

## Checklist for Foot Pain

Imaging Findings	Cause
<b>Bone Abnormalities</b>	
Discontinuous cortex and displaced bone fragment on XR, CT, and MR; abnormal marrow signal on MR	Fracture
Displaced bones; associated fracture.	Dislocation
Focal lucency on XR and CT; reparative new bone/periostitis on XR, CT, and MR; abnormal SI on MR.	Stress fracture including of the sesamoid bones (sesamoiditis)
Increased density on XR, CT; irregular contour of the MT on XR, CT, and MR; abnormal marrow SI on MR	Avascular necrosis of the MT head (Frieburg's infraction)
Lack of normal joint on XR, CT, and MR; fibrous union with reactive bone along the fusion.	Tarsal coalition
Diffuse demineralization; abnormal SI on MR and flow/update on NM	Complex regional pain syndrome
<b>Joint Abnormalities</b>	
Malalignment of the afflicted ray including hallux valgus, claw toe, hammer toe, mallet toe with or without associated degenerative changes	Metatarsal and toe alignment abnormalities
Osteophytes, joint space loss, joint subluxation, subchondral marrow change including cysts on XR, CT, and MR. DIP and PIP >> MCP	Osteoarthritis
Demineralization on XR and CT; erosions and joint space loss on XR, CT, and MR; abnormal SI on MR	Rheumatoid arthritis
Calcifications within the soft tissues and chondrocalcinosis on XR and CT; corticated non-marginal erosions with "overhanging edges" on XR, CT, and MR; secondary degenerative changes	Crystal arthropathy (gout, CPPD)
Swelling from joint effusion; loss of joint space, periostitis (with osteomyelitis) on XR; abnormal marrow SI on MR; soft tissue cellulitis or ulcer	Septic arthritis
Joint dislocation, disorganization of the joint, destruction of bone, debris within the joint, and increased density of bone on CT, XR; same with abnormal marrow SI abnormality instead of increased density on MR	Neuropathic arthropathy
<b>Juxta-articular Abnormalities</b>	
Radio-opaque foreign bodies (metal, rocks, glass) will be dense on XR and CT whereas wood splinters be of similar density to soft tissue and thus difficult to see. Foreign bodies (including wood) may be echogenic and shadow-casting on US. MR characteristics depend on the structure of the foreign body: there may be a signal void (calcium, non-ferromagnetic metals, glass, wood) or artifact (ferromagnetic material).	Retained foreign body
None on XR; swelling, increased SI, or discontinuity of the tendon and/or peritendinous fluid on MR	Tendinopathy and tendon tear
Heel spur	Enthesopathy

(Usually not done.) None on XR; increased SI or discontinuity on MR	Plantar fasciitis or sprain
Normal XR and CT; replacement of sinus fat and obliteration of ligament definition on MR	Sinus tarsi syndrome
Focal soft tissue swelling over the 5 <sup>th</sup> MTP; adjacent reactive bone changes on MR	Tailor's bunion
(Usually not done.) Normal XR and CT; fluid filled bursa with secondary adjacent bone marrow changes on MR.	Bursitis
(Usually not done.) Normal XR and CT; contrast-enhancing focal lesion on MR	Morton's neuroma

## **DICTIONARY TEMPLATE WITH PROMPTS FOR FOOT RADIOGRAPHS PERFORMED FOR FOOT PAIN**

### FOOT RADIOGRAPHS

INDICATION: Foot pain.

COMPARISON: [Check priors to see if following a known lesion.]

TECHNIQUE: [].

Bones: [Discontinuous bone cortex or displaced bone fragment (fracture). Periostitis (stress fracture, infection, hypertrophic pulmonary osteoarthropathy). Erosion (infection, inflammatory arthropathy). Osteophytes or subchondral cysts (osteoarthritis). Second metatarsal head increased density or contour abnormality (Freiberg's infraction). Peri-articular lucency (inflammatory arthropathy, complex regional pain syndrome, disuse osteoporosis).

Joints: [Hallux valgus or cock-up toe deformity. Narrowed joint space (arthritis). Osteophytes (osteoarthritis). Chondrocalcinosis (CPPD or gout). Joint effusion (inflammation or hemorrhage following occult fracture).

Juxta-articular tissues: [No calcification of the articular cartilage, synovium, or surrounding soft tissue (CPPD, gout). No vascular calcifications (suggesting arterial insufficiency and claudication). No abnormal swelling over the great toe MTP (bunion) or small toe MTP (Tailor's bunion).

IMPRESSION: []

# Checklist for MR Imaging of the Foot

## **DICTIONARY TEMPLATE WITH PROMPTS FOR FOOT MRI PERFORMED FOR FOOT PAIN**

### MRI FOOT

INDICATION: Foot pain.

COMPARISON STUDIES: [Check priors to see if following a known lesion.]

TECHNIQUE: []

### FINDINGS:

Bones: [Discontinuity (fracture, tumor, inflammation, or infection, avascular necrosis of the metatarsal head). Erosion (inflammatory arthropathy, infection). Increased signal on T2 weighted images (subchondral marrow degenerative changes, contusion, fracture, tumor, infection, avascular necrosis of the metatarsal head).]

Articulations: [Hallux valgus or cock-up toe deformity. Articular cartilage loss (arthritis). Joint effusion (inflammation or trauma).]

Juxta-articular tissues: []

Ligaments: [Intact Lisfranc and metatarsophalangeal and interphalangeal collateral ligaments.]

Tendons: [Abnormal signal intensity or swelling (partial thickness tendon tear tendinopathy) or discontinuity (full thickness tendon tear). No excessive fluid along the tendon sheath (tenosynovitis).]

Plantar aponeurosis: [Increased signal intensity (sprain, inflammation) or discontinuity (tear).]

IMPRESSION: []