

N.E.C.K.S

Name: Malvina Sher, PT

Title of Splint: N.E.C.K.S.

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Description of Splint:

Burns to the anterior neck often result in functional and cosmetically limiting sequelae with adult and pediatric patients. Contractures may lead to deficits in posture, movement, nutritional intake, dental hygiene, and socialization. The anterior neck is a particularly challenging area to immobilize and position during all stages of burn recovery. Various devices are used for both post-operative immobilization and prevention or correction of a neck contracture. However, these devices often fit improperly, are uncomfortable, do not allow visualization of the burn, and at times add undesirable pressure to involved areas. The result is patient discomfort and noncompliance, as well as failure of the device to maintain cervical neutral/extension. N.E.C.K.S. is a simple, comfortable and versatile device used to promote cervical extension while concurrently relieving pressure at the anterior neck. It can also be used for patients s/p tracheostomy.

Materials Used:

- One 20" x 3" strip and a 1.5" x 1.5" strips of Ezeform
- Two 12" sections of cylindrical foam tubing (Blue Foat Tubing; Richardson Products, Inc; Sammons Preston).
- Two 5" Velcro male/hook adhesive.
- One 17" x 2" Velcro loop strap (1" can be used depending on the size of the patient)
- Optional: Silipos digital sleeves



Fabrication Instructions:

- 1.) Place patient in supine with neck in slight extension.
- 2.) Heat Ezeform and triple fold it.



- 3.) In order to create a smooth edge, cut ezeform material 2/3 of width as shown. You will be cutting through the triple folded material to create a smooth, cylindrical piece of Ezeform which will form the splint.



- 4.) Mold center of Ezeform from mid chin to laterally along each inferior mandible to the angle of each mandible, down to clavicles, and medially to mid-sternum.



- 5.) Once Ezeform hardens, thread cylindrical foam padding onto Ezeform (as an alternative use digital silipos sleeve). Use two separate pieces for the top and for the bottom of the splint.



- 6.) Close bottom part of neck splint with 1.5" x 1.5" piece of Ezeform wrapped around ends and cut close to splint edge to form a continuous loop.



7.) Slide cylindrical foam pads to the top and bottom of the splint



8.) Fold both pieces of adhesive Velcro hook on itself, place them towards ends of the Velcro loop strap, loop ends of strap around lateral edges of splint and attach ends to the Velcro.



Advantages:

- 1.) Maintaining correct posture at cervical area
- 2.) Improved breathing with upper chest expansion
- 3.) Improved swallowing capability
- 4.) Increased visual field
- 5.) Ease with donning and doffing
- 6.) Increased compliance to a wearing schedule
- 7.) Improved ADL

Additional Benefits

- 1.) Reduced pressure around tracheostomy
- 2.) Decreased tracheostomy periwound irritation
- 3.) Improved secretion management
- 4.) Visualization of a graft/ wound

Disadvantage:

None

Indications:

For patients with anterior neck burns or scarring that lead to decreased cervical extension

Precautions/Contraindications:

C-spine precautions and compromised skin at bony prominences

Level of Therapist:

Intermediate level of splinting knowledge

Total time to Fabricate Splint:

1 therapist at approximately 45 minutes

References:

Serghiou, M., Holmes, C., and McCauley, R. (2004). A survey of current rehabilitation trends for burn injuries to the head and neck. *J Burn Care Rehabil.* **25: 514-518.**