

Foot and Ankle Problems in the Senior Population

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Anatomy of the Foot

Foot Structure and function often impacts the ankles, knees, hips and back. Your foot has:

- 26 Bones
- 33 Joints
- over 100 ligaments

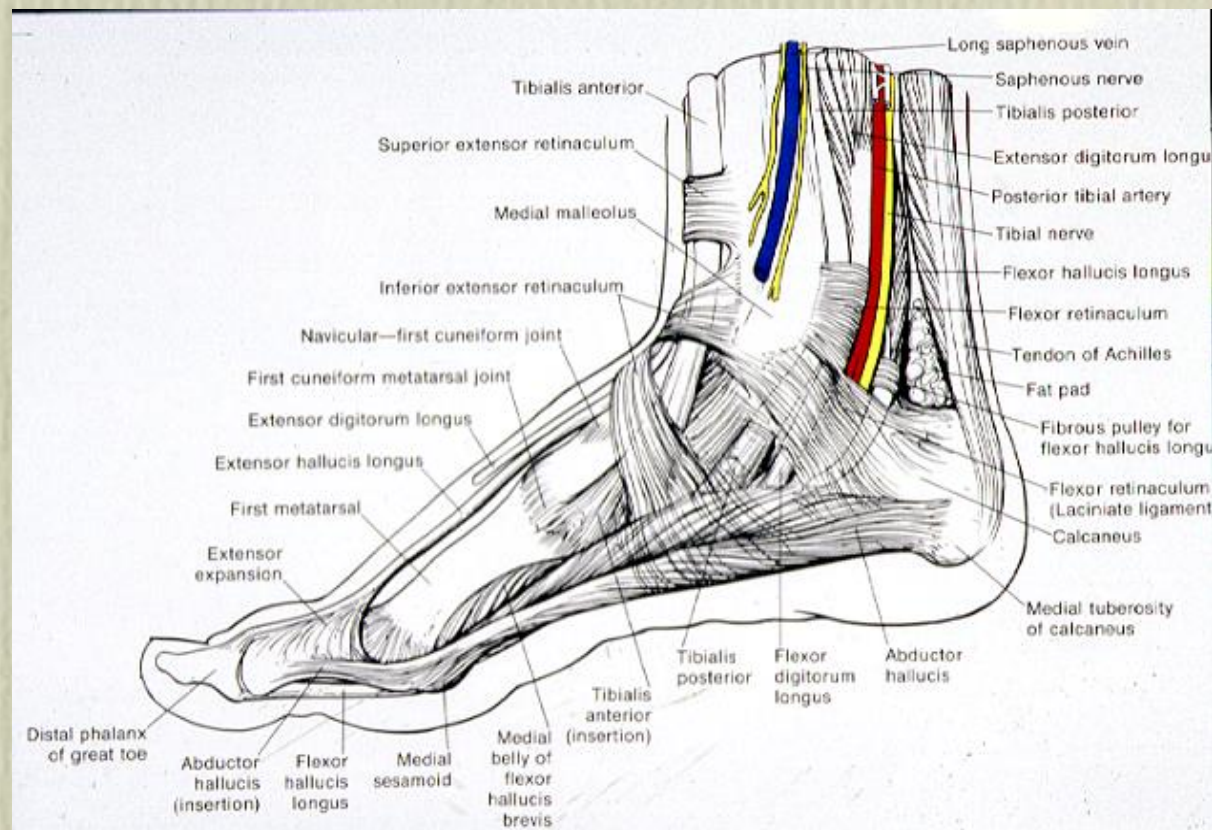


“When our feet hurt, we hurt all over”

~Socrates

Common Pains

- Heel pain/bone spurs
- Bunion
- Hammertoes
- Flatfeet
- Ankle Sprains
- Foot and Ankle Arthritis
- Diabetic Foot



Heel Pain/Plantar Fasciitis

- Inflammation and pain along the plantar fascia
 - the tissue band that supports the arch on the bottom of the foot
- Pain to the bottom of the heel at the point where the plantar fascia attaches to the heel bone
- Is not necessarily associated with the heel spur
- Over 90% resolve with conservative treatment



Plantar Fasciitis Symptoms

- Pain on standing after periods of inactivity or sleep
- Pain subsides, with returns to activity
- Pain related to shoe wear
- Radiating pain to arch and/or toes
- In later stages pain persists throughout the day
- Pain varies in character: dull/ache, “bruised” feeling, burning and tingling, or sharp pain



