EXPLORING HAND THERAPY

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FROM THE PUBLISHERS DESK:

Message from the Editors:

Nancy and Susan, founders of Exploring Hand Therapy Company (EHT) are happy to announce our first PDF email edition of our newsletter. If you received this via email you will have bonus sections. Enjoy!

As you know this newsletter is made possible through the generosity of our sponsors who are dedicated to providing superior products and services to hand therapists. We have a link to their websites by simply clicking anywhere on their ads. We offer an extra page of "tips and tricks" on the Bonus Page in our email version. You can print the newsletter and have a hard copy. To PRINT in Black and White and go to file, print, properties, then color. Click grayscale & choose quality level. If you want to sign up for the email version, email:

susan@exploringhandtherapy.com

Don't forget, the ideas expressed here are the views and ideas of the authors and contributors (this includes you). So remember, to always consult your referring physician and clinic manager before you implement ideas. EHT is not responsible for ideas printed or posted. It is the clinicians responsibility to ensure proper implemention of ideas and suggestions.

In This Issue

Susan Weiss and Nancy Falkenstein

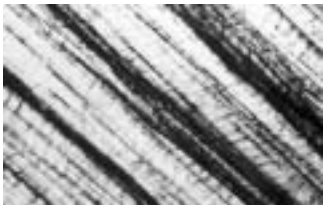
This Month's Featured Article
Scar Wars by Wendy Hill

I've been practicing hand therapy for over 26 years and the scars on the hand and upper extremity have always posed interesting and difficult problems for the patient, physician, and therapist.

The patient, of course, wishes there was no scar, and the therapist attempts to diminish the effects left by the scar. The goal is a softer, smoother, and less tender scar.

Hence begins the "War on Scar" as I classify this process. There are several phases of wound healing or scar tissue healing. These stages or phases include inflammation, fibroblastic, scar maturation and finally, wound contracture. (Tanenbaum 1995; Cahill, 1993) Scar management should be addressed from the first day of wounding. We, as therapists, try to control some factors that will help to minimize fibrosis and hypertrophic scarring. Edema, infection, wound hydration, and inflammation are a few of the areas we address in the early stages.

The phase of wound healing that I will address to implement my treatment techniques will be the scar maturation/ remodeling phase. Approximately the third week post injury, the wound undergoes constant alterations known as remodeling which can last for years. The ultimate scar is 80 percent the tensile strength of the original skin. Scar remodeling is characterized by the rapid, ongoing production of new collagen and the removal of the old collagen. The initial gel-like collagen with its randomly arranged fibrils and low tensile strength is gradually replaced with stronger and more highly organized collagen. (The Hand, Fundamentals of Therapy, third



healthy collagen

edition, Judith Boscheinen-Morrin and W. Bruce Conolly)

During this stage with turn-over of collagen our therapeutic techniques can exert their greatest influence; hence optimize functional outcome. The process I use to promote scar remodeling is a low-load technique applied at the appropriate time, (Arem-Madden 1976) and is achieved in numerous ways as I will describe.

Pressure in controlling scars is well accepted. The scar becomes flattened,

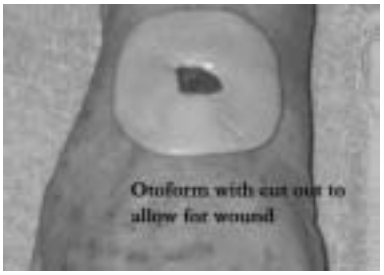
Continued on page 2

smooth and supple after pressure is applied. Topical silicone gel sheeting is a fairly new technique to help control, prevent and reduce hypertrophic scar formation. We, as therapists, have noted a decrease in redness and a more flattened scar with topical silicone gel sheeting. Also, most patients report less itching and painful sensations when implementing silicone gel sheets. It is believed that the silicone gel may promote hydration of the scar. Although the research is not adaquate to back our clinical results, we as therapists will continue to take advantage of the positive effects seen on scar tissue with the application of pressure.

I have come to believe that the earlier I can begin to apply my techniques the better the end result. I begin at approximately 3-4 weeks with Cica-Care™Gel Sheets. This particular product is my preference as it sticks on one side only, can be re-used for weeks, can be cleaned and maintains its sticky surface to adhere directly to the scar. It can actually debride the scar each time it is removed, leaving a new skin surface. Patients find the gel pad comfortable and easy to use, which helps with compliance. Another bonus from using a gel pad is the protective aspect. It will protect a new scar from being bumped or reinjured, preventing the formation of more scar tissue.

