

MANAGING MUSCULOSKELETAL INJURIES

The word 'musculoskeletal' simply means anything to do with the muscles (musculo) and/or bones (skeletal), including tendons and ligaments forming joints and supporting your spine. So, a musculoskeletal injury could vary from a muscle tear or strain; to a sprained ankle where the ligaments are overstretched or torn; to a meniscus or cartilage tear in the knee or a large contusion (muscle bruise) on your thigh.

WHEN SHOULD YOU COMMENCE TREATMENT?

In most cases, 'the early bird catches the worm'. Researchers have found that intervention with physical therapy treatment for acute soft tissue injuries within a few days has many benefits.

Prompt treatment benefits include:

- Relieving your pain more quickly via joint mobility techniques, soft tissue massage, electrotherapy
- Improving your scar tissue quality using techniques to guide the direction it forms
- Getting you back to sport or work quicker through faster healing rates
- Loosening and/or strengthening of your injured region with individually prescribed exercises and techniques
- Improving your performance when you do return to sport, work or simply daily life
- Correcting any biomechanical faults that may be affecting your movement, technique or predisposing you to injury.

WHAT IF YOU DO NOTHING?

Research shows that injuries left untreated do take longer to heal and can result in lingering pain. They are also more likely to recur and leave you with abnormal scar tissue

formation, joint stiffness and muscle weakness.

It's important to remember that symptoms lasting longer than three months become habitual and are much harder to solve. The sooner you get on top of your symptoms the better your outcome.

TREATMENT PHASES

1 Acute - Protection Phase
Early accurate assessment and prompt appropriate treatment is much better than delay. What may appear to be a simple muscle, ligament or soft tissue injury can include a hairline fracture, bone bruising or dislocation. Regardless of what the injury is or where it is on your body the early management is the same – that means the first 24-48 hours.

A soft tissue injury is termed as acute from the initial time of injury and while the pain, bleeding and swelling is at its worst. Your body's aim at this point is to protect your injury from further damage. The usual time frame for your acute symptoms to settle is two to four days post-injury, but this can vary depending on how you treat your injury.

In the first three days after injury, use the P.R.I.C.E. method. If you are unsure on any of these stages ask for advice from your physical therapist

P Protect: Protection is meant to prevent further injury. For example, an injured leg or foot may be protected by limiting or avoiding weight-bearing through the use of crutches, a cane,

or hiking poles. Partially immobilising the injured area by using a sling, splint, or brace may also be a means of protection.

R Rest (to avoid pain and further damage): Rest from painful exercise or movement is essential in the early injury stage. We call this active rest. The saying 'No pain, no gain' does not apply in most cases. The rule of thumb is - don't do anything that reproduces your pain for the initial two or three days. After that, you need to get it moving or other problems will develop.

I Ice (20 minutes every two to three hours): Ice is preferred for the initial two or three days post-injury. Ice should also help to reduce your pain and swelling in traumatic soft tissue injuries, such as ligament sprains, muscle tears or bruising.

C Compression (to support the injury and minimise swelling): Yes. If it is possible to apply a compressive bandage or elastic support to the injury, it will help to control swelling and bleeding in the first few days. In most cases, the bandage/support will also help to support the injury as the new scar tissue is laid down. This should help to reduce your pain. Some injuries will benefit from more support such as a brace or rigid strapping tape.



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Elevation (*above your heart to assist swelling reduction*): Elevation of an injury in the first few days is very helpful. Think where your injury is and where your heart is. Gravity will encourage swelling to settle at the lowest point. Try to rest your injury above your heart. Obviously some injuries are impossible or it would be detrimental to elevate, so please use your common sense and be guided by your pain.

Your chances of a full recovery will be helped if you avoid the H.A.R.M. factors in the first 48 to 72 hours.

H What are the HARM Factors?

Heat: Increases swelling and bleeding. Avoid heat packs, a hot bath and saunas.

Alcohol: Increases swelling and bleeding. Plus, it can delay healing.

Running or exercise: Aggravates the injury which increases pain, swelling and bleeding. Always check with a health professional before resuming sport or exercise.

