's *post hoc* tests were performed for multiple comparisons among groups. For time, letters (a – d) indicate differences among timepoints at $p < 0.05$ or * $p < 0.01$ (a = vs 2 wk, b = vs 1 mo, c = vs 2 mo, d = vs 3 mo). For interactions, † indicate $p < 0.05$ and ‡ indicate $p < 0.01$ for respectively labeled SHAM and SCI groups. Only significant *post hoc* values are reported. NS = no significant interaction.

Note: P-values for distal thirds BV/TV were derived from 2 (Group) x 3 [Location (Distal = a, Middle = b, Proximal = c)] ANOVAs. Serum measurements are reported as the percentage change from baseline, except for testosterone which is the actual concentration (due to insufficient sera to determine baseline values on all samples).