

# *SaeboStretch™*



*A Dynamic Solution for a Dynamic Problem™*

# Outline

- Challenges with splinting
- Problems with traditional splints
- Features of the *SaeboStretch*<sup>TM</sup>
- Who is a candidate for the *SaeboStretch*<sup>TM</sup>?

# Challenges With Splinting

Splinting the neurologically involved wrist and hand has been a challenge for therapists since the first splint was fabricated.

- Challenges:
  - Assessment:
    - Deciding if the patient should be splinted
    - Increased flexor tone
    - Soft tissue shortening
    - Joint integrity
  - Goals of Splinting
    - Tone reduction
    - Protecting joint integrity
    - Preventing or correcting soft tissue tightness and limitations in ROM
  - Splint Fabrication:
    - Splint material and design

# Should the Patient be Splinted?

- There are conflicting practices in splinting with therapists being unable to agree on whether a neurologically involved patient should be splinted.

Neuhaus BE (Am J Occup Ther 1981)

# Should the Patient be Splinted?

- A non-functioning hand usually rests with the long finger flexors in a shortened position.



# Should the Patient be Splinted?

- Soft tissue shortening has been observed to begin in as little as 4 weeks in a non-functional joint.

Pandyan (Clin Rehabil 2001)

- Animal models indicate physiological changes to soft tissue in as little as 2 weeks.

Botte (Clin Ortho and Rel Research 1988)

- Even with adequate finger extension strength, hand function will be limited if soft tissue shortening is not addressed.

# Problems With Traditional Splints

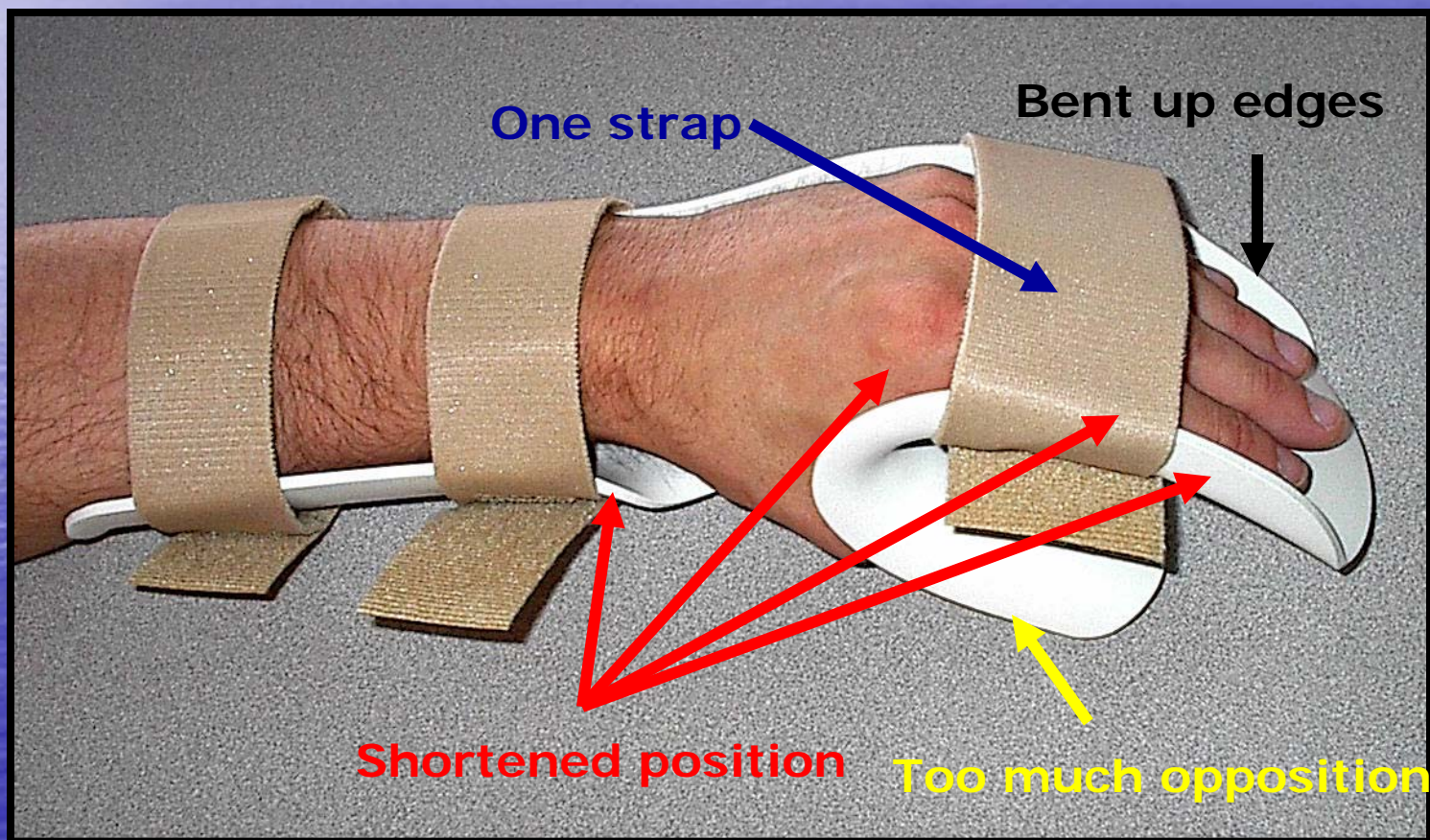
- Poor Splint Design (Functional "C")
- Static Hand Piece
- Strapping Location
- Strap Material
- Cover Material

