RESTORING WRIST FLEXION/EXTENSION USING PRINCIPLES OF STRESS RELAXATION/STATIC PROGRESSIVE STRETCH

Peter Bonutti, M.D., Frank Lee, M.D., Michael Hotz, P.T.

Many patients develop joint stiffness and loss of motion as a secondary complication to wrist trauma. Two types of loading can be used to permanently lengthen soft tissue and restore ROM: creep-based and stress relaxation.

Historically, ROM limitations have been treated in the home setting using creep-based loading/dynamic splint devices that require eight to 12 hours per day wear time. Complications include poor patient compliance and skin irritation/breakdown.

The goal of this retrospective study was to verify whether stress relaxation/static progressive stretch (SPS) therapy could significantly increase ROM in patients with wrist stiffness. A secondary goal was to determine if a protocol of 30-minute SPS sessions could improve compliance and reduce complications.

Patient Population
- 25 patients with post-traumatic loss of motion at the wrist joint.
- All had plateaued in therapy and failed to gain ROM with other treatment modalities.
- Mean age was 44 years (22 to 72).
- Majority of patients were limited in both flexion and extension.

Materials and Methods
- A JAS Wrist SPS device was prescribed for home use.
- Patients were instructed to perform three 30-minute SPS sessions per direction, per day.
- Patients were regularly evaluated by licensed therapists who independently recorded ROM measurements.

Results
- Total average increase in ROM was 37° per patient.
- Patients gained an average of 19° extension and 18° flexion.
- Average treatment time was eight weeks.
- No reports of complications or skin problems with device use.
- All patients completed the suggested treatment protocol.
- The JAS device was effective in restoring ROM using a significantly shorter treatment protocol than creep-based loading/dynamic splinting.

References: