**Supplemental Digital Content 2**

**Table.** Absolute bone values in the athletes and referents.

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  |  |  | | Referents |  | Athletes | | | | |
| Variable (units) | | | 31-45 y | |  | 40-49 y | 50-59 y | 60-69 y | 70-85 y | \*ANOVA  P |
| Distal tibia (5%) | | | n=19 | |  | n=17 | n=18 | n=24 | n=24 |  |
|  | BMCtot (mg/mm) | | 381±44b | |  | 468±93ade | 414±52 | 412±44b | 405±56b | <0.001 |
|  | CSAtot (mm2) | | 1103±142 | |  | 1214±198 | 1158±116 | 1179±125 | 1219±169 | 0.112 |
|  | vBMDtrab (mg/cm3) | | 297±19b | |  | 334±44ae | 310±31 | 307±28 | 293±40b | 0.003 |
|  | BSIcomp (g2/cm4) | | 1.32±0.19b | |  | 1.83±0.5acde | 1.50±0.29b | 1.46±0.25b | 1.38±0.33b | <0.001 |
| Tibial midshaft (50%) | | | | |  |  |  |  |  |  |
|  | BMCtot (mg/mm) | | 472±40b | |  | 554±68ade | 511±51 | 487±52b | 487±47b | <0.001 |
|  | CSA tot (mm2) | | 483±44b | |  | 553±68ade | 524±46 | 495±47b | 508±51b | <0.001 |
|  | Thco (mm) | | 4.9±0.5b | |  | 5.7±0.6ae | 5.4±0.6 | 5.2±0.7 | 5.0±0.7b | <0.001 |
|  | vBMDco (mg/cm3) | | 1096±23 | |  | 1109±15 | 1087±31 | 1093±20 | 1088±30 | 0.072 |
|  | Imin (mg\*cm) | | 1807±335 | |  | 2036±508 | 1725±287 | 1727±383 | 1791±362 | 0.094 |
|  | Imax (mg\*cm) | | 4157±852b | |  | 5571±1749ad | 5174±975 | 4476±875b | 4645±107 | 0.002 |

Data are means ± SD; n, number of subjects. \*ANOVA P values and the locations of significant differences are shown.

a,b,c,d,e Group is significantly (P<0.05) different from the 31-45- (Referents), 40-49-, 50-59-, 60-69-, and 70-85-yr-old groups, respectively. BMCtot, total bone mineral content; CSAtot, total cross-sectional area; vBMDtrab, trabecular volumetric bone mineral density; BSIcomp, bone strength index against compression; Thco, cortical wall thickness; vBMDco,cortical vBMD; Imin, minimum moment of inertia (resistance to bending for the direction of smallest flexural rigidity);

Imax, maximum moment of inertia (resistance to bending for the direction of greatest flexural rigidity).