Plantar Fasciitis

- Causes
 - Biomechanical abnormalities
 - Tight calf muscle
 - Poor shoe choice
 - Weight gain
 - Hard work surface

Heel Pain/other causes

- Stress fracture
- Arthritis
- Achilles tendon problems
- Bone cyst
- Nerve entrapment
- Low back or degenerative discs problems

Diagnosis and Treatment

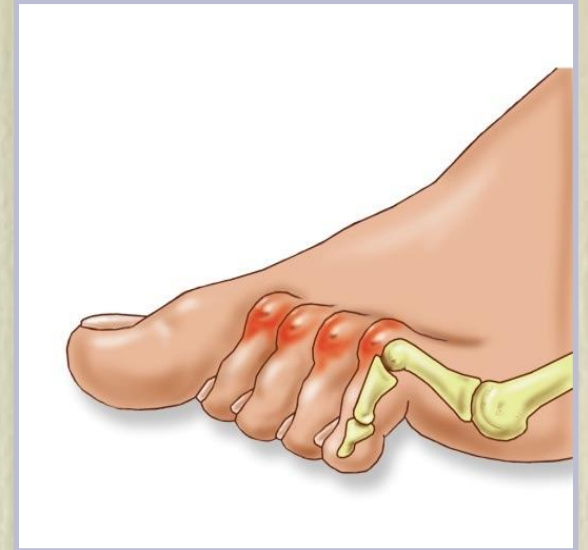
- **Clinical diagnosis**
 - pain with pressure the to the heel or arch
- Radiographs (rule out other diagnosis)
 - bone spur - effect no cause
- Nerve conduction studies (nerve entrapment)
- MRI (stress fracture/bone cyst)



Treatment

- **Stretching exercises:** calf stretches, fascial massage.
- Avoid going barefoot
- Ice/Oral NSAIDs
- **Limit activities:** Cut down on extended physical activities
- **Shoe modifications:** Stiff soled supportive shoe
- **Orthotic devices:** Help Support the arch
- **Injection therapy:** Corticosteroid, PRP, Amnion.

Hammer toes



- Contracture of the toe at the first/and or second joint
- Any toe can be involved, mostly 2-5
- More common in women



Hammer toes

- The most common cause of hammertoe is a muscle/tendon imbalance
- Hammertoes may be aggravated by shoes that don't fit properly.
- A toe is too long and is forced into a cramped position



Symptoms of Hammer toes

- Pain upon pressure at the top of the bent toe (usually due to footwear)
- The formation of corns on the top of the joint or between toe
- Redness and swelling at the joint contracture
- Restricted or painful motion of the toe joint
- Pain in the ball of the foot at the base of the affected toe

Treatment - conservative



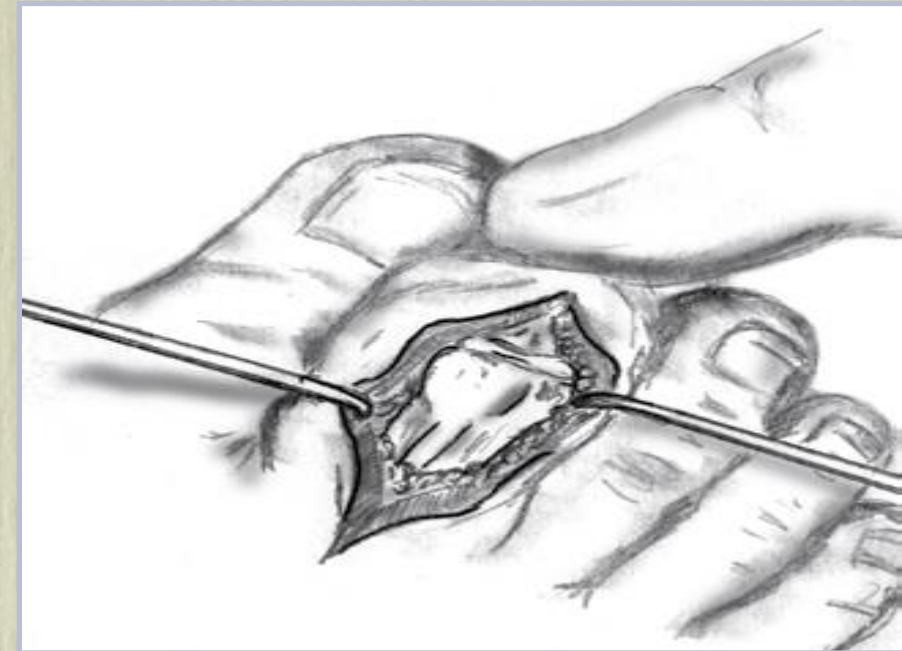
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Treatment - Surgical

- For less severe hammertoes:
 - Tendon release (if flexible)
- For more severe hammertoes:
 - Removal of a portion of bone
 - Fusion (joining of bones)
 - Minimally Invasive approach (MIS)





- What is a bunion?

