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Allometrically adjusted isokinetic leg extension torque of adults in relation to body mass

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The purpose of the study was to examine the isokinetic leg extension torque of adult participants using allometric scaling to account for differences in body mass. 10 men (23.1y, 1.72m & 64.5kg) and nine women (20.7y, 1.62m & 52.1kg) participated in the study. Peak isokinetic leg extension torque at 1.02, 3.12 and 5.20 rad•s-1 were determined using a Cybex 6000 isokinetic dynamometer. Torque at 1.04 rad•s-1 was significantly higher than torque at 3.12 rad•s-1 and 5.20 rad•s-1 in men and women. Torque in newton.metre in men were 162.5, 167.3 and 151.3% but were reduced to 130.2, 126.2 and 121.8% that of women when the data were allometrically scaled to body massb=0.89, 1.13 & 0.97. Common identified b exponents between torque and body mass included b=1.0 within the 95% confidence intervals, as predicted by geometric similarity theory.

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