

INJURY TREATMENT

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When to See A Doctor?

Call a doctor if any of the following symptoms persist: stabbing or radiating pain, numbness or tingling, significant swelling, inability to move injured part, night pain, if pain persists for more than 7-10 days.

What's the First Thing You Should Do to Treat an Injury?

Apply ice. With acute injuries such as torn ligaments, muscle strains and bruises, start icing soon as possible.

R. I. C. E.

Remember with acute injuries such as sprains and tears and when swelling is present:

Rest the Injured Part

Ice - crushed ice in plastic bag, blue ice, etc.

Compression - Compress with cold wet ace wrap, weave ice bag into wrap

Elevation - injured part above level of heart

How Should Ice be Applied?

Apply ice to the injured area for 10-15 minutes for first 1-½ hours, then every 2 to 3 hours as needed. Do not apply for longer than 20 minutes at a time, longer than that may cause frostbite.

What About Heat?

Heat actually increases blood flow, tissue leakage and swelling and inflammation. Use only after swelling has subsided and injury has become more chronic in nature.

Heat is helpful in relieving pain of chronic injuries, relaxing muscles, decreasing joint stiffness and increasing range of motion.

Activity Pain Phases

1. Soreness after activity
2. Stiffness before - soreness after activity
3. Mild during activity - but no activity alterations needed
4. Pain with activity, and activity alterations
5. Constant pain

Should You Take Pain Relievers?

Taking aspirin or ibuprofen (Advil) can help ease pain or inflammation of minor sprains, strains and inflammations, i.e. pain phases 1 and 2. Acetaminophen is less helpful (Tylenol) because it has a non-anti-inflammatory effect.

When Should You Stop Exercising?

For most mild overuse injuries (pain phases 1 and 2) rest a day or two and then resume exercising at an intensity that doesn't cause pain. Don't work out if the pain is persistent and returns, pain phases 3, and 4. Don't resume your normal level until you are pain free and asymptomatic before, during and after exercise. It's very important to determine cause and site of injury.

When About Liniments and Sports Creams?

Their effect is only superficial - the active ingredients stimulate sensory nerve endings in the skin only, just enough to produce sensation of heat or cold. This at best will only temporarily mask the pain of sore muscles.

Since the heating or cooling sensations are only superficial, they do little or nothing to promote healing.

What's the Best Way to Treat Sore Muscles?

This kind of muscle pain from training too hard, or "overdoing it" is called delayed-onset muscle soreness. Delayed onset muscle soreness (DOMS) results from microscopic injury to the muscle tissue itself, and is not due to lactic acid buildup.

There is no "proven" treatment for DOMS. Not exercising for five to seven days can ease the pain. However, active rest may be better. Recent research suggests that relief from DOMS may be best achieved by repeating the same activity that cause the soreness, but at a much lower intensity.

Don't take aspirin or ibuprofen to relieve the pain. These drugs may interfere with muscle repair and thus actually prolong the soreness. These drugs block the body production of prostaglandin in substances that help stimulate the repair process. In the case of DOMS acetaminophen would be a better choice.

Concepts of Injury Treatment

1. Relief of Inflammation
2. Promote Healing
3. Exercise
4. Eliminate Abuse

1. Relief of Inflammation

A. Signs of Inflammation

1. Swelling
2. Local fever
3. Tenderness
4. Erythema (redness)

B. Rest

1. Protection from further injury not an absence of all activity

C. Ice/Anti-inflammatory medications

1. Criteria for ice
 - a. Local fever
 - b. Swelling Phase 2
 - c. Pain and tenderness

2. Physiology of Cold
 - a. Constrictions of blood vessels initially
 - b. Dilation of blood vessels
 - c. Relaxation of skeletal muscles
 - d. Decreases tissue metabolism

2. Promotion of Healing

- A. Protection from further injury

- B. Physical therapy modalities, i.e. ultrasound, massage, etc.

- C. Gradual, graduated exercises directed at maintaining flexibility, strength and endurance. Exercises should be sub maximal, low weight, high repetitions limited to pain free range of motion.

3. Exercise

- A. The goal of exercise should be the early mobilization of injury and non-injured structures without abusing the injured area or retarding the healing process.

- B. Early restoration of function is critical. A graduated program for the restoration of flexibility, range of motion, strength, power and muscular endurance should be initiated as soon as possible, while at the same time aerobic endurance is either maintained or restored.

- C. As inflammation and pain free range of motion increase along with strength, power and endurance, exercise duration and workloads - should increase accordingly. Sports specific skills are incorporated into the program as restoration of function approach normal parameters.

- D. Athlete can begin gradual guarded return to full sports activities when physiological parameters, i.e. strength, power, flexibility and both aerobic and muscular endurance are within lot normal.

4. Elimination of Abuse

- A. Alter duration, intensity of types of activities that precipitated injury.

- B. Technique modification

- C. Environmental changes or modification

- D. Equipment changes

- E. Protective equipment such as braces, splints and orthotics

The goal of treatment should be the restoration of function to the greatest possible degree in the shortest possible time.

Treatment and rehabilitation should blend together into one, and begin at the same time as the treatment of the injury.

Rehabilitation does not wait until the injury is healed, but is started while healing is taking place, resulting in an earlier return to function.

The aim is not to "speed- up" healing, but to do all that is possible to avoid slowing it down.

How Injuries Heal

Injured tendons, muscles, ligaments and cartilage (the types of soft tissue involved in most exercise injuries) can take a long time to heal - longer, in fact, than broken bones. The aim of treatment is to assist the natural healing process, which occurs in several stages.

Inflammation

In this initial response to injury, blood vessels in surrounding tissues dilate and release a variety of substances. White blood cells arrive to remove dead tissue and other debris. These and other vascular changes produce heat, swelling, and redness. The subsequent pain and stiffness have the beneficial effect of keeping you from moving and aggravating the injured muscles or other body parts.

Regeneration

After 24 to 48 hours, the body begins replacing injured tissue. Damaged cells are flushed from the area, then capillaries form, allowing a greater flow of oxygen and nutrients into the injury site. Two to three days after the initial damage, strands of collagen - protein that is the major component of connective tissue - begin forming scar tissue over the damaged areas, a process that lasts two to three weeks.