

Training Dowel



Columbia

Description of splint: A simple, comfortable device to initiate patient participation in activities of daily living and assist with pre-prosthetic training

Materials used/needed: (Figure 1)

*1/2 sheet thermoplastic material 12x18"

*1" Velcro

*1" Strapping

* 1 inch wooden dowel

* Self adherent wrap

Fabrication instructions:

- 1) The thermoplastic material is cut into an hour-glass pattern to fit around residual limb (figure 2)
- 2) Thermoplastic material is molded circumferentially around the residual limb to create a cup (figure 3)
- 3) Thermoplastic material is molded onto one end of the dowel with an extension tab that is attached to the center of the cup (figure 4)
- 4) The tip of the dowel is wrapped with adherent wrap for traction (figure 5)
- 5) Velcro and strapping are used to secure the cup to the forearm (figure 6)

Advantages:

- 1) Assists with shaping the residual limb
- 2) Assists with desensitization of residual limb
- 3) Controls edema and is able to be modified for changes with edema
- 4) Allows immediate participation in activities of daily living prior to receiving a prosthesis
- 5) Easy to don and doff
- 6) Simple to use for patient and therapist

Disadvantages:

- 1) Strapping difficult to adjust for secure fit on arm
- 2) Requires adjustments frequently to accommodate fluctuations in edema
- 3) Patient requires assistance with donning and doffing (if bilateral UE amputations)
- 4) Limited use due to no grasping mechanism

Indications:

For patients with unilateral or bilateral below elbow upper extremity amputations

Precautions/Contraindications:

Non healed wounds or incisions

Clinical reasoning:

This splint was originally designed for a patient with bilateral upper extremity amputations. While recovering in the ICU, the therapists discovered the patient was aware enough to call the nurse for basic needs. Initially, this device was fabricated for the patient to push the button to call for the nurse.

As the patient progressed in therapy, the patient was able to use the device for many other activities such as opening a door, turning on and off a light switch, writing and painting, and dialing the phone.

Level of therapist skill/Specialization required:

Intermediate splinting skills are required

Total time required to fabricate splint/device:

45 minutes

Primary reference:

Fletchall, S. (2005). *Returning Upper-Extremity Amputees to Work*. Retrieved January 30, 2006, from The O& P Edge Web site:

http://www.oandp.com/edge/issues/articles/2005-08_04.asp

Supporting references:

Lake,C. (1997). Effects of Prosthetic Training on Upper- Extremity Prosthesis Use. *Journal of Prosthetics and Orthotics*, 9(1), 1-4.

For additional information on this application, please contact Kimberly directly either by phone 212-746-1598 or via email: khh76@aol.com



