

**OLIVE VIEW-UCLA MEDICAL CENTER  
REHABILITATION SERVICES  
POLICY & PROCEDURE**

**NUMBER: 1169  
VERSION: 2**

**SUBJECT/TITLE: CUSTOMIZED SPLINTING**

**POLICY:** Patients are assessed for an appropriate splint based on their diagnosis and/or specific needs. When prefabricated splints are not feasible, staff fabricate customized splints to meet the patient's individualized needs.

**PURPOSE:** To assure that patients are assessed for an appropriate splint according to their diagnosis or specific needs.

**DEPARTMENTS: REHABILITATION SERVICES**

**DEFINITIONS:** Static splint: Appliance used to immobilize a part of the body in a fixed position.

Dynamic splint: Appliance that uses outriggers or springs to aid in initiating movement by controlling the plane of range of motion of the injured part. The objective is to encourage movement and/or improve range of motion of the injured part.

Thermoplastic material: Thin piece of rigid material that can be used to customize splints. The material becomes flexible when heated and can be conformed to the patient.

**PROCEDURE:**

I. REFERRAL FOR SPLINT

A. The physician may refer a patient for a specific splint to be fabricated, based on a specific diagnosis or after an operative procedure. The therapist may also identify the need for splinting based on his/her assessment or during the ongoing treatment process.

Splinting objective(s) may vary based on the need to:

1. Protect a weak muscle or tendon from being stretched, a fractured bone or an area after surgical repair
2. Support an arthritic joint
3. Correct an existing deformity through the application of gentle forces
4. Increase range of motion
5. Rest a painful, inflamed joint, tendon or muscle
6. Inhibit spasticity or muscle tone

II. SPLINT ASSESSMENT

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- A. Based on the needs of the patient, the therapist determines the following:
  - 1. Custom splint design simple to more complex (only if appropriate)
  - 2. Multiple splints may be indicated
    - a. Night splint
    - b. Day splint
    - c. Combination day/exercise splint regime
  - 3. Prefabricated splints or braces may be issued, if appropriate
  
- B. Type of splints:
  - 1. Protective
  - 2. Supportive
  - 3. Corrective
  - 4. Serial casting
  - 5. Exercise
  - 6. Light weight/soft for comfort
  - 7. Resting
  - 8. Circumferential
  - 9. ROM assist
  - 10. Inhibitory
  - 11. Positional
  
- C. Splinting principles to be considered:
  - 1. Fitted early after trauma, injury or surgery
  - 2. Adheres to biomechanical principles
  - 3. Adjustments to the splint are made according to increments of progress
  - 4. Latex allergies and precautions
  - 5. Sensory factors
  - 6. Cognition and developmental age
  - 7. A new splint may be re-fabricated accordingly as needs change
  - 8. Splint type may be chosen to facilitate cooperation and compliance from the patient. For example, a soft neoprene CMC splint may be issued vs a thermoplastic CMC splint due to patient's activities.
  
- D. Splinting Precautions:
  - 1. If the patient has delicate or sensitive skin, a layer of stockinette is placed on the extremity when fabricating the splint. When the skin is very fair, a second layer of stockinette may be necessary.
  - 2. Bony prominences should be well padded to minimize development of pressure sores.
  - 3. Impaired circulation and sensation
  - 4. Open wounds
  - 5. Pain lasting more than 10 mins after removal of splint.

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6. If the purpose of the splint is immobilization, the splint is fabricated and secured so it can't be removed until recommended by the physician. When the patient has been cleared to remove the splint at home, the therapist can fabricate a new splint with Velcro™ straps so the caregiver can easily remove it to check skin integrity, circulatory status and perform dressing changes.
7. The success of this program is related to the effectiveness of communication between members of the treatment team and caregivers, as well as the quality of the splint that is fabricated.
8. Inspect the patient's skin and extremity after the splinting session.

### III. GENERAL SAFETY WHILE MAKING THERMOPLASTIC SPLINTS:

- A. Make sure patient is seated comfortably and in a relaxed position, with a towel placed under the area to be splinted.
- B. Stand or sit directly facing the patient to maximize your control over the patient's arm and the splint being fabricated
- C. When using the electric skillet or heat gun, place on a stable surface away from patients. Do not leave the skillet or heat gun unattended when electricity is on. Position electrical cord so that it safely clears the working area and is not a trip hazard.
- D. Pan must always be turned off after use
- E. Fill pan  $\frac{3}{4}$  full with water; the temperature range for the Forma-Splint Thermal Bath SP-1502 should be between 140°F and 190°F.
- F. Prior to cutting the splint material, place on a folded towel to protect the work surface.
- G. Do not leave scissors or retractable knife unattended.
- H. Place a folded towel in front of splinting pan to absorb excess water.
- I. Position additional items needed to fabricate the splint within reach.
- J. Lock all sharps in appropriate storage area after splint fabrication is completed.

### IV. CASTING

- A. Purpose

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1. Serial casting to improve a contracture
2. Positional, for example after surgery in order to prevent a contracture
3. Rehabilitation Services does not apply casts for fracture management

**B. Precautions:**

1. Casting material will warm up as it is drying
2. Cast must be made long enough to provide sufficient forces across the joint to be effective in making change.
3. Keep cast material dry and free from moisture to prevent skin maceration.
4. Patients with finger serial cast will need to be seen at least 2 times a week to monitor finger and to reapply cast.
5. Make sure the position patient is placed into is not too aggressive or patient will not tolerate the cast or excessive pressure may occur over bony prominences resulting in pressure sores.

**C. Application of half cast**

1. Stockinet is placed over area to be casted and should extend beyond length of cast desired so it can be folded back to finish edges of cast.
2. Wrap cast padding in a spiral manner. Extra wrapping may be needed around bony prominences.
3. Placement of felt can help pad bony prominences and other areas that need increased protection.
4. Don gloves and dip cast material in water
5. Patient should be placed in desired position and held in that position by second staff member as other staff member applies cast.
6. Caution must be used with cast to prevent wrinkles which will become pressure areas as the cast dries and to not press fingers into casting material.
7. To complete cast, fold back stockinette at both ends and wrap with final layer of casting material.
8. Apply stockinet to hold cast in place

**D. Application of finger serial cast**

1. Measure appropriate length and width of cast material
2. Dip cast material in water
3. Apply cast material to sections of finger while being cautious to not wrap too tightly.
4. Smooth out rough edges

**E. Cast removal**

1. Bandage scissors are used to cut cast padding
2. Check skin for any abrasions, open sores, and general skin conditions. Report any problems to the physician.
3. Dip finger serial cast in water for removal

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V. PATIENT EDUCATION

Home program instructions (purpose and goals of the splint):

- A. Patient or their caregiver plays an active role in the rehabilitation process.
- B. Splint wearing schedule and instructions on how to don/doff splint appropriately is provided to the patient and/or caregiver.
- C. Cleaning the splint
- D. Exercises in the splint and/or when splint is removed
- E. Precautions, such as unusual swelling, stiffness, pain, red areas, and pressure sores.

References:	
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