



Using Cryotherapy in the Injury Process

The extent of a sports-related injury can be significantly affected by altering the temperature of the injured tissues.

Within minutes of an injury, the application of cold (cryotherapy) can lead to vasoconstriction at the cellular level and decreases tissue metabolism (Decreases the need for oxygen).

Capillary permeability and pain are decreased and the release of inflammatory mediators are inhibited. As the temperature of the peripheral

nerves decrease, a corresponding decrease is seen in pain perception. With nerve impulses inhibited and muscle spindle activity decreased, muscles in spasm are relaxed, breaking the pain-spasm cycle and leading to an analgesic effect.

Because vasoconstriction leads to a decrease in metabolic rate, inflammation and pain, cryotherapy is the modality of choice during the acute phase of an injury.

Table 1. The Application of Cryotherapy for Injury Management

<i>Cryotherapy Application</i>	
Indications Acute or chronic pain Acute or chronic muscle spasm Acute inflammation or injury Post surgical pain and edema Superficial first-degree burns Used with exercises to: <ul style="list-style-type: none"> • Facilitate mobilisation • Relieve pain • Increase range of motion 	Contraindications Decreased cold sensitivity or hypersensitivity Cold allergy Circulatory or sensory impairment Hypertension Uncovered open wounds Cardiac or respiratory disorders Nerve palsy Arthritis Leukemia or systemic lupus

Cryotherapy, in the form of an ice bag, is applied for 20-30 minutes for maximum cooling of both superficial and deep tissues.

Elevation above the level of the heart uses gravity to reduce pooling of fluids and pressure inside the venous and lymphatic vessels, to prevent fluid from filtering into surrounding tissue spaces.

Ice application is continued until 48 to 72 hours after injury, or until acute bleeding and capillary leakage have stopped, whichever is longer. However, compression with and elastic wrap should be maintained as long as swelling is present.

A treatment protocol for the application of ice is 20 to 30 minutes followed by 90 minutes of re-warming.

About eliteperformance

eliteperformance are based on the Wirral in the North West. They provide sports conditioning, personal training and sports therapy to a wide range of clients. Visit www.eliteperformance.biz