

Table 4. Descriptive Data of the Biomechanical and Tomographic Measurements and Interaction (Difference Between the Two Age-groups in the Exercise-effect) of the Male Rats.

	MATURE		SENESCENT		Age-related change (p)	Mech.responsiveness vs. Age, Interaction (p)
	CONTROL	EXERCISED	CONTROL	EXERCISED		
	Mean ± SEM	Mean ± SEM	Mean ± SEM	Mean ± SEM		
BASIC DESCRIPTIVES						
Body weight (g)	574 ± 11	528 ± 10 ^b	602 ± 14	508 ± 14 ^a	0.076	0.032
Femoral length (mm)	42.0 ± 0.2	41.9 ± 0.3	42.0 ± 0.3	42.3 ± 0.4	0.334	0.235
FEMORAL NECK						
tBMC (mg/mm) *	6.0 ± 0.1	6.2 ± 0.1	5.4 ± 0.2 ^e	6.3 ± 0.2 ^b	0.003	0.035
tBMD (mg/cm ³)	1041 ± 17	1078 ± 15	1057 ± 16	1017 ± 21 ^f	0.470	0.039
tCSA (mm ²) *	5.9 ± 0.2	5.8 ± 0.2	5.2 ± 0.3 ^f	6.1 ± 0.2 ^c	0.024	0.027
Fmax (N) *	172 ± 6	179 ± 5	148 ± 8 ^f	164 ± 6	0.018	0.647
FEMORAL MIDSHAFT						
cBMD (mg/cm ³)	1481 ± 5	1474 ± 6	1472 ± 9	1461 ± 7	0.106	0.769
tCSA (mm ²) *	15.9 ± 0.3	16.5 ± 0.3 ^c	17.1 ± 0.4 ^e	17.9 ± 0.4 ^e	0.004	0.751
cCSA (mm ²) *	9.4 ± 0.2	9.7 ± 0.2	9.3 ± 0.3	9.9 ± 0.2	0.759	0.353
Fmax (N) *	183 ± 7	197 ± 6	166 ± 9	189 ± 8	0.130	0.756
PROXIMAL TIBIA						
Trabecular TV (mm ³)	57.1 ± 1.4	57.7 ± 3.1	59.1 ± 3.1	62.1 ± 1.7	0.509	0.591
Trabecular BV (mm ³)	8.48 ± 0.38	8.92 ± 1.25	7.22 ± 0.63	6.39 ± 0.43 ^f	0.080	0.319
Trabecular BV/TV (ratio)	0.15 ± 0.01	0.15 ± 0.02	0.12 ± 0.01 ^f	0.10 ± 0.01 ^e	0.031	0.227
Tb.N (1/mm)	2.31 ± 0.06	2.39 ± 0.13	1.95 ± 0.10 ^e	1.88 ± 0.06 ^e	0.004	0.391
Tb.Th (mm)	0.085 ± 0.001	0.084 ± 0.003	0.086 ± 0.003	0.080 ± 0.003	0.725	0.300
Tb.Sp (mm)	0.42 ± 0.01	0.41 ± 0.03	0.51 ± 0.03 ^e	0.53 ± 0.02 ^e	0.003	0.512
Cortical porosity (ratio)	0.007 ± 0.001	0.009 ± 0.001	0.017 ± 0.004 ^e	0.016 ± 0.002 ^f	0.007	0.597

^a p<0.001, ^b p<0.01, ^c p<0.05 vs. corresponding control group; ^d p<0.001, ^e p<0.01, ^f p<0.05 vs. corresponding Mature group

* values adjusted with body weight and femoral length; for details, see Statistical analysis

tBMC, total bone mineral content; tBMD, total bone mineral density; tCSA, total cross-sectional area; Fmax, breaking load; cBMD, cortical bone mineral density; cCSA, cortical cross-sectional area; TV, total bone marrow volume; BV, bone volume; Tb.N, mean trabecular number; Tb.Th, mean trabecular thickness; Tb.Sp, mean trabecular separation.