

Common Foot Pathologies

Objectives

- Identify common deformities and conditions relating to the lower extremity.
- Discuss the significance and relationship of the pathology and the effects on selecting footwear.
- Compare the pathology when it relates to someone with and without Diabetes Mellitus.



Condition: Onychomycosis (Nail Fungus)

A common disease of the nails in which the nails become thickened and discolored. As the infection progresses, the nail can become brittle and break off.

Cause:

Aging is the most common risk factor due to diminished blood circulation. Perspiring heavily, humid/moist environment, wearing socks and shoes that hinder ventilation and do not absorb perspiration, athlete's foot, minor skin or nail injury.

Treatment:

Oral antifungal medications; long term topical



Condition: Edema (Swelling)

An abnormal accumulation of fluid trapped beneath the skin very commonly found in the lower extremities such as the feet and legs; venous insufficiency

Cause:

Medications; liver or kidney disease; heart failure; venous insufficiencies; pregnancy

Treatment:

Medications; Elevate feet above heart level; compression hosiery; Intermittent pneumatic compression



Edema (swelling) of the ankles and feet



Condition: Lymphedema

Abnormal collection of high-protein fluid just beneath the skin; develops when lymph vessels are damaged or lymph nodes are removed (secondary lymphedema) but can also be present when lymphatic vessels are missing or impaired due to a hereditary condition (primary lymphedema)

Cause:

Hereditary, surgery, infection, cancer

Treatment:

Exercise, massage therapy, leg wraps (tightest at toes), compression hosiery, pneumatic compression (Not to be confused with venous insufficiency edema with differing treatment)



Normal Leg



Swelling and inflammation

Lymphedema Leg



Condition: Charcot Arthropathy

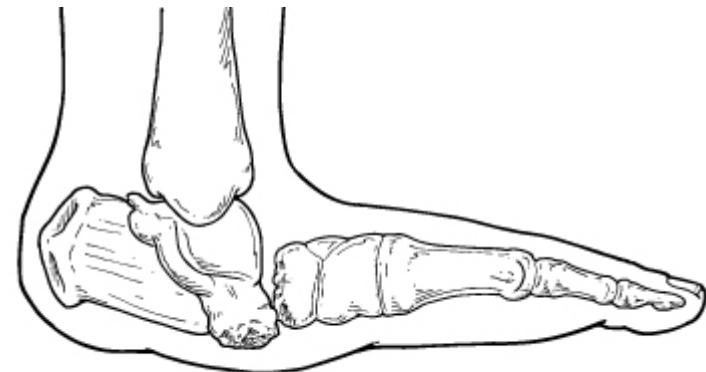
A progressive musculoskeletal condition characterized by joint dislocation, fractures and deformities. It results in progressive destruction of bone and soft tissue of weight-bearing joints, most commonly in the foot and ankle. It is most commonly secondary to diabetes.

Cause:

Loss of sensation and proprioception leads to repetitive trauma the joint ; damage goes unnoticed by the neuropathic patient, and the resultant inflammatory resorption of traumatized bone renders that region weak and susceptible to further trauma

Treatment:

Pressure relief (off-loading) and immobilization with total contact casting (TCC) are critical to helping ward off further joint destruction; walking braces



Charcot Foot



Condition: Plantar Fasciitis “First Step Pain”

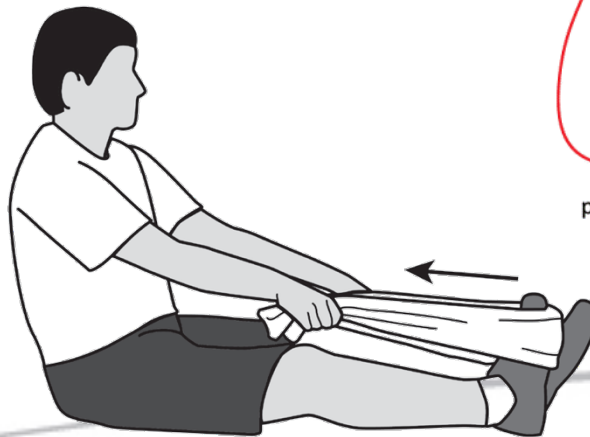
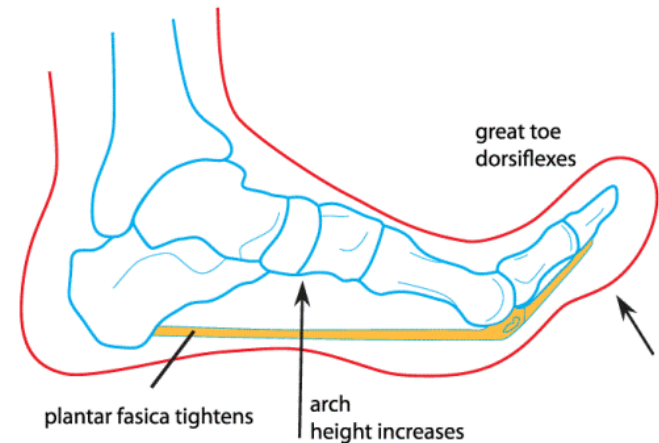
Inflammation of the plantar fascia (Common cause of heel pain)

