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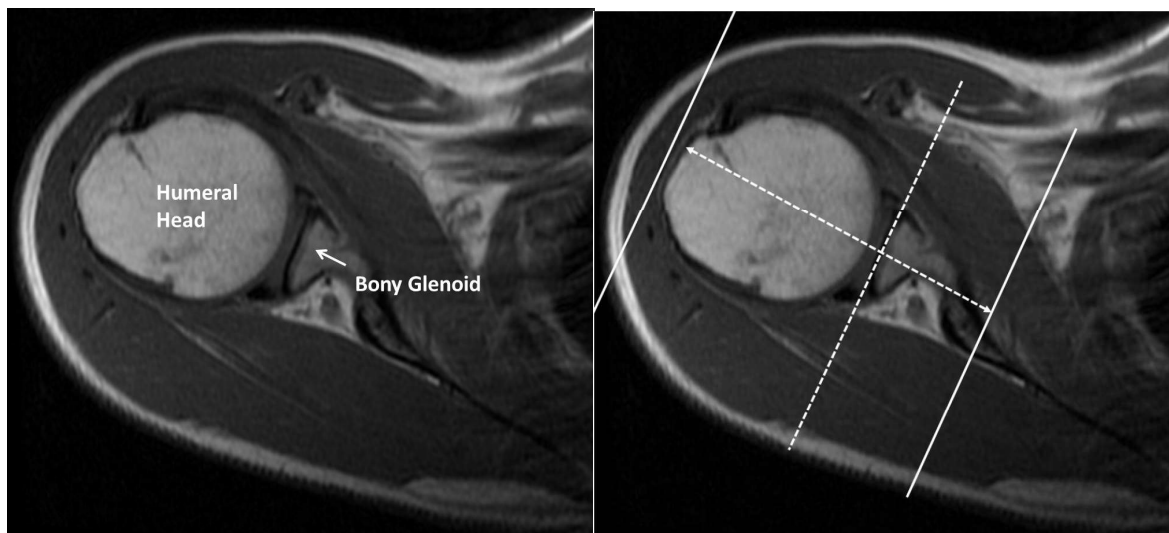
Shoulder MRI

Sequences:

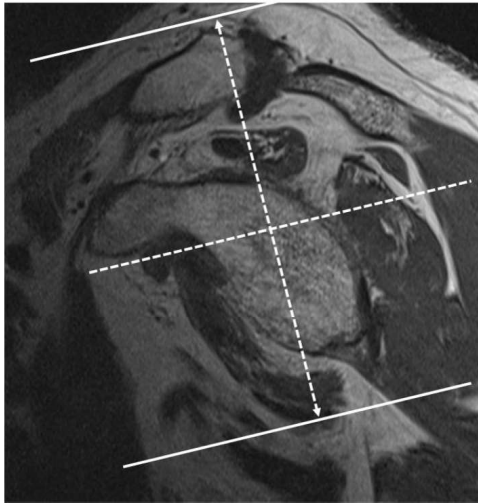
1. Cor Oblique T2 FS
2. Cor Oblique STIR
3. Sag Oblique T1
4. Sag Oblique T2 FS
5. Axial Oblique PD FS
6. Axial Oblique GRE

Obtain straight axial images to determine sagittal oblique imaging plane

SAGITTAL OBLIQUE IMAGING PLANE

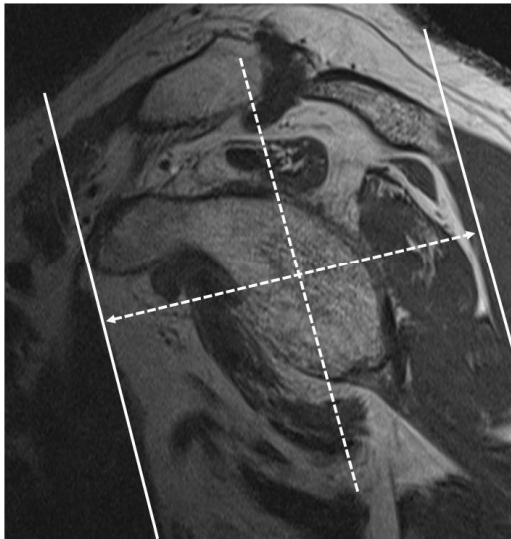


AXIAL OBLIQUE IMAGING PLANE (Based on Sag Obl images)



slightly tilted anteriorly (err on side of under-angling)

CORONAL OBLIQUE IMAGING PLANE (based on Sag Obl images)



slightly tilted anteriorly (err on side of under-angling)

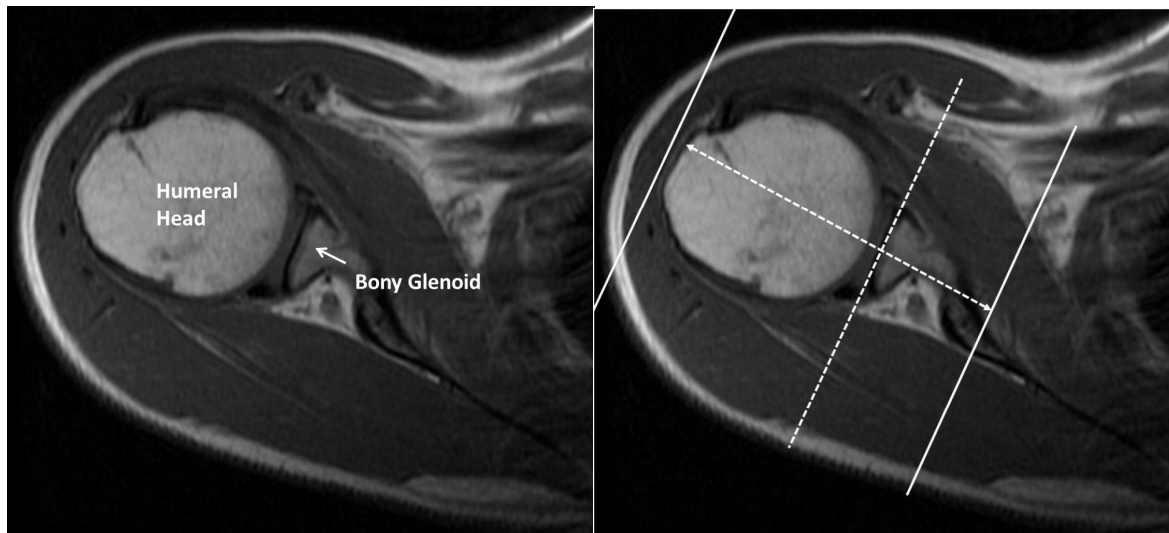
Shoulder MRI Arthrogram

Sequences:

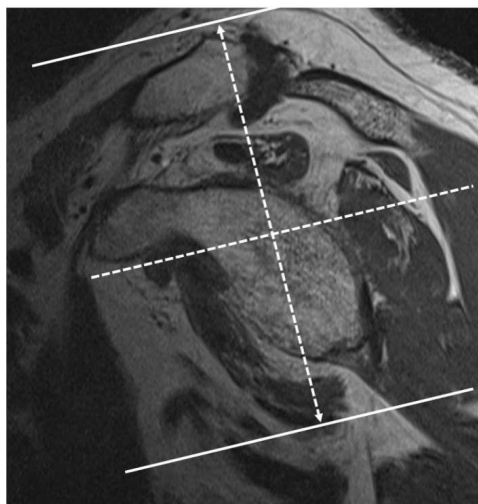
1. Cor Oblique T1 FS
2. Cor Oblique T2 FS
3. Sag Oblique T1
4. Sag Oblique T1 FS
5. Sag Oblique T2 FS
6. Axial Oblique T1 FS
7. Axial Oblique T2 FS

Obtain straight axial images to determine sagittal oblique imaging plane

SAGITTAL OBLIQUE IMAGING PLANE

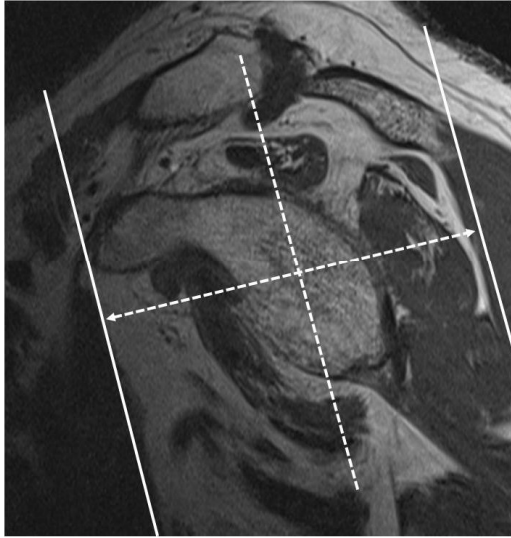


AXIAL OBLIQUE IMAGING PLANE (Based on Sag Obl images)



slightly tilted anteriorly (err on side of under-angling)

CORONAL OBLIQUE IMAGING PLANE (based on Sag Obl images)

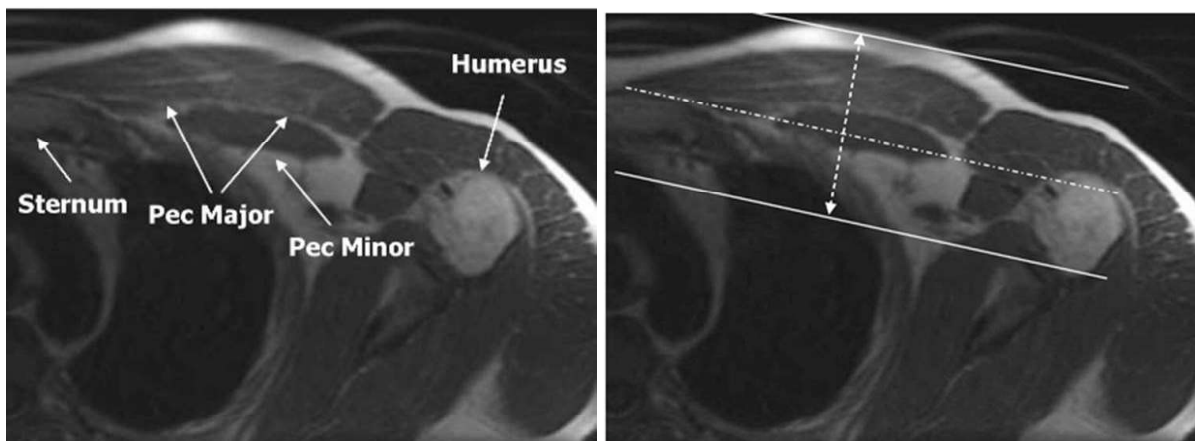


slightly tilted anteriorly (err on side of under-angling)

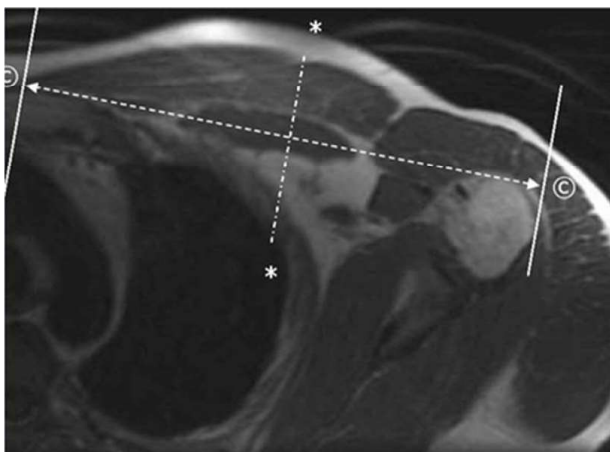
Pectoralis Muscle Tear MRI

1. Axial T1
2. Axial STIR
3. Cor Oblique T1
4. Cor Oblique STIR
5. Sag Oblique T1
6. Sag Oblique STIR

CORONAL OBLIQUE (parallels line from anterior cortex of sternum to anterior cortex of the humerus)



