Metatarsalgia

"Pain in the Ball of the Foot"
What is Metatarsalgia?

Metatarsalgia means pain in the ball of the foot. Pain is caused by inflammation between the heads of the bones in the front of the foot called the metatarsals.

What causes Metatarsalgia?

This is a common foot condition where one or more of the metatarsal heads becomes inflamed and is therefore painful. The most common cause of Metatarsalgia is excessive pressure on the bones at the front of the foot.

Pain and inflammation of the joints at the ball of the foot can develop for several reasons:

- As the result of a bunion that is putting pressure on the smaller toes.
- Wearing high heeled shoes.
- In people who are very active and do high-impact sports.
- In older people. As we age the fat pad under the ball of the foot becomes thinner and this can contribute to pressure at the front of the foot.
- Overweight patients place greater pressure through their feet.
- High arched feet. People with this foot shape are more likely to develop Metatarsalgia because their foot is less flexible.
- Tight Achilles Tendon. Muscular tightness in the calf muscles results in greater pressure at the front of the foot with each step. This can exacerbate Metatarsalgia.

How is it diagnosed?

You will have an examination of your foot by a doctor or specialist. X-rays are helpful to confirm the diagnosis.

What is the treatment for Metatarsalgia?

The first step to treating Metatarsalgia is identifying things that are contributing to the pain. The majority of patients treated non-surgically, but occasionally surgery is required.

Non-surgical options include:

- Wearing well padded shoes with soft gel inserts
- Weight loss
- Modifying footwear- wear wider shoes that don’t continue to inflame the nerve in the front of the foot
- Orthotics (insoles for your shoes)- metatarsal dome
- Physiotherapy for stretching exercises- so you decrease the pressure on the front of your foot
Typically, a combination of improving your muscle’s flexibility and wearing Orthotics in your shoes, this should considerably improve the pain. Here are some exercises that will help with flexibility at the front of your foot and at your ankle:

<table>
<thead>
<tr>
<th>Calf stretch 1-</th>
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<tbody>
<tr>
<td>Stand with one foot in front of the other. Keeping your knee of the back leg straight, lean towards a wall (see picture). Feel a strong pull in the back of the back leg (in calf and Achilles tendon). Hold for 20-30 seconds. Repeat 3 times, each leg.</td>
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<th>Calf stretch 2-</th>
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<tr>
<td>Stand with one foot in front of the other. Lean towards the wall in front of you, but now let your knee bend (see picture). Feel a strong pull in the back of the back leg (in lower part of calf muscle). Hold for 20-30 seconds. Repeat 3 times, each leg.</td>
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**What are the surgical options for Metatarsalgia?**

There are two operations that can be used to treat Metatarsalgia. These are:

1. Weil’s osteotomy
2. Fusion of the small bones in the toes (interphalangeal joint fusion)

If a person has fixed clawing or hammering of their toes as well as pain at the ball of the foot, then fusion of these joints is required to reduce pain and straighten the toes. You will decide with your Consultant Surgeon which operation is appropriate for your feet.
What is involved with a Weil’s osteotomy?

A Weil’s osteotomy involves cutting of the bones at the base of the smaller toes (metatarsals). First a small incision is made at the top of your foot over each toe joint being operated on. The bone (metatarsal) is then cut. This is then displaced slightly and fixed with a small screw to allow for there to be less pressure on the ball of the foot. This operation can be performed on any of the smaller toes. There are stitches put in place to close the wounds.

What is involved with fusion surgery (PIP joint fusion)?

This type of operation aims to improve pain at the ball of the foot but also to straighten hammered or clawed toes that are fixed. This operation can be performed on any of the smaller toes. An incision is made at the top of the foot and the surfaces of the joints at the base of the smaller toes are cut. In addition, the tendons on the top of the foot are released or cut to allow the hammer or clawed toe to come straight again. A K-wire is then placed through the bone and out the tip of the toe. This allows this joint to fuse together and stay straight.

K-wires are smooth, stainless steel wires used to keep the smaller toes straight while they heal. These are wires that come through the tips of the toes and have rubber on the tips to hold in place.

Below is a picture of a second toe that is hammering:

Are there any risks associated with having the operation?

Possible complications of surgery include:
- Stiffness of the foot
- Bleeding from the incisions
- Delayed incision healing
- Infection
- Pain
- Injury to nerves – Numbness or tingling can occur at the wound or in the foot. This is usually temporary but in some it may be permanent.
- Blood clots- Deep vein thrombosis (DVT) or pulmonary embolism (PE) is rare. If you or your family have a history please let us know.
- Need for further surgery
- Return of your symptoms

What do I need to do before the operation?

It is a good idea to get things organised for your discharge from hospital. Below is a list of things it might be a good idea to organise:

- Help with household tasks
- Food cupboards stocked up
- Help with shopping
- Help with children, pets and relatives organised for your return home
- Someone to bring you to and from the hospital

What can I expect after the operation?

You will have wool and crepe bandaging on your foot and you must wear an Orthopaedic shoe for a period of 6 weeks. You can walk on your heel in this time, while the wound is healing.

What happens after discharge from hospital?

You will be walking slowly, on your heel. You will be seen by the Nurses at the hospital for them to remove your bandaging and clean the incisions. You will be given adequate medication for pain from the Nurses on the ward for you to take home with you. You will be making steady progress back towards normal day-to-day activity across 6 weeks.

When can I return to work?

Your own circumstances will determine when you feel ready to go back to work. If you have an office-type job and you can elevate your leg then you should be able to return to work within 7 days. If your job requires a lot of walking or is strenuous then you may need 2-3 weeks off work. Patients can self-certificate their sick leave for 7 days. If you require a sick certificate please ask your GP.
When can I return to sports?
You will be able to return to normal sporting activity usually between 8-12 weeks after your operation. These exact timeframes may vary slightly and will ultimately be decided by your Consultant Surgeon and the progress you are making.

When can I return to driving?
You must be free of pain and able to perform an emergency stop. This will also depend on which foot was operated on (right or left). If you have had left sided surgery and drive an automatic car you may be able to drive 2-4 weeks following surgery. Your insurance company must be notified regarding the type of operation that you have undergone to ensure that cover is valid.

What should I do if I have a problem?
If you experience severe pain, excessive swelling, inflammation or discharge please report it to your GP. If you cannot contact your GP you should contact A&E.

Further information and advice
For further information and advice please contact NHS direct 24 hours a day on 0845 4647 or www.nhsdirect.co.uk.

You can contact our Patient Advice and Liaison Service (PALS) on freephone 0800 7838058 or pals@dchft.nhs.uk

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Last updated: October 2008
Code: