

Article title: Validation of distal radius failure load predictions by homogenized- and micro- Finite Element analyses based on second generation high resolution peripheral quantitative CT images.

Journal Name: Osteoporosis International

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Electronic Supplementary Material 2: Elastic and strength parameters used for the micro-FE and the homogenized-FE

Table 1: Elastic and strength parameters used for the micro-FE

Bone tissue Young's modulus	E_t [GPa]	10.0
Bone tissue Poisson's ratio	ν [-]	0.3
Critical volume for failure load calculation	ν_{crit} [-]	4%
Critical value for failure load estimation	ε_{crit} [-]	1%

Table 2: Elastic and strength parameters used for the homogenized FE. Bold values were determined in this study; other values were taken from [11]

Bone tissue Young's modulus	ε_0 [GPa]	19.01
Bone tissue shear modulus	μ_0 [GPa]	7.851
Bone tissue Poisson's ratio	ν_0 [-]	0.223
Power for modulus-density relationship	k [-]	2
Power for modulus-fabric relationship	l [-]	0.96
Bone tissue compressive strength	σ_0^- [MPa]	166
Bone tissue tensile strength	σ_0^+ [MPa]	131
Bone tissue shear strength	τ_0 [MPa]	67.3
Interaction parameter for surface	ξ_0	0.26BV/TV+0.23
Power for strength-density relationship	P	1.82
Power for strength-fabric relationship	q	0.79
Prescribed cumulated plastic strain at ultimate load	κ_{max}	0.02
Plastic hardening rate	S	100
Critical damage value	D_c	0.75
Damage rate	a	7.0