## Poor Splint Design

- The traditional functional "C" positions the long finger flexors in a shortened position.
- The bent up sides cause bridging of the straps that allows the fingers to pull back and out.
- The thumb is usually positioned in too much opposition.
- They usually have one strap for all four fingers.



# Poor Splint Design



## Static Hand Piece

- The neurologically involved hand is a dynamic component that is constantly changing. It changes with postural movements and associated reactions resulting in increased tone.
- As the fingers move into flexion, something has to give. Unfortunately, it's the patient's IP joints that give under the pressure.
- Pain and joint damage are often the end result.

# Static Hand Piece

“Chronic imbalances of the force about a joint or series of joints can lead to deformities”

Brandt P, Hollister A: Clinical Mechanics of the Hand. C.V. Mosby, 3<sup>rd</sup> Ed. 1999, ISBN 0815127863.

# Static Hand Piece



Are we doing more harm than good?

# Static Hand Piece



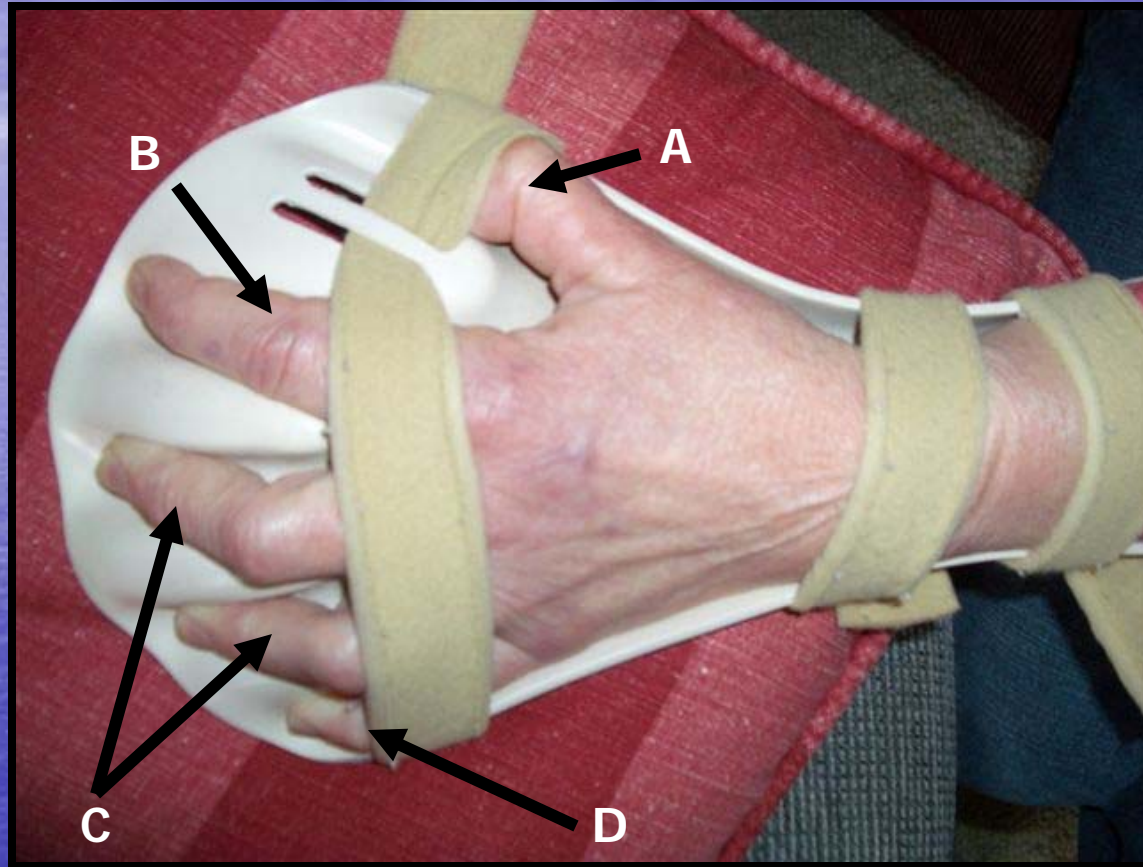
Are we doing more harm than good?

