

**Mary Pack Arthritis Centre  
Occupational Therapy Department**

## **HAND RESTING SPLINT APPROACH**

### **PURPOSE OF THE SPLINT**

- To reduce pain and swelling by providing local rest to joints of the hand and the wrist.
- To maintain optimal range of movement and ensure proper positioning during sleep.
- To immobilize, protect and support inflamed joints and tendons.
- To reduce irritation of nerves in carpal tunnel by supporting and resting wrist in the “loose pack” position.
- To help maintain length of soft tissues and prevent contracture.

### **INDICATIONS FOR USE**

- pain at night
- joint inflammation
- developing soft tissue contracture due to progressive deformity
- loss of joint range of movement
- carpal tunnel syndrome
- tenosynovitis
- risk of tendon rupture

### **EQUIPMENT / SUPPLIES REQUIRED**

- 1 roll of 6” hexcelite
- polyform or other low temp. thermoplastic for finger dividers
- stockinette (2 ½” diameter)
- velcro – (1” diameter)
- tensor bandage
- heat gun
- strong shears
- electric fry pan or other heat source for water
- towels
- hand cream
- solvent (nail polish remover)

### **SPLINT DESIGN**

#### **Considerations:**

- Resting splint should be lightweight, cool to wear and easy to clean.
- Length: 2/3 length of forearm to ¼” beyond fingertips.
- Width: 2/3 circumference of arm.
- Arches: Transverse and longitudinal arches should be supported by splint.

**Joint Position:**

- Wrist: 10° to 15° Extension (Patients with carpal tunnel syndrome splinted in 5° to 10°)
- ¾ prone position
- 5° to 10° Ulnar deviation – 2<sup>nd</sup> metacarpal in straight line with radius.
- MCP's: 15° to 20° flexion, neutral deviation
- PIP's: 20° to 25° flexion
- DIP's: 10° flexion. Patients with swan neck deformity, increase MCP extension with PIP flexion.

**CONSTRUCTION****Splint:**

- Preheat water in fry pan to approx. 150° F.
- Cut 2 lengths of 6" hexcelite, measuring from proximal 1/3 of forearm to ¼" distal to finger tips.
- Heat material in water until malleable, remove from pan and shake water from material.
- Rub both surfaces of hexcelite with hand cream, to prevent material from sticking to patient's skin.
- Mould hexcelite around volar surface of forearm and wrist, wrap with tensor bandage.
- If wrist position is correct, reheat distal section of hexcelite and mould hand and thumb sections.
- When satisfied with position of wrist and hand, cut off excess material.
- Finish edges by rolling or by moulding ½" strips of hexcelite over edges of splint.
- Flare proximal edge away from forearm.

**Straps:**

- It is important to attach straps to splint before applying finger dividers as they help maintain hand position in splint.
- Attach 3 pieces of "loop" velcro to medial side of splint
  - (1) on proximal forearm, 1" from end of splint
  - (2) at wrist joint
  - (3) under 2<sup>nd</sup> metacarpal at a 45° angle, strap goes over MCP joints
- To attach heat loop velcro and hexcelite (4cm x 6cm) together and using heat gun, heat splint at desired point of attachment and attach velcro to splint.

**Dividers:**

- Cut 3 rectangular pieces of thinned polyform (approx. 2cm X 2.5cm) with rounded corners.
- Dividers should extend slightly higher than the fingers, starting proximal to the PIP joint and ending distal to the DIP joints.

- Avoid pressure on nodules, swollen PIP joints, and in web space between the fingers.
- Heat polyform piece, apply dry heat to splint at point of attachment, apply solvent (nail polish remover) to both surfaces and press spacer firmly onto splint.

## **SPLINT CHECK**

- Position hand in splint and fasten straps.
- Check for pressure areas.
- Correct alignment and fit of splint as required.

## **USE OF SPLINT**

- Instruct patient in how to don/doff the splint.
- Discuss when to wear the splint with patient. It should be worn during rest periods and at night when the patient's hand and wrist joints are painful or inflamed.
- Provide patient with a copy of the handout "Wear and Care of you Hand Resting Splint" OTIID-2.