



**Bone & Joint
Research**

Supplementary Material

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The formulae for the combined cortical measure scores

The radial, ulna, and second metacarpal cortical measures were summed to give the following combined cortical measure scores (see Figure 6 in main text):

Radial and ulnar score = $LR+MR+LU+MU$

Radial and metacarpal score = $LR+MR+LM+MM$

Ulnar and metacarpal score = $LU+MU+LM+MM$

Radial, ulnar, and metacarpal score = $LR+MR+LU+MU+LM+MM$

LR = lateral cortex of the distal radial diaphysis

MR = medial cortex of the distal radial diaphysis

LU = lateral cortex of the distal ulnar diaphysis

MU = medial cortex of the distal ulnar diaphysis

LM = lateral cortex of the second metacarpal mid-diaphyseal

MM = medial cortex of the second metacarpal mid-diaphyseal

Table i. The Pearson correlation coefficient values between the forearm cortical measures and the dual-energy X-ray absorptiometry values.

Pearson correlation coefficient	'Ultra-Distal' DXA (n = 13)	'Mid-Distal' DXA (n = 13)	'One-Third' DXA (n = 13)	'Forearm' DXA (n = 13)	'Hip' DXA (n = 27)
2 nd MCP Lateral Cortex	0.397 (p = 0.179)	0.464 (p = 0.110)	0.462 (p = 0.112)	0.399 (p = 0.177)	0.196 (p = 0.327)
2 nd MCP Medial Cortex	0.357 (p = 0.231)	0.405 (p = 0.170)	0.488 (p = 0.091)	0.465 (p = 0.109)	0.298 (p = 0.131)
2 nd MCP Cortical Index	0.368 (p = 0.216)	0.452 (p = 0.121)	0.465 (p = 0.109)	0.433 (p = 0.139)	0.265 (p = 0.181)
Radial Diaphysis Lateral Cortex	0.487 (p = 0.091)	0.427 (p = 0.146)	0.428 (p = 0.145)	0.458 (p = 0.116)	0.160 (p = 0.425)
Radial Diaphysis Medial Cortex	0.476 (p = 0.100)	0.371 (p = 0.212)	0.343 (p = 0.251)	0.378 (p = 0.203)	0.236 (p = 0.236)
Radial Diaphysis Cortical Index	0.468 (p = 0.107)	0.439 (p = 0.133)	0.386 (p = 0.193)	0.428 (p = 0.145)	0.247 (p = 0.214)
Ulnar Diaphysis Lateral Cortex	0.509 (p = 0.076)	0.466 (p = 0.108)	0.510 (p = 0.075)	0.521 (p = 0.068)	0.354 (p = 0.070)
Ulnar Diaphysis Medial Cortex	0.511 (p = 0.074)	0.513 (p = 0.073)	0.470 (p = 0.105)	0.487 (p = 0.091)	0.318 (p = 0.106)
Ulnar Diaphysis Cortical Index	0.523 (p = 0.067)	0.461 (p = 0.113)	0.518 (p = 0.070)	0.506 (p = 0.078)	0.247 (p = 0.214)
Mean 'Cortical Measure' R values	0.456 (p = 0.117)	0.441 (p = 0.131)	0.450 (p = 0.123)	0.451 (p = 0.122)	0.260 (p = 0.190)
Mean 'Cortical Index' R values	0.453 (p = 0.120)	0.451 (p = 0.121)	0.456 (p = 0.117)	0.456 (p = 0.117)	0.253 (p = 0.203)
Radial + Ulnar Score	0.503 (p = 0.080)	0.464 (p = 0.110)	0.508 (p = 0.076)	0.528 (p = 0.064)	0.205 (p = 0.305)
Radial + 2 nd MCP Score	0.482 (p = 0.095)	0.451 (p = 0.122)	0.438 (p = 0.134)	0.452 (p = 0.121)	0.263 (p = 0.185)
Ulnar + 2 nd MCP Score	0.498 (p = 0.083)	0.463 (p = 0.111)	0.401 (p = 0.174)	0.479 (p = 0.098)	0.211 (p = 0.291)
Radial Ulnar + 2 nd MCP Score	0.540 (p = 0.057)	0.496 (p = 0.085)	0.523 (p = 0.066)	0.543 (p = 0.055)	0.275 (p = 0.165)

DXA, dual-energy X-ray absorptiometry; MCP, metacarpal; R, Pearson correlation coefficient.