# Static Hand Piece



Resting Position

# Static Hand Piece



During Exertion

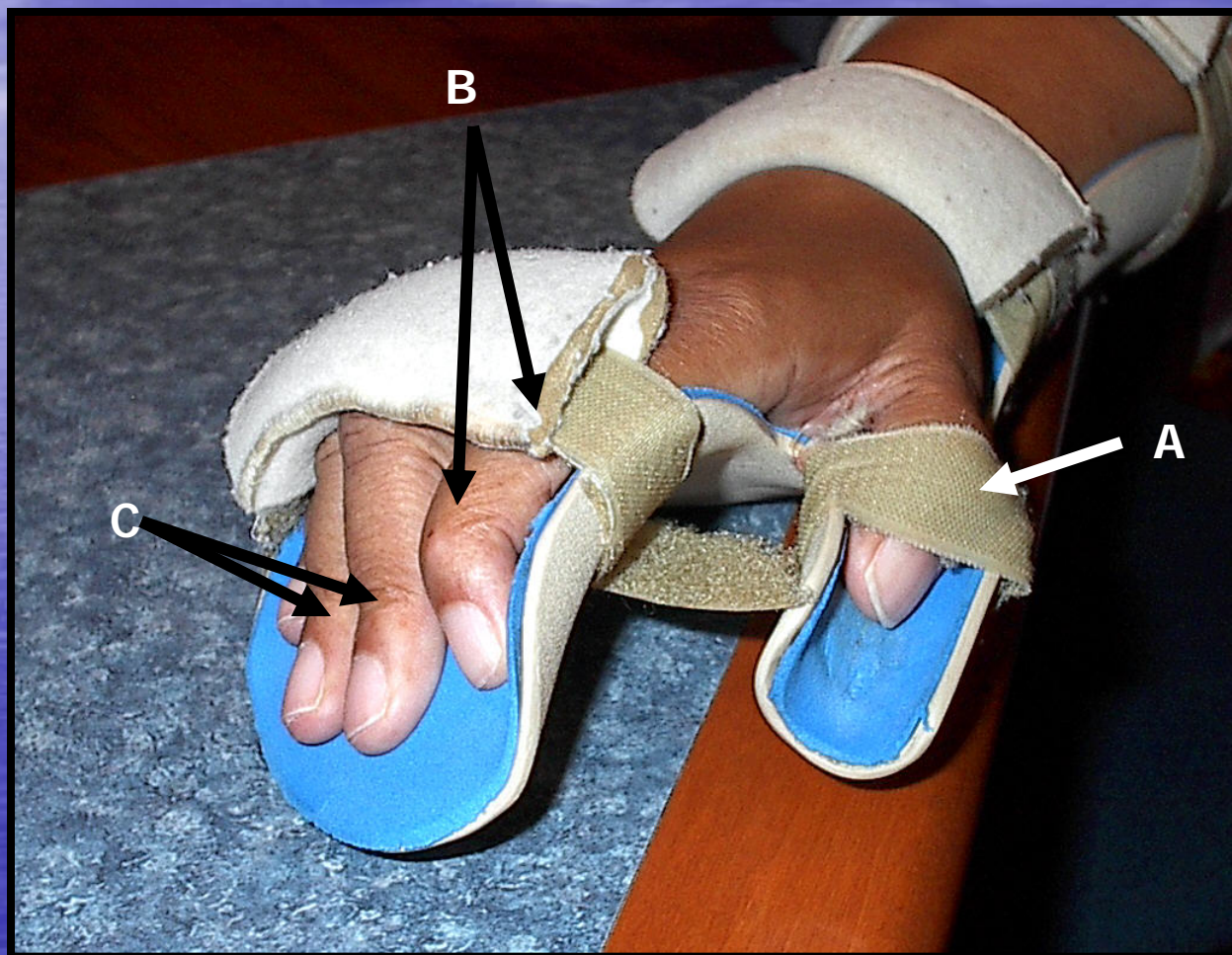
# Static Hand Piece



Resting Position