SAGITTAL OBLIQUE (perpendicular to Coronal Oblique)



Humerus MRI

1. Axial T1
2. Axial STIR
3. Cor T1
4. Cor STIR
5. Sag T1
6. Sag STIR

- Same imaging planes as elbow MRI

Elbow MRI

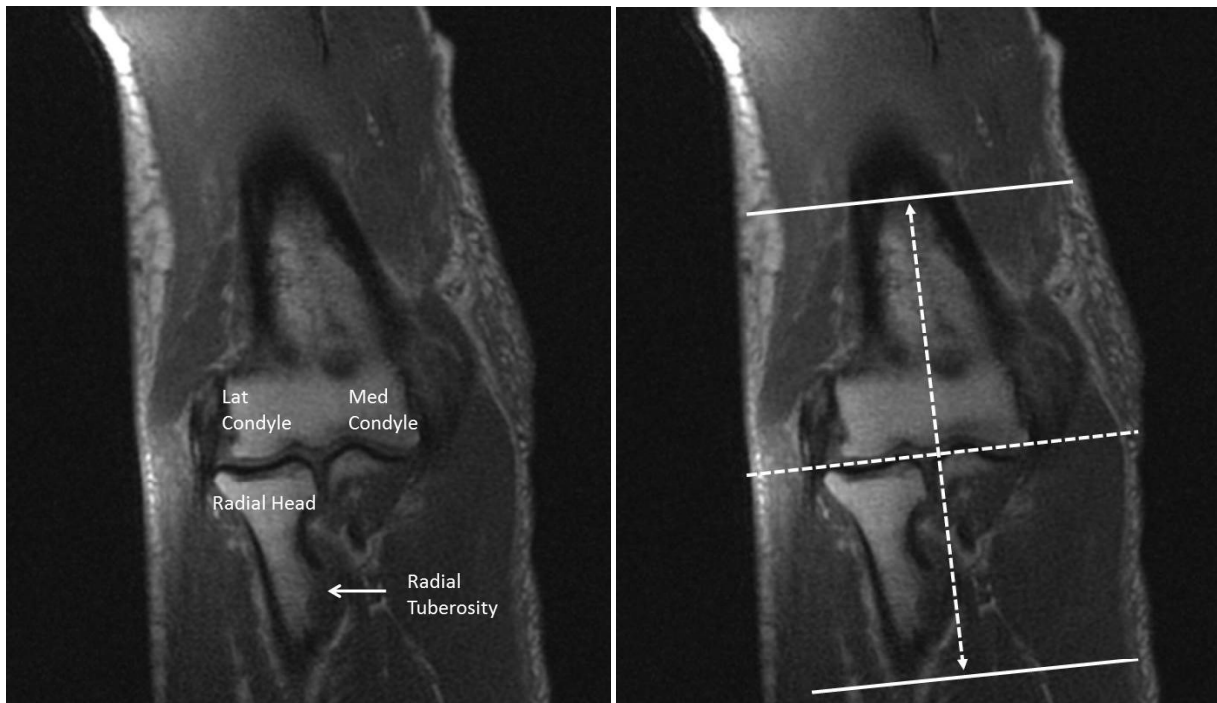
Sequences:

7. Axial T1
8. Axial STIR
9. Cor T1
10. Cor PDFS
11. Cor thin slice GRE
12. Sag STIR

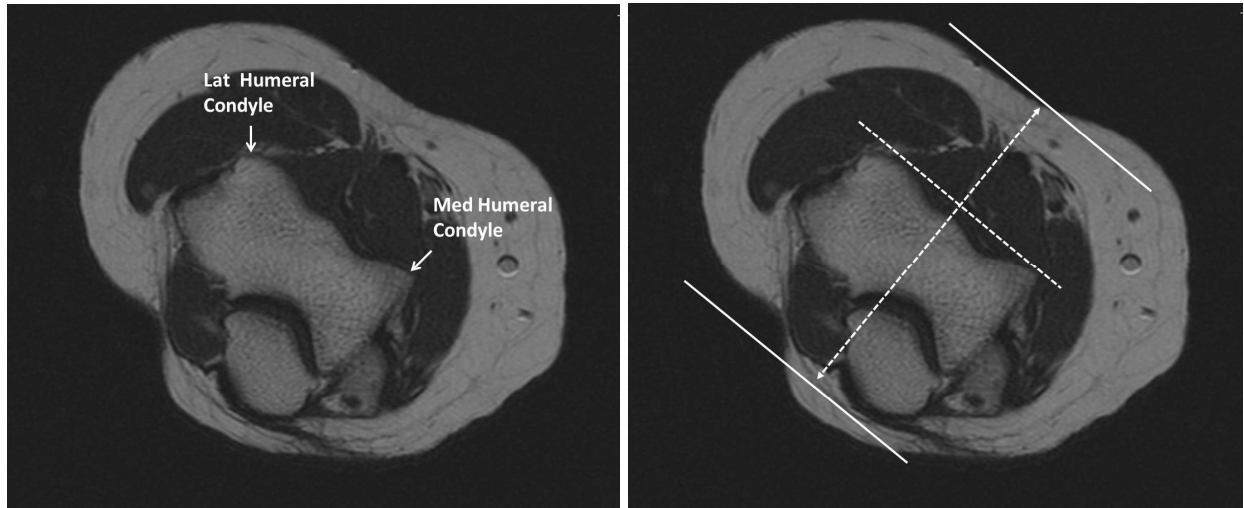
Notes:

- Elbow must be as straight as possible
- Humerus should be at top of coronal images
- Olecranon should be at bottom of axial images.

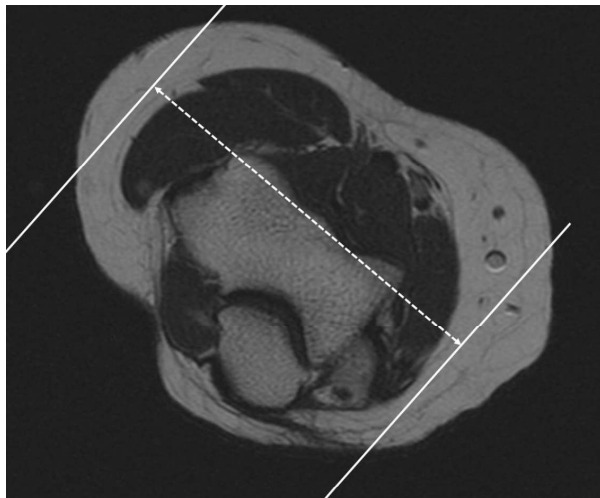
AXIAL IMAGING PLANE



CORONAL IMAGING PLANE



SAGITTAL IMAGING PLANE (perpendicular to coronal plane)



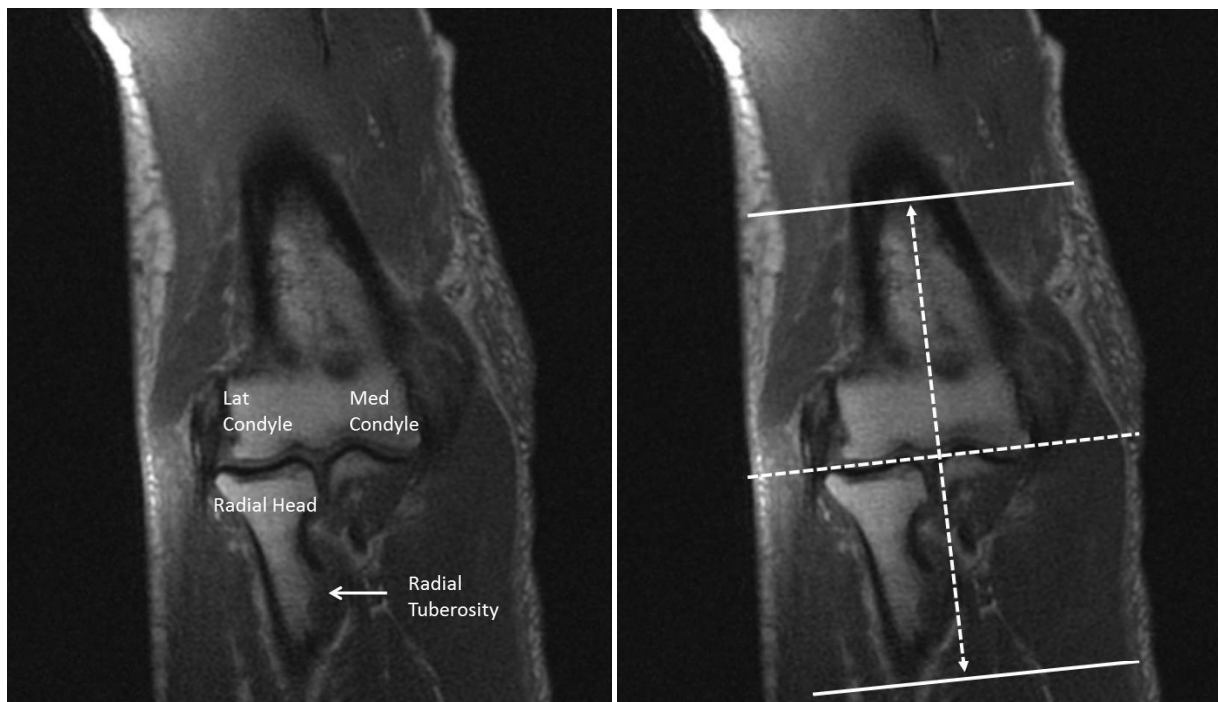
Elbow MRI Arthrogram

Sequences:

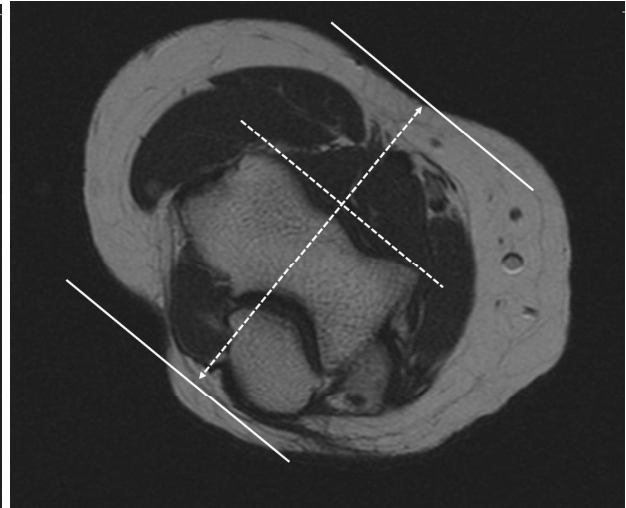
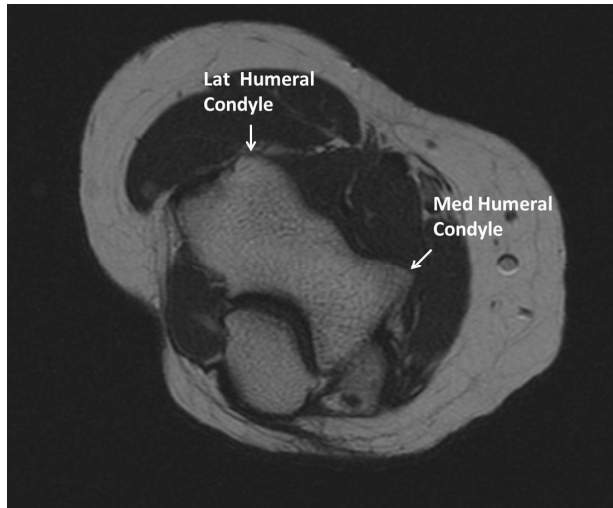
1. Axial T1
2. Axial STIR
3. Cor T1 FS
4. Cor T2 FS
5. Sag T1 FS
6. Sag T2 FS

