

Supplementary Table S3 Means, standard deviation (SD), an standard error of the mean (SEM) of data from each experiment

Experiment	Parameter	Statistics	SHM/VEH	SHM/CBD5	OVX/VEH	OVX/E2	OVX/CBD5
Tibia—<i>Ex vivo</i> mCT	BV/TV	Mean	31.160	30.620	11.040	34.950	8.924
		Std. Deviation	4.609	3.003	3.275	6.902	2.431
		Std. Error of Mean	1.742	1.001	1.036	2.183	0.919
	Tb.Th	Mean	0.087	0.081	0.087	0.097	0.084
		Std. Deviation	0.007	0.004	0.006	0.006	0.007
		Std. Error of Mean	0.003	0.001	0.002	0.002	0.003
	Tb.Sp	Mean	0.179	0.178	0.547	0.189	0.590
		Std. Deviation	0.017	0.016	0.181	0.030	0.115
		Std. Error of Mean	0.006	0.005	0.057	0.009	0.044
	Tb.N	Mean	3.564	3.793	1.260	3.593	1.062
		Std. Deviation	0.295	0.267	0.333	0.578	0.299
		Std. Error of Mean	0.112	0.089	0.105	0.183	0.113
	SMI	Mean	1.041	1.004	2.135	0.809	2.238
		Std. Deviation	0.251	0.255	0.115	0.498	0.196
		Std. Error of Mean	0.095	0.085	0.036	0.158	0.074
	Conn.D	Mean	184.000	208.500	32.360	147.100	26.690
		Std. Deviation	26.220	41.110	12.700	38.960	11.160
		Std. Error of Mean	9.910	13.700	4.018	12.320	4.219
L5—<i>Ex vivo</i> μCT	BV/TV	Mean	41.130	39.180	29.760	41.240	28.270
		Std. Deviation	3.487	2.422	3.625	3.579	3.515
		Std. Error of Mean	1.318	0.807	1.146	1.132	1.329
	Tb.Th	Mean	0.103	0.098	0.090	0.104	0.087
		Std. Deviation	0.008	0.006	0.007	0.005	0.005
		Std. Error of Mean	0.003	0.002	0.002	0.002	0.002
	Tb.Sp	Mean	0.207	0.210	0.250	0.215	0.245
		Std. Deviation	0.014	0.024	0.023	0.014	0.018
		Std. Error of Mean	0.005	0.008	0.007	0.004	0.007
	Tb.N	Mean	3.985	3.999	3.298	3.970	3.242
		Std. Deviation	0.117	0.326	0.247	0.220	0.264
		Std. Error of Mean	0.044	0.109	0.078	0.070	0.100
	SMI	Mean	0.038	0.045	0.464	0.035	0.634
		Std. Deviation	0.101	0.090	0.264	0.110	0.243
		Std. Error of Mean	0.038	0.030	0.084	0.035	0.092
	Conn.D	Mean	100.700	127.200	115.100	95.960	123.400
		Std. Deviation	31.940	32.690	23.360	23.620	18.560
		Std. Error of Mean	12.070	10.900	7.388	7.468	7.015
Tibia—<i>cortical</i> mCT	Tt.Ar	Mean	7.955	8.241	8.168	7.313	8.537
		Std. Deviation	0.519	1.017	0.501	0.588	0.565
		Std. Error of Mean	0.196	0.339	0.158	0.186	0.214
	Ct.Ar	Mean	4.887	5.001	5.169	5.045	5.262
		Std. Deviation	0.340	0.311	0.347	0.279	0.160
		Std. Error of Mean	0.128	0.104	0.110	0.088	0.061
	Ct.Ar/Tt.Ar	Mean	61.450	61.350	63.320	69.190	61.830
		Std. Deviation	2.341	6.867	2.741	3.835	3.815
		Std. Error of Mean	0.885	2.289	0.867	1.213	1.442
	Cs.Th	Mean	0.658	0.658	0.668	0.660	0.678
		Std. Deviation	0.017	0.030	0.024	0.026	0.017
		Std. Error of Mean	0.007	0.010	0.008	0.008	0.006
	<i>J</i>	Mean	7.656	8.225	9.076	8.442	9.049
		Std. Deviation	1.294	1.081	1.161	1.294	0.750
		Std. Error of Mean	0.489	0.361	0.367	0.409	0.284
	<i>I</i> _{max}	Mean	4.939	5.423	6.009	5.607	6.079
		Std. Deviation	0.953	0.710	0.709	0.788	0.613
		Std. Error of Mean	0.360	0.237	0.224	0.249	0.232
	<i>I</i> _{min}	Mean	2.717	2.802	3.067	2.835	2.970
		Std. Deviation	0.422	0.410	0.521	0.527	0.236
		Std. Error of Mean	0.160	0.137	0.165	0.167	0.089

Experiment	Parameter	Statistics	SHM/VEH	SHM/CBD5	OVX/VEH	OVX/E2	OVX/CBD5
Femur—Mechanical strength	Maximum load	Mean	174.400	175.300	169.000	180.600	160.800
		Std. Deviation	23.990	20.280	20.230	15.680	22.000
		Std. Error of Mean	9.067	6.758	6.396	5.226	8.315
	Yield load	Mean	96.200	103.200	95.190	102.000	95.940
		Std. Deviation	16.110	8.148	12.700	12.150	21.810
		Std. Error of Mean	6.090	2.716	4.015	4.048	8.242
	Ultimate displacement	Mean	573.000	536.700	554.300	536.400	540.800
		Std. Deviation	172.100	135.200	104.300	112.900	157.600
		Std. Error of Mean	65.030	45.070	32.970	37.640	59.550
	Yield displacement	Mean	185.000	200.900	194.700	194.600	222.500
		Std. Deviation	28.470	17.180	40.660	32.580	67.780
		Std. Error of Mean	10.760	5.728	12.860	10.860	25.620
	Stiffness	Mean	577.400	575.800	560.100	593.500	504.600
		Std. Deviation	69.290	40.840	51.800	68.530	46.460
		Std. Error of Mean	26.190	13.610	16.380	22.840	17.560
Bone RNA	<i>Alpl</i>	Mean	1.079	1.251	1.041	1.118	1.756
		Std. Deviation	0.499	1.097	0.829	0.947	1.127
		Std. Error of Mean	0.189	0.366	0.262	0.316	0.426
	<i>Ocn</i>	Mean	1.304	0.749	3.165	0.403	1.596
		Std. Deviation	1.023	0.921	2.321	0.741	1.241
		Std. Error of Mean	0.387	0.307	0.734	0.247	0.469
	<i>Colla1</i>	Mean	1.144	0.631	1.888	0.577	1.449
		Std. Deviation	0.691	0.665	2.390	1.061	1.414
		Std. Error of Mean	0.261	0.222	0.756	0.354	0.535
	<i>Runx2</i>	Mean	1.027	0.863	0.931	1.084	1.079
		Std. Deviation	0.269	0.314	0.704	0.935	0.562
		Std. Error of Mean	0.102	0.105	0.223	0.312	0.213
	<i>Tracp</i>	Mean	1.059	0.874	0.900	0.619	1.007
		Std. Deviation	0.408	0.352	0.563	0.225	0.635
		Std. Error of Mean	0.154	0.117	0.178	0.075	0.240
	<i>Ctsk</i>	Mean	1.043	1.109	1.542	0.740	1.591
		Std. Deviation	0.330	0.523	0.915	0.293	0.639
		Std. Error of Mean	0.125	0.174	0.289	0.098	0.242
	<i>Cnr1</i>	Mean	2.094	2.570	6.304	4.263	2.623
		Std. Deviation	1.586	1.541	7.561	3.155	3.950
		Std. Error of Mean	0.600	0.514	2.520	1.052	1.493
	<i>Cnr2</i>	Mean	1.053	1.374	1.178	1.610	1.101
		Std. Deviation	0.326	0.677	0.650	0.918	0.655
		Std. Error of Mean	0.123	0.226	0.206	0.306	0.248
	<i>Gpr55</i>	Mean	1.030	1.551	4.578	5.052	1.599
		Std. Deviation	0.274	0.810	5.216	4.972	1.306
		Std. Error of Mean	0.104	0.270	1.649	1.657	0.494
	<i>Trpv1</i>	Mean	1.571	1.898	4.118	2.452	2.309
		Std. Deviation	1.974	1.753	2.839	2.476	2.069
		Std. Error of Mean	0.746	0.584	0.898	0.825	0.782
Bone Turnover Markers	CTX-1	Mean	10.320	12.680	18.090	12.100	20.880
		Std. Deviation	4.410	6.000	6.607	3.933	5.964
		Std. Error of Mean	1.667	2.000	2.089	1.244	2.254
	PINP	Mean	2.913	5.368	7.168	2.349	9.451
		Std. Deviation	2.367	3.590	3.856	1.605	3.218
		Std. Error of Mean	0.895	1.197	1.219	0.567	1.216