



Rancho Los Amigos National Rehabilitation Center

OUTPATIENT SERVICES: MOBILE CLINIC

POLICY AND PROCEDURE

SUBJECT: Orthopedic: Splint Procedure

Policy No.: 402
Supersedes: New
Revision Date: February 9, 2022
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1. **PURPOSE:**

- 1.1 To provide guidance and describe the workflow process in performing splint procedure while out in the field for the mobile clinic.

2. **POLICY:**

- 2.1 Medical Provider will give the order for the specific splint procedure.
- 2.2 RN & LVN can apply the splint procedure after the medical order is verified.
- 2.2 Provide instructions and answers all patients' questions before and after the procedure is performed.

3. **DEFINITION:**

- 3.1 A splint is a noncircumferential orthopedic device used for temporary immobilization of a limb to reduce pain and muscle spasms, decrease swelling, and reduce the risk of further soft tissue and neurovascular injuries associated with contusions, dislocations, fractures, lacerations, sprains, and painful joints. A splint allows room for acute swelling and is faster and easier to apply than a cast. A splint can also help to control long-term pain, aid physical functioning, and slow the progression of pathologic conditions.

4. **INDICATION:**

- 4.1 Soft tissue injuries (sprains or plantar fasciitis).
- 4.2 Fractures
- 4.3 Injury Prophylaxis
- 4.4 Injury stability, pain relief, removable, temporary support

5. **CONTRAINDICATION:**

- 5.1 Premature casting before has reached maximal swelling (can cause necrosis or compartment syndrome)
- 5.2 Open wound (risk for infection)

EFFECTIVE DATE: 3/1/22

APPROVED BY:

Ben Davis

6.1 SPLINTS TYPES/INDICATION/APPLICATION:

SPLINT TYPES:	INDICATION:	APPLICATION
Dorsal Extension-Block splint	<ul style="list-style-type: none"> • Large, middle phalangeal volar avulsions with a risk of dorsal subluxation • Reduced stable proximal interphalangeal (PIP) joint dorsal dislocations 	<ul style="list-style-type: none"> • For reduced, volar avulsion fractures, the splint should be applied with the PIP joint flexed 45 degrees and secure it at the proximal finger, allowing flexion at the PIP joint. • The splint decreases flexion 15 degrees per week, until the patient achieves full extension over 4 weeks. • Treatment of reduced PIP joint dislocations is similar but requires a starting angle of 20 degrees.
Posterior knee splint	<ul style="list-style-type: none"> • Acute soft tissue injuries (such as quadriceps or patellar tendon rupture and anterior cruciate ligament rupture), patellar fracture or dislocation, and other traumatic lower-extremity injuries, particularly when a knee immobilizer isn't available or is unusable because of swelling or the patient's size 	<ul style="list-style-type: none"> • The splint begins just below the gluteal crease and ends just proximal to the malleoli. • The splint positions the knee in slight flexion.
Radial gutter splint	<ul style="list-style-type: none"> • Nondisplaced fractures of the head, neck, and shaft of the second or third metacarpal without angulation or rotation • Nondisplaced, nonrotated shaft fractures and serious injuries of the second or third, proximal or middle phalanx • Initial immobilization of displaced distal radius fractures 	<ul style="list-style-type: none"> • The splint extends along the radial aspect of the forearm to just beyond the distal interphalangeal (DIP) joint of the index finger, leaving the thumb free. • Padding between the fingers is necessary. • The splint positions the wrist in slight extension, with the metacarpophalangeal (MCP) joints in 70 to 90 degrees of flexion and the PIP and DIP joints in 5 to 10 degrees of flexion.
Stirrup splint	<ul style="list-style-type: none"> • Acute ankle injuries • Nondisplaced, isolated malleolar 	<ul style="list-style-type: none"> • The splint extends from the lateral midcalf around the heel

