

Hand Rehabilitation Section Clinical Pearls

Topic: Fabricating relative motion orthoses

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Each therapist has his/her own style for fabricating orthoses. The following workshop is the technique I currently use when. To fabricate the 2 component orthosis for extensor tendon repairs in zones 4-7, perform the following steps.

Step 1 (photo 1): Choose the material for the static wrist component (you may choose to use and over-the-counter option, if supportive enough). Cut a piece of 1/8" thermoplastic in a strip for the yoke. A material that has high drape is recommended.



Photo 1

Step 2 (photo 2): Fabricate the wrist component with the wrist in slight extension, allowing for finger and thumb range of motion.



Photo 2

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Step 3 (photo 3): Heat, fold over and pull thinner the thermoplastic material for the yoke component.

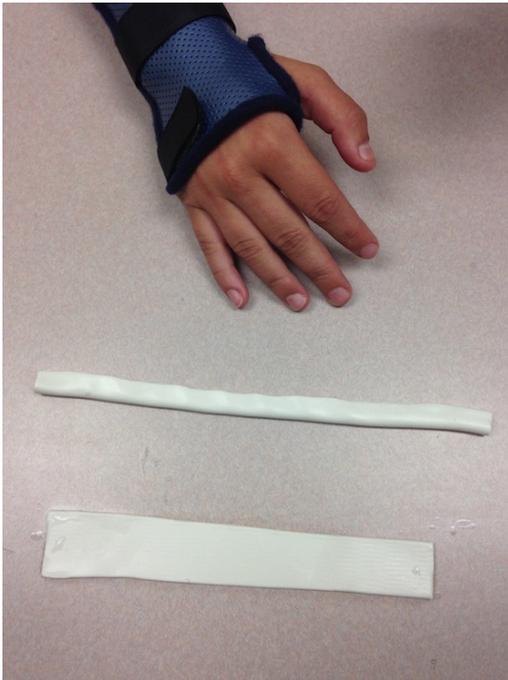


Photo 3

Step 4 (photos 4-7): Have the patient hold the injured finger in greater extension than the adjacent fingers, hand supinated to allow gravity to assist with the molding process (high drape material is recommended for this reason). Circle each of the fingers in a ring.

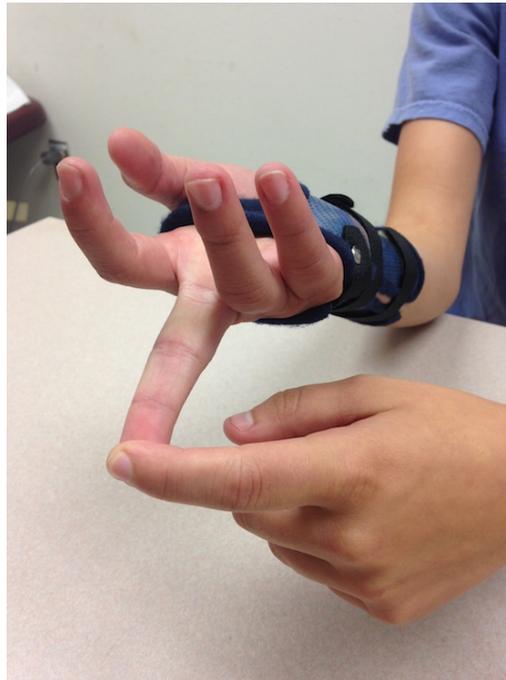


Photo 4

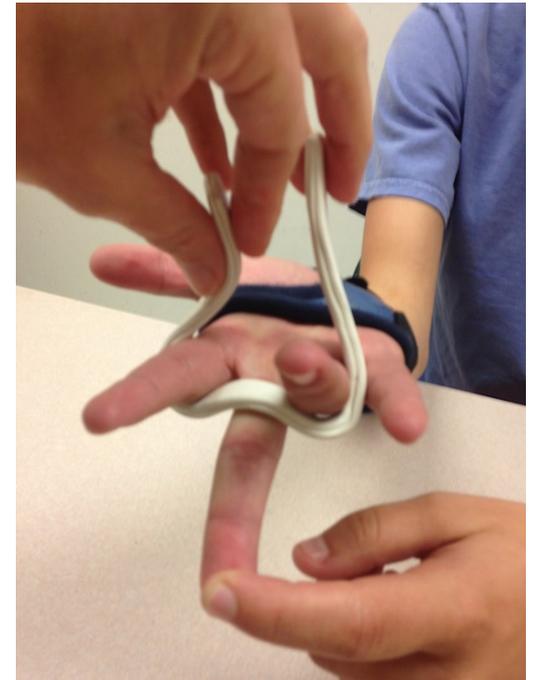


Photo 5

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(Step 4 continued, photos 6-7)



Photo 6



Photo 7



Photo 8

Step 5 (photos 8 and 9): The finished product will hold the MCP of the injured finger in relatively greater extension than the adjacent fingers. Add an additional piece of thermoplastic over the dorsum of the injured finger to keep it securely in place.

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(Step 9 continued)



Photo 9

The relative motion orthoses will allow for daily function (**photos 10 and 11**).



Photo 10



Photo 11

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For an isolated sagittal band injury, use the yoke component only. **Photo 12** shows using the hand functionally while treating a long finger sagittal band injury.



Photo 12

If a border digit is injured (the index or small fingers), the yoke component will need to capture each of the border digits to effectively position the injured digit (**photo 13**).



Photo 13

When treating a boutonniere injury, the injured finger is held in relative greater flexion than the adjacent digits. Again, the patient can assist in fabrication of the yoke by holding the uninjured fingers in extension with the hand in pronation to allow gravity to assist with molding of the thermoplastic (**photos 14 and 15**).



Photo 14

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Note the extension of the injured finger at rest in **photo 16** and the full motion allowed for function in **photo 17**.



Photo 15



Photo 16



Photo 17

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The yoke components are pieces of art (**photo 18**), but with fantastic function.