- “BUMP” is progressive

- Mostly genetic

- Instability of the joint drifts away



Bunions are



causing the bone to

Bunion

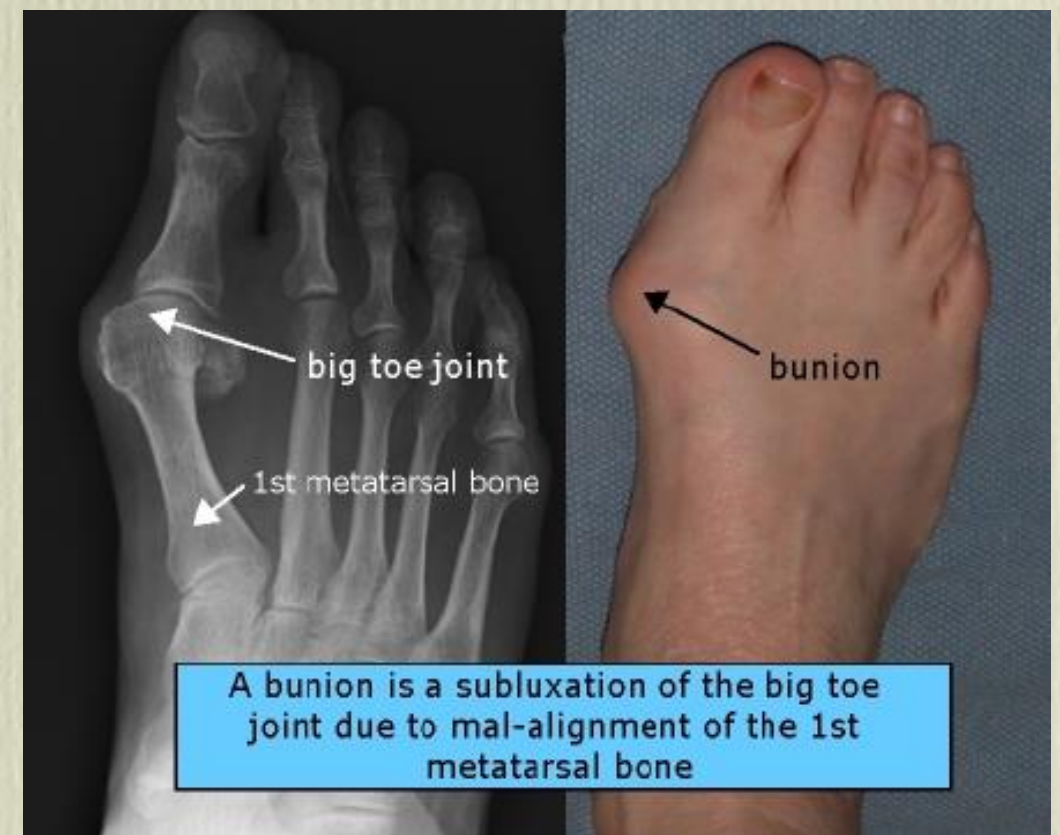
- Symptoms

- Pain or soreness
- Inflammation and redness
- A burning sensation
- Possible numbness
- Symptoms occur most often when wearing shoes