	fractures	and ends at the medial midcalf. <ul style="list-style-type: none"> • The splint flexes the ankle 90 degrees in a position of function.
Thumb Spica splint	<ul style="list-style-type: none"> • Suspected injuries to the scaphoid (large carpal bone articulating with the radius below the thumb). • Stable ligamentous injuries to the thumb. • Initial treatment of non-angulated, nondisplaced, extra-articular fractures of the base of the first metacarpal. • <i>de Quervain tenosynovitis</i> (inflammation of the tendons around the base of the thumb) • First carpometacarpal joint arthritis 	<ul style="list-style-type: none"> • The splint covers the radial aspect of the forearm and extends from the proximal one-third of the forearm to just distal to the interphalangeal joint of the thumb; the splint encircles the thumb. • The splint positions the forearm in a neutral position, with the wrist extended 25 degrees and the thumb in a position of function.
Ulnar gutter splint	<ul style="list-style-type: none"> • Nondisplaced, stable fractures of the head, neck, and shaft of the fourth or fifth metacarpal with mild angulation and no rotational deformities • Nondisplaced, nonrotated shaft fractures and serious soft tissue injuries of the fourth or fifth, proximal or middle phalanx • Boxer's fracture (distal fifth metacarpal fractures), the most common injury for which an ulnar gutter splint is used 	<ul style="list-style-type: none"> • The splint begins at the proximal forearm and extends just beyond the DIP joint. • Padding between the fingers is necessary. • The splint positions the wrist in slight extension, with the MCP joints in 70 to 90 degrees of flexion and the PIP and DIP joints in 5 to 10 degrees of flexion.
Volar or dorsal forearm splint	<ul style="list-style-type: none"> • Soft tissue injuries of the hand and wrist • Temporary immobilization of carpal bone dislocations or fractures (excluding dislocations or fractures of the scaphoid and trapezium) 	<ul style="list-style-type: none"> • The splint extends from the dorsal (back of the hand) or volar (palmar surface of the hand) mid-forearm to the distal palmar crease. • The splint positions the wrist in slight extension

7. **EQUIPMENT**

- 7.1 Gloves
- 7.2 Patient towels or drapes
- 7.3 Splint (SAM Splint)
- 7.4 Correct size if using manufactured splint
- 7.5 Shears/Scissor
- 7.6 Compression wrap elastic bandage (Ace bandage)
- 7.7 Optional: disposable measuring tape, disinfectant pad, wound dressings, Doppler US device, gown, mask, shoe covers for clinician, wound care supplies, sterile swab, sterile culture swab.

8. **PREPARATION OF PATIENT**

- 8.1 Review medical record for history of allergies to latex, medications, or splinting materials, and any contraindications to procedure
- 8.2 Confirm informed consent
- 8.3 Hand hygiene
- 8.4 Explain procedure
- 8.5 Don gloves and other protective equipment to comply with standard precautions
- 8.6 Assess neurovascular status: evaluate for pain, sensation, pulses, capillary refill, swelling, and Discoloration.

9. **TECHNIQUE**

- 9.1 Splint using (SAM Splint) *
 - 9.1.1 Estimate length of splint you plan to use.
 - 9.1.2 Follow the manufacturer instruction (SAM Splint)

- 9.2 Upper Extremities
 - 9.2.1 Finger Splint
 - 9.2.2 Volar Wrist
 - 9.2.3 Thumb Spica
 - 9.2.4 Ulnar Gutter
 - 9.2.5 Double layer wrist
 - 9.2.6 Humeral Shaft (Upper Arm)
 - 9.2.7 Sugar Tong

- 9.3 Lower Extremities
 - 9.3.1 Ankle Stirrup
 - 9.3.2 Figure Eight
 - 9.3.3 Combo Ankle Stirrup & Figure Eight
 - 9.3.4 Single Long Leg
 - 9.3.5 Double Long Leg
 - 9.3.6 Knee Immobilizer

* Please see attached SAM Splint User Guide-Pdf

REFERENCES:

- 1. Lippincott (2021). *Lippincott Procedures - Splint application, Ambulatory Care*. Retrieved on November 24, 2021, from <https://procedures.lww.com/lmp/view.do?pId=6762342&hits=splinted,splint,care,splints,ambulatory,splinting&a=false&ad=false&q=splint%20ambulatory%20care>

- 2. SAMS Splint User Guide (2021, November 22). Retrieved on November 24, 2021, from <https://www.capesmedical.co.nz/media/sam-splint-user-guide.pdf>