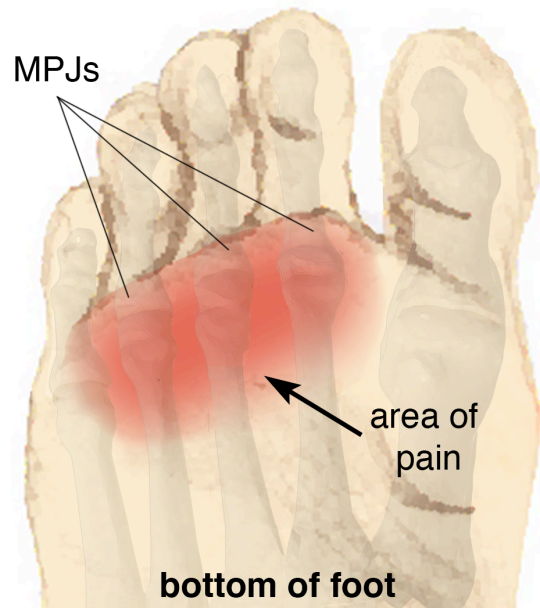


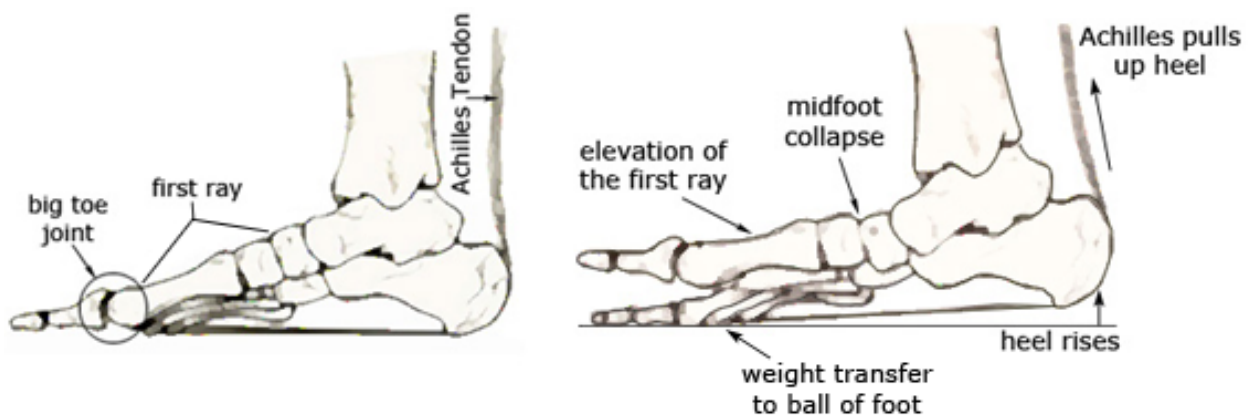
METATARSALGIA ball of foot pain

Metatarsalgia, pronounced meh - TUH - tar - SAL - juh, is a catch-all term used to describe pain in the ball of the foot. Pain commonly occurs under the 2nd, 3rd and 4th metatarsal-phalangeal joints (lesser MPJs), as indicated in the image to the right. The most common complaint is a gradual onset of deep, dull pain in the ball of the foot. The pain may be sharp and is generally worse during the "push off" phase of walking.

Metatarsalgia can be caused by trauma, arthritis, infection or previous foot surgery, but is most commonly caused by abnormal foot mechanics. Poor quality shoes and repetitive stress contribute to the development of metatarsalgia and aggravate the condition. The big toe joint is designed to carry a great portion of the body weight during the "push off" phase of walking. When the big toe joint doesn't carry its fair share of the weight, due to faulty foot mechanics, the weight is transferred to the lesser MPJs (ball of the foot) resulting in inflammation and pain.



The foot transfers weight from the heel to the forefoot when walking. To push the foot off the ground, the calf muscle contracts, lifting the heel and propelling the body forward. When the Achilles tendon and calf muscles are tight and the foot is flexible, the heel rises early causing the foot to rotate out and the arch to collapse. Abnormal stress is placed through the midfoot, resulting in elevation of the first ray. When the first ray elevates, the big toe joint can no longer function properly and weight is transferred to the lesser metatarsal phalangeal joints (MPJs).



Treatments

The initial treatments for metatarsalgia consist of calf stretching, supportive shoes, and padding. Prefabricated orthotics may be helpful and it is important to eliminate repetitive stress. Repetitive stress is a repeated force to the ball of the foot which may occur with running, stair climbing and other sporting activities. Ice and anti-inflammatory medications can decrease pain and inflammation when used with the treatments listed below.

Calf Stretching

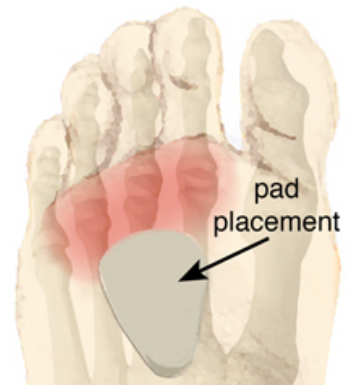
Stretching the calf muscles minimize the early lift of the heel when walking which decreases stress on the midfoot, alleviating pressure on the ball of the foot. A series of calf stretches should be performed at least three times a day.

Shoes

Shoes may be the most important treatment for ball of foot pain. A soft, flexible shoe will worsen the condition and increase pain. Your shoes should be supportive, rigid through the midfoot and have a heel of about 1/2 - 1 inch. A high heel of 2 inches or more will increase pain. A shoe with a 1/2 - 1 inch heel will distribute the pressure between the heel and the forefoot, decreasing the pull of the Achilles tendon and minimizing stress through the midfoot.

Pads

Metatarsal pads can be a very effective treatment when placed appropriately in the shoe. The pads distribute pressure more evenly under the ball of the foot, minimizing pressure under the ball of the foot. It is very important place the pad correctly. The pad should NOT be placed under the area of pain. Most pads are designed to be placed in the shoe or on an orthotic and should sit behind the ball of the foot. Pads come in different sizes to accommodate different foot sizes and variations in the area of pain. Notice in the image to the right how the pad sits behind the MPJs and the area of pain.



Prefabricated Orthotics

Semi-rigid prefabricated orthotics support the midfoot, control pronation and distribute pressure. This support and pressure distribution alleviates excess stress on the ball of the foot. The orthotic should be worn in a supportive shoes with a 1/2 - 1 inch heel. The pad can be placed on the orthotic. The pads and orthotics can be obtained in the Podiatry Cast Room.

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PODIATRY DEPARTMENT