Notes: Elbow must be as straight as possible

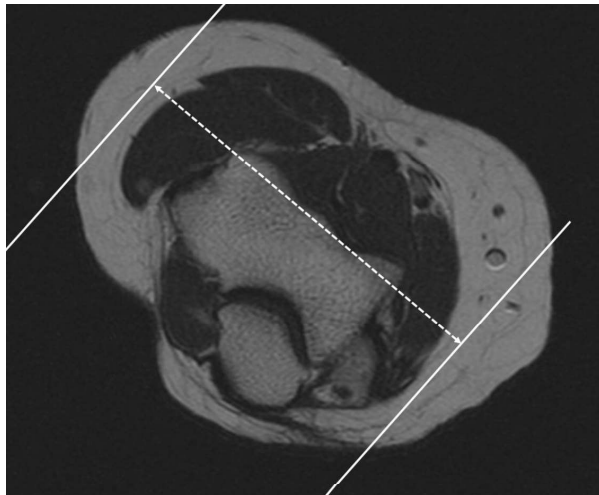
AXIAL IMAGING PLANE



CORONAL IMAGING PLANE



SAGITTAL IMAGING PLANE (perpendicular to coronal plane)



Wrist MRI

Without Contrast:

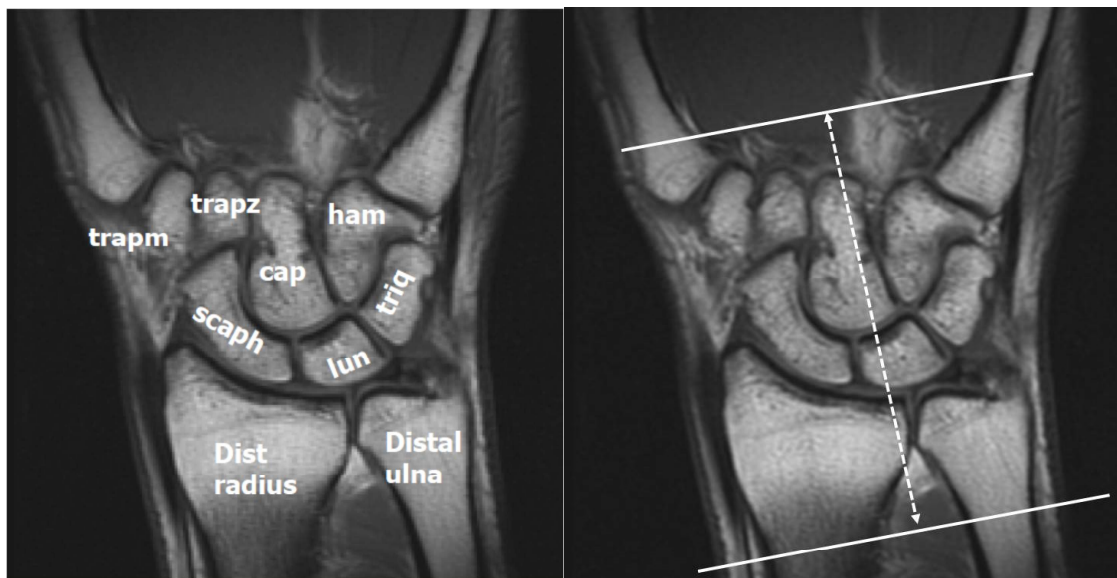
1. Cor T1
2. Cor PD FS
3. Cor thin slice GRE
4. Axial T1
5. Axial STIR
6. Sag STIR

With Contrast (mass, synovitis)

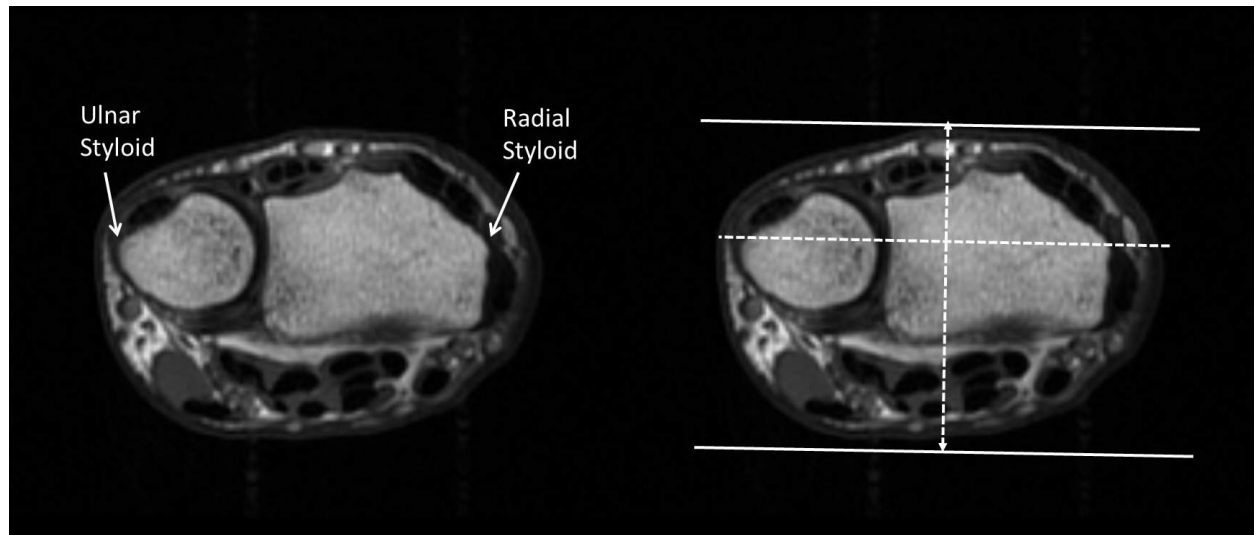
1. Cor T1
2. Cor STIR
3. Axial T1 FS
4. Axial STIR
5. Sag STIR
6. Sag T1 FS
7. Axial T1 FS post
8. Cor T1 post
9. Sag T1 FS Post

*****Please make sure thumb on axial images is on the same side of body as on coronal images and carpal tunnel is at bottom of axial images.**

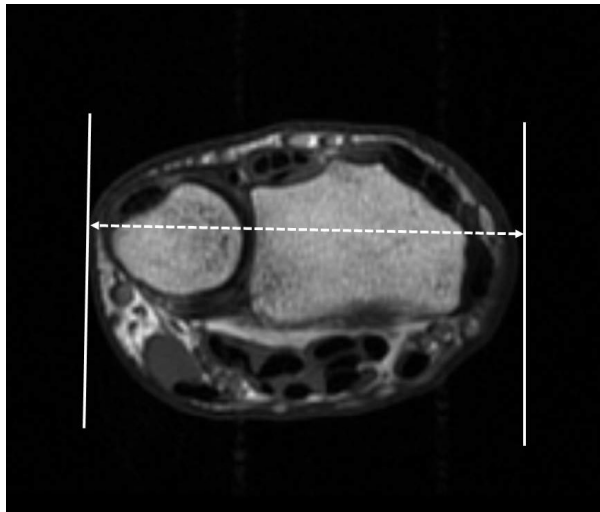
AXIAL IMAGING PLANE (oriented perpendicular to long axis of the radius and ulna)



CORONAL IMAGING PLANE



SAGITTAL IMAGING PLANE (perpendicular to coronal plane)

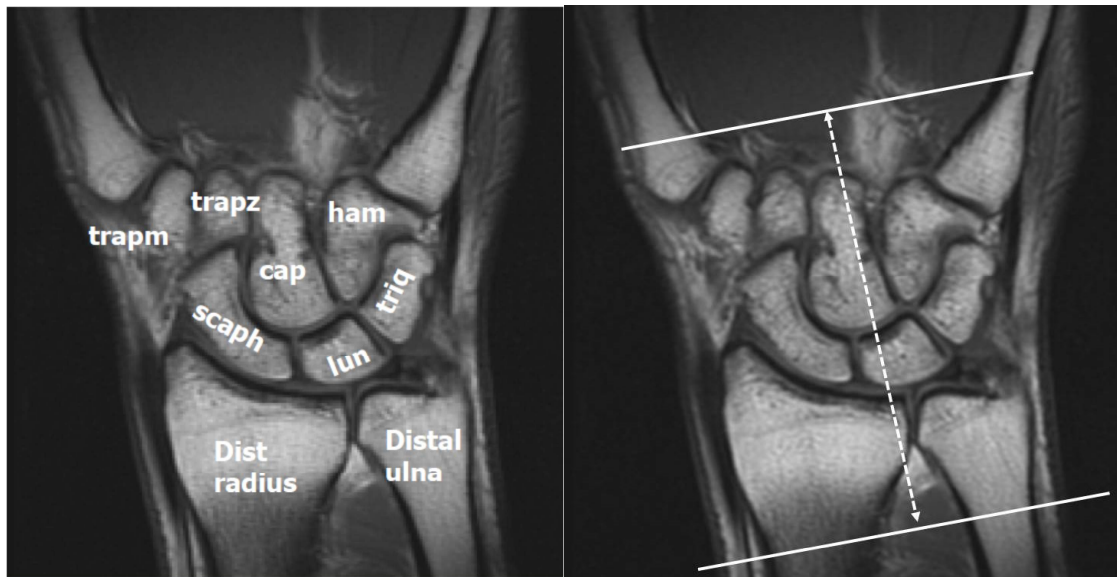


Wrist MRI Arthrogram

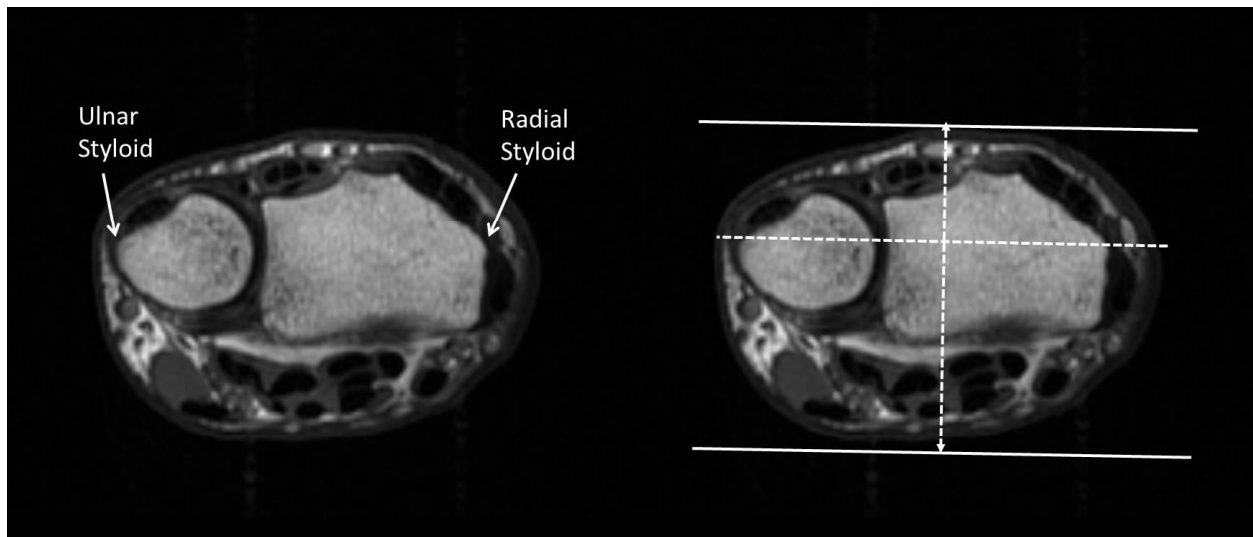
Sequences:

1. Cor T1 FS
2. Cor T2 FS
3. Axial T1
4. Axial T1 FS
5. Axial T2 FS
6. Sag T1 FS

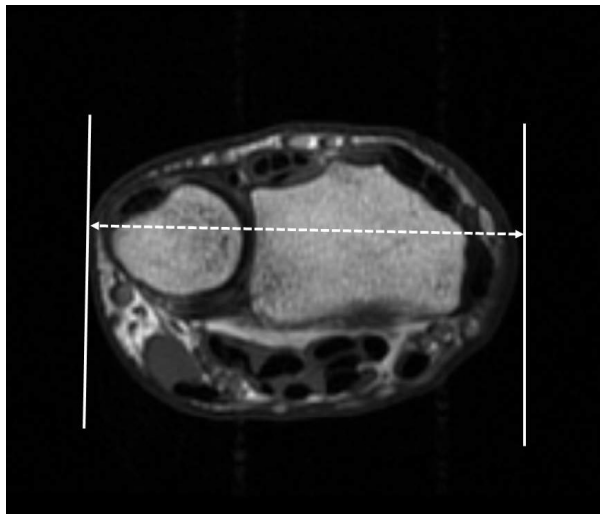
AXIAL IMAGING PLANE (oriented perpendicular to long axis of the radius and ulna)



CORONAL IMAGING PLANE



SAGITTAL IMAGING PLANE (perpendicular to coronal plane)



Finger MRI

Sequences:

7. Axial T1
8. Axial PD FS
9. Cor T1
10. Cor PDFS
11. Cor STIR
12. Sag PD FS

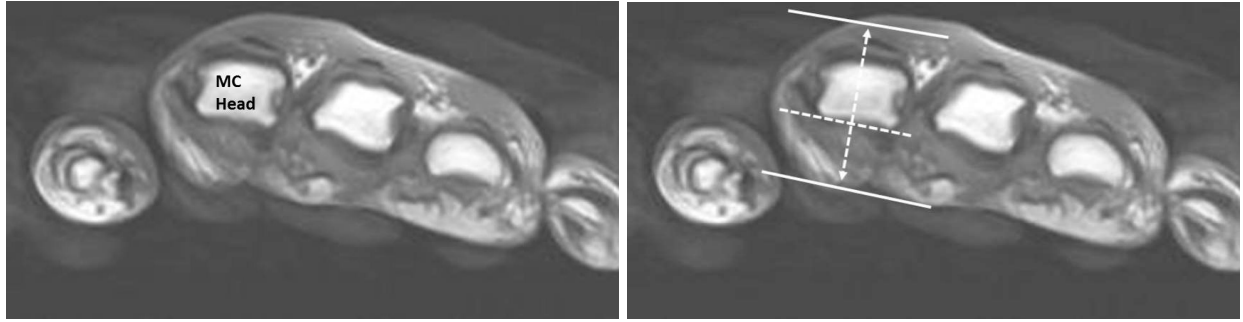
Coverage:

- FOV to include bases of the metacarpals
- Sagittal images should include 2 consecutive fingers for comparison purposes, unless a “hand MRI” is ordered in which case sagittals can extend through whole hand.
- Fingers must be as straight as possible

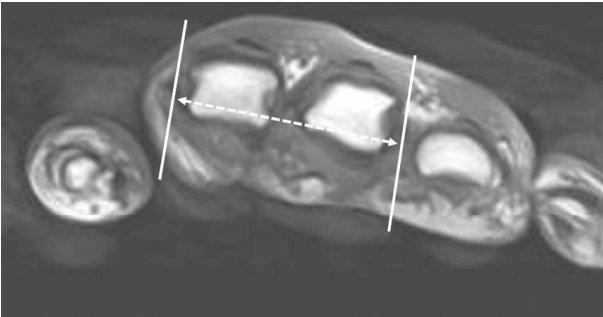
AXIAL IMAGING PLANE



CORONAL IMAGING PLANE



SAGITTAL IMAGING PLANE (perpendicular to coronal plane)



Finger Mass MRI

Sequences:

If patient cannot receive

1. Axial T1
2. Axial PD FS
3. Axial GRE
4. Cor or Sag GRE (Cor if medial or lateral, Sag if anterior or posterior)
5. Cor T1
6. Cor STIR
7. Sag T1
8. Sag STIR
9. Axial T1 FS
10. Axial T1 FS post
11. Cor or Sag T1 FS(Cor if medial or lateral, Sag if anterior or posterior)
12. Cor or Sag T1 FS post(Cor if medial or lateral, Sag if anterior or posterior)

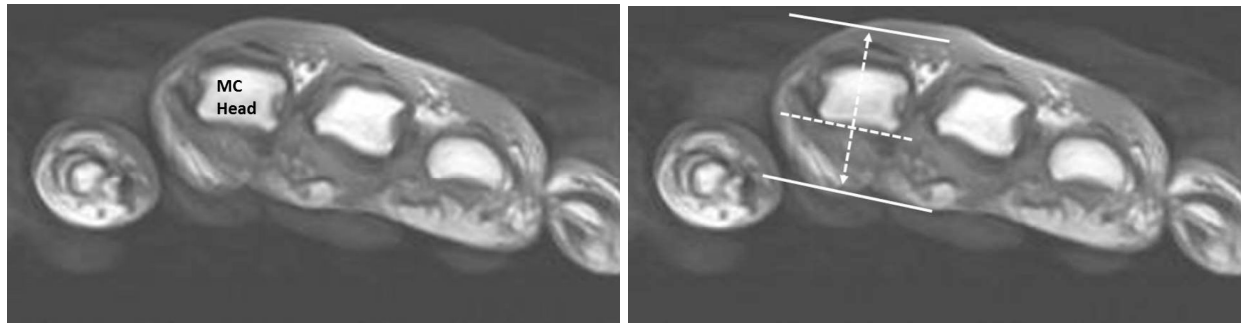
Coverage:

- FOV to include bases of the metacarpals
- Sagittal images should include 2 consecutive fingers for comparison purposes
- Fingers must be as straight as possible

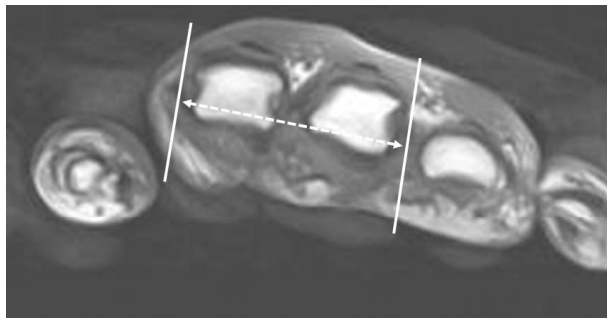
AXIAL IMAGING PLANE



CORONAL IMAGING PLANE



SAGITTAL IMAGING PLANE (perpendicular to coronal plane)

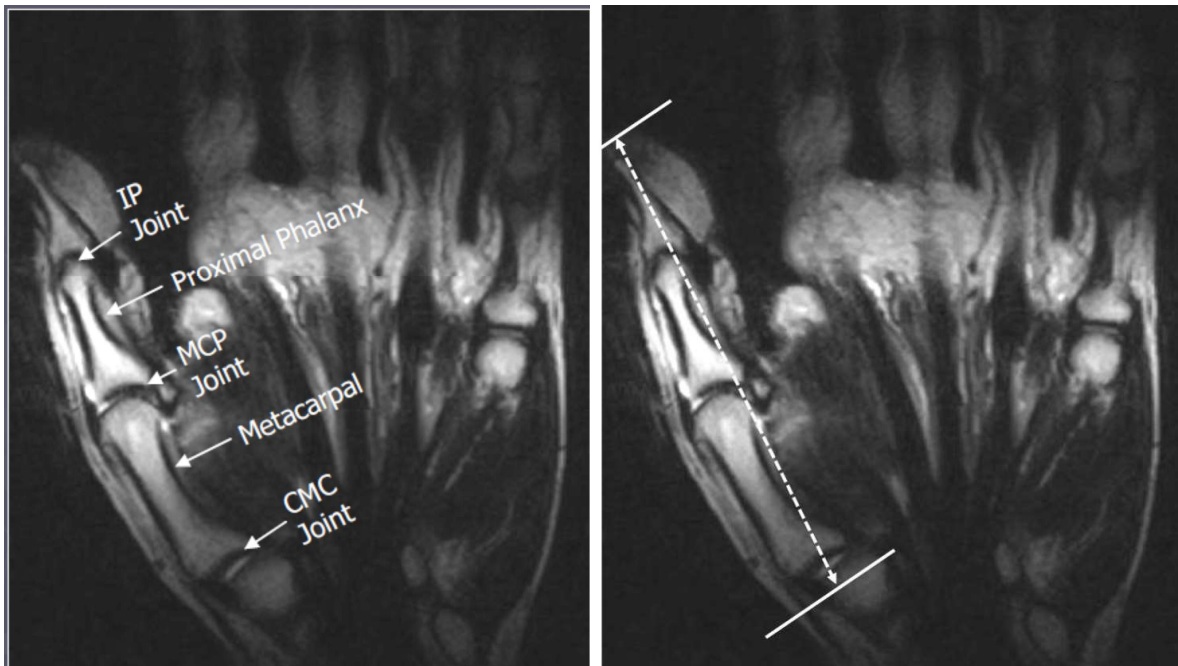


Thumb MRI

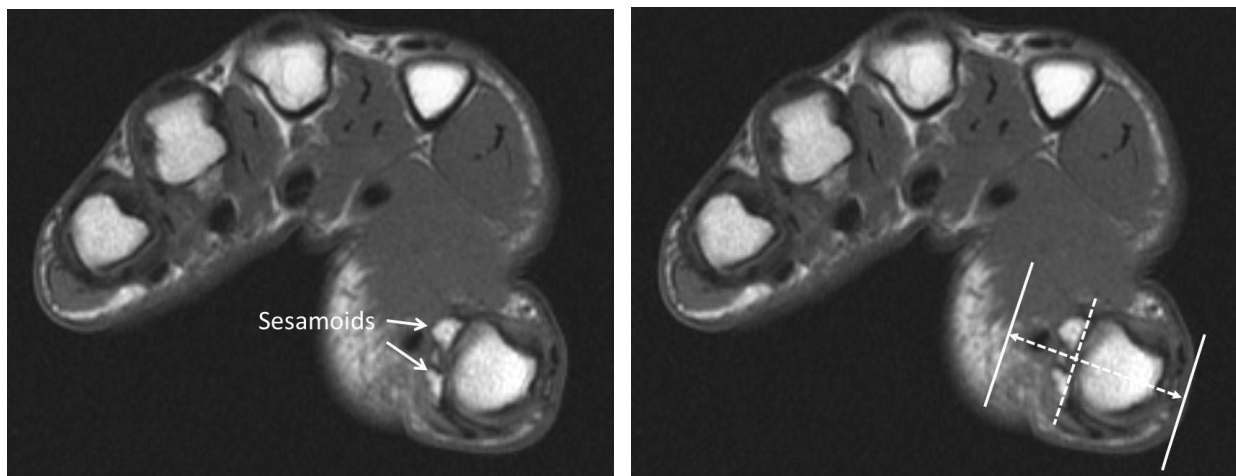
Sequences:

