Moore Health Physiotherapy Explains: Sprains and Strains

Many of us have had an injury that involves a strain or a sprain; however, lots of people don't understand the difference between these two types of injuries:

1. A ***sprain*** involves an injury (stretch or tear) to a ligament (the tough, fibrous tissue that connects bones to bones and whose purpose is to keep the skeleton in alignment).
2. A ***strain*** involves an injury (stretch or tear) to a muscle or tendon (the tissue that connects the muscle to the bone).

Sprains — In More Detail

Sprains frequently occur when a twisting motion accompanies an outstretched limb, so ankles, knees and wrists are the joints most commonly sprained. To illustrate, think of a runner's ankle twisting sharply inward or outward as their foot strikes an unseen crevice in the road, or consider a snowboarder who overbalances and falls forward onto an outstretched arm. Both of these incidents are likely to result in an 'overstretch' of the ligament at the very least!

Symptoms that commonly indicate that a sprain has been sustained include pain, swelling, bruising and a loss of functional movement in the affected joint. Occasionally, an individual may feel a 'pop' or 'tear' when the injury occurs.

Sprains are commonly 'graded' into three categories to reflect their severity:

- **Grade 1 (minor)** – No tearing of the ligament, no loss of joint function (ie movement), minor discomfort, minimal swelling and no/minimal bruising.
- **Grade 2 (moderate)** – Partial tearing of the ligament. Reduced functioning of the joint, decreased ability to bare weight on affected area and obvious swelling and bruising
- **Grade 3 (severe)** – Complete tearing of the ligament. Loss of functioning of limb, inability to bare weight on affected area, widespread swelling and bruising and severe pain. Surgery may be necessary to restore functioning to the affected area.

Fact: Frequently, the symptoms of a Grade 3 sprain are very similar to that a fracture and an x-ray will often be taken to rule out this possibility.

Strains — In More Detail

Just like a rubber band, muscles are made to stretch. But if stretched too far or if stretched while contracting (i.e. an eccentric contraction), a muscle strain may occur. Strains are often referred to as "pulled" muscles, with hamstring and back injuries amongst the most common type of strains.

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Strains can be "*acute*" or "*chronic*". *Acute* strains refer to a recent injury or trauma (such as one caused by lifting an object that was too heavy), whilst *chronic* strains are usually the result of overuse (i.e. prolonged, repetitive movement of the muscles and tendons.

Like sprains, strains are graded based on their severity:

- **Grade 1 (mild)** – Minimal damage to muscle fibres (i.e. less than 5%).
- **Grade 2 (moderate)** – There is more extensive damage to the muscle fibres but the muscle is not ruptured. Partial contraction of the muscle is still possible.
- **Grade 3 (severe)** – There is a complete rupture of the muscle (i.e. a complete tear across the width of the muscle). No contraction of the muscle will be possible, and the injury may require surgery to return functioning.

Some Tips for Preventing Sports-Related Strains and Sprains

- Avoid exercising or playing sports when you are tired
- Exercise regularly but do not exercise through pain
- Warm up and stretch before commencing sport
- Eat a well-balanced diet to keep muscles strong
- Maintain a healthy weight
- Wear shoes that fit well and are in good condition
- Wear appropriate protective equipment

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