

PRACTITIONER UPDATE

MOISTURE AND SHEAR

Important Factors in Bracing

Skin rash, maceration and breakdown are most often attributed to two factors: **moisture and shear**.

MOISTURE

Getting an Exos Brace wet should not pose a problem from an irritation perspective as long as the skin and brace is cleaned, thoroughly rinsed and dried. Following bathing or swimming the brace should be partially loosened, rinsed sufficiently to allow soap, cleaners, chlorine, salt water or bacteria to be washed away. Then the skin and inside of brace must be dried.

It is imperative that the inside surface of the brace and the skin underneath it be void of moisture. To do so, please follow these instructions and illustrations (right):

STEP 1: Pull up on Boa® Reel

STEP 2: Pull the Boa® Tab approximately 1" to 1½" or until there is ample space between the brace and skin for air flow. Using a hair dryer set on high volume and warm setting blow air through both ends of the brace and through air holes until the skin and inside of brace is completely dry.

STEP 3: Push Boa® Reel down and turn clockwise until brace is comfortably supportive.

Note:

If the patient is instructed by the physician not to loosen the brace, they should be advised not to get the brace wet.

There is a certain "at risk" group of patients (elderly with thin skin, smokers, those with particularly bony wrists, or those who sweat excessively) who may benefit from special attention and frequent assessment when wearing a brace or cast.

For these patients, the use of an absorbent stockinet or a sleeve may be of significant benefit in lessening the possibility of skin irritation. Sleeves are available through Rolyan® for under \$15.00 (treated with anti-microbial) or Bracesox® liners sold in pairs for \$24.95. They can be changed and/or washed as needed.

Even if a patient is advised not to get the brace wet or wears a protective sleeve under the brace, there are still many advantages of the Exos technology over traditional casting and bracing that make it a preferred treatment mode.

SHEAR

An over tightened brace creates "shear" to the tissue beneath it that can separate the superficial layers of the skin from deeper tissues, resulting in redness, irritation and rash or in some cases occlude blood flow into tissues directly beneath the brace resulting in blistering of the tissue. Shear or motion on the skin under high pressure causes a greater degree of damage compared to higher repetition motion under lower pressure. In other words, the skin is more tolerant of rubbing under low force.

Exos Braces are not meant to be worn tight to the skin. Much like a plaster and fiberglass casts that are inherently loose after application, Exos Braces are meant to be worn under low pressure. A little wiggle room inside an Exos Brace promotes air circulation and helps maintain dry healthy skin.

Practitioners and patients should be made aware of the potential problem of shear and instructed not to over-tighten Exos Braces. For best results the steps below should be followed:

STEP 1: Warm and form brace to the patient.

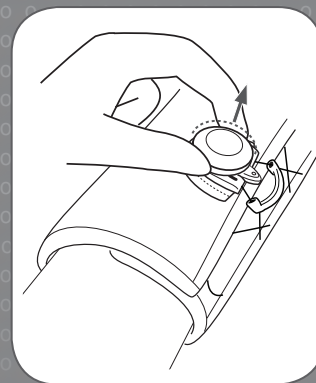
Note: Take the slack of the Boa® line but do not tighten while warm.

STEP 2: Once the brace has cooled and formed to the patient the brace can be tightened until comfortably supportive.

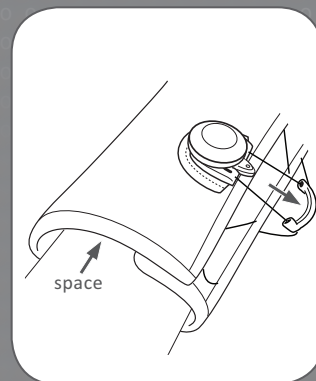
STEP 3: If the skin does not easily slide underneath the brace when the arm is rotated, the brace should be slightly loosened until it does.

Note:

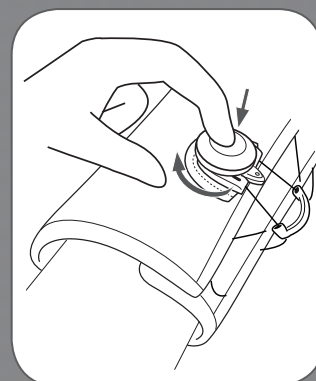
The "frictional force" on the skin (shear) can be exacerbated by moisture between the skin and brace surfaces. A large amount of water (e.g. complete immersion in water) decreases the frictional force. However, a small amount of water (e.g. perspiration) on the skin increases the shear forces on the skin. Therefore, individuals who sweat often should take precautions to frequently remove the perspiration or wear a liner or sleeve that will help absorb the perspiration.



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