

# CLINICAL OVERVIEW



## THE USE OF STATIC PROGRESSIVE STRETCH ON THE BURN JOINT CONTRACTURE

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Restoration of functional ROM is a primary goal of most burn rehabilitation programs. Static progressive stretch (SPS) is a technique that uses the biomechanical principle of stress-relaxation to restore ROM.

Viscoelastic tissue such as tendons, ligaments, muscles, joint capsules, fascia, and skin respond to SPS by stretching and remodeling to new permanent lengths. Dynamic splinting and serial casting, while proven effective, are time intensive and do not account for the viscoelastic properties of soft tissues.

This prospective study evaluated whether JAS devices, which allow for patient-controlled SPS therapy, are an effective modality for restoring ROM in burn joint contractures.

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## Patient Population

- Evidence of a joint contracture greater than 10° at the elbow, wrist, knee, or ankle caused by a burn injury.
- Ability to comply with JAS SPS device wearing schedule.
- Availability to meet with investigators weekly.
- Age between 14 and 80.

## Materials and Methods

- Quantitative, descriptive study with convenience sampling, carried out over 4 months.
- Patients performed up to three 30-minute SPS sessions per day with a JAS device.
- Active and passive ROM, skin integrity, and level of pain during and after treatment were measured weekly.
- Treatment was continued until full ROM or a plateau of ROM for more than two weeks was achieved.

## Results

- Functional active and passive ROM was restored in 100% of patients.
- ROM increases ranged from 5° to 55°.
- Total treatment time ranged from 10 to 45 days.
- Patient compliance rate with JAS device was 96%.
- No patient exhibited increased pain or decreased skin integrity.
- The JAS SPS system was proven an effective treatment modality in achieving functional ROM of the burn joint contracture.