After the Cica-Gel stage, (at approximately 6-8weeks, depending on the individual scar), I move into the next stage by using a little pink putty-like substance called "Otoform-K". Many of you might say, "Oh that has been around forever." Yes, and for a good reason! The photo below depicts using Otoform with a persistant open wound. You do not want to put the material over an open wound so a " tip" is to mold around the wound to allow pressure management to occur despite the open wound.

There are plenty of other products on the market I can use, yet I have found this to



be most effective. It is easy to mix, not too messy, a little greasy and one must work fairly quickly to form it onto the scar. I put a small amount, enough to

Continued on page 3

cover the scar, into my hand and add the catalyst, then mix with my fingers. I build up the center of the pad up for more height (I build height so there will be more pressure directed to the scar surface area). A good "tip" is to add lotion to your fingertips so your fingers glide over the Otoform and you can shape and smooth it to perfection.

Afterwards, I apply a pressure bandage of Ace™, Coban™, Demi-Grip™ or finger stockenette to hold the pressure pad in place. Patients are instructed to wear it at night and sometimes during the day if needed. However, if the scar is hypersensitive, the scar control device must be off a portion of the day to help control the hypersensivity. If the scar is not as flat as you would like here is a "tip" that may help you achieve your goal. Simply add additional Otoform - K to the original mold and apply it to the scar. The raised portion of the pressure pad will increase the effectiveness of the pad. Just this little extra height or pressure will assist in achieving your goal of a supple, smooth scar. It is not unusual to wear the pressure pads for months. You many need to fabricate a new pad periodically for optimal results.

There are many other modalities, creams, and devices to help in the remodeling stage of wound healing. I have in the past added Ultrasound treatment using Ketoprofen cortisone cream and other creams on the market. The most recent discovery I've made is a new emollient I use to rub directly onto the scar and massage with it to soften the tissue. Research has shown ultrasound using a low-intensity increases the tensile strength, tensile stress, and energy absorption capacity of soft tissue. (Rehab. of the Hand & UE 5th edition).
Patients are constantly inquiring about the benefits of vitamin "E" and other ointments/creams. I even found an Elicina cream (on the Internet) made of some Chilean snail excretions (glop/slime). I did not find great benefit using this cream over others.

This summer I decided to take a fun class at Summers Past Farms (an herb farm in San Diego County).
The class focused on how to make a garden hand salve. After I took the class I decided to make up a recipe for myself and ended up taking it to work and using it on my patients for scar massage, and for soft tissue mobilization. My patients raved about it! I was amazed how the scar became softer and more supple.

I went a step further and grew the required herbs in my back yard and infused them into oils in a crock pot for an hour or so. I have altered the original recipe to include specific skin softening ingredients. I will be seeking a patent on this in the continued on page 5

near future.

Below is a list of the ingredients used in my emollient for your information.

I begin by placing the fresh (preferably) or dried herbs (if out of season) in a large crock pot and filled to cover the herbs with the olive and almond oils.

Herbs	Oils	Essential Oils
Comfrey Leaf	Virgin Olive	Lavender
Calendula flowe	Almond	Rose Geranium
Rosemary	Jojoba	Ylang Ylang
Eng Lav. Flowe	Wheat Germ	
Rose Geranium	Borage	
Chamomile	Evening Primrose	
Rose Petals		
Violet Leaf	Gels-Aloe Vera	

The herbs are cooked approximately 1-3 hours on low. When the air smells of sweet candy, the mixture is done.

Do not over cook. All of the other ingredients are added in afterwards, followed by the beeswax to thicken the mixture. Pour into small sterile plastic pots or jar- like containers and seal.

Scar remodeling is an important issue in therapy and I welcome anyone with an interest in research to continue with scientific study in the area of scar maturation and remodeling to decrease the devastating effects scar can have on an individual's physical and mental well being.

Wendy L. Hill OTR/L, CHT

If you would like a sample you can write to me at the below address:

Wendy L. Hill OTR/L, CHT
@ US Spine and Sport
3444 Kearny Villa Rd.
Suite 205, San Diego, Ca. 92123.

Please send $10.00 to cover costs of shipping and handling.

Thank you Wendy for your input and sharing your experience.

Keep us posted on your patent.

Wazzz Uuup???

