

**Orthosis Fabrication - Step by Step Guide – Wrist Cock-Up Orthosis**  
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1. Make sure your orthosis pan is on at the appropriate temperature for your material. Check your orthosis material sticker (usually on a corner of the sheet) for information related to the ideal temperature for heating. For most basic orthosis material approximately 155-165 degrees is appropriate. If you are using material that is foreign to you, snip a small piece, heat it, and play with it. Does it have adequate drape for your patient? Does it stick to itself? Does it have memory (which are typically more forgiving if you need to start over)? Does it stretch?
2. **Assess the sensation** of your patient. This is a good rule of thumb for any hot or cold modality you may use with your patients! You are using warm/hot orthosis material on an already sensitive area of skin – make sure they can tell you if it is too warm. If your patient is cognitively impaired you can use stockinette under your material to mold it.
3. Place a paper towel under the hand/forearm and trace an outline of the forearm and hand (use a wrist cock-up pattern if needed for reference).
4. Cut out your drawing and **place it on your patient** to make sure it is long enough for the forearm, and the sides will be high enough to encompass half of the forearm circumference.
5. Lay your paper towel over your patient and check fit. Is the thumb space too large or too small? Is your pattern long enough? **Make adjustments as needed on the paper towel before moving on to the next step.**
6. If you are satisfied with the shape, then trace your pattern on your orthosis material. For the forearm 1/8" thickness works best for most wrist/forearm orthosis fabrication. Wax pens are easy to use for tracing – Crayons work too! The markings stay on when the material is wet and is easily removed with alcohol wipes when you're done.
7. **Position your patient!** Sometimes people have difficulty resting in forearm supination so compensatory motion of the shoulder is necessary. Gravity is an asset when fabricating an orthosis – use it if you can! Ask the patient to rest their elbow on the table (preferably on a pad or towel) with the forearm supinated and wrist in slight extension. Asking them to lay on a mat table or using pillows for positioning might be necessary.
8. Heat your material. When you try to lift it out of the pan it may be slippery or impressionable. A spatula can be helpful! If it is not heated through it will not bend easily. If it has been left in the water too long it will be gummy and difficult to use. Be careful as some material sticks to itself!
9. Lay your material on a towel and flip to dry it partially.

# Your Orthosis

## Care, Use, Precautions

### You should wear your orthosis:

- Full time except for hygiene
- For functional use only
- For sleep

### To clean your orthosis:

- Use dish or hand soap on a soft cloth with water.
- Use rubbing alcohol on a cotton ball if you notice an odor.

### Helpful hints:

- I used heat to make it, heat will DESTROY IT! Please don't leave it in a hot car or on a window sill. It will melt!
- Your dog or cat will chew on it because of the material texture and it smells like you! Make sure you put it in a safe place while showering.

### Caring for your skin:

- You can use stockinet or a sock with the toes cut off between your orthosis and your skin.
- If you notice a red mark or feel pain with use of your orthosis, call your therapist for an adjustment!



### Contact information

Phone:

Email:

10. **CHECK THE TEMPERATURE** of the material on your own forearm. I often lay the orthosis material on my own forearm while carrying it to the patient. This will allow you to determine if the orthosis needs more time to cool as not to burn your patient.
11. Mold your orthosis. I generally lay the material proximally first then adjust it distally. You can smooth the edges or fold them. Keep your bony prominences in mind. Make sure you mold around the metacarpal heads and the radial/ulnar styloids. If your patient has spasticity or is unable to get into a position where gravity can help you mold it you can use an Ace wrap to hold the material in place.
12. Once your alignment is acceptable make sure the wrist is in slight extension (15-30 degrees or as instructed on your order) and in neutral between radial and ulnar deviation. When in doubt ask the patient to make a fist with the non-affected hand to see what a functional position is for them. Sometimes the patient is too painful to achieve this on the first day but you can always remold your material to accommodate for changes in edema, pain, wear, fit, or comfort.
13. Trim and smooth your orthosis. The inside edge of the material has a lip on it. To make it more comfortable you can dip just the edge back into you warm water and smooth it with your fingers.
14. Flare the proximal edge of your orthosis. The skin on the volar side of you forearm can be sensitive and fragile. Flaring the edge slightly by dipping it into the water up to 2 inches and pulling it outward with your thumbs can stop the orthosis from rubbing or pinching.
15. When you are satisfied with the fit you can work on strapping your orthosis. There is a wide variety of ways to strap your orthosis but most therapists seem to use a three strap closure. The distal strap across the metacarpals, the medial strap just proximal to the wrist crease, and the final proximal strap around the proximal aspect of the orthosis to prevent lifting/bowing and to control wrist movement.
16. Ask your patient to move! Pump the shoulder and elbow, rotate the forearm, and make a fist. Ask them to assess your work and to inform you of any rough edges, pinching, or pressure points.
17. **THE FINAL STEP – EDUCATE!!!!** How often is your patient to wear their orthosis? Full time (as in all of the time, and to put a bag over it to shower), or removal for exercises and hygiene? For sleep only? Ask them to demonstrate the ability to take off their orthosis and put it back on again. Many people become confused and put it on upside down or backwards. You can take video (with their permission) or photos (again with permission) to ensure excellent carry over at home. Not everyone is an auditory learner! Always check for understanding.

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## BILLING

Your orthosis can be billed a few different ways. If your patient has DME coverage with their insurance company it can be billed as an HCSPCS code as an L code (e.g. Medicare coverage) **and make sure you designate between right and left arms!** Occasionally clinics will charge a flat fee for the materials (to be determined by your specific clinic) if your patient does not have DME coverage. Always check insurance coverage prior to fabrication to make sure you and your patient know the total cost!

L codes are billed by the type of orthosis you are fabricating and will be an acronym.

S: shoulder

E: elbow

W: wrist

H: hand

F: finger

For example – the wrist cock-up orthosis you fabricated is a WHO (wrist hand orthosis). A forearm based thumb spica splint would be a WHFO because we included a “finger” being the thumb

For more information on billing you can refer to your in-house guidelines for orthosis fabrication, federal payer rules for Medicare, or [www.ASHT.org/practice-l-codes/search](http://www.ASHT.org/practice-l-codes/search) for a guideline.