

Table 5. Descriptive Data of the Biomechanical and Tomographic Measurements and Interaction (Difference Between the Two Age-groups in the Exercise-effect) of the Female 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)	307 ± 9	312 ± 7	313 ± 7	298 ± 5	0.634	0.208
Femoral length (mm)	35.9 ± 0.2	36.6 ± 0.2 ^c	36.0 ± 0.3	36.0 ± 0.2	0.901	0.173
Uterus weight (g)	1.5 ± 0.1	1.4 ± 0.1	1.9 ± 0.2	1.5 ± 0.1	0.123	0.158
FEMORAL NECK						
tBMC (mg/mm) *	5.1 ± 0.1	5.0 ± 0.1	4.7 ± 0.1 ^f	5.2 ± 0.1 ^b	0.024	0.002
tBMD (mg/cm ³)	1129 ± 15	1193 ± 8 ^a	1166 ± 20	1164 ± 14	0.155	0.022
tCSA (mm ²) *	4.5 ± 0.1	4.2 ± 0.1 ^c	4.0 ± 0.1 ^f	4.5 ± 0.1 ^{cf}	0.015	0.001
Fmax (N) *	124 ± 5	130 ± 4	101 ± 6 ^e	119 ± 5 ^c	0.008	0.226
FEMORAL MIDSHAFT						
cBMD (mg/cm ³)	1486 ± 2	1488 ± 2	1497 ± 4 ^e	1499 ± 4 ^f	0.009	0.933
tCSA (mm ²) *	10.7 ± 0.1	10.7 ± 0.1	10.8 ± 0.2	11.1 ± 0.1 ^f	0.648	0.247
cCSA (mm ²) *	6.6 ± 0.1	6.5 ± 0.1	6.5 ± 0.1	6.8 ± 0.1 ^f	0.424	0.055
Fmax (N) *	144 ± 4	146 ± 4	123 ± 5 ^f	144 ± 4 ^c	0.014	0.032
PROXIMAL TIBIA						
Trabecular TV (mm ³)	38.7 ± 2.0	38.6 ± 2.4	39.3 ± 1.4	38.5 ± 1.2	0.820	0.851
Trabecular BV (mm ³)	9.60 ± 1.02	9.95 ± 0.80	7.28 ± 0.76	7.79 ± 0.42 ^f	0.087	0.904
Trabecular BV/TV (ratio)	0.25 ± 0.02	0.26 ± 0.01	0.19 ± 0.02 ^f	0.20 ± 0.01 ^e	0.048	0.666
Tb.N (1/mm)	3.56 ± 0.29	3.84 ± 0.14	2.99 ± 0.15	3.14 ± 0.10 ^d	0.108	0.694
Tb.Th (mm)	0.077 ± 0.004	0.073 ± 0.001	0.070 ± 0.003	0.073 ± 0.002	0.204	0.187
Tb.Sp (mm)	0.28 ± 0.04	0.24 ± 0.01	0.32 ± 0.02	0.30 ± 0.01 ^d	0.283	0.704
Cortical porosity (ratio)	0.006 ± 0.000	0.007 ± 0.001	0.007 ± 0.001	0.006 ± 0.000	0.205	0.058

^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.