

## Heat or Cold Application

It's a common question relating to injuries: "Should I apply heat or ice?" The answer is almost always ice. Heat can actually be detrimental to tissue healing in many cases. To clarify specific issues surrounding this topic, I'll discuss the appropriate application of both modalities here.

Trauma to your tissue sets off a physiologic process known as inflammation. As part of the inflammatory process, your body sends specialized cells and proteins to seal off the injured area, destroy damaged tissue and keep out bacteria. This can become problematic if left unchecked, inflammation can destroy healthy tissue and create a bigger problem than you started with. To prevent this, it is crucial that you minimize inflammation as soon as possible.

Application of ice, more properly known as cryotherapy, decreases the temperature of injured tissue. This helps diminish pain, slow down muscle metabolism, and minimize muscle spasm. As a result—and here's the key—the inflammatory process is decreased which aides in tissue recovery after trauma. Introduction of heat to the area will have the opposite effect. It increases blood flow to the area and can actually accelerate the inflammatory process in acute injuries. Therefore, any time there is an acute injury with swelling or inflammation present, heat is not the most appropriate.

### Instructions for Applying Ice to Injuries

The basis for application of cryotherapy is different depending on the acuity of the injury in question. Ice applied right after the injury occurs reduces muscle metabolism and decreases the degree of tissue damage due to inflammation. Later, when the injury is in its sub-acute phase, the primary purpose of cryotherapy is to relieve pain to help facilitate exercise and activity tolerance. Large, flexible gel ice packs that can surround the joint provide superior skin cooling effects when compared to rigid ice packs. Research articles recommend anywhere from 10-20 minutes 2-4 times a day up to 30-45 min every two hours.

### When to use Heat Therapy

Despite its lack of applicability to acute injuries, heat is not without utility in treating certain types of injuries. Heat can be applied for chronic issues such as muscle or joint stiffness or soreness. Heat can also help relax muscles or decrease muscle spasms. In these cases, it is best applied before exercise to promote blood flow and prepare tissue for use. Heating pads or hot packs are good ways to heat tissue but I recommend moist heat for maximum efficacy. Try using a hot, wet towel to wrap the area in question. Safely apply heat for 15-20 minutes at a time and make sure that you have several layers between your skin and the heating source to avoid burns. Do not use a heating pad for long periods of time and do not go to bed with a heating pad. Heat should not be applied after exercise. Even with chronic injuries, ice is the better choice after activity.