From the APTA.ORG website

Senate and House conferees on the Medicare prescription drug bill agreed on several key issues.... including a one-year moratorium on the $1,590 therapy cap for 2004. While this is obviously tremendous news, the Medicare conference negotiations are far from complete and, while it appears unlikely, it is possible that the moratorium could be reconsidered.... Also, the conference committee agreement has no direct impact on the current implementation of the $1,590 cap. If enacted into law, the moratorium would apply to calendar year 2004.

UPCOMING ON-SITE COURSES by EHT

** Pembrooke Pines, Florida
Treatment To Go: Everything You Wanted To Know About the Treatment of the Hand....That Nobody Ever Tells You.

Contact:
Dawn Broksch
Email: DBroksch@mhs.net
Phone:954-430-6880 ext. 9824 (leave a message)
Memorial Hospital West
703 N. Flamingo Road
Pembrook Pines FL 33028

When: February 7th and 8th 2004
Lecture Topics:
*UE nerve compression
*Soft tissue pathologies
*CRPS/RSD
*Tendon Injuries
*Test Your Knowledge Game

Another ON-SITE COURSE by EHT

**Hollywood, Florida
Static Progressive Splinting: Up Close and Personal

Contact:
Exploring Hand Therapy (EHT) @ www.exploringhandtherapy.com
or call: 727-341-1674
Email inquiries to: susan@exploringhandtherapy.com

When: Saturday March 6, 2003
Memorial Regional Hospital

Course designed to view on close circuit TV as the instructors fabricate static progressive spints. Excellent opportunity to visualize splint making. Attendees will receive a free video of course!

Pssst! Did You Know...

The Healing Power of LIght

Read all about it!!

FDA Approved!!

The FDA recently cleared “cold” laser therapy to treat carpal tunnel syndrome.

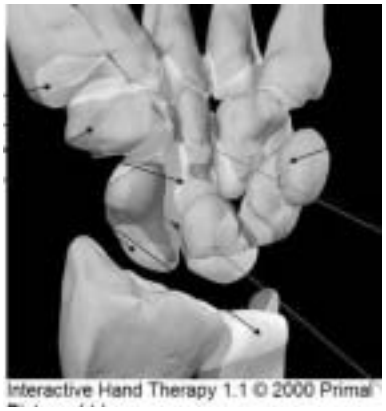
The long awaited ML830 non-thermal laser is here in the U.S. European therapists have long known the benefits of non-thermal laser to treat carpal tunnel syndrome and other inflammatory diseases. Now the U.S. has been cleared via the FDA to utilize laser to treat carpal tunnel syndrome. It is worth mentioning that the referring physician has the option of ordering the use of the laser for other conditions if in his/her medical opinion it is indicated. This is a usual FDA procedure when a medical drug or device is cleared for a specific condition.

Non-thermal laser is non-invasive, reduces inflammation and increases cellular metabolism rate which helps cellular repair. In additonal “cold” laser helps stimulate the immune, lymphatic and vascular systems. All of this results in decreased pain, inflammation, edema and an increased healing time. The above is based on 12 years of clinical research.

Some additional acute and/or chronic conditions that may benefit from “cold” laser are: bursitis, nerve root pain, tendonitis, arthritis, trigger finger, and ulnar tunnel, to mention a few.

The ML830 non thermal laser penetrates to 5cm reaching deep tissue with a 3 cm lateral spread. The light energy promotes photobiostimulation resulting in the above mentioned benefits. When in the market for a laser device ensure it has a wavelength of 830nm with a power output of 90mw. If the laser does not meet these specs it may not be any stronger than the laser in the grocery stores.

Contact Lori Franckle for additonal information at:
www.laserhealthproducts.com
or call: 727-804-7754



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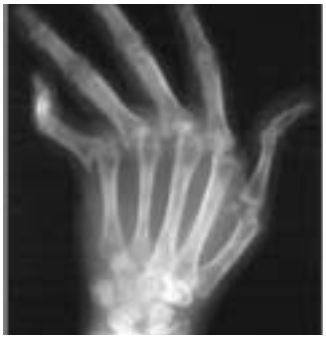