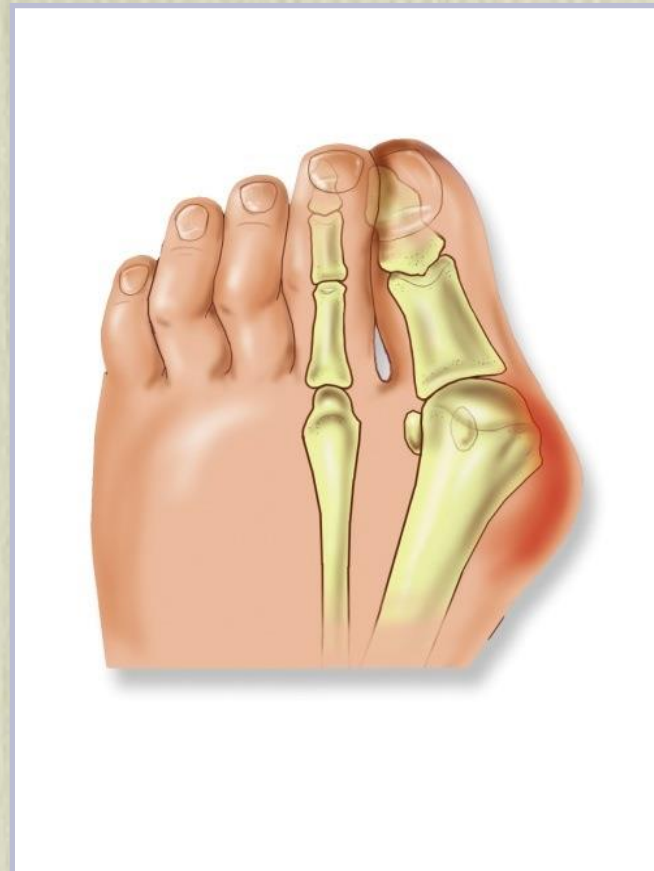
Bunion

- Diagnosis
 - X-rays - determine the severity of the deformity
- Treatment Non-surgical
 - appropriate shoe wear
 - orthotics
 - activity modification
 - padding



Bunion

- Treatment Surgical
- Surgery can remove the bony enlargement, restore the normal alignment of the toe joint, and/or relieve pain
- Many types of bunion procedures:
 - Simple bunionectomy
 - Head procedures
 - Base procedures
 - Joint destructive procedures



Minimally Invasive







Flatfeet

- Posterior tibial tendon serves as one of the major supporting structures
- PTTD “adult acquired flatfoot”
- Usually progressive



