OPERATIVE AND NON-OPERATIVE REHABILITATION OF SKIER'S THUMB

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OBJECTIVES

- Present evidence-based timelines and progression for both operative and non-operative rehabilitation of skier's thumb.
- Share best practices for therapeutic exercises tailored to each stage of skier's thumb recovery
- Educate participants on typical orthoses used for operative and non-operative management of skier's thumb.
- Discuss collaboration between therapist and referring physician.

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CONSIDERATIONS

- The rehabilitation timelines provided are drawn mainly from the Indiana Hand Protocol, known for its conservative guidelines for both operative and non-operative treatment
- Protocols are intended to provide the therapist a general guideline for rehabilitation based on the average recovery times; however individual patients will progress at different rates depending on age, comorbidities, pre-injury ROM, strength, rehabilitation compliance, and complications.
- If a patient's progress doesn't align with the anticipated outcomes, the therapist should collaborate with the referring provider and use clinical judgement before adjusting the treatment approach.

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NON-OPERATIVE REHABILITATION: 0-4 WEEKS POST INJURY

- Initial evaluation is performed
- A custom hand-based thumb spica orthosis is fabricated, typically using thermoplastic materials:
  - MP in 25˚ of flexion
  - IP joint free
  - Consider reinforcing the radial aspect of the thumb with material extending past the IP joint to provide added stability and protect the UCL from lateral strain
- Patient education on edema management:
  - Finger socks, 1" coban, or an edema glove

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NON-OPERATIVE REHABILITATION: 0-4 WEEKS POST INJURY CONT.

- Patient education on orthosis wear and care:
  - Splint 24/7, can be removed for hygiene while ensuring to not place any lateral stress on MPJ
  - Clean orthosis using mild soap and water avoiding extreme temperatures
  - Avoid extreme temperatures while wearing orthosis
- AROM of fingers and wrist initiated to prevent stiffness and reduce edema.
  - Wrist: flexion, extension, ulnar deviation, and radial deviation
  - Fingers: tendon glides and/or DIP, PIP, MP, and composite flexion and extension

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NON-OPERATIVE REHABILITATION: 4-6 WEEKS POST INJURY

- Initiate gentle AROM exercises, starting with mid-arc and gradually increasing to full-arc motion:
  - 3-4x/day, 25 slow repetitions of
    - Blocked IP flexion and extension
    - Blocked MP flexion and extension
    - Composite thumb flexion and extension
    - Palmar and radial abduction and adduction
- Avoid lateral stress on thumb and do not force motion
- Initiate moist heat prior to HEP for 5 minutes
- Consider ultrasound to promote circulation and healing of soft tissue
- Orthosis continued between HEP sessions and at night

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NON-OPERATIVE REHABILITATION: 8 WEEKS POST INJURY

- PROM initiated to MP joint as necessary
  - 3-4x/day for 25 repetitions until within 5-10 degrees of contralateral side
  - Flexion and extension
- Typically, AROM has been restored by this time frame
- Strengthening is generally initiated at this stage; however, timing may vary. It is essential for the therapist to apply clinical judgment and/or consult with the referring physician before proceeding
- Graded strengthening of lateral pinch, three-point pinch and gripping:
  - 1-2x/day 10-20 reps
  - Typically done using resistive sponges or therapy putty

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NON-OPERATIVE REHABILITATION

8-10 weeks post injury:

- Can discontinue custom orthosis during light daily activities
- Continue wearing orthosis during heavy tasks
- If additional support is still needed a pre-fabricated neoprene thumb orthosis can be issued to use during the day with light activities as needed

10-12 weeks post injury:

- Splint is discontinued during all activities based on the patient's pain
- Most patients can return to sport per physician recommendations

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NON-OPERATIVE REHABILITATION: CONSIDERATIONS

- If the patient continues to be symptomatic after 6 weeks of immobilization the orthosis should be worn for another 2-4 weeks of full-time wear
- Collateral ligament injuries are slow to heal
- Stability of the MPJ is preferred over full motion, and aggressive therapy should be avoided

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OPERATIVE REHABILITATION: EVALUATION

- Protocols recommend to start therapy 3-5 days post op, however this typically doesn't occur until after first post-op appointment with physician ~10-14 days after surgery
- Initial evaluation is performed
- A custom hand-based thumb spica orthosis is fabricated, typically using thermoplastic materials:
  - MP in 25° of flexion
  - IP joint free
  - Consider reinforcing the radial aspect of the thumb with material extending past the IP joint to provide added stability and protect the UCL from lateral strain

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OPERATIVE REHABILITATION: EVALUATION CONT.

- Patient education on edema management:
  - Completed for hand and forearm using elastic stockinette for wrist/forearm and/or finger socks or Coban for fingers
- Patient education on orthosis wear and care:
  - Splint 24/7 as if casted until sutures are removed and the provider okays for hand hygiene to be performed. Then can remove only for hygiene purposes avoiding lateral stress on MPJ
  - Avoid extreme temperatures while wearing orthosis
- Sutures removed by physician at 1st post op (typically 10-14 days)
- Initiation of scar massage with lotion/vitamin E oil once wound is completely healed

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OPERATIVE REHABILITATION: 4 WEEKS POSTOP

- AROM initiated to the thumb. If the repair is completed with bone anchors AROM can be initiated at 3 weeks postop.
  - 3-4x/day 25 slow repetitions of:
    - Blocked IP flexion and extension
    - Blocked MP flexion and extension
    - Composite thumb flexion and extension
    - Palmar and radial abduction and adduction
- Orthosis continued between HEP sessions and at night
- Firm scar massage is often needed at this point to reduce adhesions.
- Can also initiate a silicone scar pad to help soften the scar and limit sensitivity along the scar. Typically worn for up to 12 hours/day

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OPERATIVE REHABILITATION: 5 WEEKS POSTOP

- Initiate AAROM of the thumb as needed.
  - These are always performed in adduction to avoid placing lateral stress on the ligament repair
- Sometimes a custom dynamic flexion or extension splint may be needed at this point in recovery if recommended by the physician.
  - Typically used 3-4x/day for 20-minute sessions
- Orthosis is continued for protection and comfort

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OPERATIVE REHABILITATION

7 weeks postop:

- Orthosis may be left off during the day for light ADLs
- At times, a 1st web space contracture can develop. A custom serial static web spacer may be fitted for nighttime wear for 10-14 days

8-12 weeks postop:

- The orthosis is discontinued no later than 8 weeks postop
- The hand can start being used in all daily activities. Avoiding activities that require a repetitive pinch or tight pinch/grasp against resistance for ~3 months.

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OPERATIVE REHABILITATION: CONSIDERATIONS

- It is common for the repair to cause discomfort for 3+ months with pinch activities
- When anchors are utilized, some athletes may safely return to sport within 6–8 weeks, based on the surgeon's recommendations. For contact sports, a modified short opponens orthosis may be required.
- Progressive strengthening can be initiated at 12 weeks if functional use has not restored sufficient strength and endurance:
  - Graded strengthening of lateral pinch, three-point pinch and gripping:
    - 1-2x/day 10-20 reps
    - Typically done using resistive sponges or therapy putty

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