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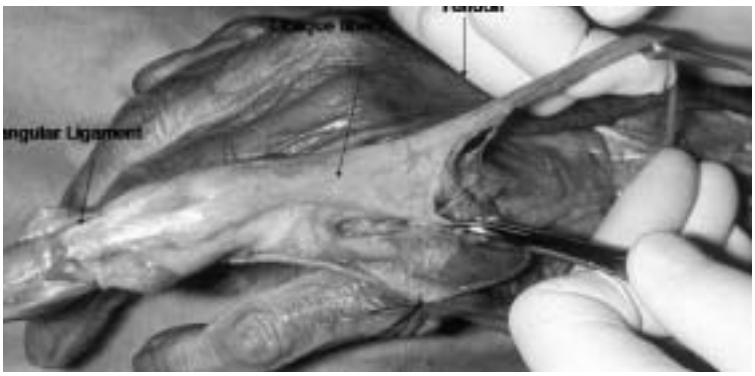

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Test Your Knowledge

1. Scar remodeling is characterized by removal of old collagen and production of new collagen. True or False

2. In reference to scar remodeling; list 3 benefits for applying pressure.

3. The ultimate scar is what % the tensile strength of its original skin?

4. What are some of the benefits of using low intensity ultra sound on scar tissue?

5. How long should you advise your patient to stay out of the sun to protect the scar?

Just for Fun

6. What are Kanavel's 4 signs of flexor tenosynovitis?

7. What are the 4 P's of compartment syndrome?

8. What is the space of Poirier?

9. What is a reverse Bennett's fracture?

10. The EDC to the 5th digit is absent in what percentage of people?

11. What is the arcade of Struthers?

12. What is a glomus tumor?

13. Poland's syndrome is associated with the absense of what major muscle?

14. Scratches and mild burns of the skin are healed by epidermal regeneration. True or false

15. The wound-healing process is divided into 3 stages: List them.

answers on page 13

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Splinting Tips and Tricks

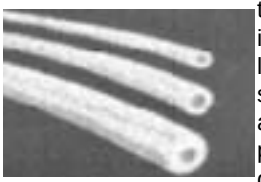
1. A circumferential splint is also termed a

Sarmiento style splint or brace. This type of splint is great to use on patients with fractures or patients that have come out of a cast early. It can be made of very thin material 1/16" and is lightweight. These splints are durable and easy to fabricate.

2. The RCAI Dorsal Carpal Tunnel Splint is made of heat moldable thermoplastic for patient customization. The breathable Moisture Wicking liner "wicks" away moisture from the skin. The narrow palmar roll

supports the hand while fingers remain free for grasp. The Dorsal Carpal Tunnel Splint holds the wrist in a neutral position and limits wrist flexion and extension during repetitive hand motion. Patients report this splint is comfortable to wear on a daily basis.

3. Hollow, low-temperature thermoplastic



tubes bond instantly to all low-temperature splinting materials. They are perfect for line guides and to direct angle of pull on dynamic splints. They are also great for figure-8 splints, outriggers, or as an inexpensive hinge. Tubes are available from most splint manufacturers.

4. The Terris Golf Glove (see ad on back cover for photo) has a padded thumb that covers the CMCJ and patients who have CMCJ problems who wear this glove have less pain while golfing!

5. A great inexpensive way to gain PIP and/or DIP joint end range of motion is to use an “exam glove”. Snip the tip off

each finger of the glove and then cut the finger from the glove. Now you have a “tube” so to speak. Have your patient

bend his/her finger then place on your patient’s finger. Wear the glove tips to tolerance up to 15 to 30 minutes 1 to 2 times a day. As always, teach your patients precautions such as: if glove feels too tight and/or causes throbbing or pain remove the glove tips. This should not cause pain. Your goal is to gain end range of motion. Try it...It works!

Exploring Hand Therapy would like to express their sorrow in the loss of Dr. Paul Brand.

The hand surgery and hand therapy communities, as well as countless others across the globe are now mourning the loss of Dr. Paul W. Brand, celebrated teacher, hand surgeon, author, and fervent supporter of hand therapy. According to the press release posted on www.paulbrand.tk, "the world lost a man highly honored by the international medical community, the Queen of England, the United States Public Health Service, millions of victims of leprosy and diabetes and countless others." (ASHT.org) The following is from Dr. Paul Brand’s website. According to the press release the following depicts just a fraction of the man Dr. Brand was.