# Static Hand Piece



During Exertion

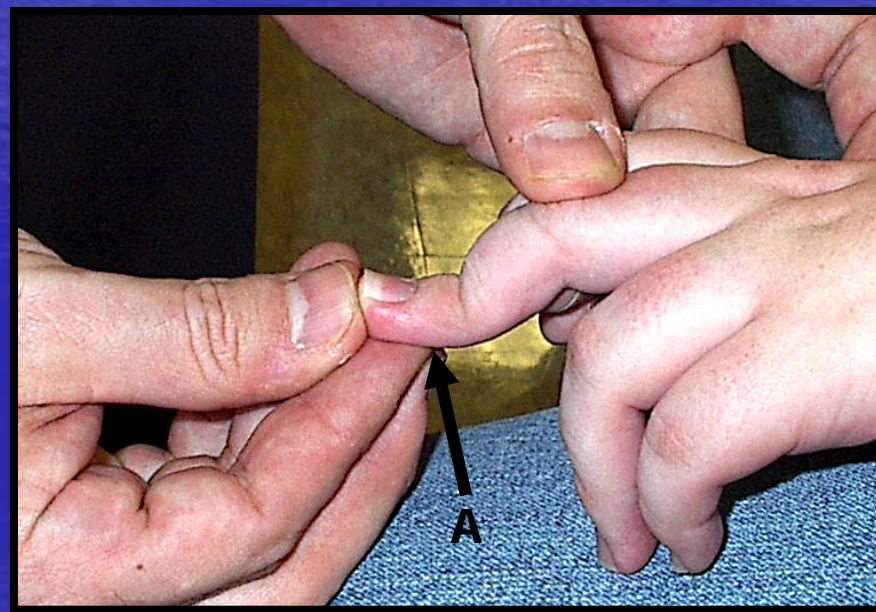
## Static Hand Piece

- The volar plate (A) at the DIP joint has been stretched past its limits.

