‘You can put a ***PRICE*** on healing’

Every once and a while we all sustain an injury to ourselves that results in pain and swelling! Whether it is an ankle, knee or some other part of the body, it would be great to know what to do immediately that will save you time, effort and grief in the future.

If you are not aware what PRICE means now, hopefully you will at the end of this feature.

The course of an injury can be significantly affected by the appropriate, effective and timely action, particularly in management of swelling (oedema) in both the acute (early) and in the chronic (later) stages of injury where the swelling can hinder rehabilitation and increase the risk of the injury re – occuring. A soft tissue injury involves damage to cells in tissue structures such as ligaments, muscles and tendons. These injuries may include strains (overstretching injury to muscle), sprains (overstretching injury to ligaments), bruising or crushing.

Tissue response to injury.
Tissue injury usually involves damage to the small blood vessels supplying nutrients to the injured tissue. These vessels bleed into the damaged area causing some or all of the four main signs of inflammation. These signs are:- (if you didn’t already know!)

Heat
Redness
Pain
Swelling

I would like to concentrate on one of the areas listed above and that is ‘swelling’.
Swelling occurs because the first response to injury damage is to increase blood flow to the area to bring healing agents and clear away dead cells. This is achieved by dilation of the capillaries as well as increased permeability of the blood vessel walls caused by the release of chemicals by the damaged cells. The swelling of inflammation in mostly fluid called the inflammatory exudates. This fluid contains large amounts of protein called fibrinogen. This protein reacts with other chemicals at the site of injury and turns into fibrin which helps fight infection and promotes healing.

Now we all know that our body is a clever piece of kit but when the above occurs it has a tendency to overreact in much the same way, as we all react when there is a ***‘free’*** bar. The body sends large amounts of the inflammatory exudates resulting in excessive formation of fibrin that eventually becomes scar tissue. In addition the presence of protein increases the osmotic pressure of the tissue fluid in the damaged area, thus drawing more fluid out of the nearby capillaries and into the surrounding tissues. This swelling develops about two hours after injury and may continue for up to four days depending on the injury. Individuals of all age groups, of all levels of fitness, and who participate in physical activity, from everyday functional activities to the ‘Big Brown Log Challenge, should benefit from adhering to the recommendations for the management in the immediate (up to 72 hours) post – injury management. So here’s the Important stuff:-

Protect.
Protect the injured tissue from undue stress that may disrupt the healing process and/or cause further injury. This could include splinting or bandaging, slings or crutches. Complete immobilisation isn't usually necessary or desirable. This needs to be done for 3-5 days depending on the severity of the injury.

Rest.
This reduces the energy requirements of the area, avoids any unnecessary increase in blood flow, ensures protection of the area and optimises healing. The use of slings, crutches or static rest (i.e. sitting or lying down). Immediately after injury and for 3-5 days depending on injury severity. Complete rest isn't desirable but any movement needs to be carefully controlled.

Ice.
Ice is used to limit the body's over-reaction by reducing the temperature of the injured tissue and therefore the energy requirements and subsequent influx of blood. The ice helps constrict the blood vessels thereby limiting bleeding and reducing the accumulation of unnecessary tissue protein. Crushed ice wrapped in a damp towel or cloth is best (ice cubes can be wrapped in the cloth and smashed to crush the cubes) alternatively ice in a plastic bag, a frozen gel pack, or a packet of frozen peas is a cheap and practical substitute. A damp towel must be placed between the ice and the skin to avoid ice burn. The sooner the ice can be applied the better. Ice should be applied for between 20-30 minutes each time. If the area is very bony such as the elbow, reduce this time to around 10 minutes. Do not return to activity immediately as the ice will have an analgesic effect.

Compression.
Compression limits an unnecessary accumulation of inflammatory fluid and ultimately over – production of scare tissue. Simple of the shelf compression bandages such as Tubigrip and adjustable neoprene supports are best for self-application. The area should be compressed a minimum of six inches above and below the site of the injury. It should be flexible enough to accommodate initial swelling and continue to apply pressure as this reduces. Loosen the compression if you feel pins and needles around the compressed area. This should be done as soon as possible after an injury and continue for the first 72 hours.

Elevation.
Lowers the blood pressure and therefore helps limit the bleeding and encourage drainage of fluid through the lymphatic system. Use pillows, foot stools, (or gullible male if available!) this should be done as soon as possible after the injury and for the first 72 hours.

Finally, when following **PRICE** it is also important to avoid **HARM,**
Heat – hot bath, sauna etc
Alcohol
Running
Massage
As these are counter productive to the price treatment.
Please always remember there is no substitute for professional advice, so if you are in doubt at any time, seek the advice of a health professional.

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