

# Metatarsalgia

## What is metatarsalgia?

*Literally, "metatarsalgia" means pain in the metatarsals of the foot. Usually the term is used to describe pain in the ball of the forefoot.*

The pain is usually on the sole of the foot and often sharp, described as similar to walking on pebbles or like having a stone in their shoe. However, there are a variety of possible causes of metatarsalgia and consequently the type of pain described varies also. Some people describe localised pain to one or two toes whilst others describe more generalised pain or burning pain.

## What are the symptoms?

The main symptom is that of pain. Sometimes there is associated swelling in the foot although frequently there is none. There may be build up of hard skin over the painful area. This is called a callosity. People usually report more pain when taking weight through the affected foot but sometimes also complain of pain when at rest or in bed at night. Sometimes numbness accompanies pain into the toes. Depending upon the cause, some people might have noticed a problem with the shape of their foot or toes which may also be relevant. Overall, these symptoms can often interfere with comfort in shoes and ability to walk or play sport.

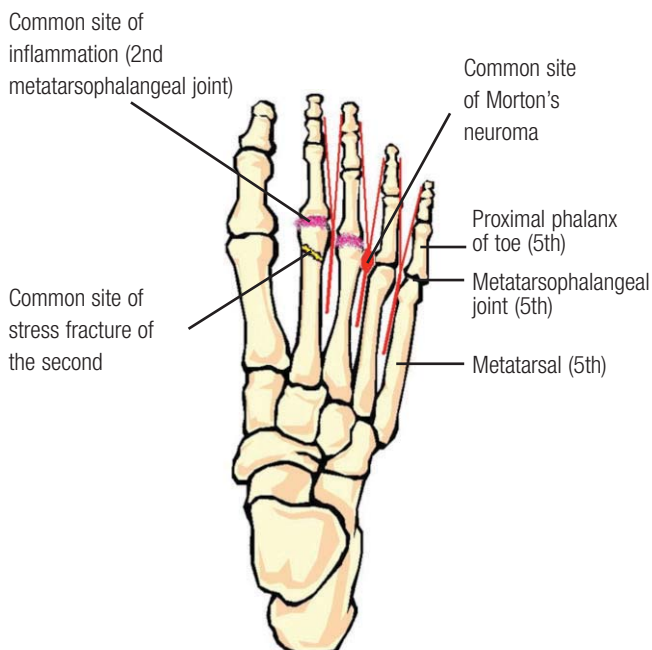


Diagram of the foot showing some of the common causes of metatarsalgia

## What are the causes of Metatarsalgia?

There are many causes of metatarsalgia and your surgeon will make a careful assessment to decide upon the correct diagnosis and treatment.

### Some common causes include:

#### Problems with the mechanics of the foot (the way body weight is distributed)

- Overweight
- Overuse (e.g. sports)
- Hallux valgus (bunions)
- Hallux Rigidus (arthritis of the big toe)

#### Problems with inflammation in the joints of the forefoot

- Arthritis (various different types can affect the foot)
- Gout

#### Problems with the bones

- Fracture of a metatarsal
- "Stress reaction" in a metatarsal (can precede a fracture)

#### Problems with the nerves

- Morton's neuroma: This is a common condition in which one or more of the nerves supplying sensation to the toes are squeezed and irritated over a period of time causing scarring of the nerve and in turn more persistent pain in the forefoot (often including a burning pain and feeling of numbness in the affected toes).

#### Problems with the toes

- Deformed toes rubbing in the shoe

## How is a diagnosis made?

Finding the correct diagnosis and hence cause of the metatarsalgia is essential to being able to advise the correct treatment. Sometimes more than one diagnosis is present.

Your orthopaedic surgeon will talk to you to gain clues from the history of your condition and will then examine you. Xrays and other investigations such as magnetic resonance imaging (MRI) may also be required and the surgeon will discuss these with you. Only when a diagnosis has been made can treatment be initiated.

## Metatarsalgia

# What treatment is available?

The treatment offered will obviously depend upon the cause (diagnosis). Here are some of the common conditions causing metatarsalgia and their treatment:

### 1. Problems with the mechanics of the foot (the way body weight is distributed)

This covers a variety of diagnoses but in principle, the options are to try and manage the problem with non-operative treatments including custom inner soles, modification of footwear/footwear advice, physiotherapy, restricted weight bearing (acute problems) and occasionally steroid injections. If these treatments are not successful then surgery may be considered.

