

## CLINICAL OVERVIEW

# TREATMENT OF A KNEE CONTRACTURE USING A KNEE ORTHOSIS INCORPORATING STRESS-RELAXATION TECHNIQUES

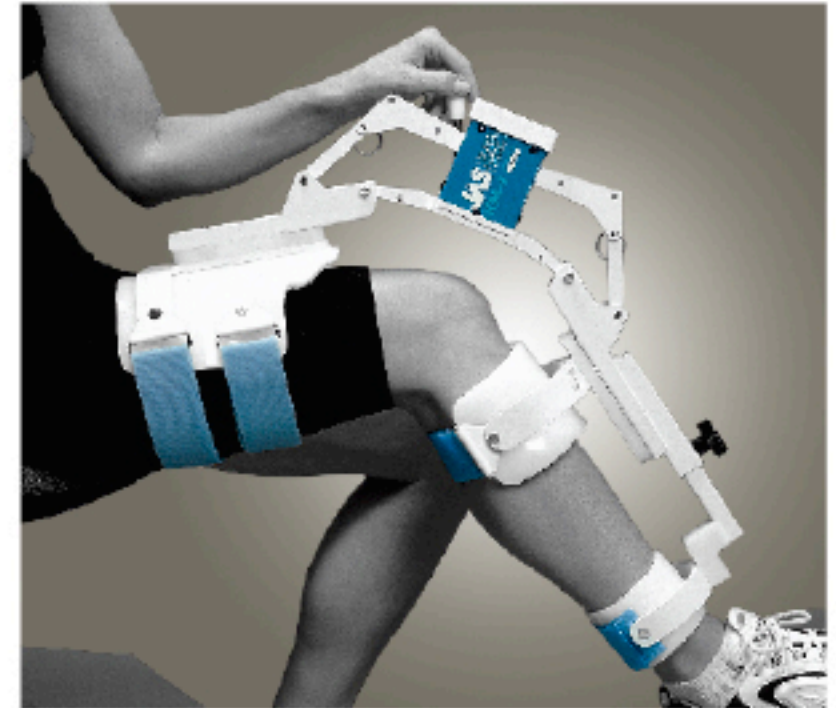
Full study appeared in *Physical Therapy*. 1996; 76(2): 182-186.

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The subject of this case report was a 67-year-old woman who underwent right total knee arthroplasty and developed postoperative knee stiffness.

Treatment to reestablish range of motion (ROM) included physical therapy followed by use of a Joint Active Systems (JAS) Knee device, an orthosis that utilizes principles of stress relaxation and static progressive stretch (SPS).

The patient gained 17° in active ROM following 29 days of JAS device use, indicating that SPS can be an effective adjunct for restoring joint ROM when therapy alone is insufficient.



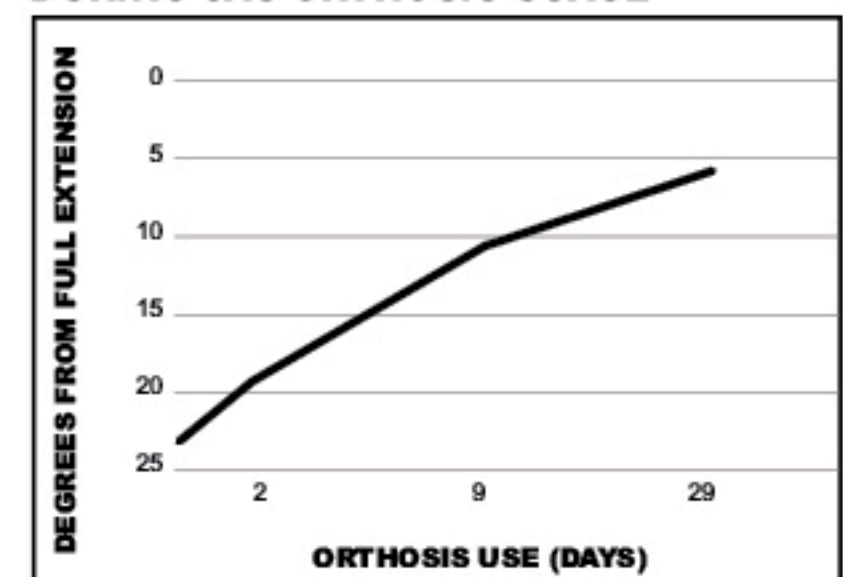
## Case History

- Postoperative therapy consisted of CPM, active ROM and strengthening exercises.
- Patient began physical therapy at three weeks. Active knee ROM was 110° flexion and 25° from full extension.
- Therapy included exercises, stationary bike and 20- to 30-minute manual therapy sessions twice a week.
- Patient discharged from PT after seven weeks, when ROM gains plateaued at 130° active knee flexion and 2° from full knee extension.
- After three months, patient lost 5° of flexion and 21° of extension.
- At this time, therapist initiated use of the JAS Knee device.

## Materials and Methods

- Patient gradually progressed from one to three 30-minute JAS SPS sessions per day in extension, and maintained three per day for the remainder of the treatment.
- Patient ROM was monitored bi-weekly by three independent athletic trainers and two physical therapists.
- Total treatment time was 32.5 hours over 29 days.

**KNEE EXTENSION  
DURING JAS ORTHOSIS USAGE**



## Results

- Patient gained 17° active extension, resulting in 6° lack of extension, which was equivalent to contralateral knee.
- There was no report of pain or discomfort during JAS Knee device use.
- There was no decrease in ROM at six-month follow-up.
- The JAS Knee device was effective in permanently restoring ROM.



**Full Study Available.**

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