Massage: Stimulates circulation which is a benefit for healing and relaxation, except in the acute phase where you are wanting to reduce the bleeding and swelling to the injured area. Direct massage to the injured area may aggravate the damaged tissues and is normally best avoided for the first 48 to 72 hours. Indirect massage (away from the injury site) may be helpful.

2 Sub-Acute – Repair Phase

A soft tissue injury is termed as sub-acute when the initial acute phase makes a transition to repairing the injured tissues. This phase commonly lasts up to six weeks post-injury when your body is busy laying down new soft tissue and reducing the need to protect your injury as the new scar tissue, muscle or ligament fibres are beginning to mature and strengthen.

The purpose of physical therapy in the sub-acute injury phase is to assist nature to quickly reduce the inflammation, hasten the healing process and avoid complications such as joint stiffness, muscle tightness and weakness which may predispose you to re-injury.

Treatments in this phase may include:

- Local modalities are used to assist pain reduction and the natural healing response via an increase in energy (electrical, sound, light, magnetic, temperature) to the area. Some examples include, cryotherapy, heating, electrotherapy, ultrasound, laser, TENS. These modalities have short-term benefits that can assist with the earlier introduction of other longer-lasting techniques such as exercise prescription.
- Massage, acupuncture, dry needling
- Joint mobilisation - joint stiffness is a complication associated with both joint and adjacent muscle, tendon and ligament injury. Your physical therapist is highly skilled in regaining full joint motion via a range of skillful hands-on techniques.
- Protective strapping, bracing, supportive tape
- Exercise prescription has been shown by researchers to be the most effective method to hasten recovery, reduce pain and improve your post-injury function. These can start early in this phase and gradually the load and intensity will be increased overtime and tissues heal and strengthen.
 - Specific stretching exercises
 - Strengthening exercises: localised and global. This means strengthening the specific muscle that may have been injured with isolated exercises to that one muscle group. But slowly more functional exercises will be introduced where the muscle or joint needs to work in a co-ordinated manner with surrounding areas. Core stability (that being your pelvis and abdominal, lower back area) are also key areas to strengthen in any back and lower limb injury. Similarly an injury to the upper limb or neck requires strength of the upper back and entire shoulder girdle, even your core, as no muscle or joint works in isolation.
 - Proprioceptive and balance retraining
 - Biomechanics correction: Biomechanics is how your entire system (body) works together through a movement or action. For example how your foot position may affect your legs and hips whilst running or how your trunk rotation affects your shoulder and arm

when throwing a ball. Your body works as a chain, all joints and bones being connected through soft tissues; so any stiffness or weakness in one area can affect a different area predisposing it to injury.

– Function or sports-specific rehabilitation.

3 Late Stage - Remodelling Phase

Your body does not magically just stop tissue healing at six weeks post-injury. Healing is a continuum. At six weeks post-soft tissue injury your healing tissue is reasonably mature but as you stretch, strengthen and stress your new scar tissue, it often finds that it is not strong enough to cope with your increasing physical demand.

When your body detects that a repaired structure is still weaker than necessary, it will automatically stimulate additional new tissue to help strengthen and support the healing tissue until it meets the stresses of your normal exercise or physical function. The period between six weeks and three months post-injury is commonly referred to as the remodelling phase. Not unlike a growing family putting demands on a small one-up one-down house, a home requires remodelling, expansion and alterations. So as you require more from the injured area so your body does some remodelling!

4 Chronic Phase - Ongoing Repair and Remodelling

Beyond three months is referred to as the chronic phase and refers mainly to pain that lasts more than 3 months. However, your soft tissue is constantly being injured by your daily activities and workouts, only to magically repair and remodel the tissue to meet your specific exercise demands. Balancing training, rehabilitation and matches, as well as adequate recovery time, is key to ensure your body adapts in a positive way to the stimulus without becoming overly fatigued and injured.

Your treatment will vary depending upon the needs of your injury. Your physical therapist is an expert in the diagnosis and treatment of soft tissue injuries and the best techniques for your specific injury and phase of healing.

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