Osteoarthritis – Big Toe

What is Osteoarthritis?

Osteoarthritis (OA) is the most common form of arthritis. It is a progressive, degenerative condition affecting the smooth cartilage that normally protects the ends of the bone. This cartilage slowly becomes damaged and worn causing inflammation and pain. OA of the big toe or first metatarsophalangeal joint is also known as Hallux Rigidus.

What causes Osteoarthritis of the Big Toe?

Posttraumatic: This may be an injury to the joint such as a bone break causing the bones to line up improperly (malalignment), lose stability, or damage cartilage.
Repetitive stress injuries: overuse of the big toe is common in physically active individuals. This may involve repetitive microtrauma to the toe.
Footwear: Often inappropriate footwear (undersized or high heeled shoe) may cause repetitive minor injury.
Endocrine: People with diabetes may be prone to osteoarthritis. Other endocrine problems also may promote development, including hypothyroidism and obesity.
Inflammatory joint diseases: This would include infected joints, chronic gouty arthritis, and rheumatoid disease.
Metabolic: Diseases causing errors of metabolism may cause osteoarthritis. For example, Paget disease and Wilson disease.

Who Gets Osteoarthritis?

Primary OA develops most commonly in people over 50 in joints that were previously healthy.
Secondary OA develops in people younger than primary OA, normally after injury or in joints that were previously abnormal.

What are the signs and symptoms?

- Pain is felt over the top of the first metatarsophalangeal joint (as shown in X-Ray) and may feel like a deep, aching sensation. This area is very tender on palpation.
- There is a painful limitation of joint movement at the big toe. Typically, there is gross limitation of extension (straightening) and some limitation of flexion (bending) at the joint.
- Functionally, it may be painful to put pressure over the toe when walking or standing on your tip-toes. Occasionally bony growths (exostoses) can be felt over the top of the joint.

What will physiotherapy consist of?

The following treatment options may be employed:

Massage encompasses a variety of techniques and is given with sufficient pressure through the superficial tissue to reach the deep lying structures. It is used to increase blood flow, decrease swelling, reduce muscle spasm and promote normal tissue repair.

Mobilisation is a manual technique where the joint and soft tissues are gently moved by the physiotherapist to restore normal range, lubricate joint surfaces, and relieve pain.

Ultrasonic Therapy transmits sound waves through the tissues stimulating the body's chemical reactions and therefore healing process, just as shaking a test tube in the laboratory speeds up a chemical reaction. It reduces tissue spasm, accelerates the healing process and results in pain relief.

Interferential Therapy introduces a small electrical current into the tissues and can be used at varying frequencies for differing treatment effects. E.g. pain relief, muscle or nerve stimulation, promoting blood flow and reducing swelling/inflammation.

Advice regarding lifestyle will be given in order for the balance between rest and activity to be applied.

Other treatments that may be used

Laser Therapy emits beams of light into the tissues of the body, stimulating chemical reactions and having a similar effect to ultrasound though using light energy instead of sound energy.

Acupuncture is an oriental technique of introducing needles into the skin to increase or decrease energy flow to promote pain relief and healing.

Injection Therapy is a specialist procedure, which needs the consent of your G.P. Your physiotherapist might recommend an injection before "hands on" physiotherapy is commenced. A non-harmful steroid and local anaesthetic are injected directly into the injured structure. It has a dramatic effect on removing inflammation and promoting healing.

Podiatry involves an analysis of the foot mechanics and structure during walking or running and correction as appropriate. For osteoarthritis of the big toe this may involve special insoles, or orthotics to correct a pronated (flat) foot.

What should the patient do to help their condition?

Lifestyle changes – keep active but balance rest with activity. Even when having a "good day" do not be tempted to over do it, likewise on a "bad day" keep active within pain limits. Generally avoid activities and footwear that aggravate your condition.

Apply an ice pack – for a maximum of 20 minutes. Do this in acute injuries where there is swelling, inflammation and pain. A bag of frozen peas wrapped in a damp cloth works well because it moulds to the shape of the foot. Ensure that the skin does not change colour (the sign of an ice burn).

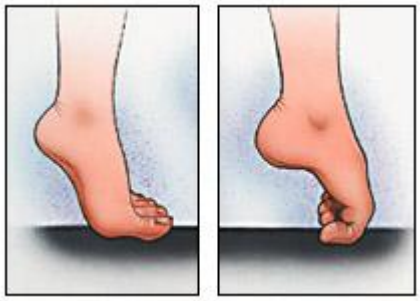
Non-steroidal anti-inflammatory drugs/ Ibuprofen - NSAIDs should be considered only for patients who do not obtain adequate pain relief with paracetamol. Take according to the directions on the packet, up to the maximum daily dose. It is not suitable for people who have a history of stomach ulcers, or for some people with asthma. If in doubt, ask your pharmacist for advice.

Glucosamine and Chondroitin - Glucosamine is believed to play a role in cartilage formation and repair. Chondroitin sulfate is part of a large protein molecule that gives cartilage elasticity. These are very popular and it is believed that they play a role in producing and maintaining new cartilage.

Exercise programme –Your physiotherapist will instruct you as to which of the following exercises to begin with, when to add the others, as well as how to progress the exercises.

1. Big toe flexion stretch

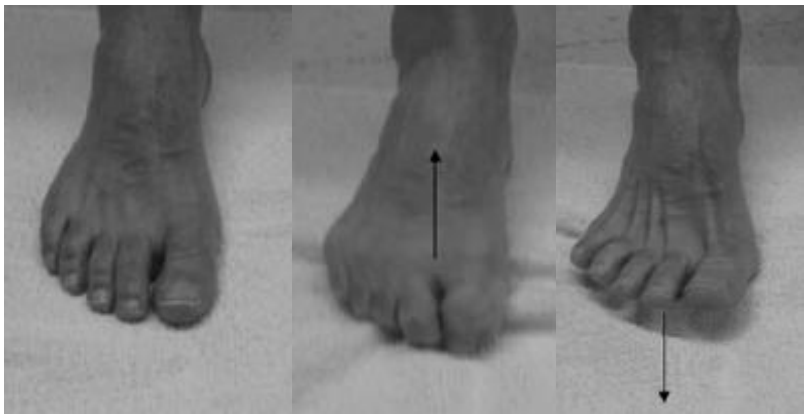
2. Big toe stretches.



1: Bend your ankle and foot towards you and place a finger over the end of your big toe. Slowly pull your toe towards you until you feel resistance or a stretch.
2: On one foot, place your toes flat on the ground whilst lifting your heel of the ground until a stretch is felt. In contrast, curl your toes up, lift your heel of ground and slowly push down on your toes until a stretch is felt.

Hold all stretches for 30 seconds and repeat 5 times.

3. Towel Curls



4. Marble curls

3: Place a towel underneath your foot. Keeping your heel flat on the towel, slowly curl your toes so that you scrunch and drag the towel underneath your foot. Straighten your toes and repeat until no more towel can fit under your foot. This may also be performed with a paper towel.
4: This is similar to exercise three. Practice gripping marbles between your toes - pick them up with your toes and place them in bowl. Repeat 20 times

5. Foot and ankle mobility/strengthening

6. Big toe flexion strengthening.

5: Sit on the floor with knees straight. Without moving your heel, pull your foot towards you. Hold for 10 seconds, and then point your foot down towards the floor. Repeat 8 times.
6: In a sitting position, place your foot over the edge of a step (as shown) or large, thick book. The main joint of your big toe should be rested just on the edge of the step (as shown). Whilst maintaining this position, slowly bend your toes, hold for 5 seconds and then straighten them fully. Repeat 12 times.

What if physiotherapy does not help or resolve my condition?

It is very rare that physiotherapy does not give great benefit or help you to manage your symptoms effectively. In these cases a cortisone injection may be appropriate and in very extreme cases surgery is a possible option. These options can be discussed with your therapist if appropriate.