

## WHY ICE?

### WHY SHOULD WE USE ICE IN AN ACUTE INJURY, RATHER THAN HEAT

Many "sinsehs" and "bomohs" believe that one should use heat and massage on a fresh injury. However, there is good scientific proof that ice works better in resulting in faster and better healing. Why is this so?

When we sustain an injury to a muscle, tendon or ligament, certain chemicals are released by the body at the site of the damage during the first 24 to 48 hours. These chemicals may affect the blood vessels supplying the area of damage and the immediate surrounding area. This, combined with the bleeding in the area of injury means that less oxygen will be supplied to these areas. This may result in "suffocation" and death of the surrounding tissues, in addition to the area already damaged.

Applying **ice** to the area of damage and the surrounding tissues slows down their metabolism, and reduces their need for oxygen. This helps them to survive longer during the 24 to 48 hour period when there may be a lack of oxygen. (This principle is also used in organ transplants, eg. when a donor's kidney is kept in ice in order to keep it alive while it is being transported to the recipient). By keeping the surrounding area alive, the damage is restricted only to the original area injured. A smaller area of injury means that healing will be faster.

Ice, together with pressure (compression) on the area of damage, also helps to reduce bleeding, inflammation and swelling in the area. Less bleeding means that the blood clot formed at the injured site will be smaller, and healing will be faster. Less inflammation and swelling also results in faster healing.

The **"R.I.C.E."** formula is a useful guide as to what should be done when you have a fresh injury or a recurring injury:-

- R** = Rest the injured Area
- I** = Ice for 15 to 30 minutes every 2 to 3 hours
- C** = Compress the injured area (eg. With bandage)
- E** = Elevate (eg. Raising an injured ankle on a pillow when lying down)

### WHAT ABOUT HEAT?

Many people like to apply heat because a warm sensation on the skin feels better than cold. Heating tissues normally results in improved blood circulation to the tissues. However:

- ◆ Applying heat to the area of injury in the first 24 to 48 hours will result in increased metabolism of the surrounding tissues, which will increase their

need for oxygen. As explained earlier, less oxygen is supplied to these areas during the first 24 to 48 hours. The surrounding tissues may therefore die or be damaged from a lack of oxygen. Ultimately, this will result in a larger area of damage than the original area, and a longer time needed to heal this larger area.

- ◆ Increased blood circulation could result in increased bleeding. The worse possible combination during the first 24 to 48 hours would be heat and deep massage combined, as this would encourage more bleeding than ever! Unfortunately this is what many "sinsehs" and other untrained people do.

### **CAN HEAT BE USED AT ALL?**

Yes! but definitely not in the first 24 to 48 hours. It is usually safe to use heat after 72 hours. The improved circulation which heat causes may encourage healing at this stage.

### **THE BOTTOM LINE**

Remember, if you have a fresh injury, or if you have made an existing injury worse, the action YOU take immediately (during the first 24 to 48 hours) can affect the total time needed for healing.

Use ice and not heat during the first 24 to 48 hours, and follow the "RICE" formula.

*\* information provided by the Singapore Sports Council's Sports Medicine and Research Centre (SMRC)*