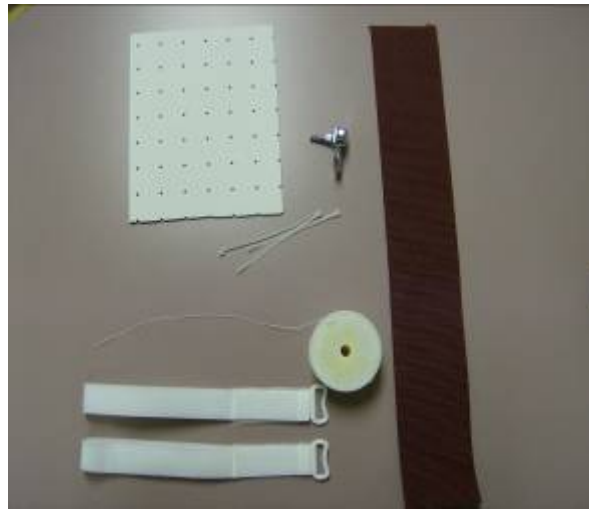


Terminal Elbow Flexion Splint

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Description of splint: Static Progressive Terminal Elbow Flexion Device



Materials used/needed:

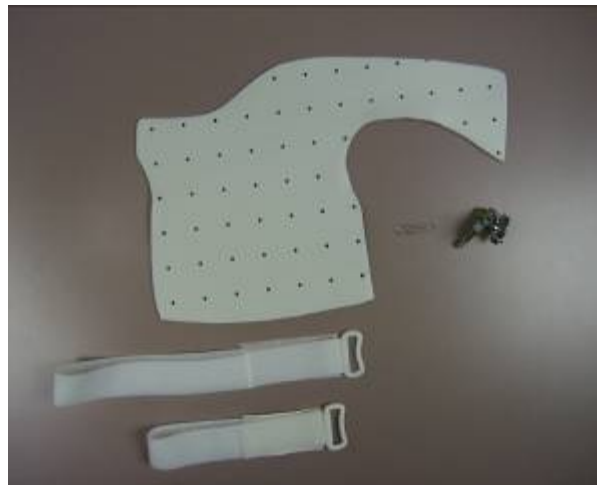
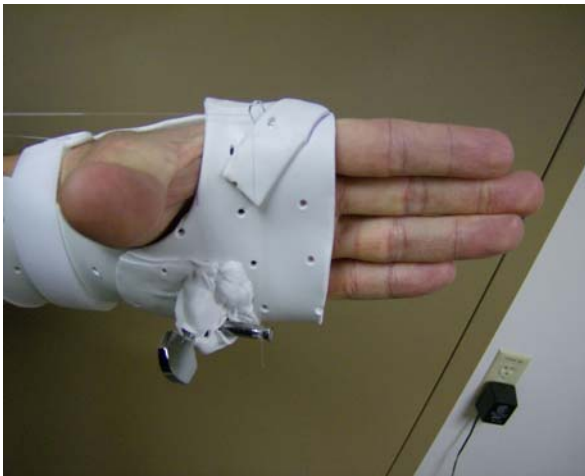
- *3 inch wide webbed strapping
- *Guitar Tuner
- *fishing line/ nylon string
- *Zip-Ties

- *Thermoplastic material
- *2 D-rings with strapping attached
- *Sewing Machine & Thread
- * Paper clip

Fabrication instructions:



Humeral Strap: Measure pt's arm and then add 2-3 inches for overlap. Cut the webbed strap to length and sew the ends over to prevent unraveling. Cut the D-ring off from the strap, leaving ½ inch remaining. Sew the loop end of the strap to one end of the 3 inch wide strap. Use a leather punch to create 2 small holes in the remaining D-ring material. Secure the D-ring to the webbed strap using a zip-tie at the opposite end of the 3" strap (note: by not punching a hole in the 3 inch strap you will ensure that the webbing does not unravel. I simply wiggle the small zip tie through the strap then attach to the D-ring material). Once donned on the patient, rotate the humeral strap so that the D-ring is placed at mid-line



Ulnar Based Wrist splint: Pattern your patients hand so that your pattern covers the ulnar half of the hand/wrist from the MCPJ's to approximately 6 inches proximal to wrist. Include an extended radially based thenar portion that will wrap through the thenar web space and secure over the dorsal aspect of the second metacarpal. Fabricate the splint and fit to patient. Insert a metal travel guide (I use a paper clip) over the radial aspect of the second metacarpal head. Secure a guitar tuner onto the ulnar palm portion of the splint, proximal of 4th and 5th metacarpal. Ensure that the tuner is placed perpendicular to the anticipated string angle from the inserted metal travel guide. Add a self-adhesive D-ring to the wrist portion of the splint. Locate the D-ring as close to the radial styloid as possible.

Fishing Line/ nylon string: Secure by tying one end of the fishing line to the D-ring located over the radial styloid. Traverse the line through the proximal edge of D-ring on the humeral strap. Then bring the line back through the metal guide located on the 2nd metacarpal head and terminate the line at the guitar tuner.

Advantages: This device achieves true, full terminal elbow flexion- unlike many static-progressive style splints. The static-progressive aspect of the device allows the patient to adjust the tension to ensure a prolonged; low-load stretch is achieved. Fabrication is made faster by utilizing zip-ties and strapped D-rings. The nylon webbed humeral strap can be made up ahead of time and is easily adjusted. This strap is also sturdy enough for prolonged load, more comfortable and has a lower profile compared to traditional thermoplastic technique.

Disadvantages: Donning the device can be difficult at first and your patient must have use of their opposite extremity if they are to don themselves. Reaching therapeutic stretch by tightening a guitar tuner can be laborious.

Indications: Difficulties with terminal elbow flexion

Precautions/Contraindications: The line of pull through the metal guide can cause proximal travel of the thermoplastic. This can cause pressure over the dorsal 2nd MCP joint. Extending a small thenar piece of thermoplastic up the thumb (mimicking a shortened web spacer) or including padding over the MCP joints prevents this from occurring.

Your patient must be orthopedically sound prior to application.

Primary reference: Trial and Error

Supporting references: Richard, Reginald L, and Marlys Staley. Burn Care and Rehabilitation Principles and Practice. Philadelphia: F.A Davis Company, 1994

Level of Therapist Skill / Specialization Required: Intermediate to Advanced Clinician

Total Time Required to Fabricate Splint / Device: 20-30 minutes

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