



Many of our patients are confused as to what circumstances they should be applying ice and those when heat is more ideal.

Whilst there are exceptions to the information on here, the general principles are sound and can offer an overall idea of how to apply ice and heat. However this advice is not designed to replace the advice from a health professional. Please always consult them if you are unsure.

### **!! CAUTION !!**

If a person's ability to detect changes in temperature is compromised, then they SHOULD NOT apply ice or heat without first checking with a health professional. Applying either with altered skin sensation could result in damage to the skin or underlying tissue.

If the Ice/Heat feels generates pain then it should be removed immediately.

### **ICE**

Ice is more often applied immediately after an acute injury ("acute" meaning one that has recently happened) and sometimes to manage pain symptoms of a chronic injury. ("Chronic" meaning one that has been there for an extended period of weeks or months.) We will focus on the use of ice to treat acute sprains, strains or bruising of an area.

Placing a cold pack on an area causes heat to be drawn away from the underlying inflamed tissues, whilst swelling can be limited through constriction (narrowing) of damaged blood vessels. Other effects include muscle relaxation, analgesia (pain relief) and increased tolerance to pain. (Hanchard et al 2011)

### **How Long?**

The length of time that ice should be applied for is debated in the literature.

Ho et al (1994) - Suggest a 20 minute application of ice.

Stitic and Nadler (1998) - suggest 20-30 minutes every 2 hours.

Other authors suggest that 10 minutes is sufficient to achieve the cooling benefits required.

Bleakley (2004) conducted a systematic review and found there was no optimal time for ice application that is generally accepted in the literature. Advance Physiotherapy would advise that patients apply ice for a period of 10-20 minutes and then not re-apply for at least an hour after removal to avoid tissue damage that can occur from icing too long.

### **How to apply?**

There are many different techniques available to apply ice/cooling. You can use a bag of peas, ice massage, ice baths and there are many commercially available gel/ice packs.

The cooling effects of ice baths and ice massage have been shown to cool the skin more quickly than applied packs, and THE TIMES GIVEN ABOVE WOULD NOT BE RECOMMENDED for these techniques. Please consult a health professional for more advice on these techniques.

### **Barriers between skin?**

An older research paper (Lavelle and Snyder 1985) suggests that bandages and other layers between the ice pack and the skin can stop the cooling effects of the ice on the tissue below the skin. A damp washcloth between the skin and ice pack has shown to allow the greatest cooling effects whilst still offering the required protection to the skin. (The ice was left in place for 30 minutes in this research paper.)

### **HEAT**

Heat therapy is believed to reduce pain by mechanisms involving the release of endorphins. The warming effect may also reduce stiffness in joints and spasm in muscles. The heat is believed to dilate blood vessels increasing the flow of blood to an area blood which might improve transport of oxygen and nutrients to the tissues, and assist with the removal of waste products. (Hanchard et al 2011)

Heat can be very soothing to chronic pain and aching muscles. Again this can be applied in a variety of forms including hot water bottles, wheat bags, warm towels etc. Care must be taken that the method of application is not too hot as burns can easily occur. As a guide the temperature should be soothing.

### **How Long?**

If the heat is soothing then there is no real limit advised in the literature at present.

### **More Information**

For more information or to book an appointment please call Advance Physiotherapy Nottingham on 0115 9455232 or visit our website [www.advance-physiotherapy.com](http://www.advance-physiotherapy.com).

Author of report

Michael Brownlow MSc BSc (Hons) MCSP HPC – January 2011