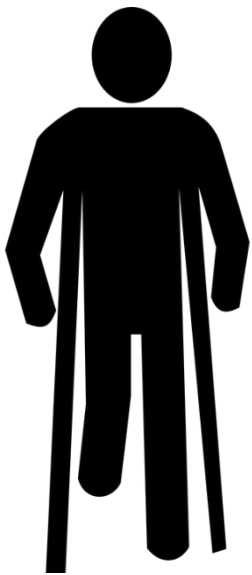




QUEENSLAND
PHYSIOTHERAPY

Injury Prevention



Can injuries be prevented?

Most people rely heavily on their bodies for their lifestyle, whether it be for a physical job, activities of daily living, or recreation such as sport or exercise. When an injury prevents a person from doing these things as they normally would, it can really impact on quality of life. Many injuries are preventable through risk minimization – i.e. identifying risk factors and taking measures to reduce the likelihood of injuring yourself during a given activity. Of course, this doesn't guarantee that you won't be injured (as some risks cannot be avoided) but it does significantly improve your chances of staying fit and healthy.

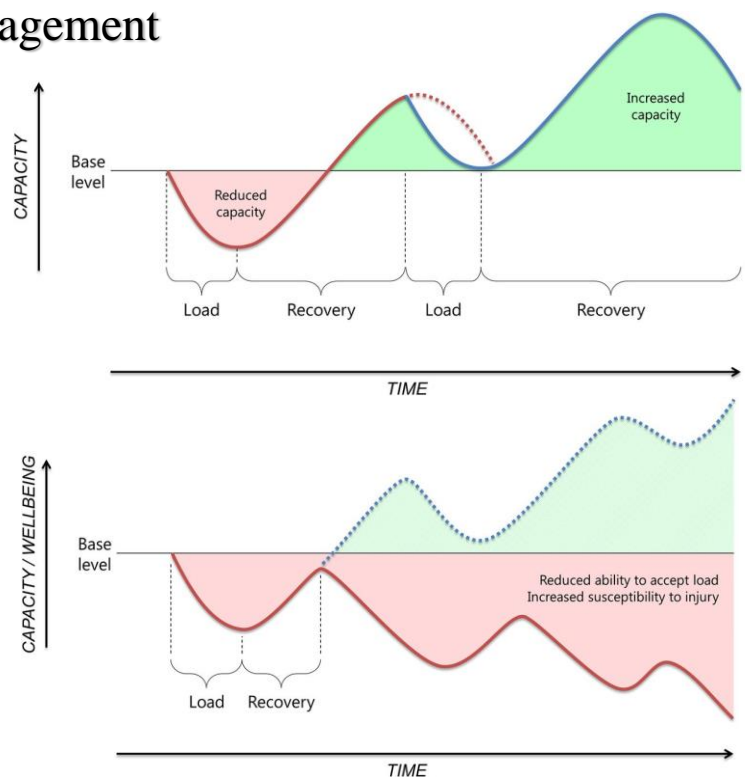
Risk factors can be classified as controllable (e.g. flexibility, training load, equipment) or uncontrollable (e.g. age, weather, other people/opponents) and can be further divided into intrinsic (you and your body) or extrinsic (your environment, equipment, etc.). Risk minimization aims to address controllable risk factors, both intrinsic and extrinsic.

Load Management

Load management refers to monitoring and adjusting the demands that are put on your body. It encompasses many different aspects of loading; including intensity of exercise, duration and frequency of training sessions, repetition of certain activities or movements, the amount of time spent sitting, or any other physical demand.

The graph to the right shows that when the body is put under load, your capacity to perform is reduced (e.g. after a heavy weights session you might feel fatigued and weaker than normal). The higher the load, the greater your capacity is reduced. When you are resting, your body recovers and your capacity increases (e.g. you've built more muscle after your weights session and are stronger than before).

If you put the body under too much load, or if you don't allow enough recovery time between sessions (shown in the second graph), then your capacity gradually decreases. This is when you become more susceptible to injuries, so make sure you are not overloading your body.





Warm Up

For any kind of physical activity, it is important that you warm up appropriately, before putting your body under stress. This increases blood flow to your muscles, improves flexibility, improves reaction speeds and increases your body temperature – all of which help to prevent injuries.

A good warm up should be:

- **Dynamic** – get your joints and muscles moving; include lots of stretching in the movements.
- **Specific** – your warm up should reflect the exercise you intend to do. For cardio warm ups, get your heart rate up. For strength sessions, start with low-level resistance work to prep your muscles. If you play throwing sports, focus on loosening up your shoulders and upper back.
- **Gradual** – ease into the activity! Start low and slow, then build up towards the intensity you'll be training at.

Stretching

Stretching is a great way to increase muscle length and flexibility; a valuable tool in injury prevention. This being said, research shows that simply stretching before or after exercise does not prevent injury. Evidence suggests that stretching can prevent muscle and tendon injuries if done **regularly** – 5-10 minutes every day, or more! Ideally, you should do a combination of static and dynamic stretches.

Balance Training

Balance training helps to improve core stability, strength of postural (stabilizing) muscles, proprioception, force modulation and reaction time. Lots of research has been published that supports balance training as an effective way to reduce the risk of injuries in a number of different sports. These include netball, soccer, basketball and AFL. Simply practicing standing on one leg in sets of 30 seconds can be an effective way to train your balance. For more of a challenge, try doing it on an unsteady surface, or add in head, arm or leg movements while you balance.

Posture and Form

The posture you adopt while sitting, standing, walking or during exercises significantly affects the amount of load you place on certain joints and muscles in your body. Correct form during exercises means ensuring your movement pattern and muscle engagement is appropriate for the specific exercise that you are doing. This is different for every exercise, but is always vital for preventing injury. Maintaining correct form becomes increasingly difficult when you are fatigued, distracted or when you add more load to an exercise. Your physio can assess your form while exercising and help identify any areas that might need correcting.

Other Factors

There are numerous other factors that might increase your risk of injury – workplace setup, exercise equipment, footwear, fitness, muscle strength, coordination, training schedule, etc. These will depend on you as an individual, the ways you use your body and the environment that you are in. For ways that you can minimize your risk of injury as an individual, or for advice about specific injuries you should consult your physiotherapist.

Previous Injuries

If you have had an injury in the past, it is likely that you are more susceptible to injuring yourself again – either a recurrence of the same injury, or a new injury entirely. For instance, if you've sprained a ligament after rolling your ankle, then your balance will be impaired and therefore you are more likely to roll it again. Similarly, if you've strained a particular muscle, the decreased strength in that muscle may cause nearby muscles to overload, as compensation. This is why it is very important that you **fully rehabilitate** after an injury – this usually means strength and control training even after you are pain-free. While you are recovering, strategies such as taping or bracing might be useful in preventing re-injury.

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