Uninvolved Hand



Splinted Hand



# Should Static Splints Be Contraindicated When Dealing With Hypertonicity?



# Dynamic Hand Piece

- As tone increases, the *SaeboSStretch*<sup>™</sup> protects the joints by allowing the fingers to move into flexion.



# Dynamic Hand Piece

- Utilizing a low-load, long duration stretch, the *SaeboStretch*<sup>TM</sup> will reposition the fingers into their original position of extension.



# The Dynamic Hand Piece Allows the Fingers to Move Through Flexion



Protecting the IP Joints

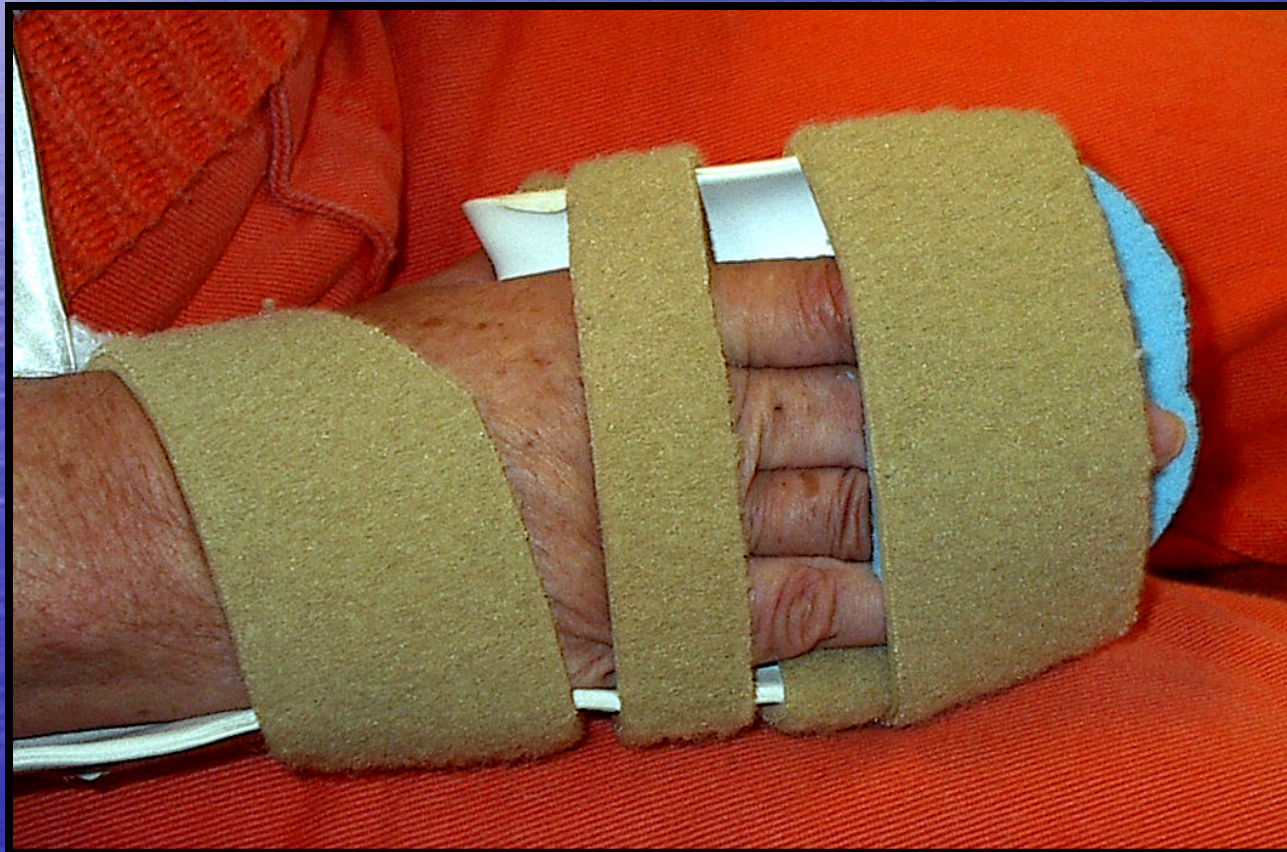
# Strap Location

- How many times do patients say that their fingers pull out of their splint?



