

The impact of grip width on kinetics and kinematics in the shoulder press among resistance-trained men

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Abstract

This study investigated the impact of grip width on kinematics and kinetics in the seated barbell shoulder press among resistance-trained men. Eleven participants (age: 25.9 ± 3.1 years, height: 180.4 ± 5.4 cm, body mass: 87.0 ± 7.9 kg) performed eight repetitions to failure with a narrow, medium and wide grip width. Statistical parametric mapping was used to analyse kinematics and kinetics during the entire concentric phase of the last repetition. The main findings revealed that narrower grips increased both load lifted, and shoulder, and elbow range of motion. Moreover, grip width influenced horizontal barbell forces throughout 100% of the lift, and joint kinetics during the initial 64% of the lift. Wider grips increased lateral barbell forces and reduced elbow net joint moments (NJMs), while narrower grips increased medial forces and reduced shoulder NJMs. These findings suggest that grip width modulates joint kinematics, NJMs and lateral barbell forces during the shoulder press. Based on our findings, practitioners can make technical adjustments according to individual training goals, or tailor execution to minimise pain or injury risk. For example, by increasing or decreasing loading of a specific joint or altering joint ROM according to the athlete's or patient's needs.