Phillip Yancey wrote in his foreword to the book Ten Fingers For God: The life and work of Dr. Paul Brand by Dorothy Clarke Wilson, "I look with deep appreciation on the privilege of learning from a great and humble man. I came to know him (Dr. Brand) not through history, but as an actual living model, a man of God I could see in action - at Carville with his patients, in rural villages of India, as a husband and a father, as a speaker at both medical and spiritual conferences. He, as much as anyone, has helped set my course in attitude, spirit and ideals."

EHT would like to send our condolences to Dr. Paul Brand’s family. He will be missed but his work will live on.

Clinical Gems

** While rehabing a patient post colle's fracture, make sure you exercise wrist muscles by having the patient make a fist or hold a pencil or weight in their hand.

**Ulnar wrist pain: You suspect TFCC pathology and your approach is conservative. Suggest a neoprene wrist wrap or an elastic bandage (ace) around the distal forearm when performing tasks that increase pain (grocery shopping, tennis, golf, house cleaning). You can also suggest using an over the counter pain patch (Tiger Balm, etc.) under the soft support. (make sure they read ingredients to see if it is compatible with their meds, when in doubt, check with MD)

**When fabricating a circumferential wrist brace, make sure you pad the ulnar and radial styloids.

**Patients with OA and stiffness, can wear gloves at night for warmth and to decrease morning stiffness.

**When dealing with intrinsic tightness have your patients exercise using the hook fist. However, make sure their MPJ's are hyper-extended so they achieve the optimal interossei stretch.

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What's Up Doc?

Question: When is the earliest you would use silicone gel sheets?

EHT: Most of the time we like to wait until the sutures are removed and wounds are closed. In some cases we may begin while sutures are intact. If we do, we put a barrier (such as tissue) between the incision and the gel pad.

Question: How do you know when to stop using the gel pads?

EHT: We usually inform patients to wear pads for three months at a minimum. This is because of the maturation phase and around three months the remodeling of old and new collagen slows however, it is still active. So, as usual, treat on a case by case basis. It is not unusual to continue using gel pads for 6 months or longer.

A word of caution. Even though your patient tolerates the silicone gel sheet at first he/she may develop a reaction. We have seen patients who tolerated the gel sheet for 3 to 4 months then all of a sudden break out in a rash. Looks like small red bumps on the area of the gel sheet and spreading. If you note this, stop using the gel sheet and it should clear up within 72 to 90 hours. Once it clears up you can try switching to another product.

Question: What are some adjunct treatments to help decrease scar.

EHT: We use ultrasound with stretch on the scar. You can also try a piece of theraband to rub on scar. A neat "trick" Casey Hoover recently shared, is to take a scrap of thermoplastic, mold it to the patient's or therapist's thumb which will give them tool for scar massage.

Test Your Knowledge

1. True

2. Decreased itching, decreased redness, more flattened scar, decreased pain, promote hydration of the scar, prevent or reduce hypertrophic scar.

3. 80%

4. Increase tensile strength and stress and increase energy absorption capacity.

5. 12 to 18 months

6. Tenderness over the flexor sheath, flexed posture of the digit, fusiform swelling, pain with passive extension of the digit.

7. Pain, Pulselessness, Paresthesias, Paralysis

8. An inherently weak region due to lack of ligamentous structures at the capitolunate articulation.

9. A fracture dislocation of the 5th metacarpal.

10. Approximately 50%

11. The arcade of Struthers is a fascial arcade of the intermuscular septum through which the ulnar nerve passes.

12. A benign vascular tumor

13. Pectoralis major

14. True

15. Inflammation, granulation tissue fibroplasia, and matrix remodeling

What's Hot

These are a must for clinics and rehabilitation centers. Thera-P Bar can be purchased separately or in a set of five bars (1-5 lbs). Therapists have desired a better, more efficient and safer exercise device for their patients, but none was available until now. Thera-P Bar is balanced because it is designed with its weight self-contained and evenly distributed. Uniquely designed by an OT it provides a safe and comfortable grip for patients. Don't hesitate to call them **1-800-675-3200** for your **free CD with designed exercises that you can print for your patients.**

Tell them EHT sent you.

Ergo Tips and Tricks

Problem: While gardening your hands get tired.

Solution: When gardening most people wear gloves. Although gloves are important to protect against bacteria and thorns, you may hold your tools with a tighter fist or grip than actually needed. The gloves decrease the sensory feedback causing an increase in grip. So release the tool every now and then and reposition. Break up the task, especially if it is a large task, with smaller tasks. And, don't forget to stretch the hand and upper extremity every 15 to 20 minutes.

