

ER35: Pinch strength measurements among Iranian population

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Data on the physical strength capabilities of users are essential for designing the safe and usable products. The purpose of this study was to determine peak lateral pinch strength, key pinch strength and tip-to-tip pinch strength among 328 (104 males, 224 females) participants aged between 7 and 30 years in Tabriz. Measurements were carried out with both right and left hands in standard sitting posture using a B&L (B&L Engineering, Tustin, CA) pinch gauge. Two repetitions of each strength measurement were recorded for each condition and the average value of the two trials was used in the subsequent analysis. The results indicated that the lateral pinch strength, key pinch strength and tip-to-tip pinch strength exertions by females were 62%, 65% and 85% of those exerted by males, respectively. Strength exertions with the left hand were 95%, 96% and 96% of the right hand exertions for the lateral pinch strength, tip-to-tip pinch strength and three-jaw pinch strength exertions, respectively. These findings can be used to fill the gaps in strength data for Iranian population.

Keyword: Lateral pinch, key pinch, tip-to-tip pinch, force

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