

## Your Answer To Understanding Sport Injuries and The Correct Treatment To Follow

Increasing numbers of Americans of all ages are participating in sports. According to data for the year 2001 compiled by American Sports Data, Inc., more than 50 million people older than 6 years of age were "frequent" exercisers who participated in a single activity such as running, cycling, or treadmill exercise on at least 100 occasions.

Of the more than 10 million sports injuries that occur each year in the United States, most (about 95%) involve minor trauma to soft tissues-muscles, ligaments, and tendons.

The majority of minor sports injuries are believed to be self-treated. Unfortunately, as the Harris Interactive survey revealed, many people are either unaware of the appropriate steps to take when they suffer a sports injury, or confused about the appropriate steps.

The musculoskeletal system is composed of muscles, tendons, ligaments, joints, and bones. Skeletal muscle accounts for nearly 50% of the average person's total body weight, making it the single largest tissue in the body.

The primary function of skeletal muscle is to generate force, thereby producing joint and limb locomotion and movement. Force can be generated while the muscle is:

- Shortening (concentric muscle action).
- Lengthening (eccentric muscle action).
- Holding a fixed length (isometric or static muscle action).

Tendons are tight parallel bundles of collagen fibers that form the distal portion of muscle and connect muscles to bone. They are design to transmit the force generated within muscle to bone, making joint movement possible.

Ligaments connect adjacent bones to each other. They are similar in structure to tendons and composed primarily of collagen. Ligaments generally are found around joints, they help to stabilize joints by guiding normal joint motion and restricting abnormal motion.

### Exclusions to Self-Treatment of Soft Tissue Injuries

Severe pain that does not subside

- Pain that is present before, during, and after exercise
- Pain that has persisted > 2 weeks
- Increased intensity of pain or any change in the character of pain
- Performance, daily activities, or normal movement affected by pain
- Moderate to severe tenderness, swelling, or discoloration
- Visibly deformed joint or abnormal joint movement
- Suspected fracture
- Pain with high fever, nausea, severe vomiting, or other systemic symptoms

## ***PRICE Therapy for Acute Injuries***

The primary nonpharmacologic treatment of acute traumatic injuries is RICE: rest, ice, compression, and elevation. This acronym has been expanded recently to PRICE, with "P" standing for protection (Table 1).

**Table 1 - PRICE Treatment for Acute Soft Tissue Injury**

- P = Protect the area from further injury using a splint, sling, crutches, etc.
- R = Rest the injured part to promote tissue healing
- I = Ice (i.e., apply cryotherapy to) the injured part
- C = Compress the injured area (e.g. with an elastic bandage)
- E = Elevate the injured part above the level of the heart

The components of PRICE therapy are thought to work together to decrease bleeding and plasma exudation at the site of the injury.

**Protection.** Steps should be taken to protect the injured area from the possibility of additional tissue damage. Excessive stress during the initial healing phases (i.e., initial 24-72 hours) could disrupt the healing process and delay rather than promote healing. Canes, crutches, slings, splints, and taping are among the various modes available for protecting or supporting injured areas.

**Rest.** Although the concept of "rest" may seem straightforward, it actually is the subject of some controversy. In current clinical practice, patients with painful minor soft tissue injuries usually are advised to limit movement in the affected area for 24 to 72 hours, depending on the severity of the injury. This period of rest facilitates compliance with other components of PRICE therapy (icing, compression, elevation).

**Ice.** The tradition of treating soft tissue injuries with cryotherapy dates back at least to the time of Hippocrates. By decreasing tissue temperature, the application of cold (usually through the application of ice) is thought to diminish pain, local tissue metabolism, and muscle spasm and minimize the inflammatory response, thereby aiding recovery.

Cryotherapy should be begin as soon as possible after injury occurs, preferably within 10 to 15 minutes. The safest effective duration of application is 20 to 30 minutes; applying ice for more than 30 minutes at a time increases the risk of skin and tissue damage and nerve palsy.

Chemical cold bags contain separate components in inner and outer bags; when the inner bag is broken, the two components mix in an endothermic reaction. The peak cooling effect occurs during the first 5 to 10 minutes; shaking the bag periodically extends the reaction.

Although it was once common practice to use heat (e.g. hot packs, hot water baths) in the treatment of acute soft tissues injuries, current clinical practice is to avoid heat during the first 72 hours following injury.

**Compression.** External compression of the injured area helps to limit and reduce bleeding and edema and control initial swelling. The application of gentle but firm pressure around the injured area decreases the amount of space available for swelling and pushes interstitial fluid back into

the capillaries and lymph vessels. It also reduces the blood supply by about 95% within a few seconds. The most common means of compression is the elastic bandage or wrap (often referred to as an "Ace bandage" after the brand name).

Compression should be applied for at least 72 hours after an injury, both during and after cold application. Some experts recommend leaving the bandage in place continuously, others recommend removing it when the patient is lying down.

Elevation. Elevation of the injured part helps to overcome the gravitational influence on blood pooling in the extremities. The injured part should be elevated as soon as possible during the first 72 hours following injury.

Conclusion. Injuries to muscle tendons and ligaments are common and debilitating. Immediate and appropriate self-treatment of minor acute injuries can facilitate the healing process and decrease athlete discomfort. Based on the facts and directives of many medical and athletic trainers, we at Professional Safety have patented a new product called the CCT Wrap: Cold Compression Therapeutic Wrap.

CCT Wrap: Cold Compression Therapeutic Wrap

Cryotherapy (cold therapy) in combination with controlled compression has been clinically proven to increase the benefit and speed of cold therapy penetration.

The benefits of our combined ice/compress wrap are:

1. Speed of applied use (all needed items are in one product)
2. Reduction of pain sensation, and inflammation due to deeper tissue penetration
3. Restoring strength and mobility quickly
4. Quick conformability to injury area

Cold compression therapy (CCT Wrap) allows the use of applied compression and cold therapy for maximum tissue penetration.

For complete product information.

1-800-272-3008 or visit [www.professionalsafetyrx.com](http://www.professionalsafetyrx.com) and click on Cold Compression Therapeutic Wrap which is the third item down under "Products" listed on the left sidebar.

A combination of compression and cryotherapy immediately upon injury has reduced tissue damage and promotes an early return to full activity.

Directions For Use:

Simply activate ice pack and place on affected area with blue bandage on top - unroll bandage around appendage and apply pressure for 15 seconds on at least a 4" overlay - bandage on bandage - readjust bandage as swelling changes.

Simple and inexpensive