



**Service Priorities and Programmes**  
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**Effect of Sugar Tong Splint in Limiting Forearm Rotation**

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**Introduction**

To promote primary healing, restriction of forearm rotation by a cast or a splint has been recommended after distal radioulnar joint injury including a triangular fibrocartilage complex tear (TFCC). Historically, a long arm hinged brace was used for restriction of forearm rotation in our Hong Kong settings. Several studies recently have shown that a below-elbow splint is sufficient for immobilization and some authors have reported that sugar tong splint is superior to allow mid-range elbow flexion and extension while preventing forearm rotation.

**Objectives**

The purpose of this study was to investigate the degree of forearm immobilization by sugar tong splint, in terms of the average active pronation and supination achievable at the forearm while wearing the sugar tong splint.

**Methodology**

Healthy participants who did not have any trauma or injury to the dominant upper limb were recruited into our study. The dominant upper limb was assessed and a sugar tong splint was fabricated. Active range of motion (AROM) in forearm pronation and supination was measured with a goniometer. They were required to pronate/ supinate their forearms under the following circumstances: 1) without sugar tong splint, 2) point of sensory feedback, i.e. the first point where the participant reported feeling the splint beginning to resist forearm rotation, and 3) point of maximal force applied to rotate the forearm.

**Result**

There were 9 healthy participants included in this study. Sugar tong splint could not completely immobilize, but largely restricted the forearm rotation. The mean point of sensory feedback for the sugar tong splint in pronation was 15.9° and in supination was 24.3°. There was 80% reduction in our participant's AROM when performing forearm rotation with the sugar tong splint.

Sugar tong splint is recommended for providing maximal restriction of forearm rotation to reliable and compliant clients, while not limiting elbow extension and flexion.