Cause:

Overuse-long period of standing, increase in exercise, obesity, improper footwear

Prevention/Treatment:

Arch supports; anti-inflammatory medications; cortisone injections; stretching, night splints



**Condition: Posterior Tibial Tendinitis/Dysfunction
(Adult Acquired Flatfoot)**

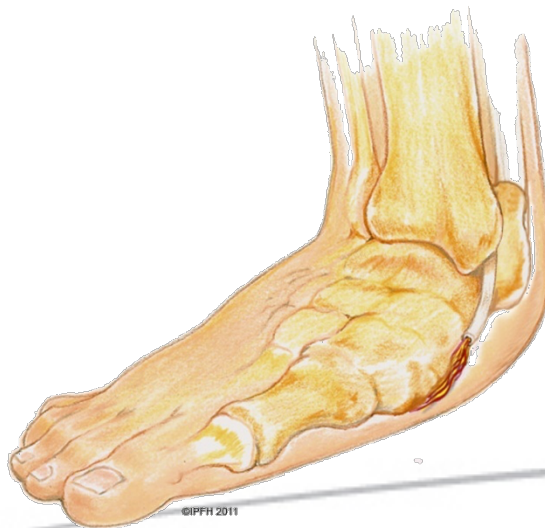
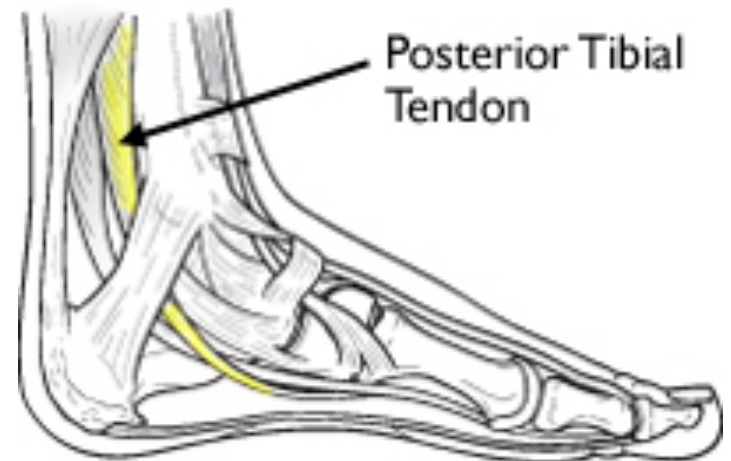
Inflammation/Stretching/Tearing of the posterior tibial tendon and inability to support or stabilize the arch of the foot

Cause:

Injury; Underlying biomechanical defect; Overuse from walking, running, hiking

Treatment:

Rest, Ice, anti-inflammatory medications, orthotics, bracing, surgery in some instances, physical therapy



Condition: Stroke (Drop Foot)

Brain cells are deprived of oxygen—the result can be memory and muscle control loss-- difficulty lifting the foot up (dorsiflex)

Cause:

More likely to affect people if they are overweight, aged 55 or older, family history, lack of exercise, drink heavily, smoke or use illicit drugs. Foot drop can also be caused by nerve or spine injuries.

Treatment:

Aspirin, surgery, rehab, shoe modification (toe skater), bracing, build-up on contralateral shoe



Condition: Limb Length Discrepancy

Unequal leg lengths due to a number of factors including hip replacement, scoliosis, or hyperpronation conditions.

Cause:

Hip/Knee surgery/fracture, scoliosis, hyperpronation, congenital

Treatment:

Heel and sole lift



Condition: Deep Vein Thrombosis (DVT)

