



Dr Simon Hutabarat

POST-OPERATIVE PROTOCOL PIP JOINT REPLACEMENT

4-7 days post-operative care

- Remove dressing and fabricate splints
- Initiate exercises and limit active arc of motion to 0-30° for the first 3-4 days

Splint fabrication

Static splint:

- Fabricate a forearm-based static resting splint with the wrist in neutral radial-ulnar deviation and 10-15° of extension
- The digits are positioned with the MCPs in slight flexion and the IPs in near full extension in the normal situation (no extension lag or hyperextension). If hyperextension is observed, the PIPs are splinted at up to 60° of flexion in the resting splint
- The static splint is worn at night and during rest periods from the dynamic splint

Dynamic splint (if required):

- Fabricate a forearm-based, low profile PIP dynamic extension splint with the wrist in neutral deviation and 10-15° of extension
- Position of the MCPs in 20° of flexion and apply dynamic assist for PIP extension
- Place slings on the middle phalanx of the involved digit
- The purpose of the dynamic splint is to guide the PIP through the arc of motion and provide dynamically assisted extension to 0°
- **Avoid any hyperextension**

Check all splints with x-ray to ensure proper joint alignment

EXERCISES

- Perform active PIP dynamic assisted extension to neutral and flexion to recommended range of motion (0-45° by the end of four weeks post-operatively). These exercises must be performed while in the dynamic splint
- Perform PIP flexion exercises hourly, 10-12 repetitions, beginning after dressing is removed and splints are fabricated at 4-7 days post-operatively
- Monitor splints closely to ensure proper alignment and prevent any deviation, rotation or hyperextension

SPLINT MODIFICATIONS

- If any hyperextension of the PIP is noted, an extension block should be added. Block PIP dynamic active extension at 30° of flexion and allow 60° of active flexion
- If significant hyperextension occurs, induce a flexion contracture with these splints for three weeks:
 1. Daytime extension block splint allowing an arc of motion 45° with a 30° extension block
 2. Night static splint holding PIPs at 60° of flexion
- Patients will generally regain extension within one week when a dynamic extension assist is applied after the three week removal of the extension block splint
- If an extension lag occurs use these modifications:
 1. Dynamically pull up to zero, then
 2. Convert to STACK boutonniere splint for three weeks night and day
 3. Reinitiate flexion slowly after three weeks per normal protocol
- If angular deformity is present, construct a hinged PIP splint to provide radial-ulnar support to the PIP, yet allow flexion and extension

All correspondence to: PO Box 749, Woy Woy, NSW, 2256
Brisbane Waters Private Hospital, 21 Vidler Avenue, Woy Woy, NSW, 2256
Phone: 02 4341 9925 | 1800 686 694 | **Fax:** 02 4341 1889 | **Email:** office@ccbj.com.au
See website for locations www.ccbj.com.au

- If active flexion is less than 30° at two weeks post-operatively, fabricate a dynamic PIP flexion splint with MCP flexion blocked at neutral. A knuckle-bender splint may be considered
- The goal is to achieve 0-45° of active PIP motion by the fourth week post-operatively
- If active flexion at PIP is less than 30° by three weeks post-operatively and full active PIP extension is maintained, remove dynamic extension assist during exercises and begin to active assistive range of motion to 45° flexion

4 weeks post-operative care

- Continue to monitor splinting to ensure proper alignment
- If full active extension of PIP is present, increase the arc of motion to 60°
- Initiate light functional activities outside the splints under supervision of therapist
- If the PIP maintains full active extension, full time use of the dynamic splint may be discontinued
- Initiate buddy taping to the adjacent digit to assist with alignment and motion

6 weeks post-operative care

- The goal is to achieve 0-75° + of active range of motion of the PIP joint
- Initiate gentle stretch at this point to gain optimal range of motion
- Increase light functional activities outside splint per therapist's direction
- Utilise buddy taping as appropriate
- If limited motion or any deformity is present, continue splinting as necessary

3 months + post-operative care

- Goal is to maintain 0-75° + active range of motion of PIP
- Continue activities as tolerated without the protection of the splint
- If limited motion or any deformity is present, continue splinting and AAROM as necessary

Items to watch

- Monitor range of motion of the PIP joint to avoid rotation, deviation and extension lag. Adjust the splint accordingly
Avoid ANY hyperextension of the PIP

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