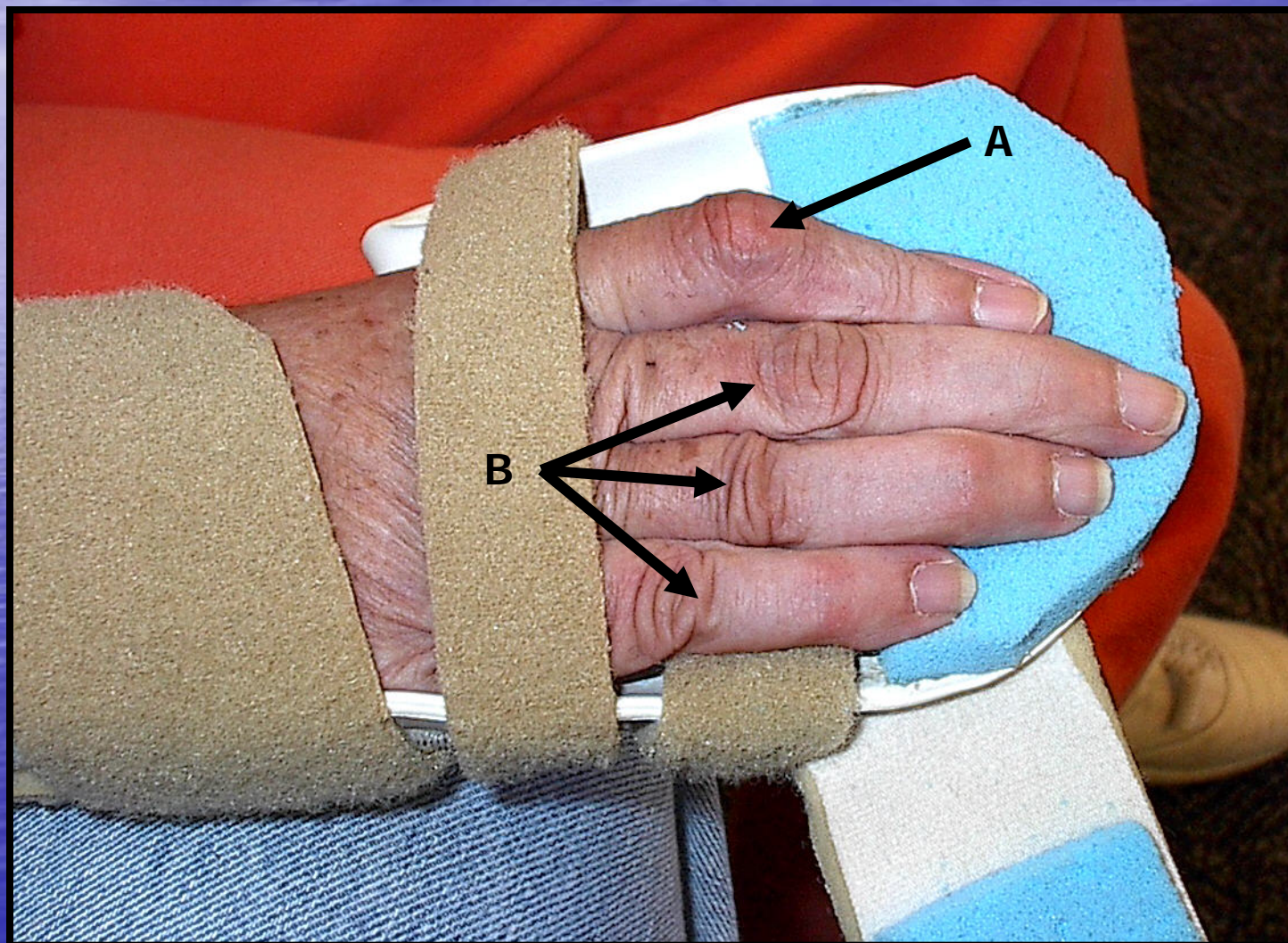
# Strap Location

- Is the larger strap at the fingers helping or just covering up the underlying problems?





