

## **Soft Tissue Mallet Finger Splinting Protocol**

### Overview

A “soft tissue mallet finger” occurs when the terminal extensor tendon (which straightens the tip of the finger) is disrupted at or near its attachment on the distal phalanx—without an associated avulsion fracture (or only a very small one). This leads to an inability to actively extend the distal interphalangeal (DIP) joint. Splinting is the mainstay of conservative treatment, aiming to keep the DIP joint in continuous extension while the tendon heals.

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### Goals of Splinting

1. Maintain DIP joint in extension: Promotes proper healing of the terminal extensor tendon.
  2. Prevent flexion forces: Any unintended flexion at the DIP joint can disrupt healing and prolong recovery time.
  3. Restore normal DIP extension: Enable gradual return to functional hand use.
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### Splint Type

- A volar or dorsal DIP extension splint (commercially available mallet splint or custom thermoplastic splint) that immobilizes the DIP joint in slight hyperextension or neutral extension, while leaving the proximal interphalangeal (PIP) joint free to move.
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### Splint Fitting

1. Position the Finger
  - Gently extend the DIP joint to neutral (or slight hyperextension) without forcing.
  - Ensure the PIP joint remains free to allow flexion and prevent stiffness in the rest of the finger.
2. Secure the Splint

- If using a pre-fabricated splint, adjust it to fit snugly around the distal finger without causing pressure areas.
  - If making a custom thermoplastic splint, mold the material to conform to the finger shape, taking care not to apply pressure over the DIP joint or the nail bed.
3. Skin Checks
- Confirm there are no pressure points, irritation, or compromised circulation.
  - Educate the patient on checking their skin regularly for redness, swelling, or maceration (especially if the splint is worn continuously).
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## Splint Wear Schedule

1. Continuous Splinting Phase (6–8 weeks)
    - The splint is worn 24 hours a day, including during sleep.
    - Do not remove the splint unless instructed by the physician or therapist.
    - If it is necessary to remove the splint (e.g., for cleaning), it must be done in a way that keeps the DIP joint in extension. One common method is to place the finger flat on a table, gently slide off the splint, perform hygiene, then slide it back on—never allowing the fingertip to drop into flexion.
  2. Gradual Weaning Phase (2–4 weeks)
    - After the initial continuous immobilization period (usually 6–8 weeks), the physician or therapist will guide splint weaning.
    - Typically, the patient may begin removing the splint for short supervised periods (e.g., for gentle active DIP extension/flexion exercises), then gradually increase time out of the splint.
    - At night or if the finger becomes sore, the splint is often worn for protection.
  3. Maintenance
    - Some protocols recommend continued use of the splint during sports, heavy activities, or at night for an additional few weeks to guard against inadvertent DIP flexion.
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## Exercises and Follow-Up

1. Exercises
  - Active Range of Motion (AROM) at PIP Joint: The PIP joint should remain free for flexion and extension to prevent stiffness.
  - AROM at DIP Joint: Introduced only after the continuous immobilization phase. Start with gentle, pain-free motion under guidance from a therapist.
  - No Forceful Flexion: Avoid any resistance or forceful flexion of the DIP joint in the early stages of rehab, as it can disrupt tendon healing.
2. Monitoring
  - Regular follow-up visits with a physician or hand therapist to assess tendon healing and splint fit.

- If there is any lag in extension, the continuous splinting phase may be extended.
  - If the DIP joint regains near-full active extension, move to weaning protocols as directed.
3. Strengthening
- Light strengthening can begin once the tendon is stable (usually after the splint-weaning phase), guided by a hand therapist.
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## Precautions and Troubleshooting

- Avoid DIP Flexion when cleaning or changing the splint. Even a brief moment of flexion can re-injure the tendon and prolong healing.
  - Skin Care: Check daily for breakdown, maceration, or irritation under the splint. Clean and dry the skin carefully.
  - Swelling or Pain: Report any significant increase in pain, swelling, or redness to the healthcare provider immediately.
  - Adherence: Consistency with the splinting regimen is crucial. Non-adherence often leads to incomplete healing and a persistent mallet deformity.
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## Typical Timeline (Soft Tissue Mallet Finger)

- Week 0: Injury occurs. The DIP joint presents with an inability to actively extend. Patient is fitted with a DIP extension splint.
  - Weeks 0–6/8: Continuous wear of splint, 24/7, no active flexion at DIP.
  - Week 6/8: Re-evaluation by physician or hand therapist. If extensor lag is minimal or absent, begin gradual weaning. If extensor lag is still present, splinting is continued.
  - Weeks 8–10/12: Gradual weaning period with supervised DIP joint exercises and continued nighttime or protective splint wear.
  - Week 12+: Full return to normal activities if the tendon has healed properly and no extension lag remains.
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## Conclusion

A soft tissue mallet finger often heals well with diligent conservative management if the DIP joint is held in uninterrupted extension. The primary treatment principle is strict adherence to the splinting protocol for the recommended duration, followed by gradual reintroduction of motion and activity. Close follow-up with a healthcare professional ensures optimal healing and functional recovery.

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Disclaimer: This protocol is a general guideline. Individual treatment may vary based on patient factors, clinical judgment, and physician/therapist preferences. Always consult with a qualified healthcare provider for diagnosis and tailored management.