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# Rehab Rounds

Redington-Fairview General Hospital  
46 Fairview Ave, Skowhegan, ME 04976

Rehab & Fitness Services  
(207) 474-7000 FAX 858-4772

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## Custom Splinting: When? and Why?

Roughly 16 million people in the US receive emergency services for hand injuries each year. The epidemiology of such injuries varies greatly. But whether it involve lacerations, fractures, or overuse of tendons, hand and upper extremity injuries typically pose significant and painful barriers to patients in their every day life at home or at work. Recovery from such injuries begins first with an appropriate physician examination — which may or may not lead to surgery.

Yet in either case, many such patients are then referred to a hand specialist — typically an **occupational therapist** for follow-up splinting and therapy



*Thumb spica shown above; used to immobilize to reduce inflammation and to provide support.*

based on specific parameters recommended by the physician. Depending on those parameters and the type of injury or condition involved a therapist may then recommend fabrication of a custom splint to improve on a patient's condition and function. Custom splinting involves fabri-

cation of a splint from thermo-plastic material that when heated can be molded into a variety of configurations to immobilize or support the part of the body to which it is applied. There are two types of splinting, commonly referred to as *static* and *dynamic*. A static splint offers a firm base and immobilizes or restricts the joint(s) they cross. The purpose of a **static splint** is to prevent further deformity; or stretch soft tissue contracture; or to provide rest to soft tissues and joints. Common static splints are *wrist cock-up, resting hand, thumb spica, gutter, and elbow*.

The purpose of a **dynamic splint** is to move joints to substitute for loss of motor function, to provide control in motion or assist in aligning fractures. Common dynamic splints are various flexor and extensor types, splinting for metacarpal fractures, progressive wrist splints, and radial palsy.

Splints are typically applied and positioned to a body part with Velcro-type strapping. A patient's work and ADL demands and restrictions, environmental factors, and the necessary care and maintenance of the splint are also factored into it's design by the occupational therapist. Though typically more costly, there are several significant advantages of a custom splint



*A digit outrigger dynamic splint shown above; allowing controlled motion and proper alignment of fractures.*

versus an "off-the-shelf" variety.

Custom splinting offers the patients a more efficient and accurate positioning of the body part, tailored to maximize function. They are usually more comfortable to wear than an OTS, which often translates into greater patient compliance with their use. This can be key to a patient's recovery. And custom splints can be modified as a patient condition progresses. Together, such benefits can justify the increased "up front" costs associated with custom fabrication, while improving overall patient outcome.

*For more information, contact an RFGH occupational therapist @ (207) 474-7000 or email: [efarrar@rfgh.net](mailto:efarrar@rfgh.net)*

## Classifying Low Back Pain (to Improve Treatment Outcome)

Low back pain is the fifth most common reason for all physician visits in the United States. Studies have documented the lifetime prevalence of low back pain to be as high as 80%. In many cases, individuals will recover with little formal intervention. However, those who do recover are prone to recurrences at a rate of up to 60%. Up to 90% of patients with low back pain cannot be given a precise diagnosis. Instead, they are typically given a vague diagnosis such as lumbar



strain, lumbago, or back pain. Furthermore, they are often viewed as a homogeneous group that responds equally to any particular treatment. However, for physical therapists, low back pain is best addressed

in terms of a differential set of classifications that are based on specific signs and symptoms found during the examination. **Clinical Prediction Rules** are tools designed to assist clinicians to developing treatment strategies based on information garnered from the physical examination. This includes a detailed review of symptom variability along with any medical red flags and psychosocial yellow flags that may impact a patient's suitability for physical therapy. The Clinical Prediction Rules establish four basic treatment classifications used by physical therapists for patients with acute low back pain: **manipulation, stabilization, specific exercise** (flexion, extension, and lateral shift preferences), and **traction**.

For patients whose symptoms during an exam place them in the **stabilization** category, treatment focuses on strength and endurance deficits affecting the patient's core musculature. For example, bridging, hands and knees with alternate arm or leg lifts are some of the best

exercises for this group.

The key clinical characteristic of patients who are likely to benefit from **specific exercise** routines appears to be the presence of a centralization phenomenon. This is when a patient is performing active motion (flexion, extension, lateral flexion) their pain moves from an area more distal or lateral location (such as the back of the leg) to a more central or near midline position in the lumbar spine. These movements then serve as the basis for treatment exercises during subsequent therapy.



PT exam for back flexion exercise

When a patient's clinical presentation suggests that **manipulation** or **traction** may first be indicated, clinicians should view such procedures as only a

temporary means to reduce pain. The goal of therapy should remain to progress the patient through either a stabilization or specific exercise type of treatment program. Doing so empowers the patient to resolve their own pain symptoms over the long term through specific exercises that they perform independently. In fact, the ultimate goal of therapy is to prevent future back injury or pain by increasing a patient's core strength and flexibility.

Although low-back pain has historically been a challenging population for both physician and therapist, use of this symptom-based classification system has been shown to significantly improve clinical decision making and obtain outcomes superior to the one-size-fits-all approach.

For more information regarding this topic, please call or email Wendy Willett, PT, COMT, @ RFGH Rehab & Fitness Services, (207) 474-7000 or email: [wwillett@rfgh.net](mailto:wwillett@rfgh.net).

## Avoiding Dehydration: Athletic Trainer Tips

**Dehydration in the winter?** "You bet," says Scot Padelford, one of RFGH Rehab & Fitness's nationally certified athletic trainers. "In fact, it's more likely given the conditions and nature of exercising outdoors at this time of year."

Dehydration occurs when one's body fluid and salt levels fall below 98% — wherein fluid loss is greater than fluid replacement. The primary cause of fluid loss is sweating, which is essential to releasing body heat. If left untreated, dehydration can be life threatening. Typical signs of dehydration include dry

mouth, cramps, dizziness, fatigue, headaches, irritability, "foggy" thinking, and, of course, thirst. Left unchecked, these early symptoms can lead to more severe heat cramps, heat exhaustion, and, even heat stroke — a condition wherein the body's thermoregulatory system shuts down, requiring emergency medical care. How to prevent? Its simple. Drink plenty of liquids before, during, and after an activity — or when one is exposed to heat for excessive periods of time. Fluids are recommended to be consumed between 50 and

60 degrees F. When doing rigorous activity (snowshoeing, hiking, running), drinking 17-20 ounces of water two to three hours beforehand and an additional 7-10 ounces 10 to 20 minutes beforehand is recommended; followed by an additional 7-10 ounces every 10-20 minutes thereafter. Avoid caffeinated or alcoholic beverages during this time. One can also check the color of their urine to help determine if they are drinking enough. Clear or pale yellow is fine. Bright yellow or darker and its time for bottom's up!