For example consider a patient who has a bunion with associated metatarsalgia (pain under the forefoot); initially, change in footwear and/or custom insoles may help with the metatarsalgia but if not, surgery to correct the bunion may improve the mechanics of the forefoot to resolve the metatarsalgia.

### 2. Problems with inflammation in the joints of the forefoot

Depending upon the cause of the inflammation, the treatment is directed at trying to reduce the inflammation with cushioning from inner soles as well as anti-inflammatory medication (or disease specific medication) and sometimes steroid injections (corticosteroid is a strong anti-inflammatory). Sometimes, if these treatments do not provide relief of pain then surgery is required.

For example consider a patient who has rheumatoid arthritis with associated metatarsalgia (pain under the forefoot); initially, change in footwear and/or custom insoles may help with the metatarsalgia but if not, surgery to the metatarsals to shorten them may be considered to make the foot more comfortable by allowing the specialised padding in the sole of the foot to sit back in the correct position. There are a variety of different surgical procedures that may be recommended depending upon the exact nature of the problem and the surgeon will discuss these with you.

### 3. Problems with the bones

If a fracture is identified then usually, the treatment will involve resting the broken bone which may involve splinting it in a removable boot (specialised boot with adjustable air cells inside). Use of these modern specialist boots can usually avoid the need for traditional cast. The surgeon will also recommend a period of restricted weight bearing and reduced activity to try and get the fracture to heal. The healing of the fracture will be monitored on xrays over a period of several weeks (or sometimes months).

If the fractured bones will not heal despite such treatment (or if the surgeon identifies the type of fracture as a very difficult fracture to heal) then surgery to "fix" the fracture using screws and / or plates under general anaesthetic may be recommended. This can sometimes allow earlier return to activity.

### 4. Problems with the nerves

The most common nerve problem is that of what is called **Morton's neuroma**. The diagnosis is often confirmed with an ultrasound scan or MRI scan. There are a lot of treatments put forward for this condition but many do not have much evidence to suggest that they are successful. Inner soles and changes in footwear can sometimes help relieve these symptoms. Sometimes your surgeon may recommend that you have an ultrasound guided injection of steroid to the nerve which can provide relief for some patients (although not always permanent) and sometimes surgery is recommended. Surgery involves either removing the troublesome nerve through an incision on the upper surface of the forefoot, or, sometimes the ligaments trapping the nerve are released. Your orthopaedic surgeon will discuss the type of surgery required with you. "If the nerve is removed, the pain is usually abolished or substantially reduced in 90-95% of patients but often leaves permanent numbness in the web space supplied by the nerve (this is not usually a problem).

### 5. Problems with the toes

Problems with toes causing pain often relates to deformities of the toes. Once again, your surgeon may recommend that you see a podiatrist in the first instance to see if relief can be obtained with the use of devices such as toe socks, silicone spacers and modification of footwear. Sometimes surgery will be recommended to correct the deformity and the exact nature of the surgery obviously depends upon a careful assessment of the exact nature of the toe deformity and which part of the toe is painful. This type of surgery may involve fusing or removing the joint affected joint(s) or planning intricate cuts in the forefoot bones (osteotomies) to realign / correct the deformities.

## sussexfoot&anklecentre

The Sussex Foot & Ankle Centre was founded in 2005 by two orthopaedic surgeons, David Redfern and Stephen Bendall, with the aim of providing a high quality specialist service for the diagnosis and treatment of all foot and ankle problems. Both orthopaedic surgeons are specialists in problems affecting the foot and ankle and have many years of experience. They operate the service with outpatient clinics at the Brighton and Haywards Heath Nuffield Hospitals.

The sussex foot and ankle center strives to provide the best advice and treatment for all foot and ankle problems. This includes sports injuries and trauma, bunions, metatarsalgia, and arthritis. Both surgeons have particular interests in minimally invasive surgery and are at the forefront of developing such techniques in this country.

Both surgeons are also academically very active and have appointments within the national (BOFAS) and international (EFAS) professional foot and ankle surgery societies.

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