1. Axial T1
2. Axial PD FS
3. Cor T1
4. Cor PDFS
5. Cor GRE
6. Sag PD FS

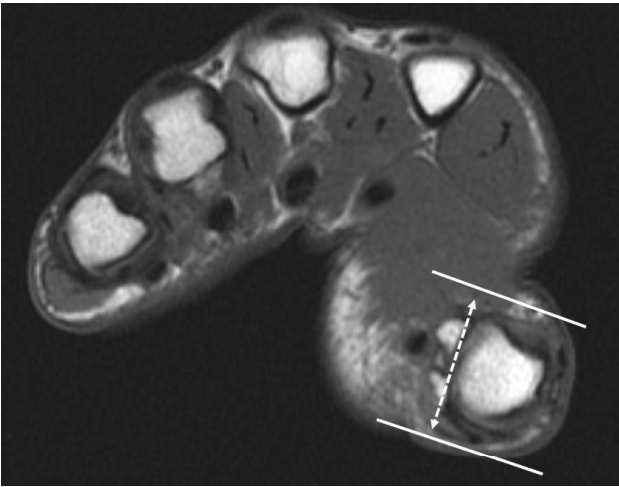
AXIAL IMAGING PLANE



CORONAL IMAGING PLANE (sesamoids as reference point)



SAGITTAL IMAGING PLANE (perpendicular to coronal plane)



Pelvis MRI

Without Contrast:

1. Axial T1 entire pelvis
2. Axial STIR entire pelvis
3. Cor T1 entire pelvis to include iliac crests
4. Cor STIR entire pelvis to include iliac crests
5. Sag PD FS entire pelvis

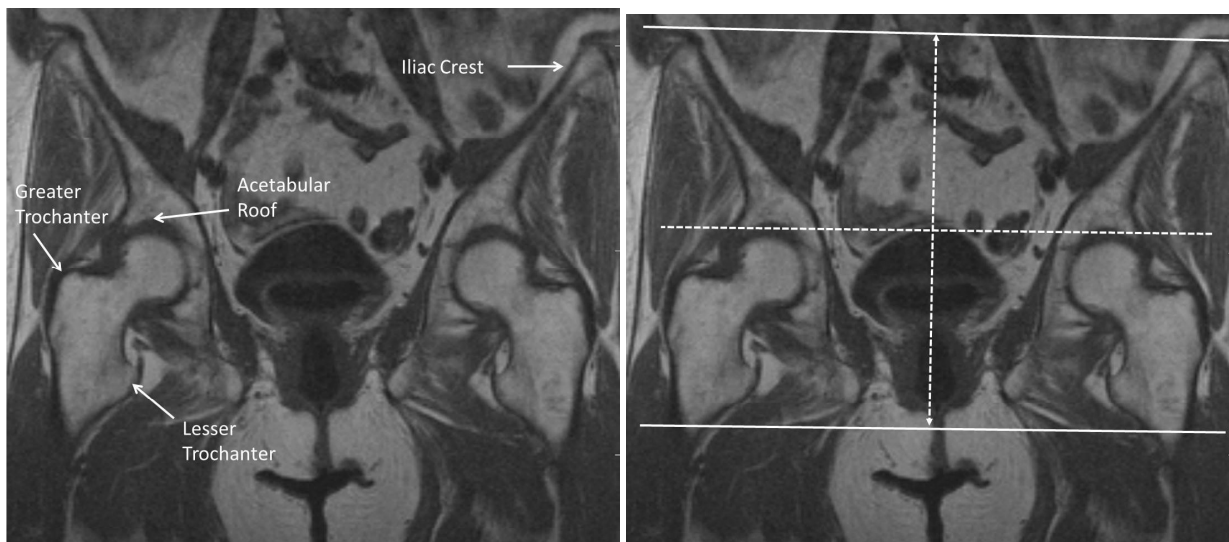
With Contrast:

1. Axial T1 entire pelvis
2. Axial STIR entire pelvis
3. Cor T1 entire pelvis to include iliac crests
4. Cor STIR entire pelvis to include iliac crests
5. Sag PDFS entire pelvis
6. Axial T1 FS
7. Axial T1 FS Post
8. Coronal T1 FS Post

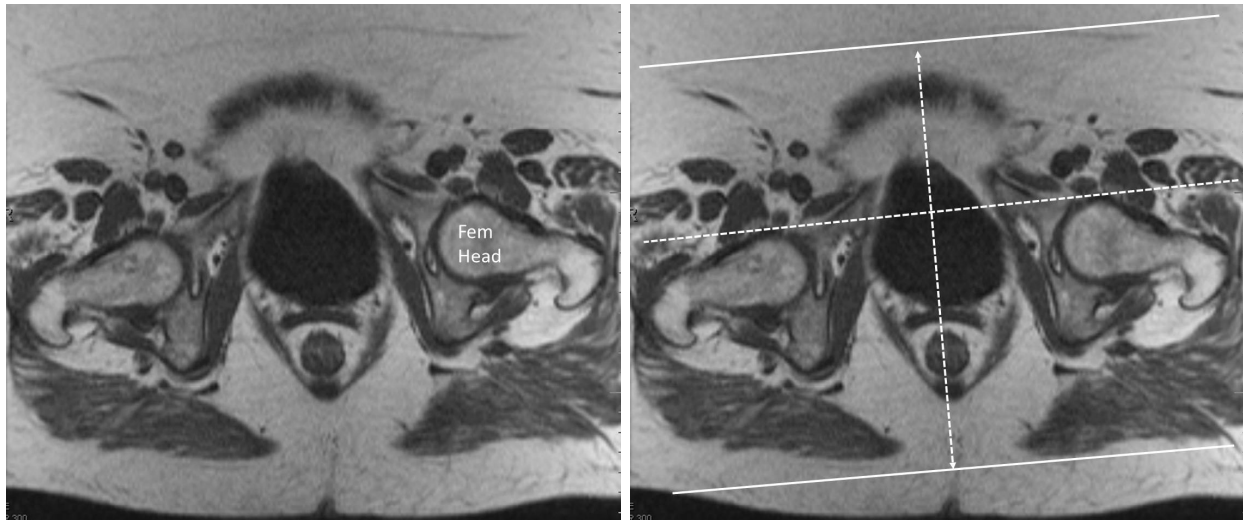
Coverage:

- FOV to include from iliac crests through lesser trochanters
- Axial FOV must include all muscles, but does not require all subcutaneous fat to be imaged.

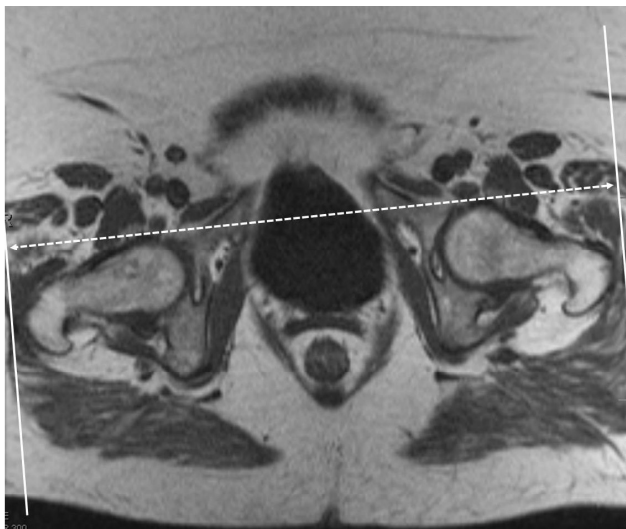
AXIAL IMAGING PLANE (parallels acetabular roofs)



CORONAL IMAGING PLANE (parallels anterior cortex of femoral heads)



SAGITTAL IMAGING PLANE (perpendicular to coronals)



Hip MRI

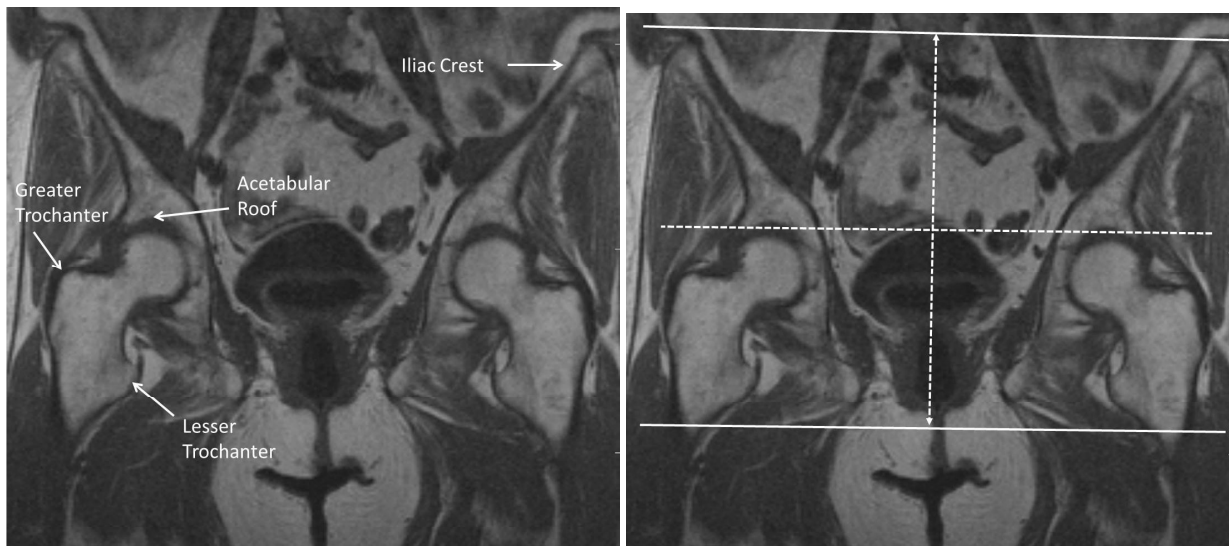
Sequences:

1. Cor T1 entire pelvis
2. Cor STIR entire pelvis
3. Cor PD FS small FOV of affected hip
4. Axial STIR small FOV of affected hip
5. Sag PD FS small FOV of affected hip

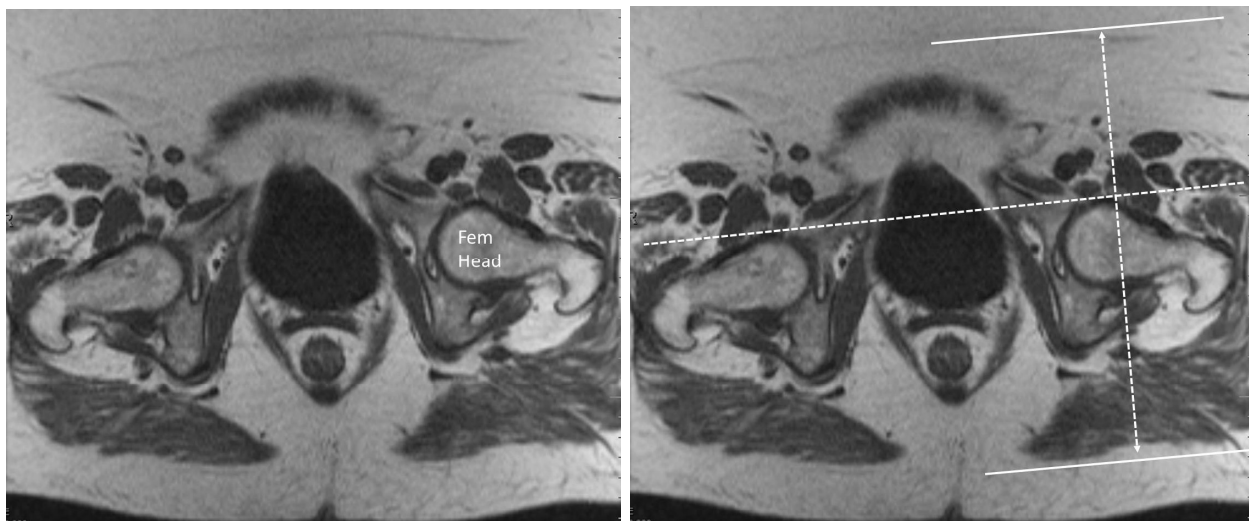
Coverage:

- Entire pelvis FOV to include from iliac crests through lesser trochanters

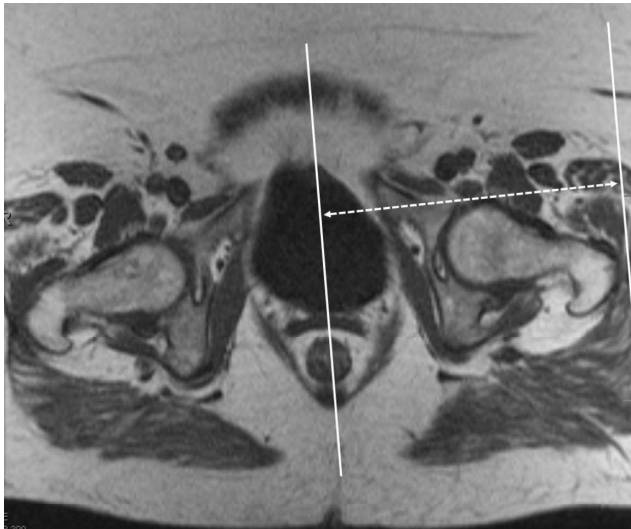
AXIAL IMAGING PLANE (parallels acetabular roofs)



CORONAL IMAGING PLANE (parallels anterior cortex of femoral heads)



SAGITTAL IMAGING PLANE (Perpendicular to coronal, from midline through all muscles)



Hip MRI Arthrogram

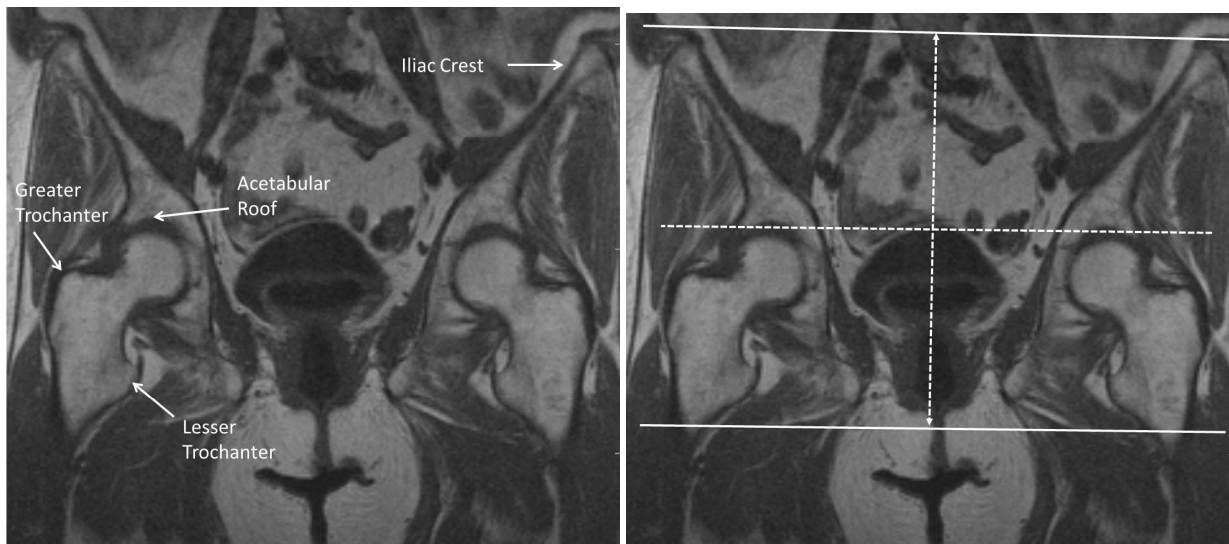
Sequences:

1. Cor T1 entire pelvis
2. Cor T2 FS entire pelvis
3. Axial T1 FS small FOV of affected hip
4. Cor T1 FS small FOV of affected hip
5. Cor PD FS small FOV of affected hip
6. Sag T1 FS small FOV of affected hip
7. Sag T2 FS small FOV of affected hip

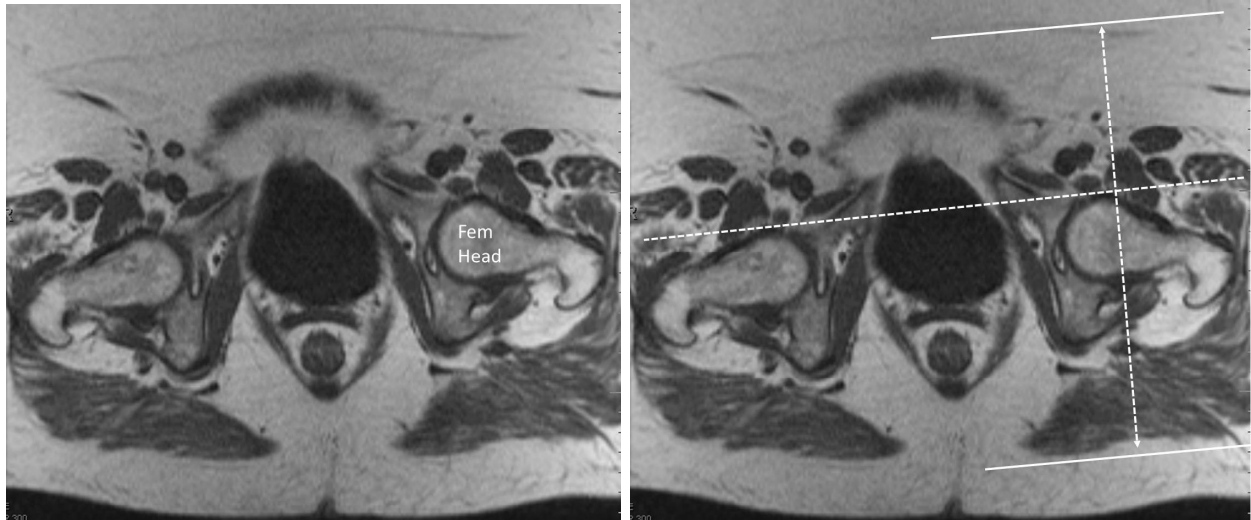
Coverage:

- Entire pelvis FOV to include from iliac crests through lesser trochanters

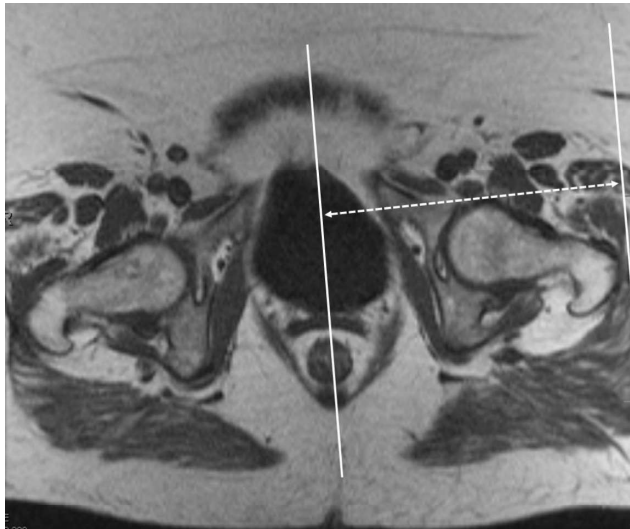
AXIAL IMAGING PLANE (parallels acetabular roofs)



CORONAL IMAGING PLANE (parallels anterior cortex of femoral heads)



SAGITTAL IMAGING PLANE (Perpendicular to coronal, from midline through all muscles)



Sacrum/SI Joint MRI

Sequences:

Without Contrast (this also includes sacral decubitus ulcer indication)

1. Axial T1
2. Axial STIR
3. Coronal Oblique T1
4. Coronal Oblique STIR
5. Sag T1
6. Sag STIR

With Contrast

1. Axial T1 FS
2. Axial STIR
3. Coronal Oblique T1
4. Coronal Oblique STIR
5. Sag STIR
6. Axial T1 FS Post
7. Coronal Oblique T1 FS Post
8. If indication is sacral decubitus ulcer please add axial and sagittal T1

Coverage:

- FOV includes sacrum and SI joints, not the entire pelvis.

CORONAL OBLIQUE PLANE



Rev May 2020

Athletic Pubalgia (Sports Hernia) MRI

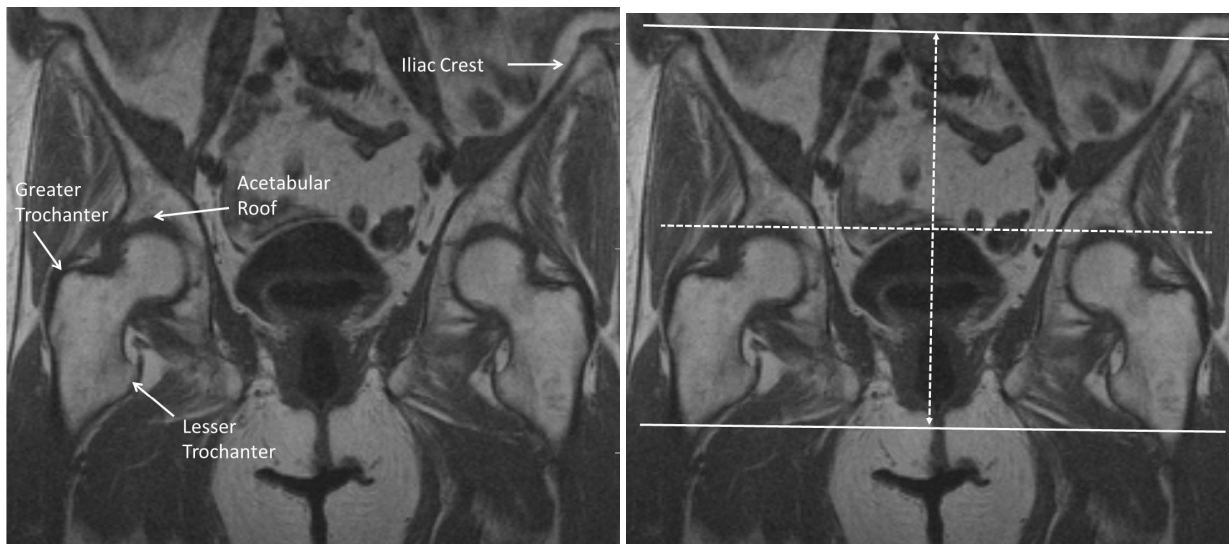
Sequences:

7. Cor T1 including both hips
8. Cor STIR including both hips
9. Axial STIR including both hips
10. Sag T2 FS small FOV centered on pubic symphysis
11. Axial Oblique PD FS small FOV centered on pubic symphysis
12. Axial Oblique T2 FS small FOV centered on pubic symphysis

