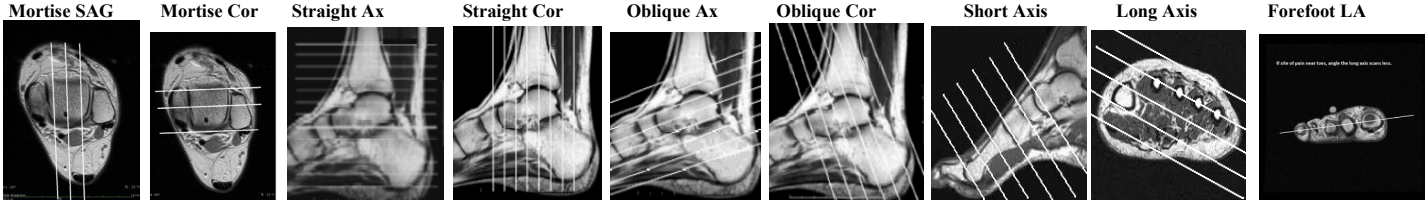
FOOT & ANKLE

9-10-24

Mortise SAG | Mortise Cor | Straight Ax | Straight Cor | Oblique Ax | Oblique Cor | Short Axis | Long Axis | Forefoot LA

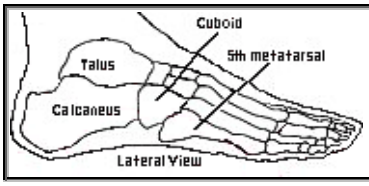


Ensure extremity of interest is as isocenter as possible **SHIM all Fat sat scans!!**

Make Sure to have patient's foot positioned in Dorsi Flexion

Include in Study notes: Date of injury? previous surgery?

NON SPECIFIC FOOT PAIN



Request: MRI Foot w/o

Center at cuboid.
Cover maximum foot & ankle using the prescribed FOV.

1.	3 Plane loc		
2.	Straight Sag T1	3/1.5	20 FOV
3.	Straight Sag FSTIR	3/1.5	20 FOV
4.	Oblique Ax T1	3/1.5	20 FOV
5.	Oblique Ax T2 FLEX (IDEAL if flex not available)	3/1.5	20 FOV
6.	Oblique Cor T1	3/1.5	16 FOV
7.	Oblique Cor T2 FLEX (IDEAL if flex not available)	3/1.5	16 FOV

OCD - LOOSE BODY - LIGAMENT TEAR

1.	3 Plane loc		
2.	Mortise Sag T1	3/0.5	14 FOV
3.	Mortise Sag T2 85% dark fat	3/0.5	14 FOV
	►Use **SAGITTAL T1** to GRx AXIAL scans		
4.	Straight Ax PD	3/0.5	14 FOV
5.	Straight Ax T2 classic fat sat	3/0.5	14 FOV
	►Use **Sag and AXIAL** images to GRx CORONAL scans		
6.	Mortise Cor T2 cl fat sat	3/0.5	14 FOV
7.	Mortise Cor PD (2/.5 or 2/.2 10 FOV) High rez for cartilage		
	►keep TR @ 3000 (give or take 100)		
	► cover joint only (about 20 slices)		

Synovitis Optional Contrast (Copy GRx from pre):
8. Pre Strt Ax T1 FAT 10. Mortise Sat T1 cl Fat 11. Strt Ax T1 cl Fat

Request:
MRI Ankle w/o
MARKER at site of maximum pain

Optional Contrast: Vueway 0.05mmol/kg Max 10

Low eGFR inpatient
Dose: No Change

PLANTAR FASCIITIS - FIBROMA - HEEL PAIN

1.	3 Plane loc		
2.	Mortise Sag PD THIN	3/0.5	14 FOV
3.	Mortise Sag T2 85% dk fat THIN	3/0.5	14 FOV
4.	Straight Cor T1	3/0.5	16 FOV
5.	Straight Cor T2 cl fat sat	3/0.5	16 FOV
6.	Straight Ax T2 cl fat sat	4/1	16 FOV

Request:
MRI Foot w/o
MARKER at site of max pain
COVER: Hindfoot, ankle, calcaneus, cuboid, soft tissue

STRESS FX - MIDFOOT

1.	3 Plane loc		
2.	Mortise Sag T1	4/1	16 FOV
3.	Mortise Sag FSTIR	4/1	16 FOV
4.	Oblique Ax T1	3/1	14 FOV
5.	Oblique Ax T2 cl fat sat	3/1	14 FOV
6.	Oblique Cor T1	3/0.5	14 FOV
7.	Oblique Cor T2 FLEX (IDEAL if flex not available)	3/0.5	14 FOV

►Opt: Rad to specify coverage: THIN SA T1 2/0.2, Thin Sag PD FS 2/.2, or Thin LA PD FS 2/.2