# Strap Location



# Strap Location

- Many therapists use one strap to address the four fingers that are different lengths. This often causes a 5<sup>th</sup> digit PIP joint flexion contracture.



# Strap Location

- Sometimes all four fingers develop flexion contractures.



## Strap Location

- The *SaeboStretch*<sup>™</sup> utilizes a slot, cutouts and key anatomical points of control to keep the fingers in place.



# Strap Material

- Conventional splint straps are made of hook and loop material that does little to hold the fingers in place.
- They also have a very limited life span which directly impacts functionality.



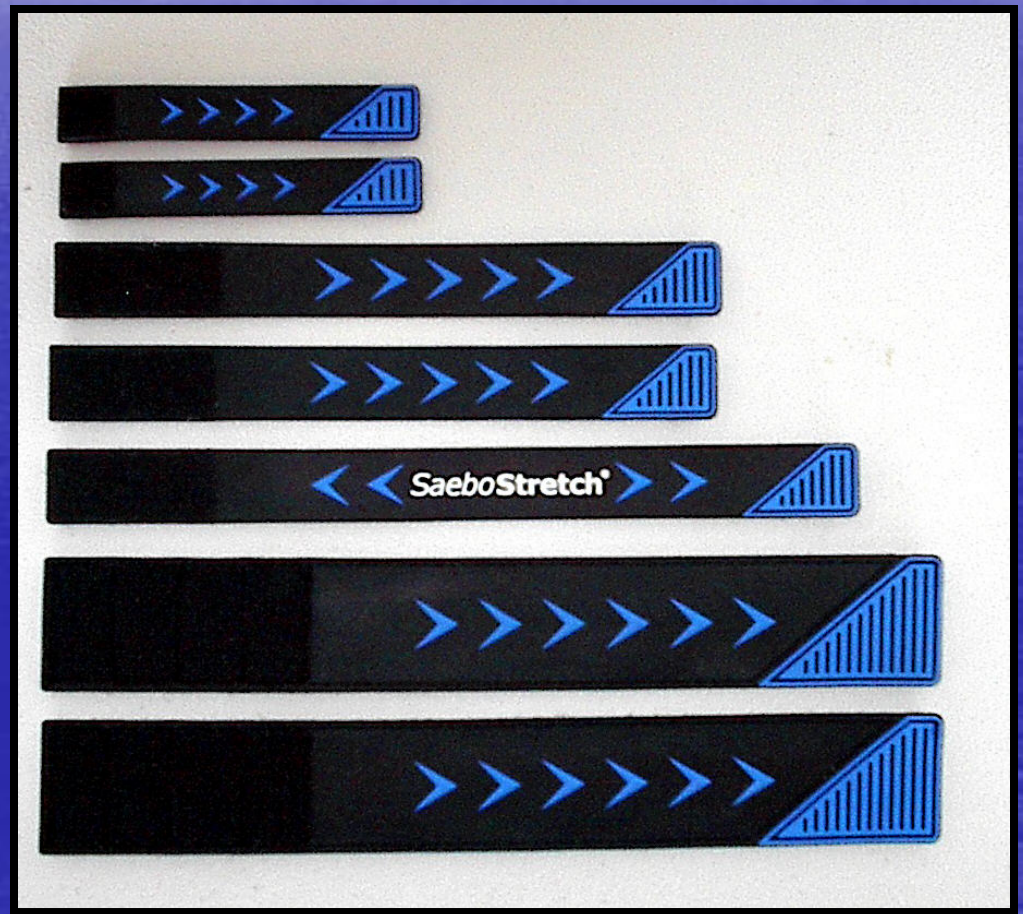
# Strap Material

- Other straps are made of a terrycloth material and offer little to hold the fingers in place.



