

BASIC FIRST AID FOR MUSCLE AND JOINT INJURIES

By: Dr. John A. Papa

Physical injury to your muscles and joints can occur with workplace, household, sporting, and recreational activities. Common mechanisms of injury include slip and fall or collision-impact type accidents, overstretching a body part, changing direction or slowing down abruptly, twisting awkwardly, or performing repetitive movements or activities. This can cause pain, stiffness, and swelling around a joint or muscle, leading to injuries known as *sprains*, *strains*, and *contusions*. Fortunately, there are steps that can be taken to minimize the effects of such injuries and help speed recovery.

A discussion regarding basic first aid for muscle and joint injuries would not be complete without first defining the difference between *sprain*, *strain*, and *contusion* injuries.

A *sprain* refers to a stretching or tearing of a ligament. Ligaments are tough bands of fibrous tissue that connect one bone to another. They help stabilize joints, preventing excessive movement. One or more ligaments can be injured at the same time. Common locations for *sprains* are the ankles, wrists, and knees.

A *strain* refers to a stretching or tearing of a muscle. This type of injury occurs when muscles suddenly and powerfully contract, or when a muscle is overstretched. This is called an acute strain. Overuse of certain muscles over time can lead to a chronic repetitive strain. *Strains* are commonly referred to as “pulled muscles”. The shoulders, forearms, low back, and leg regions are common locations for strains to occur.

Contusions are commonly called “bruises”. Skin, muscles, and bones can all sustain a bruising injury. Sprain, strain, and contusion injuries can exist on their own or in combination with each other.

Initial conservative management and first aid of such injuries should follow the **P.R.I.C.E.** principle (**P**rotection, **R**est, **I**ce, **C**ompression, **E**levation) outlined below.

PROTECTION: Immobilize the injured area to protect from further injury. This can be accomplished with the use of an elastic wrap, brace, splint or sling. Walking aids such as crutches or a cane can be useful to help you get around.

REST: To ensure proper healing, rest the injured area and avoid activities that cause pain. Do not restrict all activities completely. Other regions of your body can still be used. This will help prevent physical de-conditioning. An attempt should be made to return to regular or modified activities as soon as possible provided it does not put you at risk of further injury.

ICE: Crushed ice, ice cubes, or snow should be molded or applied to an injury site immediately. Icing will help to reduce pain, swelling, and inflammation in the injured tissues. Ice application should not exceed 15 to 30 minutes at a time. Allow for skin temperature to return to normal before ice is reapplied. This cycle can be repeated as often as necessary within the first 48 to 72 hours. Ice should not be applied directly to the skin. Instead, a damp towel should be used to serve as a barrier between the ice and skin and act as a conductor of cold. Do not apply ice to blisters, open cuts or sores. Individuals hypersensitive to cold and those who have a circulation problem should avoid ice.



COMPRESSION: Compress the injured area with an elastic tensor bandage. This will help decrease swelling. Do not wrap the bandage too tightly as to cut off circulation. You should not feel an increase in pain with compression.

ELEVATION: Elevate the injured area (whenever possible) above the level of the heart, especially at night. Gravity helps reduce swelling by draining excess fluid.

Continue to use **P.R.I.C.E.** treatment for as long it helps you recover. With a mild injury you should experience progressive improvement within 2 to 3 days. You should gradually begin using the injured area after this time. Mild injuries usually heal completely without any residual consequence in 1 to 4 weeks. Moderate injuries usually require 4 to 12 weeks to heal and may require basic rehabilitative treatment and exercises. Severe injuries will take longer to heal. You should seek additional medical care under the following circumstances: obvious evidence or suspicion of a broken bone, fracture or joint dislocation; injury accompanied shortly afterwards by redness or red streaks, heat, and high fever; or a popping sound heard during the injury accompanied by a feeling of joint instability or inability to weight bear.

Physical injury to your muscles and joints can occur with workplace, household, sporting, and recreational activities. By using the **P.R.I.C.E.** principle after an injury, you can significantly reduce swelling, tissue damage, inflammation, muscle spasms, pain, and recovery time. You should contact a licensed health professional who deals in the diagnosis and treatment of muscle and joint pain if symptoms do not subside. A qualified health professional can determine the cause of your pain and prescribe appropriate therapy, exercises, and rehabilitation strategies specifically for your circumstance. For more information, visit www.nhwc.ca.

This article is a basic summary for educational purposes only. It is not intended, and should not be considered, as a replacement for consultation, diagnosis or treatment by a duly licensed health practitioner.