

Acute Injury Management

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Nobody wants to get injured! True. And as physiotherapists we actually don't like seeing people get injured either. But if you do get hurt, we are there to look after things the best we can so that you, or your players, can get back on the training track and then the park as soon as possible. So, if you do get injured what should you do and who should you see? Is it really possible that there is a right and wrong way to look after your injuries? And, what can go wrong if you don't look after an injury correctly? Let's look first at what you should do in the first few days after an injury occurs.

The body's response to injury

When an acute soft tissue injury occurs the body responds with bleeding and inflammation. So if you tear a muscle, sprain a ligament or irritate a tendon, there will be a rapid response to an injury. This will vary in severity and significance in relation to the size and extent of the injury. Let's use an ankle sprain as an example.

When you roll your ankle in to inversion (rolling the foot in) the ligaments on the outside of the ankle can be damaged and bruising can occur to the inside of the ankle. Tearing of the ligaments will release bleeding and the bony impact on the inside of the ankle will also cause bruising and swelling.

We want to slow down the impact of an injury like this by minimising the amount of bleeding and swelling. This allows for more rapid healing due to less direct tissue damage and indirect pressure on tissues from the swelling and bleeding.

What should I do in the first few days?

When is the best time to start treating an injury? The answer to this question is straight away! The earlier you get into treating an injury correctly, the less tissue damage there will be and the quicker your recovery.

Immediately after a soft tissue injury you should apply the RICER principle.

This very well known principle stands for:

1) R – Rest the injured area

In the case of the injured ankle reduce your weight bearing stress by using crutches if the injury is to a shoulder or other part of the arm use a sling. Resting reduces tissue damage by minimising movement of torn fibers.

2) I – Ice the injured area

Apply ice to the region of the injury. This may be in the form of a bag of crushed ice, commercial ice pack or bucket of cold water with ice in it. Apply an ice pack for 15 to 20 minutes. In the case of submerging the area in icy cold water, 10 minutes will generally be enough.

Make sure that you wrap you ice pack in a thin tea towel or piece of paper toweling to prevent ice burn to the skin. Also, if you do use a commercial ice pack, make sure that it stays cold!! I have come across plenty of packs that don't stay very cold and this can be a waste of time. The pack should still be quite icy cold after being on your body for 15 minutes.

Ice has a terrific effect on the injured area. It dramatically slows down the activity in the region of the icing and thus decreases the bleeding, swelling and thus subsequent damage.

I have had plenty of players over the years proudly report to me that they iced for 45 minutes after a game. Unfortunately these guys have probably defeated the purpose of icing. Research has shown that if you ice for greater than 25 minutes, you can get the reverse effect of what you are trying to achieve. This is because the muscles around the small blood vessels get frozen and allow for blood to rush back into the area. Therefore stick to the 15 to 20 minutes rule.

How often should you ice. In the first 72 hours after an injury it can be beneficial to ice for 15 minutes every hour. Some professional sports people have been known to set an alarm clock at night so that they continue to ice 24 hours a day. For most of us time is an issue, so icing 4 to 6 times a day is a good goal / target.

3) C – Compress the injured area

At one point I read an article that suggested that compression was the most important facet of the RICE formula. Compression continues the goal of decreasing swelling by applying pressure to the injured area and helping “push” the waste products back into the bloodstream to be removed by the body.

Compression can be applied using a tubular stocking (tubigrip), compression bandage or taping. I favour using tubigrip as it can be easily removed and thus makes icing easier. Most of us get sick of re-applying a compression bandage every hour and give up on icing.

Make sure the compression you apply isn't too strong. The compression should be firm but not uncomfortable. I usually recommend to my patients to remove or soften the compression at night.

4) E – Elevate the injured area

Elevation helps drain the swelling and bleeding back into the system. If possible, raise the injured area above the level of the heart. This can be pretty tough if you've injured a hip or shoulder, but do your best.

5) R – Referral to appropriate sports medicine professional

The often forgotten second R in the RICER principle! A crucial facet to quality injury treatment and player recovery is to get to a qualified physiotherapist or sport doctor as soon as is practical. With the use of testing and experience you can get an accurate diagnosis and plan to treat and recover from an injury.

If you or your football trainer suspect the possibility of a fracture, then make sure you get to an emergency department to get assessed and have an X-ray. However, even if you have been to hospital, I would still recommend getting the advice of a good physio with an interest in sports injuries as soon as you can.

What happens if I don't do the RICER principle?

The effect of swelling and bleeding can slow down the healing process and cause extra scar tissue if the RICER principle is not followed. This can mean

a significantly slower recovery period and the greater chance of re-injury once you return to the game.

Take your injury treatment seriously in the first few days and you may be able to reduce your missed games by 1 or 2, which is good for you and your team.

What shouldn't I do in the early stages?

The RICE principle aims at reducing swelling and bleeding by slowing down the metabolic rate in the area of the injury. There are things that we can do to increase bleeding and these should be seriously avoided in the first 72 hours after a soft tissue injury. These are the HARM factors and stand for:

- **H**eat – don't heat the area as it causes more bleeding
- **A**lcohol – don't drink alcohol as it increases bleeding
- **R**e-injury – be prepared to rest the area to avoid re-injury
- **M**assage – early massage can cause further damage

The Last Word!

Once you have successfully negotiated the first 3 days (72 hours) after an injury it is time to start with the sub-acute treatment regime with your physio. This will often involve massage, stretching, strengthening and modalities like ultrasound. We will deal with these things when we talk about specific injuries in future articles.

I have recently found that the use of compressive garments like "skins" have helped in post exercise recovery and may have a part to play in providing compression after soft tissue injury. This can be a good way to get significant compression to an area over the course of the day and night.

Finally, I would again emphasise the value of getting things right in the first few days after an injury. No amount of fancy treatments can replace the importance of getting the basics right, and the RICER and no HARM principles are basics that can really help in the short and long term management of football injuries.

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