# Strap Material

- The straps for the *SaeboStretch*<sup>™</sup> are latex-free and made from a non-slip material.



# Does Strap Location & Material Make A Difference?





# Splint Cover Material

- While coverings vary, the ones that cannot be removed from the splint for cleaning should be avoided.

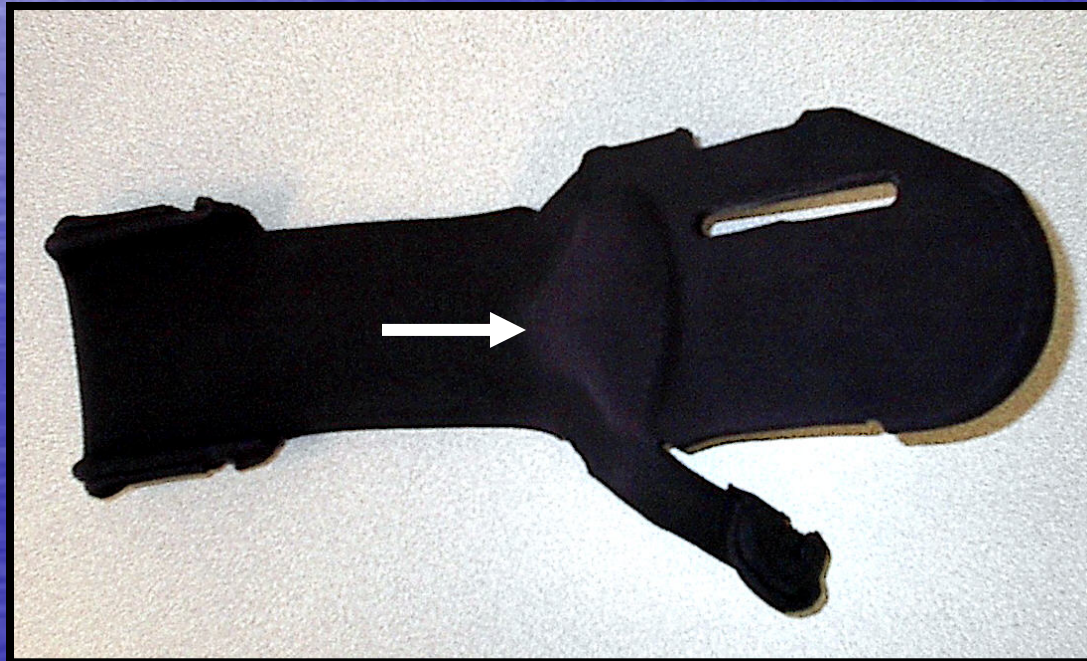


## Splint Cover Material

- The *SaebStretch*<sup>™</sup> covering is made of Breath-O-Preen<sup>®</sup> which allows moisture to wick away from the skin.
- It is silver-treated and has anti-bacterial and anti-fungal properties.
- It can be removed and cleaned in the top rack of the dishwasher.

# Splint Cover Material

- A palmer pad supports the palmer arch.



# SaeboStretch™

- Benefits:
  - Allow the fingers to move into flexion during tonal changes to protect *the* joints
  - Provide a low-load, long duration stretch to return fingers to extension
  - Improve positioning by utilizing new strapping design with non-slip material
  - Maintain and/or improve range of motion

## Who is a candidate for the *SaeboStretch*<sup>TM</sup>?

- Patients who have hypertonicity and soft tissue shortening are appropriate for the *SaeboStretch*<sup>TM</sup>.
- Patients with severe tone or soft tissue shortening may not be appropriate.
- Patients who have hypotonicity are appropriate for the *SaeboStretch*<sup>TM</sup>.

Thank You!

active  forever™  
IMPROVING OUTCOMES. IMPROVING LIVES.

[www.ActiveForever.com](http://www.ActiveForever.com)