EFFECT OF SPATIAL FACTORS ON ISOMETRIC PUSH, PULL, PUSH-UP AND PULL-DOWN STRENGTHS

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Abstract

The effect of reach levels, horizontal angles and vertical angles on isometric push, pull, push-up and pull-down strengths of males and females in standing and seating positions was determined. As reach level increased, push strength increased. Similar to push strength, pull strength in normal reach was significantly less than that in maximum and extreme reaches. Nevertheless, pull strength in maximum and extreme reach levels were not significantly different, except for the overhead location. Push-up and pull-down strengths mostly decreased with increasing reach levels, except for the overhead location. Vertical angle had a significant effect on strengths. Push, pull, and pull-down strengths increased significantly as vertical angle increased. Push-up strength decreased when vertical angle changed from -20° to 0° and 45°, whereas the greatest strength was found at the overhead location. Horizontal angle had a significant effect on strengths. Push and pull strengths decreased as horizontal angle increased. Push-up and pull-down strengths at 90° and 135° were significantly greater than that at 0°.

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