- Causes

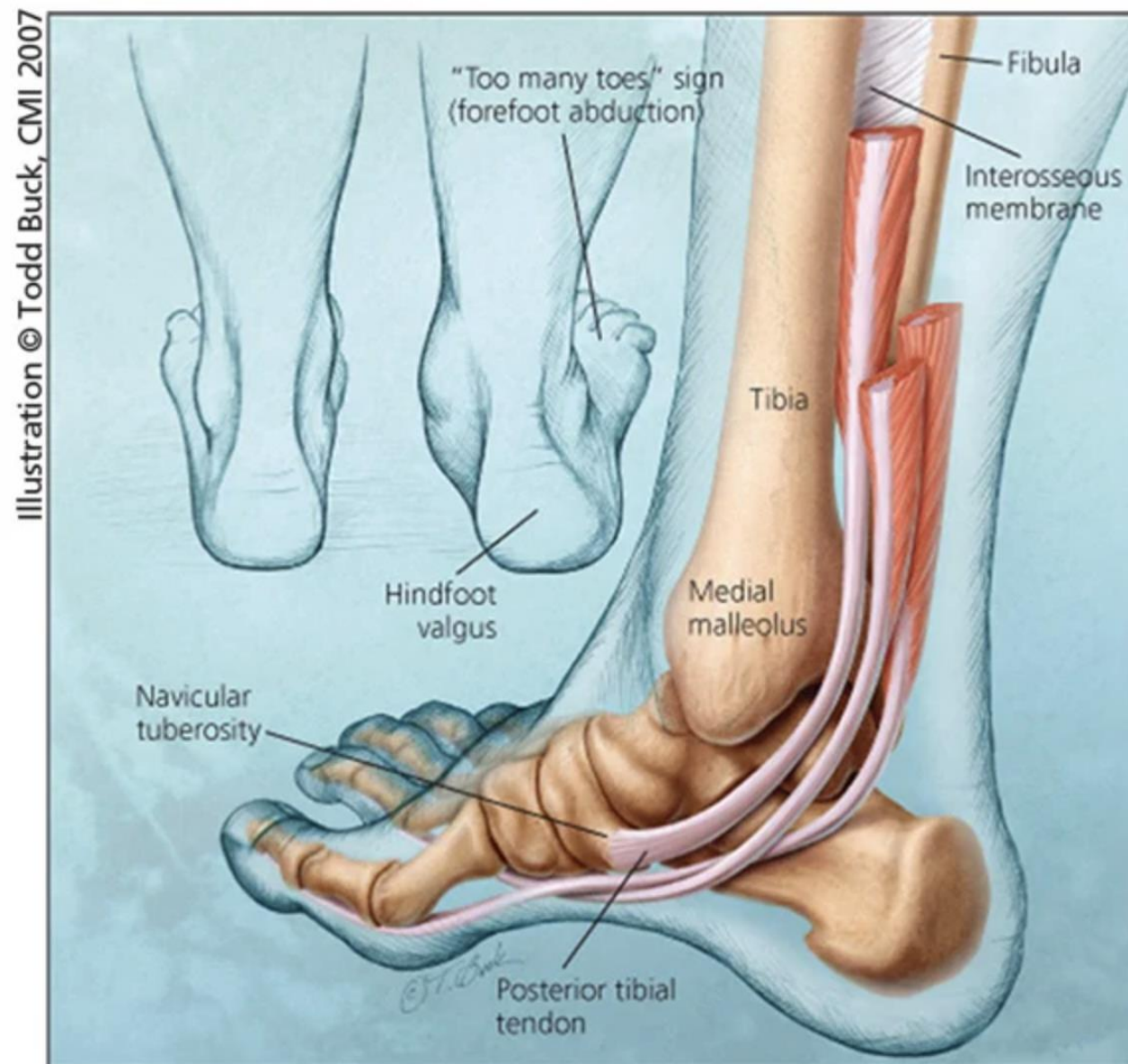


Figure 1: Anatomical diagram of the foot and ankle highlighting effects of posterior tibial tendon insufficiency. [Illustration courtesy of the Journal of Musculoskeletal Medicine]