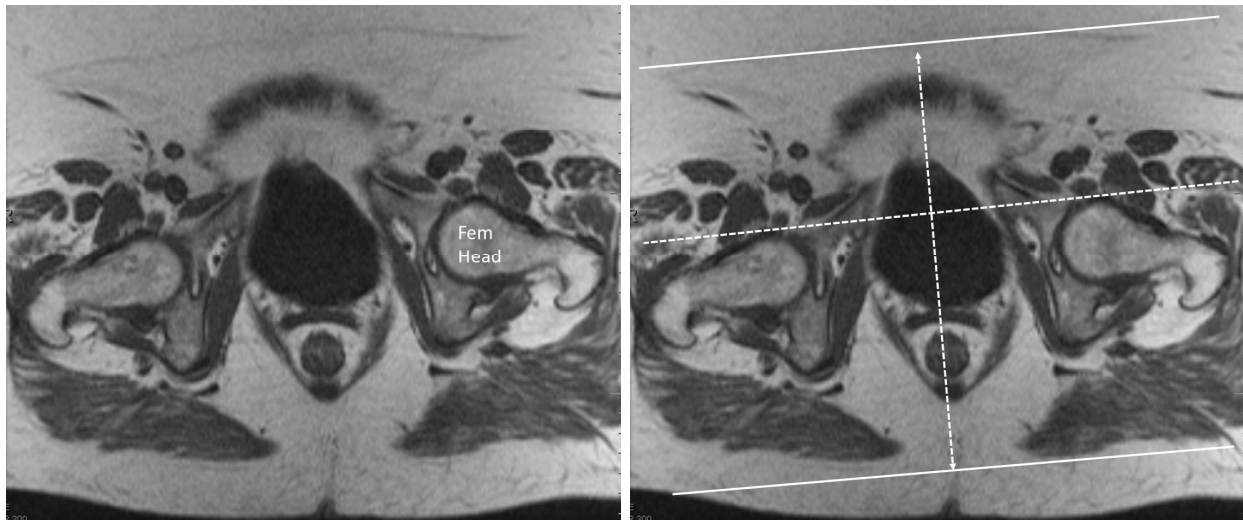
Coverage:

- Large FOV= 28-32, small FOV= 20

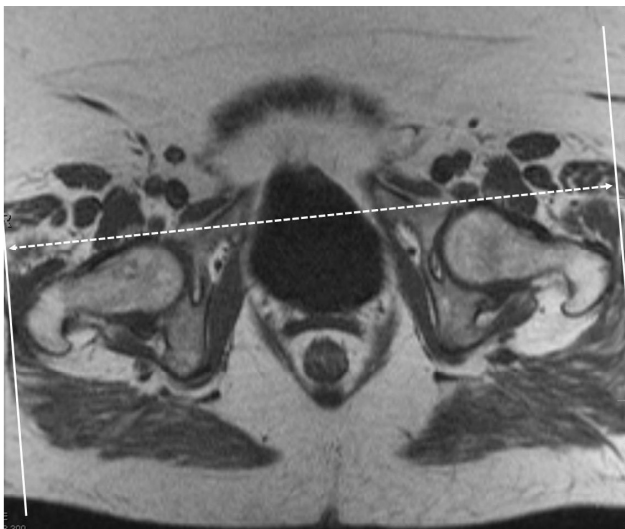
AXIAL IMAGING PLANE (parallels acetabular roofs)



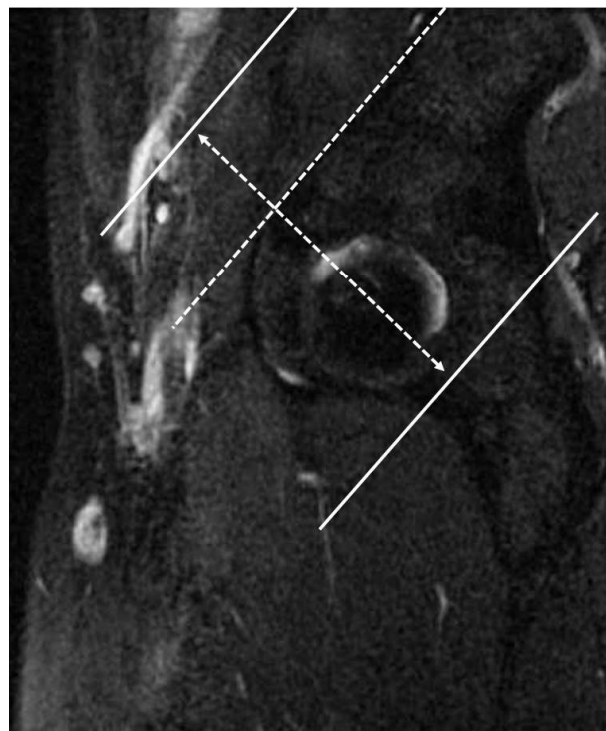
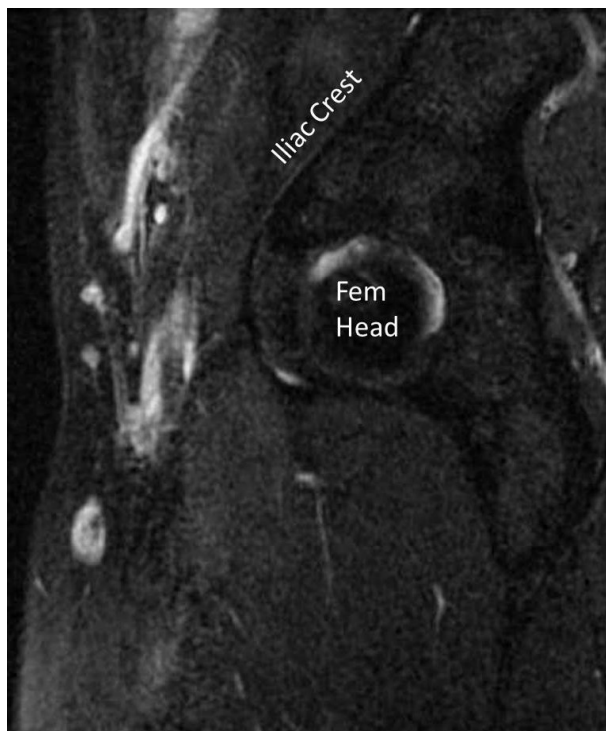
CORONAL IMAGING PLANE (parallels anterior cortex of femoral heads)



SAGITTAL IMAGING PLANE (perpendicular to coronals)



AXIAL OBLIQUE IMAGING PLANE (Images of pubic symphysis, not hip)



Thigh MRI

Sequences:

Without Contrast:

1. Axial T1
2. Axial STIR
3. Cor T1
4. Cor STIR Sag PDFS entire pelvis
5. Sag T1
6. Sag STIR

With Contrast:

1. Axial T1
2. Axial STIR
3. Axial T1 FS
4. Cor T1 FS
5. Cor STIR
6. Sag STIR
7. Cor T1 FS Post
8. Axial T1 FS Post
9. Sag T1 FS Post

Imaging planes should follow that of the pelvis/hip. Please have toes pointing straight up to maintain positioning of thigh.

Knee MRI

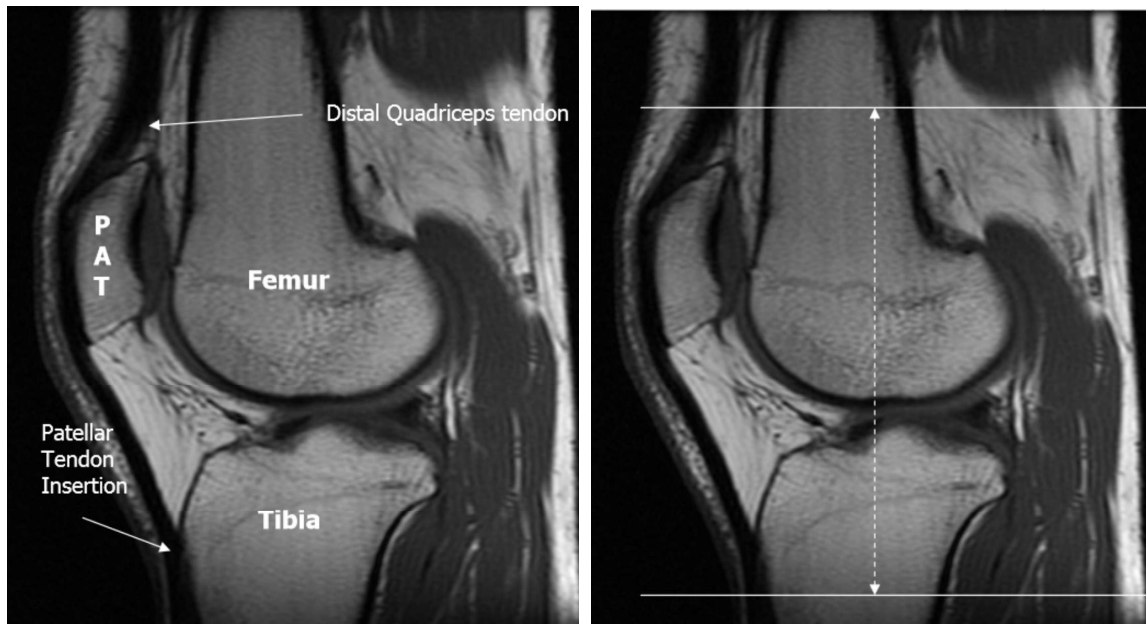
Sequences:

7. Axial T2 FS
8. Sag PD
9. Sag T2 FS
10. Cor T1
11. Cor PDFS

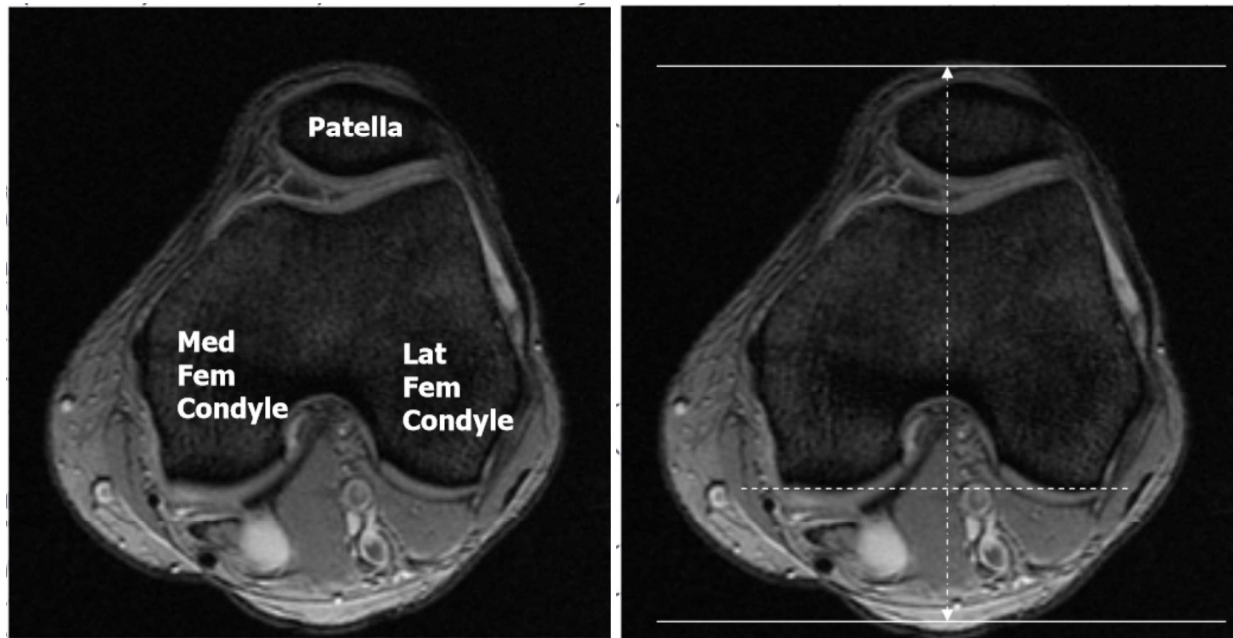
Coverage:

- From distal femoral diaphysis above the patella through the proximal tibial metaphysis to include the entire fibular head
- If there is pathology that extends superiorly or inferiorly to the FOV, perform additional sequences with the FOV centered to include pathology. Do not change FOV to fit pathology.