Request:
MRI Foot w/o

MARKER at site of maximum pain
Ant ankle joint through proximal metatarsals

STRESS FX - METATARSALS

1.	3 Plane loc		
2.	Straight Sag T1	4/1	16 FOV
3.	Straight Sag FSTIR	4/1	16 FOV
	►Use **SAGITTAL T1** to GRx SHORT AXIS		
4.	Short Axis T1	3/1	16 FOV
5.	Short Axis T2 cl fat sat	3/1	16 FOV
	►Use **SHORT AXIS** to GRx LONG AXIS		
6.	Long Axis T1	3/0.2	16 FOV
7.	Long Axis T2 FLEX (IDEAL if flex not available)	3/0.2	16 FOV
8.	LA oZTEo Bone (if Available)		

►Opt: Rad to specify coverage: THIN SA T1 2/0.2, Thin Sag PD FS 2/.2, or Thin LA PD FS 2/.2

Request:
MRI Foot w/o

MARKER at site of max pain

COVER: Bases of proximal phalanges to the talonavicular joint.

TENDON: PERONEAL or FLEXOR

1.	3 Plane loc		
2.	Mortise Sag T1	3/1.5	16 FOV
3.	Mortise Sag T2 85% dark fat	3/1.5	16 FOV
	►Use **SAGITTAL T1** to GRx **AXIAL** scans		
4.	Straight Ax PD	3/0.5	16 FOV
5.	Straight Ax T2 classic fat sat	3/0.5	16 FOV
6.	Oblique Cor T2 classic fat sat	3/0.5	16 FOV
	►Use **Sag and AXIAL** images to GRx **MORTISE CORONAL PD**		
7.	Mortise Cor PD classic fat sat	3/0.5	16 FOV.

Request:
MRI Foot w/o
or
MRI Ankle w/o

MARKER at site of maximum pain

ACHILLES (Tendon)

1.	3 Plane loc		
2.	Mortise Sag T1 THIN	3/0.2	16 FOV
3.	Mortise Sag T2 85% dark fat THIN	3/0.2	16 FOV
	►Use **SAGITTAL T1** to GRx AXIAL scans		
	►A 2nd set of axials should be done to cover marker if needed		
4.	Straight Ax PD	4/1	14 FOV
5.	Straight Ax T2 classic fat sat	4/1	14 FOV
	►Use **Sag and Ax** images to GRx MORTISE CORONAL		
6.	Mortise Cor T2 classic fat sat	3/1.5	16 FOV

Request:
MRI Ankle w/o

MARKER at site of maximum pain

COVER: All of Achilles tendon, heel, & to the metatarsal bases

QUICK HIGH ANKLE SPRAIN

1.	3 Plane loc		
2.	Straight Sag SSFSE	4/0	24 FOV
	►Inferior aspect of FOV should be at the distal tip of fibula		
3.	Straight Ax T2 classic fat sat	3/0.5	16 FOV
	►**30 slices** with the most inferior slice at the distal tip of fibula		

Request:
MRI Ankle w/o

Coil: Foot/Ankle coil

MARKER at site of maximum pain

Ankle Tumor or Osteo-Abscess

If ER or IP, ensure there has been an x-ray within the last 6 months. IF not, request that one be ordered. OK to proceed with MRI if x-rays are ordered and not completed

Contrast: Vueway 0.05mmol/kg Max 10

HEEL or MALLEOLAR ULCER – OK if ordered as MRI Foot -- If Ulcer is more midfoot-OK to Oblique to area of interest

1.	3 Plane loc		
2.	Mortise Sag T1 (Obl to Calcaneus for Heel Ulcer)	3/1.5	16 FOV
3.	Mortise Sag FSTIR Obl to Calcaneus for Heel Ulcer	3/1.5	16 FOV
4.	Straight Ax T1	3/1.5	14 FOV
5.	Straight Ax T2 classic fat sat	3/1.5	14 FOV
6.	Straight Cor T1	3/1.5	14 FOV
7.	Straight Cor T2 classic fat sat	3/1.5	14 FOV
	Add FOR TUMOR ONLY—PRE AX T1 FAT (1 nex, ok if grainy)		
8.	+C Mortise Sag T1 classic fat sat	3/1.5	16 FOV
9.	+C Straight Ax T1 classic fat sat	3/1.5	14 FOV
10.	+C Straight Cor T1 classic fat sat	3/1.5	14 FOV

Request:
MRI Ankle w/o & w
or
Foot wo & w
MARKER over ulcer (It is not necessary to remove dressing)

Heel through Base of Metatarsals

Low eGFR inpatient
Dose: No Change

Foot Tumor or Osteo-Abscess

If ER or IP, ensure there has been an x-ray within the last 6 months. IF not, request that one be ordered. OK to proceed with MRI if x-rays are ordered and not completed