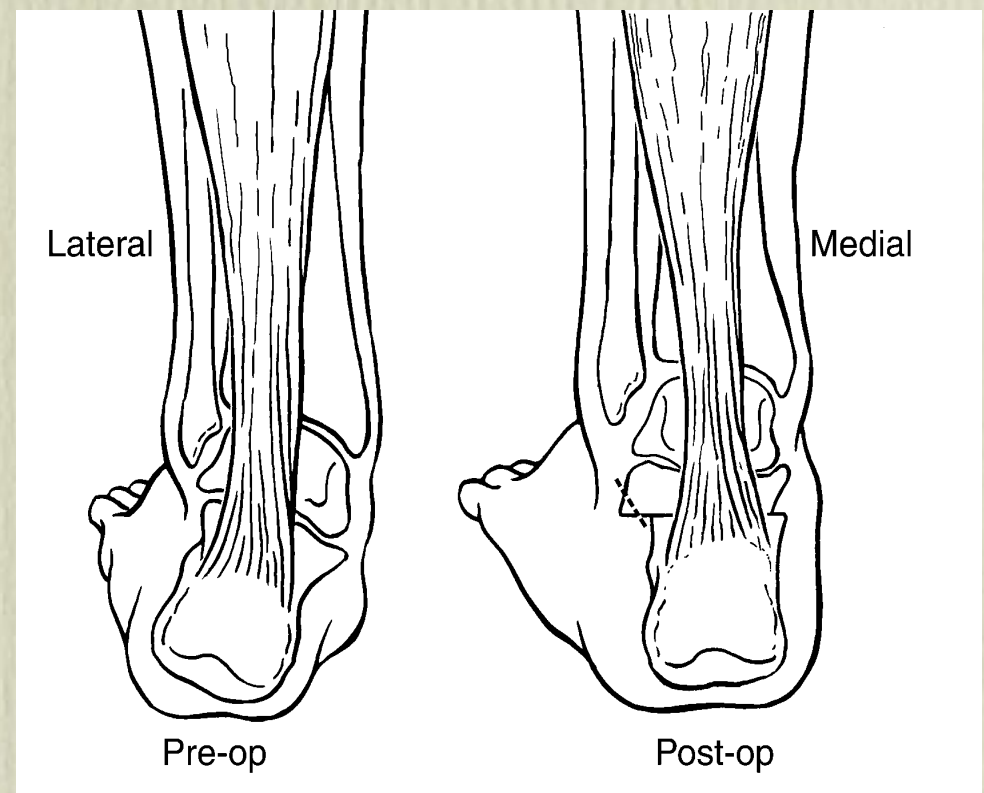
or climbing, pain is resolved

Flatfeet



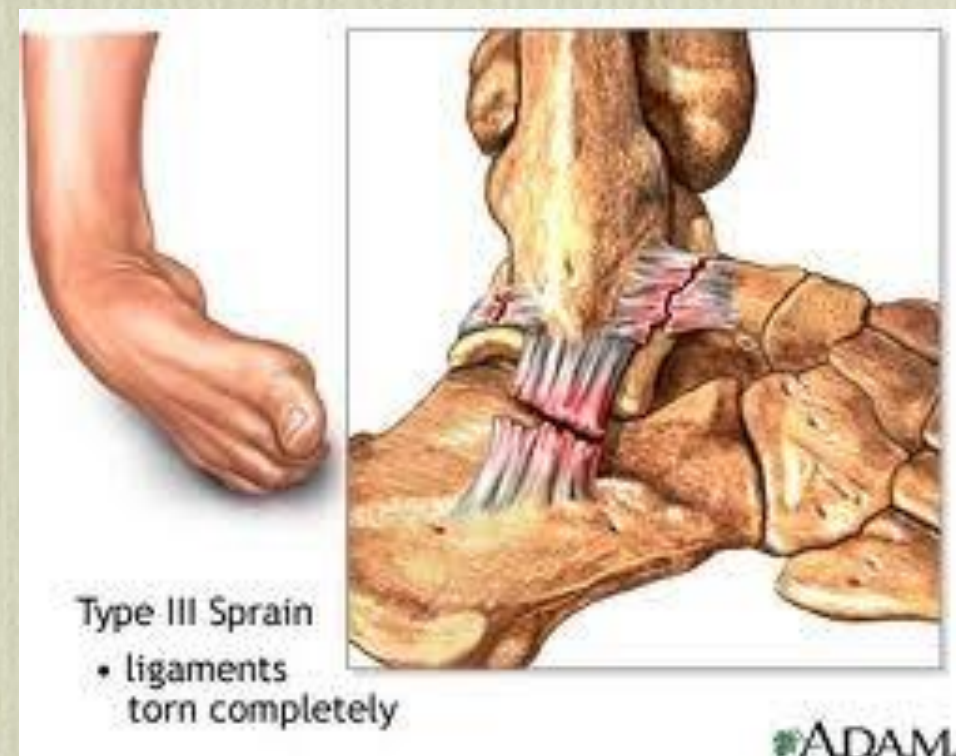
Flatfeet

- Treatment
 - Conservative
 - orthotics
 - stretching - calf muscle
 - physical therapy
 - rest - activity modification
 - Surgical
 - Reconstruction of the foot and tendon



Ankle Sprain

- One or more of the ligaments of the ankle is injured
- Severity of a sprain depends whether the ligament is:
 - stretched
 - partially torn
 - completely torn
 - and the number of ligament involved



Ankle Sprain

- Causes

- Often result from a fall, a sudden twist
 - forces the ankle joint out of its normal position.
- Commonly occur while participating in sports, wearing inappropriate shoes, or walking or running on an uneven surface.
- Can have inherently weak ankles, “loose ligaments”



Ankle Sprain

- **Symptoms** - vary in intensity, depending on the severity of the sprain
 - Pain or soreness
 - Swelling
 - Bruising
 - Difficulty walking
 - Stiffness in the joint
- Prompt medical attention



Ankle Sprain

- **Non-surgical Treatment**

- Rehabilitation is crucial—and it starts the moment your treatment begins
- RICE: Rest, Ice, Compression, Elevation.
- Early physical therapy: promote healing and increase your range of motion
- Medications: Nonsteroidal anti-inflammatory

- **When Is Surgery Needed?**

- Severe cases
- When conservative therapy fails
- Repairing or recreating the damaged ligament(s)



Arthtitis

- **Osteoarthritis** affects millions of Americans
- Osteoarthritis is breakdown and eventual loss of cartilage in.
- Cartilage protects and cushions the bones during movement.
- When cartilage deteriorates or is lost, symptoms develop that can restrict one's ability to easily perform daily activities.
- Osteoarthritis is also known as degenerative arthritis, reflecting its nature to develop as part of the aging process

Arthritis

- Causes

- “wear and tear”
- An injury, post traumatic arthritis
- Can occur at any joint: big toe, ankle and subtalar joint
- Abnormal foot mechanics such as flat feet or high arches.
- Abnormal knee or hip position
- limb length discrepancy



