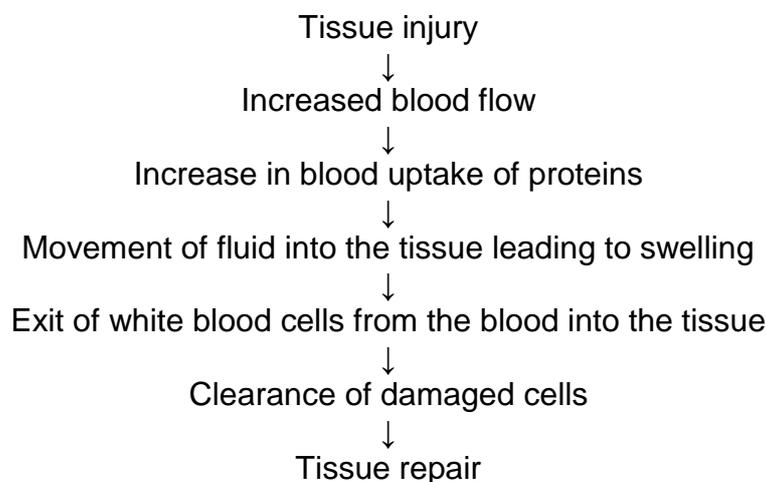


Inflammation and management of swelling

What is inflammation?

Inflammation is an immune response to injury or infection, causing pain, redness, heat and swelling. It is a sequence of complex chemical reactions that work to defend the body. This brings plasma proteins and phagocytes (white blood cells that engulf and consume foreign material and debris) to the injured area for the purpose of tissue repair.

Although complex in nature it can be summarised in 7 steps:



Management of swelling

RICE is recommended during the first 24 to 48 hours post injury to minimise swelling. It stands for:

Rest

Rest your injured limb in the first 24 hours as much as possible. Avoid regular exercise and reduce daily physical activity. Using crutches or a walking stick may help if you are unable to put weight on your ankle or knee.

Ice

Ice is excellent at reducing the inflammatory response and the pain from the heat generated. It is recommended that ice be used for approximately 15-20 minutes and placed within a wet towel to prevent frost bite or ischemia (poor blood flow to the tissues) to the skin.

Compression

The use of a support bandage is often helpful in reducing swelling and pain. Use a compression bandage when you are active and remove at rest.

Elevation

Keep the injured leg, knee, arm, elbow or wrist raised above the level of the heart as this may also help reduce swelling.

After 48 hours of RICE compression should be stopped and you should try to move the area. If after this time your symptoms get worse you should seek further advice from a health professional.

PRICE

You may also see PRICE mentioned in the management of injuries. In this the P stands for protection. It involves protecting the injured area from further injury, by using a support, for example, or in the case of an ankle injury, wearing shoes such as lace ups that enclose and support your feet.

Contrast bathing

Contrast bathing (or hot/cold immersion therapy) is a form of treatment where a limb or part of the body is immersed in ice water followed by the immediate immersion in warm water. Use two bowls of water for an ankle or hand injury. The warm water should be bath temperature and the cold water should have some ice floating on the surface. Dip for 30 seconds and always start and end with the warm water. Ten dips should be enough to have a positive effect on the swelling.

The theory behind this technique is that the warm water causes blood vessels to open increasing the blood flow followed by the cold water which causes blood vessels to close. The overall effect is to pump out the swelling.

When to use heat

Heat treatments should be used for conditions that are longer term. It will help to relax and loosen tissues and to stimulate blood flow to the area. Use heat treatments for longer term conditions, such as overuse injuries, before participating in activities.

Heating tissues can be accomplished using a heating pad, or even a hot, wet towel. When using heat treatments, be very careful to use a moderate heat for a limited time to avoid burns. Never leave heating pads or towels on for extended periods of time, or while sleeping.

Do not use heat treatments after activity. Do not use heat immediately after injury or if the tissues are infected, red or warm to the touch. See the table below for a guide.

| | Ice | Heat |
|------------------|--|--|
| When? | After an acute injury (e.g. ankle sprain) | On chronic conditions or injuries |
| How? | Ice pack or bag of frozen peas in a damp towel | Heat pad, wheat bag or hot wet towel |
| How long? | No more than 20 minutes | No more than 20 minutes and never while sleeping |

Pain relief

Simple pain killers or anti-inflammatory medication will help to relieve the pain caused by swelling. Speak to your GP or pharmacist for advice on which tablets are best for you.