Contrast: Vueway 0.05mmol/kg Max 10

TOE ULCER

1.	3 Plane loc		
2.	Straight Sag T1	3/1.5	16 FOV
3.	Straight Sag FSTIR	3/1.5	16 FOV
	►Use **SAGITTAL T1** to GRx Short Axis		
4.	Short Axis T1	3/1.5	16 FOV
5.	Short Axis T2 FLEX (IDEAL if flex not available)	3/1.5	16 FOV
	►Use **SHORT AXIS** to GRx LONG AXIS (near area of pain)		
6.	Long Axis T1	3/1.5	16 FOV
7.	Long Axis T2 FLEX (IDEAL if flex not available)	3/1.5	16 FOV
	Add FOR TUMOR ONLY—PRE AX T1 FAT (1 nex, ok if grainy)		
8.	+C Straight Sag T1 classic fat sat	3/1.5	16 FOV
9.	+C Short Axis T1 classic fat sat	3/1.5	16 FOV
10.	+C Long Axis T1 FLEX (IDEAL if flex not available)	3/1.5	16 FOV

Request:
MRI Foot w/o & w
MARKER over ulcer (It is not necessary to remove dressing)

Include Metatarsals through toes

Low eGFR inpatient
Dose: No Change

FOREFOOT

1.	3 Plane loc		
2.	Straight Sag T1	4/1	16 FOV
3.	Straight Sag FSTIR	4/1	16 FOV
	►Use **SAGITTAL T1** to GRx SHORT AXIS		
4.	Short Axis T1	3/1	16 FOV
5.	Short Axis T2 cl fat sat	3/1	16 FOV
	►Use **SHORT AXIS** to GRx LONG AXIS		
6.	Long Axis T1	3/0.2	16 FOV
7.	Long Axis T2 FLEX (IDEAL if flex not available)	3/0.2	16 FOV

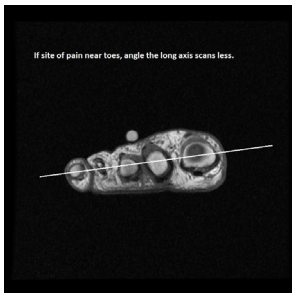
Rad to choose specific optional sequence and will specify coverage:
Morton's Neuromas: THIN SA T1 2/0.2
Plantar Plate or Sesamoiditis: Thin Sag PD FS 2/.2 or Thin LA PD FS 2/.2

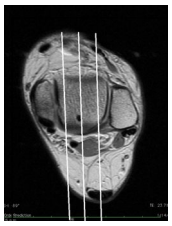
Request:
MRI Foot w/o

MARKER at site of max pain

COVER: Entire phalanges and most of metatarsals

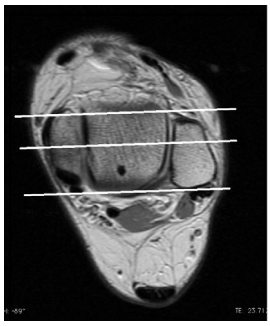
Forefoot LA:





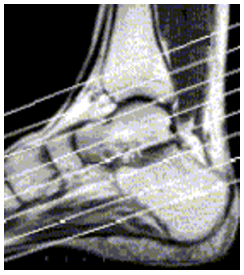
Mortise Sagittal

Angle parallel to the talus bone (will also end up being the
Cover skin to skin



Mortise Coronal:
Angle Perpendicular to the talus bone (Will also end up being perpendicular to the calcaneus)

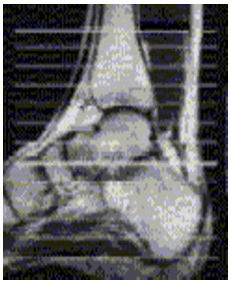
Cover entire calcaneus to metatarsals



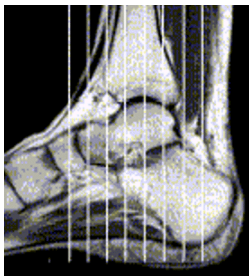
OBQ Axial:

Angle parallel to the sustentaculum tali (between the talus and calcaneus bones)
Cover a 5 slices above the ankle joint through the entire calcaneus

Straight Axial:

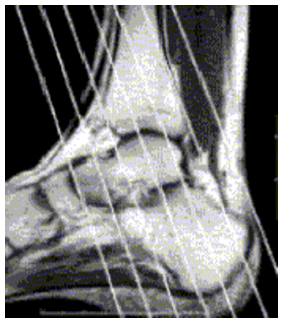


Cover 5 slices above ankle join through the entire calcaneus.

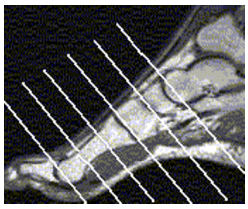


Straight Coronal

Cover posterior to calcaneus to the metatarsal bones

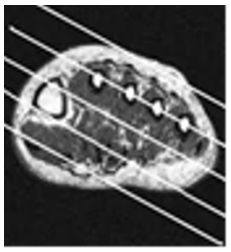


OBQ Coronal:
Angle perpendicular to the sustentaculum tali (between the talus and calcaneus bones)
Tendon Protocol: Cover posterior to calcaneus to the metatarsal bones
Metatarsal Stress Fx: Ant ankle joint through proximal metatarsals



Short Axis:

Prescribe off of Sagittal Scan. Try to angle perpendicular to metatarsals.



Long Axis:

Prescribe off of Short Axis Scan. Try to angle so the metatarsals are in one plane.