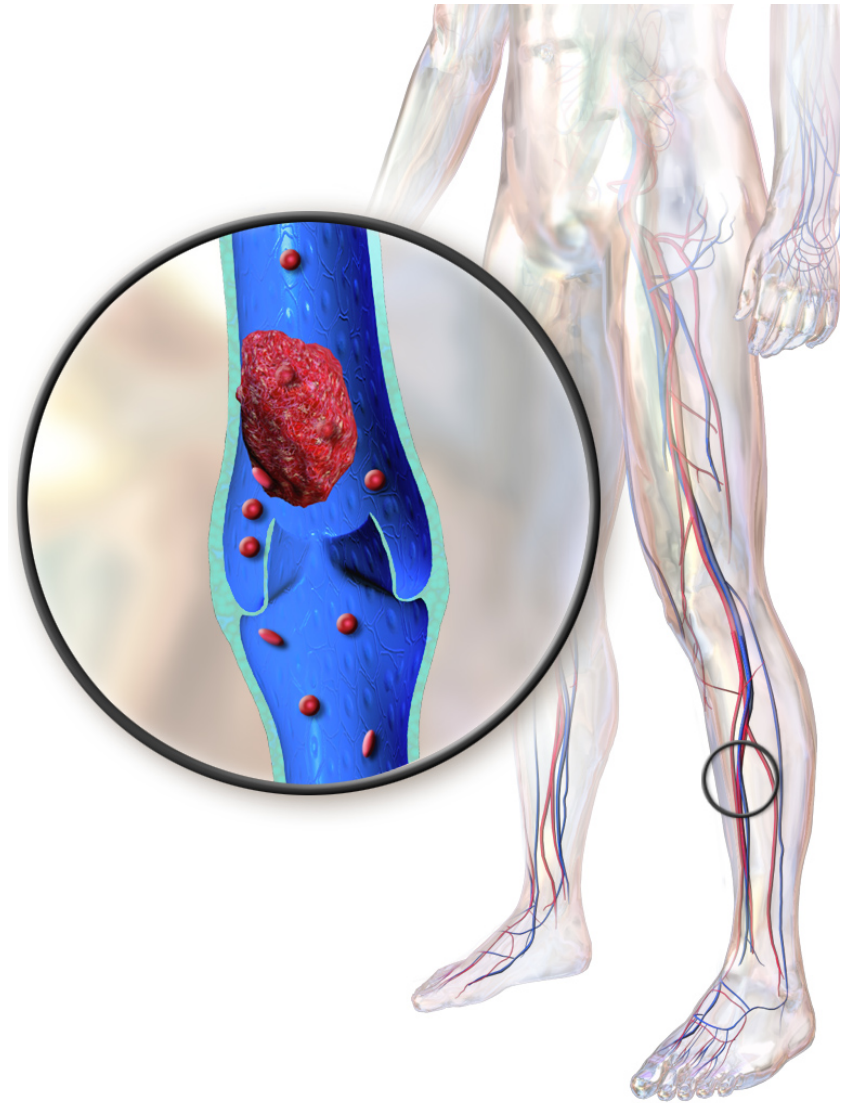
Formation of a blood clot in a deep vein and causes pain, swelling and redness; Pulmonary Embolism (PE) is a detachment of a clot which may result in death if it reaches the lung

Cause:

3 Factors: Virchow's triad—venous stasis (slow blood), hypercoagulability (clotting), and changes in the endothelial blood vessel lining (such as physical damage or endothelial activation)

Treatment/Prevention:

Frequent walking, calf exercises, anticoagulants, aspirin, graduated compression stockings, and intermittent pneumatic compression.



Condition: Morton's Toe

A condition in which the first ray is shorter than normal. Sometimes results in callouses under the 2nd and 3rd metatarsals

Cause:

Hereditary

Treatment:

Proper length shoes, foot orthoses



Condition: Ingrown Nails

Often painful condition in which the nail grows so that it cuts into one or both sides of the nail bed. Possible infection if left untreated.

Cause:

Improperly fit shoes, poor nail care, trauma, hereditary

Treatment:

Soaking in water and salt, surgical treatment, properly fitting shoes



Condition: Plantar Warts (Veruca)

Caused by a virus (human papillomavirus-HPV); the virus attacks compromised skin through direct contact, entering through tiny cuts and abrasions

Cause:

Viral

Prevention/Treatment:

Changing socks/shoes regularly; wear footwear in communal showers; medications and surgery



Condition: Gangrene

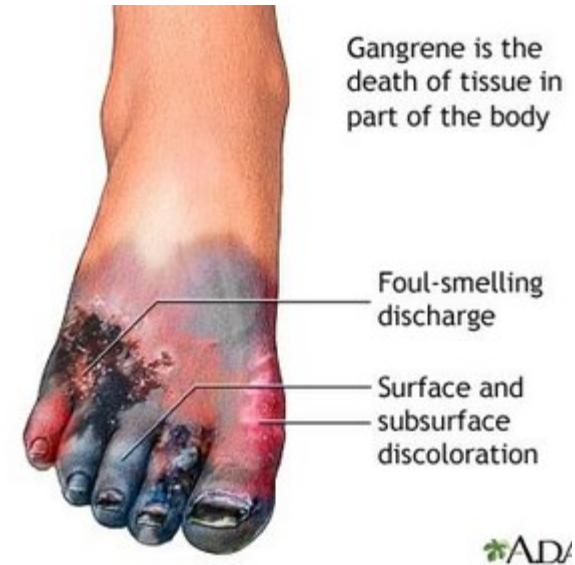
Body tissue dies; can also occur inside the body

Cause:

Diabetes, PAD, Atherosclerosis, smoking, trauma, obesity, may occur after an infection

Treatment:

Debridement, surgery/amputation, maggot therapy, hyperbaric oxygen therapy



Condition: Hallux Limitus/Rigidus

Limitus: Limitation of motion at the first MTP joint that results in a functional impairment.

