



## **METHOD OF MAKING PLASTER HAND CAST**

### **EQUIPMENT / SUPPLIES REQUIRED:**

- plaster bandage – 4” or 6” wide, depending on width at the arm
- plaster scissors
- bowl of water – approximately 8” in diameter
- Dove soap
- towels, apron
- newspaper
- pencil, indelible pencil

### **1. PREPARE PLASTER BANDAGE**

- For the dorsal and volar pieces, cut two slabs of plaster bandage (triple thickness, the length from PIP joints to 2” distal to the elbow).
- Cut a half circle in the volar slab to accommodate thenar eminence
- For the thumb, cut 2 pieces of 6” plaster approximately 2/3 the length of the forearm. Fold each piece into thirds. This piece needs to be long enough to extend from the thumb IP to the radial styloid.

### **2. MARK BONY PROMINENCES**

- Using a ballpoint pen, mark the apex of the ulnar styloid process with an X.

### 3. **CASTING POSITION**

- With patient in a sitting position and their elbow comfortably supported on a table (with pad under elbow if needed) position their wrist and hand for casting as follows:

**Forearm** -neutral, neither pronated or supinated

**Wrist** -10 to 20° extension with 5° ulnar deviation (10° extension preferred position for carpal tunnel splints)

**Thumb** -Opposition to pads of index and long fingers

**MCP's** -Slight flexion in order to maintain the transverse and longitudinal arch.

### 4. **PROCEDURE**

- a) Generously apply soap to the forearm and hand. Dove soap is recommended, as it is creamy.
- b) Apply dorsal slab (slab without cut out).
  - Dampen plaster and gently remove excess water. Apply slab to dorsal surface extending to level of PIP joints, smooth plaster;
  - Smooth plaster around the ulnar border and then fold back edges (1/2") on radial border to reinforce edge.
- c) Apply volar slab
  - Apply second slab of wet plaster to volar aspect of forearm extending it to level of PIP joints, smooth well into palmar arches and around thenar eminence;
  - Overlap onto dorsal slab at the ulnar border and fold back radial edge so that it forms a seam with the dorsal slab.

#### d) Thumb Pieces

- Apply thumb pieces so that dorsal piece for thumb is anchored to dorsal forearm slab only and volar piece is anchored to volar slab. This should form a bivalved cast that can be opened along the radial border.

### 5. **MARK PLASTER**

- Mark across the radial seam with a pencil, on several locations, so that cast can be rejoined accurately after removal.

### 6. **CAST REMOVAL**

- When cast feels set, gently pronate and supinate client's arm and ask client to gently wiggle their fingers. This will help release the plaster from their skin and ease removal. To remove, grasp the radial borders of the cast and slowly hinge it open. Be careful to not distort the cast.

### 7. **CAST COMPLETION**

- Reinforce mark on ulnar head with an indelible pencil;
- Realign pencil markings on cast and join radial opening with a full-length, double thickness plaster strip;
- Cover distal thumb and finger holes with a double thickness bandage leaving only proximal end of cast open;
- Label cast.

## **8. FILLING CAST**

- Coat interior surface of cast with a diluted, liquid soap and check for leaks;
- Fill cast with a mixture of liquid plaster (2-1/2 cups plaster of paris powder and 2 cups water);
- Gently tap cast to dislodge air bubbles;
- Leave to set, approximately 2 hours.

## **9. CAST STRIPPING AND ADJUSTMENTS**

- Strip off plaster bandages gently;
- Smooth rough edges with a knife;
- Add extra plaster to bony prominences as marked and small amount in the web space to improve comfort of splint.

## **10. COMPLETION**

- Cast is ready to be used for the fabrication of a polyethylene or leather wrist working splint.