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Successful Static Splinting

Hand Based Splint Fabrication, Part 3

Dr. Kirsten Davin
OTD, OTR/L, ATP, SMS

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Disclosures

- Presenter Disclosure:
  - Financial: Kirsten Davin has received an honorarium for presenting this course.
  - Non-financial: Kirsten Davin has no relevant non-financial relationships to disclose.
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Learning Outcomes

After this course, participants will be able to:

- Identify three (3) characteristics of thermoplastic materials which are applicable to hand-based splint fabrication.
- List the steps involved in the fabrication of a MP joint blocking splint and a finger gutter splint, including wear schedule.
- Describe a client's clinical presentation to determine the appropriateness of a hand-based splint application, and determine the most effective type of orthotic to implement using a case study.

4

Materials Selection

Characteristics Beneficial to Hand Splint Fabrication

- Drapability
  - Ability of a thermoplastic to drape over a surface via the use of gravity
- Conformity
  - Ability of a thermoplastic to conform to the surface
- Memory
  - Ability of a thermoplastic to return to its original shape when reheated
- Perforation
  - Holes in the thermoplastic offer breathability

Q1

5

Materials Selection

Thermoplastics Beneficial to Hand Splint Fabrication

- Aquaplast – T
  - Often preferred by pediatric clients due to color offerings and ability to accommodate
  - Multiple thickness and perforation options
  - Thermoplastic with the most 'memory'

6

Materials Selection

Thermoplastics Beneficial to Hand Splint Fabrication

- Polyform
  - The most conforming thermoplastic currently available
  - Often used for very detailed and/or small anatomical surfaces

Q2/Q3 7

Overview of Splint Fabrication

- Determine - splint and pattern
- Decide - material and how to select
- Prepare - material
- Apply - patient
- Finish - trimming, edge finishing, strapping
- Assess - fit, make necessary modifications
- Instruct - care and wearing schedule

Q4 8

Splint Fabrication Goals

Serial Static

- Maintain arches
- Contour to skin
- Maintain motion (if indicated)
- Permit balanced function of unaffected muscles
- Allow maximal mobility with optimal stability
- Allows for freedom of digits
- Minimal stretch for a longer period rather than quick correction
- Larger surface area to distribute pressure following the normal contours of the hand and arm

9

Hand Based Thumb Spica Splint

Design Options

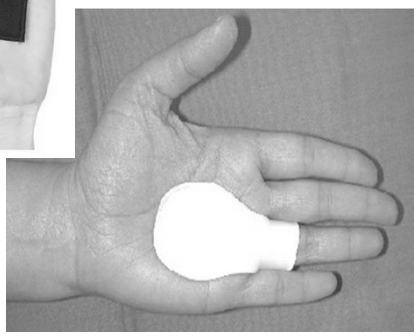
10

CONTINUED

MP Blocking Splint

Design Options

- Often used to treat trigger finger
- Blocks the MP joint from performing flexion, while allowing free flexion of the IP joint of the digit.



Q5/Q6

11

CONTINUED

Finger Gutter Splint

Design Options

- Often used for protection of an injured finger
- Blocks the PIP and DIP joints to keep the finger immobile and prevent flexion
- Variations in splint design

Q7

12

CONTINUED

Prefabricated Finger Splints

Oval-8 Splint

- May also be used for trigger finger to rest the tendon
- Also frequently prescribed for mallet finger
  - Occurs when the distal IP flexes and requires assistance with extension

Q8

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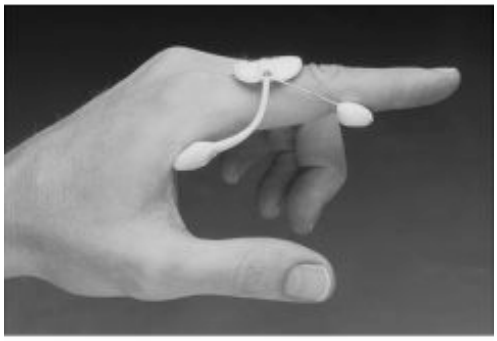
CONTINUED

Prefabricated Finger Splints

Spring Finger Extension Splint

- Designed to treat a variety of diagnoses
  - Indicated for the involvement of PIP tightness
  - Indicated for PIP joint limitations of 45 degrees or less
- Dorsal pad distributes pressure evenly across the PIP



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Prefabricated Finger Splints

Sizing and Placing a Spring Finger Extension Splint

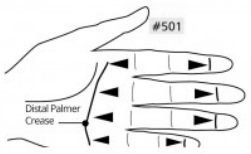
- Measure from the distal palmar crease to the DIP crease of the palm.
- When placing the finger extension splint, do not extend the PIP in question immediately
- Measure to determine

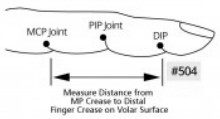
Spring Finger Model #501

SIZE	MEASUREMENT	PRODUCT #
X-Small	2.25"	501AA
Small	2.625"	501A
Medium	3"	501B
Large	3.5"	501C
X-Large	4"	501D

Spring PIP Finger Model #504

SIZE	MEASUREMENT	PRODUCT #
X-Small	1.75"	504AA
Small	1.875"	504A
Medium	2"	504B
Large	2.25"	504C
X-Large	2.625"	504D





Q9 15

Prefabricated Finger Splints

Static Progressive Finger Extension Splint

- Designed to offer low, prolonged stretch to the PIP joint to encourage extension
  - Often able to be adjusted by a medically compliant client under guidance from the therapist/MD.

Q10 16

CONTINUED

Questions?
Thoughts or Feedback?
On-Site Course Requests?

Contact Dr. Kirsten Davin anytime!

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- LinkedIn: https://www.linkedin.com/in/dr-kirsten-davin-a459a274

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