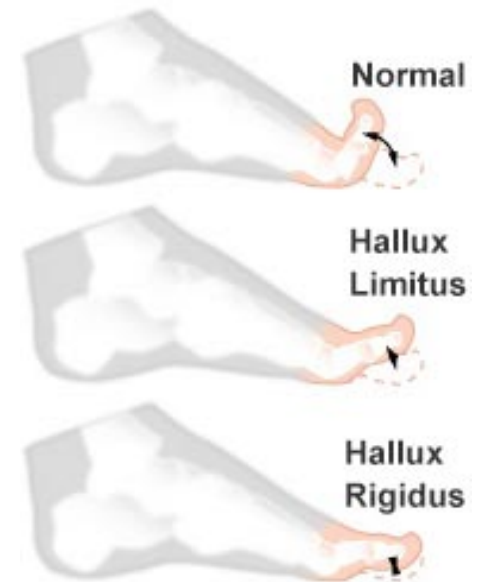
Rigidus: total lack of motion of the first MTPJ. Less than 20° dorsiflexion is approximately the degree at which the joint translates from limitus to rigidus. Pain and swelling sometimes results

Cause:

Previous trauma and/or wear and tear of first MTPJ

Treatment:

Foot orthotics, Rigid Morton's extension/ footplate, shoe modifications— rigid rocker bottom, medications (anti-inflammatory drugs), and/or physical therapy



Condition: Equinus

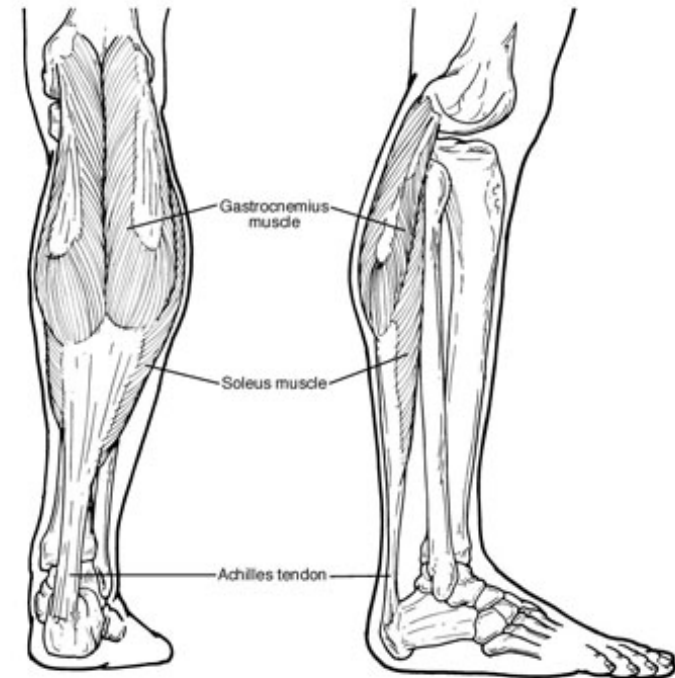
Limited dorsiflexion of the foot; Compensate by toe-walking.

Cause:

Tightness in the Achilles tendon or calf muscles; congenital; acquired through situations limiting the upward movement for periods of time, such as casts, crutches or constant use of high heels; Diabetes can also cause tightness of the Achilles tendon

Treatment:

Calf stretching, night splints, heel lifts, and arch supports or orthotics



Condition: Chronic Ankle Instability

Weakness in ankle; chronic ankle sprains. Can be functional instability or mechanical instability.

Cause: Peroneal tendon weakness, multiple ankle sprains,

Treatment: Supportive Shoes, Foot Orthoses; Bracing; Physical Therapy (Stretching/ Strengthening); Surgery



Additional Terms:

Sensate-with feeling

Insensate-without feeling

Ischemia-restriction in blood supply, generally due to factors in the blood vessels

Debridement-is the medical removal of a patient's dead, damaged, or infected tissue to improve the healing potential of the remaining healthy tissue.

Acute-short onset; rapid course

Chronic-persistent and lasting medical condition



THANK YOU!