Figure 1
Materials require for the training dowel

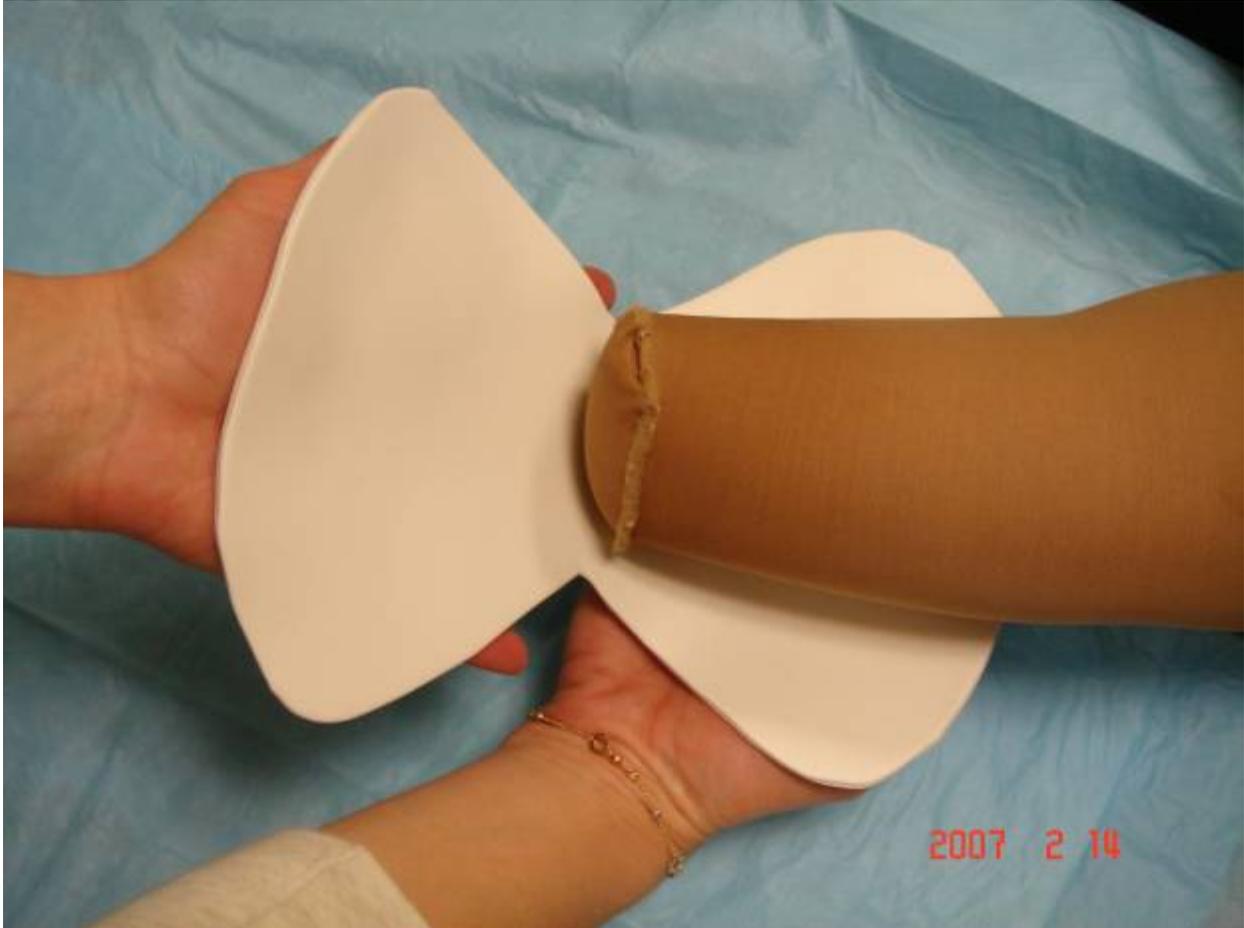


Figure 2
Application of the pattern to the residual limb



Figure 3
Fitting the training dowel on the patient



Figure 4
Attaching the dowel to the device

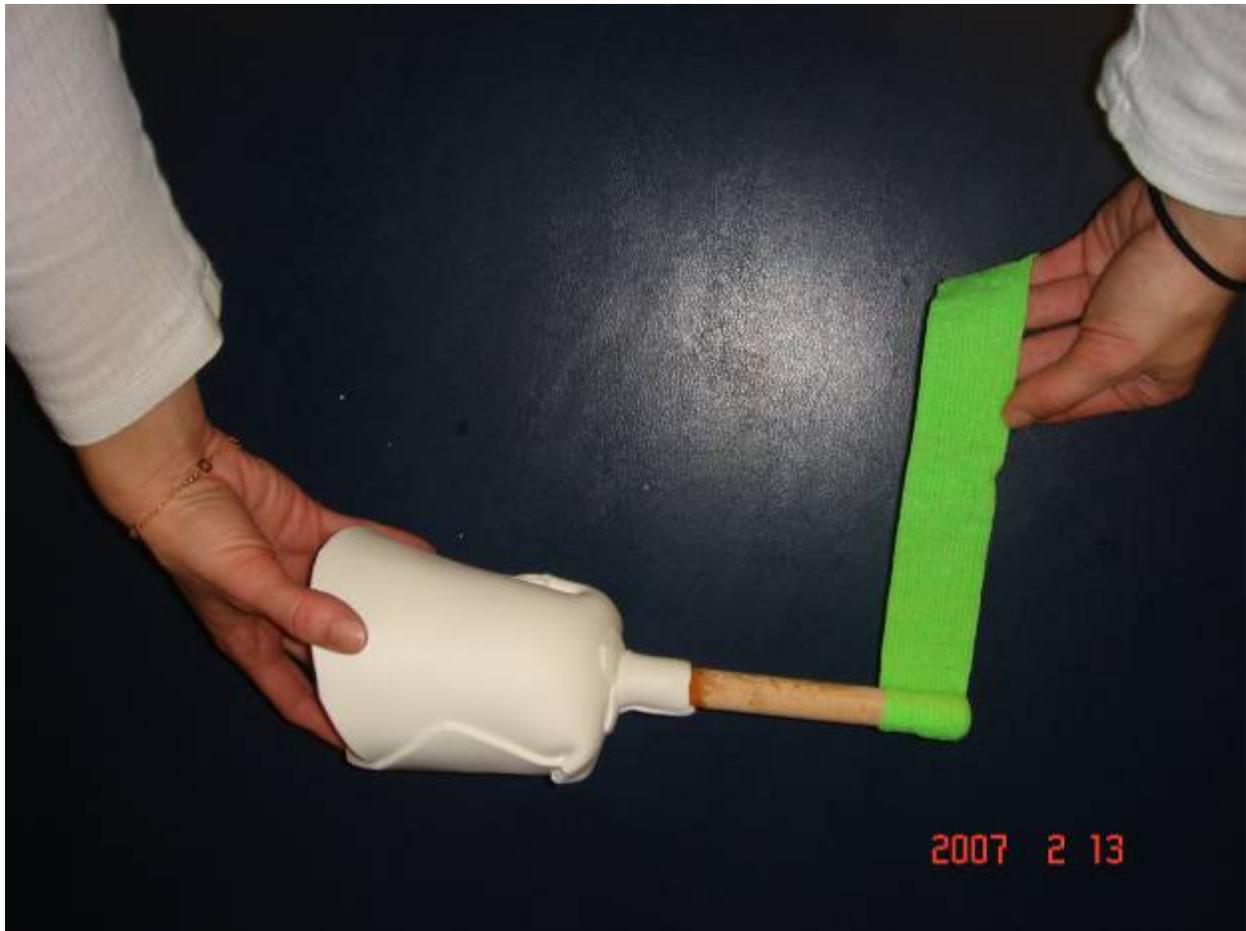


Figure 5
Applying the coban wrap for increased grip and facilitating ease of use