



Therapeutic use of ice

Cryotherapy is the practice of using ice to aid in recovery. It should be used as soon as an injury has occurred. As well as preventing swelling it also offers pain relief.

Ice reduces inflammation in traumatized ligaments and this limits the amount of scar tissue formed from the injury which leads to a quicker recovery.

It can be used on many types of soft tissue injury. Muscle strains, joint sprains and direct trauma to muscle and bone.

Guidelines for using ice

- Use immediately injury has occurred
- RICE- rest, ice, compression, elevation
- Use a damp cloth between ice and skin
- 10/10/10 cycle. 10 mins on/10 mins off/10 mins on. Repeat every 2 hours. With compression and elevation
- For the next 48-72 hours use as often as possible. (2-4 times a day)
- Continue using ice till symptoms of aching pain and local throbbing subside
- Can use ice massage. Still using 10/10/10

Why it works

Icing reduces inflammation, which leads to less scar tissue forming. It also reduces blood leakage into the area, which reduces complications of bruising.

Local cellular metabolism slows with the drop in temperature and this limits local tissue damage due to secondary hypoxic effects.

The migration of pro-inflammatory and nerve sensitizing agent to the area is minimized which aids in reducing pain.

There is also a definitive analgesic effect which is greatest when local tissue is below 16 degrees celcius. This is because nerve conduction velocity is slowed, there is decreased gamma motor neurone excitability and decreased muscle spindle cell activity. This all leads to a decrease in muscle contractility.



Heat

Heat has a short term effect in pain reduction. It will increase inflammation and slow down the healing process if used in the first 48-72 hours.

Contrast therapy

After the first 72 hours you can use heat and ice alternatively. Use heat and soft tissue massage when aching pain is replaced with muscle and joint stiffness.

Hunting response

Hunting response is a protective mechanism that guards against the excessive cooling of any part of the body.

When a body part becomes too cold the body restricts the blood vessels to that part for about 10-15 mins. If ice therapy goes for 20 mins massive local vasodilation may occur. (Vasodilation is when when muscle walls of the blood vessels relax and the blood vessel widens. This will negate the purpose of using ice.)

It is more pronounced in the extremities, i.e hands and feet than it is in larger body parts, i.e. thighs, calves, knees and ankles.

Contraindications

Persons with systemic or local circulatory disease should not use ice therapy.

Also people with vasospastic disorders such as Raynaud's disease or Raynaud's phenomena secondary to carpal tunnel syndrome.

It should not be use with Rheumatoid arthritis, or placed directly over open wounds.

It is best avoided in people with cold hypersensitivity.