

# STATIC PROGRESSIVE SPLINTING FOR RESTORATION OF ROTATIONAL MOTION OF THE FOREARM

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This study examined the use of a bidirectional Static Progressive Stretch (SPS) orthosis to improve forearm rotation. Thirty-eight patients who had limited pronation and supination following injuries and who failed other physical therapy techniques carried out a 30- to 60-minute stretching protocol with the orthosis 1 to 3 times per day. The mean arc of rotation increased by 42° (range, 0 to 122°) after a mean treatment duration of 12 weeks (range, 3 to 57 weeks). The mean patient satisfaction score was 8.1 points on a scale of 0 to 10 points. All of the patients completed the treatment and no short-term complications were reported. Gains in motion were comparable to the published results of other ROM therapy technologies as well as surgical procedures such as external fixators and closed manipulation, but fewer complications occurred with use of the SPS orthosis.



## Subjects and Intervention

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- 38 consecutive patients who had developed pronation and/ or supination ROM deficiencies secondary to upper extremity injuries
- Referred by treating therapist for a prospective trial of SPS orthosis use, when gains in forearm ROM had plateaued with a standard course of therapy.
- Mean interval between injury and initiation of SPS orthotic device treatment was 21 weeks (range, 6 – 75).

## Materials and Methods

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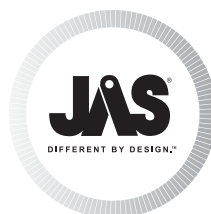
- Enrolled subjects used an SPS orthosis (Joint Active Systems, Inc., Effingham, IL), following a wearing protocol of 3 thirty - minute sessions, per direction of motion loss, per day.
- Active ROM was measured weekly by a treating therapist.
- Treatment was discontinued when satisfactory functional ROM was achieved or when no ROM gains occurred for two consecutive weeks, as determined by treating therapist.

- Patients were examined weekly for injury, nerve palsies, and questioned about complications.
- Satisfaction was measured using a Likert scale (0 – 10).

## Results and Conclusion

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- All patients completed their course of SPS orthosis therapy, with a mean treatment time of 12 weeks (range, 3 – 57).
- Mean increase in total ROM was 42° (range, 0 – 122)
- Mean increase in pronation was 12° (range, -10 – 70)
- Mean increase in supination was 31° (range, 0 – 85)
- No injuries, nerve palsies, skin irritation, or other complications were reported at final follow up.
- Mean satisfaction score was 8.1 points (range, 1-10); 82% of patients were highly satisfied with their clinical outcome.
- SPS splinting was successful in restoring forearm rotation in patients with ROM limitations resistant to standard therapy treatment.



**Full Study Available.**

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