

ORAL PRESENTATION OP1

Non-Paretic Scapular Kinematics During Scaption to 90° in Subacute Stroke Patients: A Case-Control Study

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ABSTRACT

Background and Objectives: Scapular dysfunction after stroke may contribute to upper limb dysfunction. Previous studies have mainly focused on the paretic side, with limited investigation of the non-paretic side, and have largely utilized sophisticated laboratory-based motion analysis systems. This study aimed to compare non-paretic scapular kinematics during scapular plane elevation (0°–90°) between individuals with subacute stroke and healthy controls using the practical and clinically accessible EasyAngle® Digital Goniometer. **Methods:** A case-control study included 30 individuals with subacute unilateral stroke (mean age: 64.7 ± 9.1 years) and 30 healthy controls (mean age: 62.8 ± 8.8 years). Scapular upward rotation, external rotation, and posterior tilt were measured during scaption at 0° and 90° of arm elevation. A mixed-design analysis of variance was performed with group as the between-subject factor and elevation angle as the within-subject factor. **Results:** Elevation angle significantly affected upward rotation, external rotation, and posterior tilt (all $p < 0.001$; partial $\eta^2 = 0.930$ – 0.989). A significant group effect was observed only for upward rotation ($p = 0.002$; partial $\eta^2 = 0.150$). No significant between-group differences were found for external rotation or posterior tilt, and no significant group-by-angle interactions were identified (all $p > 0.05$; partial $\eta^2 = 0.018$ – 0.026). **Conclusion:** Non-paretic scapular kinematics during scaption to 90° were largely preserved in individuals with subacute stroke and were comparable to healthy controls, suggesting near-normal biomechanical function with only minor compensatory adaptations in upward rotation.

Keywords: Stroke; Non-Paretic Side; Scapular Kinematics; Digital Goniometer; Scaption, Rehabilitation

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