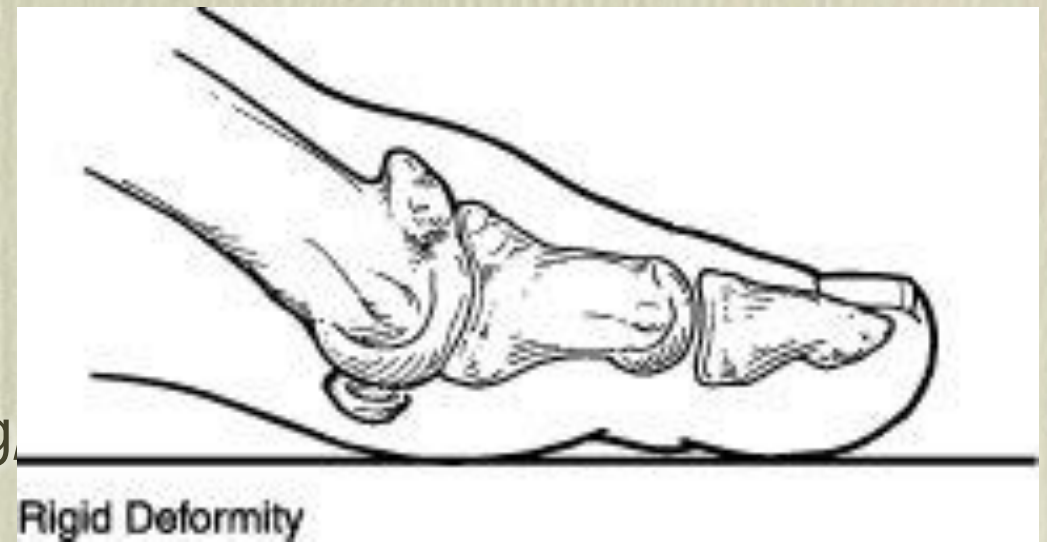
Hallux Rigidus (big toe joint)

- Causes
 - Structural abnormalities of the foot that can lead to osteoarthritis .
 - Results from “wear and tear” it is associated with overuse
 - injury - stubbing the toe, dropping objects
 - Inflammatory diseases such as gout, rheumatoid arthritis



Hallux Rigidus

- Symptoms
 - Pain and stiffness with use can be aggravated by cold, damp weather
 - Difficulty with certain activities (running, squatting)
 - Swelling and inflammation around the joint
 - Difficulty wearing shoes because bone spurs (overgrowths) develop



Hallux Rigidus

- Treatment
 - Conservative
 - Shoe modifications- larger toe box, stiff soled
 - Orthotic devices with rigid splint under the big toe
 - Medications Oral: anti-inflammatories
 - Surgery
 - Cheilectomy - cleaning up of the joint
 - Joint replacement
 - Arthrodesis - fusion



Midfoot Arthritis

- Treatment
 - Conservative
 - Stiff soled shoes
 - Calf Stretching/Strengthening



Midfoot Arthritis

- Surgical
 - Denervation (Neurectomy)
 - Diagnostic injection
 - Arthrodesis (Fusion)



WEIGHT BEARING

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ART



Ankle Arthritis



Ankle Arthritis

- Treatment
 - Conservative
 - Orthotics - to help alignment
 - Maintain motion - early
 - Restrict motion with bracing - late
 - Injections
 - steroids
 - Viscosupplementation
 - Platelet rich plasma (PRP)



Ankle Arthritis

- Treatment
 - Surgical
 - Arthrodesis (fusion)
 - Replacement







Diabetic Foot

- Diabetes is a “Silent Disease”
- Total Coast (updated as of March 2022)
 - Total costs of diagnosed diabetes in the United States
412.9 billion
 - 2.6 x more than avg. w/o Diabetes

Diabetic foot

- Diabetes kills more Americans every year than AIDS and breast cancer combined
- Every 3 minutes and 30 seconds in the United States, a limb is amputated due to diabetes..
- More than 80 percent of non-traumatic lower-limb amputations occur in people with diabetes

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Diabetic Foot

- Prevention

- Comprehensive

- include risk a

- foot care edu

- treatment of

- referral to specialists

- can reduce amputation rates by 45 to 85 percent



Diabetic Foot

- **The patient plays a vital role**
 - Keep blood sugar levels under control
 - Wear well-fitting shoes to avoid skin irritation, calluses, sores, wounds
 - Annual foot exam

Thank You

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