Problem: Bending the knees while gardening causes numbness in the legs.

Solution: When gardening try not to kneel, this causes decreased blood flow and increased fatigue. Also, when getting off the ground you have to put your weight onto your hands putting them at an increased risk. An easy solution is to use a small garden stool.

Problem: When finished with digging during gardening tasks, you note a popping or clicking in your ring finger.

Solution: A sustained tight grasp (often used with digging) may result in a trigger digit especially if you are susceptible to the injury. You should lighten up on the grip but even more important is to increase the diameter of the tool. It is most beneficial to purchase ergonomic tools or adapt your digging tools. Ergonomic gardening tools are lighter, made of aluminum, wider and easier to use as compared to traditional gardening tools.

If you choose to adapt your tools you can add padding to widen the grip and protect the joints of the hand. If you have old tools you may be working with heavy outdated designs.

In addition, make sure the tool is long enough for your hand. In other words, the tool should not stop in the palm of the hand as the end of the tool will put undo pressure on the tendons and soft tissue structures.

(parts of this information from AOTA.org)

Hi Everyone,

Unfortunately, we missed the meeting in California- bummer!

If you made it and would like to share something fun, new or exciting in our next issue that would be FANTASTIC.

Email: susan@exploringhandtherapy.com or
Call: 727-341-1674

Thanks!

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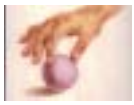


Weblinks about scars and healing

Click on links below for additional information about the subjects

***For great definitions relating to scars and types of scars
http://www.uic.edu/depts/doms/rounds/rounds-35.html

***Great link to learn about the human scar - good photos
http://micro.magnet.fsu.edu/primer/techniques/phasegallery/humanscar.html

***Site about caring for scars.
http://www.raft.ac.uk/plastics/scar_care.html

***Facts about scars
http://www.avocetcorp.com/wound_healing.html

***Great PowerPoint presentation on wounding and inflammation:
http://pathophysiology.uams.edu/Fall02/GeneralPath/chronic-inflam/sld001.htm

***Fantastic PowerPoint presentation on tissue repair.
http://www.pathology.vcu.edu/education/dental2/Repair(B)/sld001.htm

**Case Studies: An Evaluation of Mepiform for the Management of Hypertrophic Scars.
http://www.directmedicalinc.com/scar/studies.html

***Scar & Skin Care Treatment
http://www.plasticsurgery4u.com/web_links_folder/scar_web.html

Radial Nerve Palsy Splinting

Why do we splint the radial nerve injured hand?

* Substitute for weak or paralyzed muscles
*To enhance prehension
*Prevent over-stretching of the paralyzed muscles
*Prevent shortening of intact muscles
*Prevent an unorthodox prehension pattern

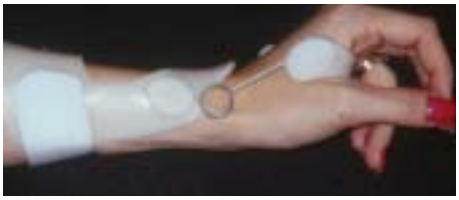
What are some of the splint/orthotic designs?

There are a number of radial nerve splints you can choose from depending on your goal. It is not uncommon to fabricate a couple of splints to achieve your goals. Click on the photos for more information.

* Volar forearm-based static thumb-hole splint
*Dorsal forearm-based static wrist support

*Circumferential forearm based splint

*Dynamic coil wrist assist extension splint/orthosis



*Dynamic spring wire wrist support with MPJ extension assist orthotic

*Dynamic medium profile wrist and MPJ extension assist splint

One nice thing about these splints is the pre-cut option. Most of your splint and hand rehab supply companies carry “pre-cut” splint designs. Sammons Preston has an entire line of customized pre-cut patterns you can order. NorthCoast Medical has some of the designs in a kit, like the Dynamic coil splint wrist assistive extension splint/orthosis and the Dynamic coil splint wrist assistive extension splint/orthosis.

Splinting TIP

When securing velcro make sure you cover the hook portion completely with the loop portion to prevent the hook velcro from catching on material or causing a skin abrasion

Nancy’s Splinting TIP

When fabricating a dynamic coil wrist support splint, I like the pre-cut kit offered. The material is Orfit and it is easy to secure the coil spring because orfit sticks to the material. Great! Easy! Functional!

Thank you. Please send us your tips and tricks relating to anything on the upper extremity.
Regards, EHT