

### **Ice Treatment:**

Ice has several potential benefits. If applied early it can reduce bleeding by constricting blood vessels. This will mean less swelling & pressure on surrounding tissues. Ice also slows down the metabolism of the tissues, so that they can function with less oxygen. This is important in the early stages, when blood supply to the tissues is disrupted due to bleeding & swelling. Poor blood supply means that not only the damaged tissues, but surrounding healthy tissues, can become damaged due to lack of oxygen. The initial injury can actually worsen over 24 to 48 hours. Ice allows the tissues to survive in a low oxygen environment, until the body re-establishes the blood supply.

Ice is also an effective pain reliever, and it helps inhibit muscle spasm. This is because the cold slows the conduction velocity of the pain & muscle nerve fibres. With injuries, a lot of the pain can be due to the accompanying muscle spasm. Settling this allows a quicker return to normal function. It also makes it easier to determine how severe the injury actually is. Ice is sometimes used with heat, in the subacute or recovery stage. This is to alternatively constrict and dilate the blood vessels, to 'flush out' inflammatory by-products & swelling. Do not use heat in the acute injury stage.

How to apply ice. There are several ways ice can be applied, depending on what you have available, the type of injury, and the desired effect:

1. Ice packs. Crushed ice in a bag or damp cloth can be placed around the injured area. To avoid an ice burn, it is safer to put at least one layer of damp cloth between the ice and the skin. If ice is not available, a bag of frozen peas works just as well.
2. Ice gel packs. These can be purchased from the chemist and kept in the freezer. A word of warning – these packs freeze to a much colder temperature than water, and will easily cause an ice burn. Place two to three layers of damp cloth between the pack and the skin.
3. Ice immersion. A sprained ankle, for example, can be placed directly into a bucket of iced water.
4. Instant ice packs. These work via a chemical reaction & do not need pre-cooling. For this reason they are convenient for use on the sideline.

The ice should be kept on for no longer than 20 minutes, and can be repeated every one to two hours. When icing directly over bone, or over superficial joints such as the fingers or toes, 10 minutes of ice is probably sufficient. There have been cases where ice left on for longer than 40 minutes has caused tissue damage, including frost-bite & nerve damage. So 20 minutes maximum is a safe and effective guideline. Ice treatment will be most effective during the first 24 to 48 hours, so should be repeated regularly during this time.

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