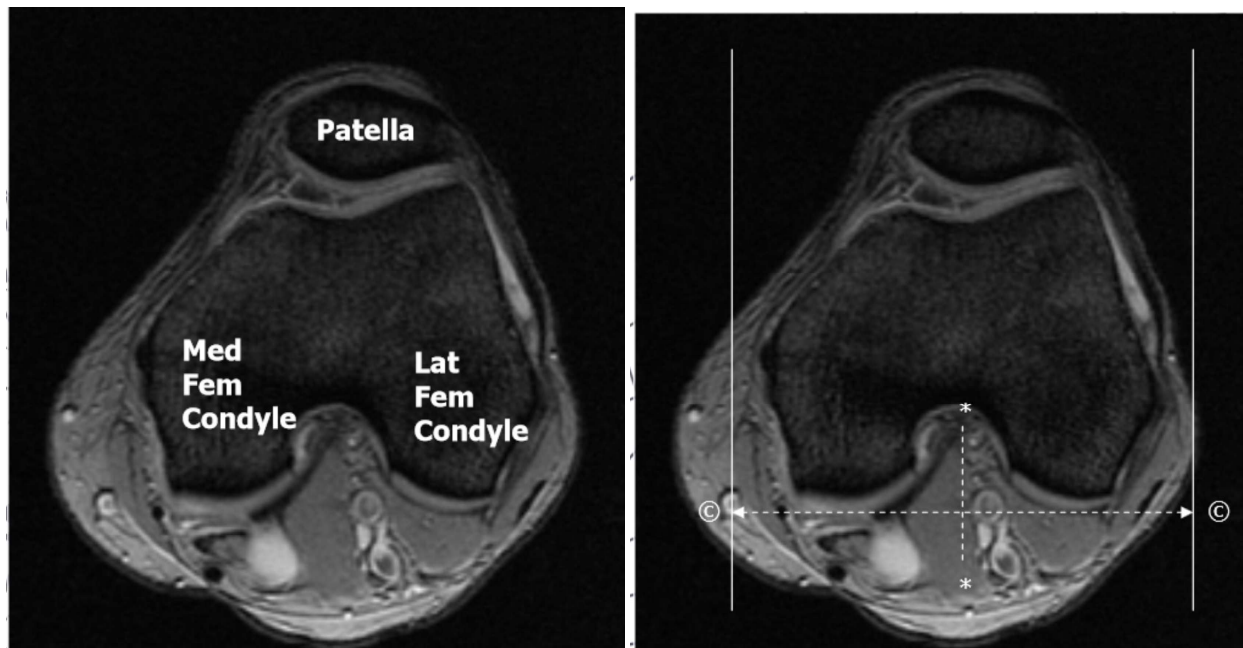
AXIAL IMAGING PLANE



CORONAL IMAGING PLANE



SAGITTAL IMAGING PLANE



Knee MRI Arthrogram

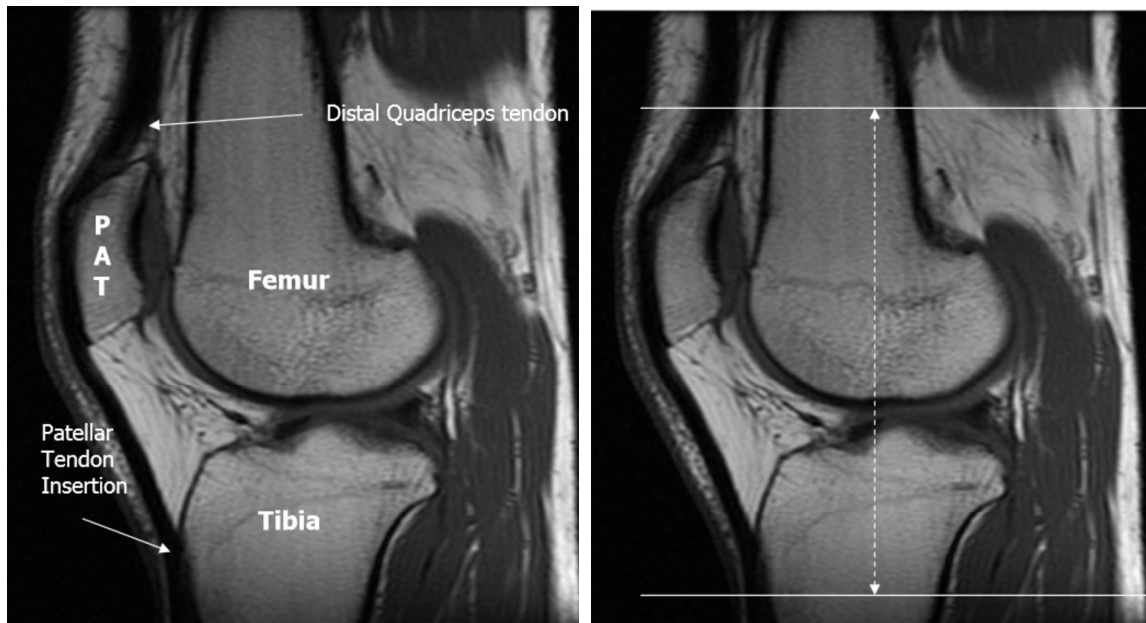
The only indications for arthrograms of the knee are:

- Recurrent meniscal tear after meniscal repair
- Loose body

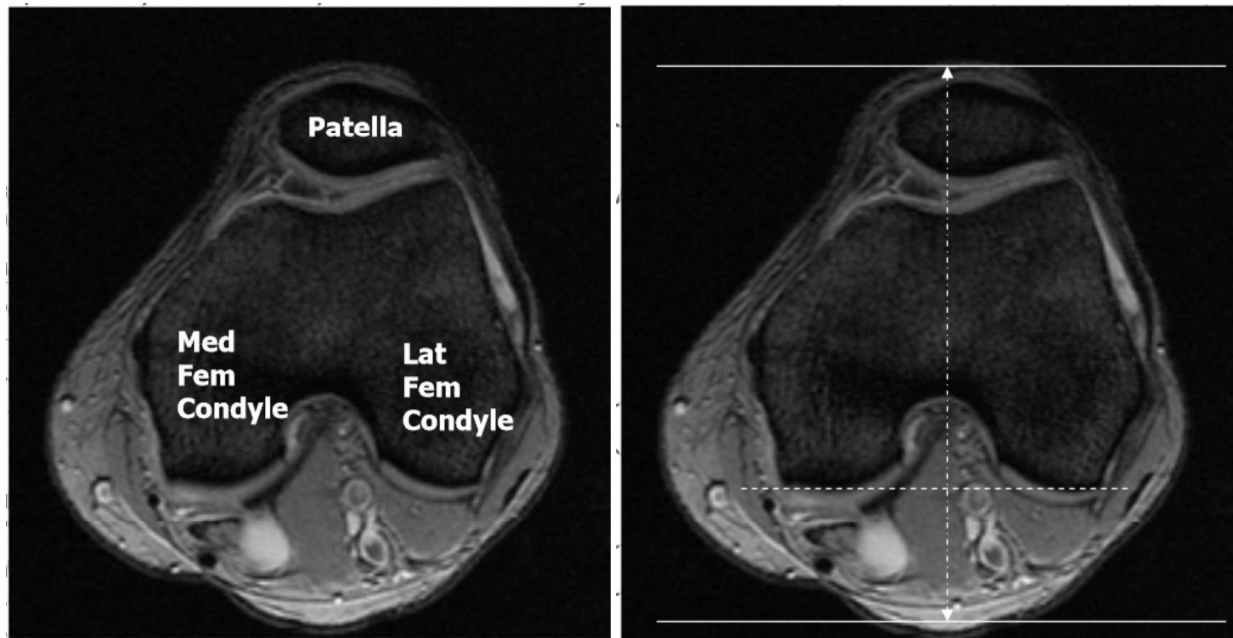
Sequences:

12. Axial T1 FS
13. Axial T2 FS
14. Sag T1
15. Sag T1 FS
16. Sag PD FS
17. Cor T1 FS
18. Cor PD FS

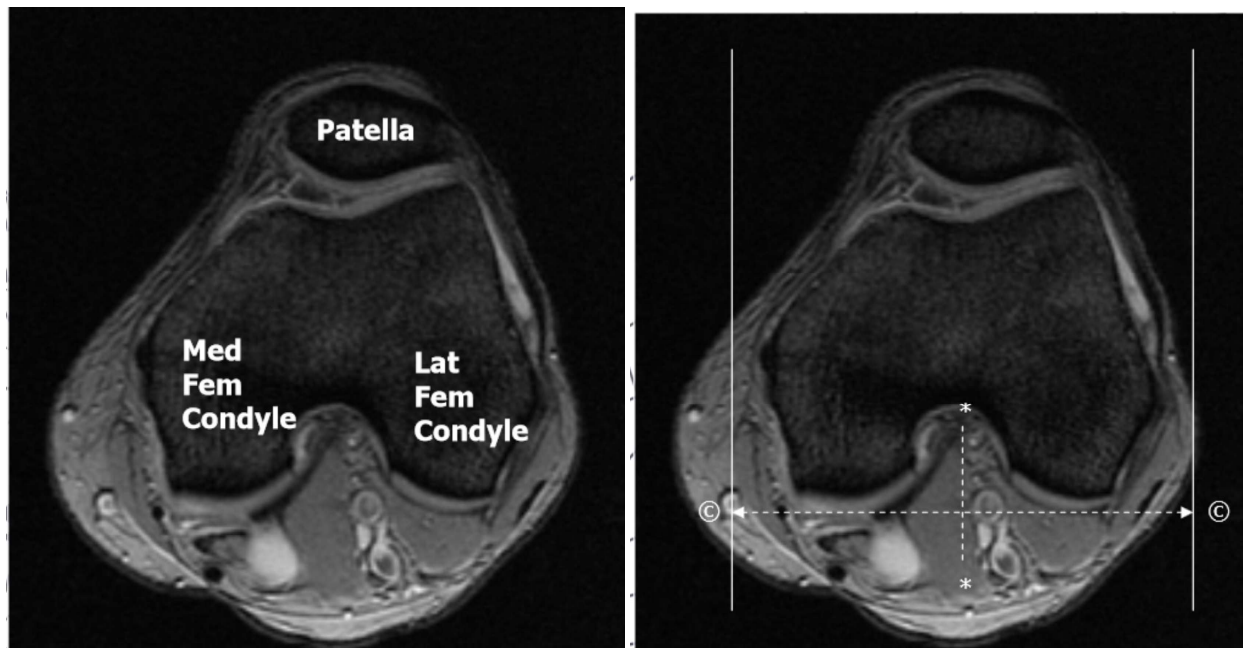
AXIAL IMAGING PLANE



CORONAL IMAGING PLANE



SAGITTAL IMAGING PLANE



Tib Fib MRI

Sequences:

19. Axial T1 of both legs
20. Axial STIR of both legs
21. Cor T1 of both legs
22. Cor STIR of both legs
23. Sag STIR of affected leg
24. Axial PD FS of affected leg

Notes:

- Place marker at site of pain
- Please make sure legs are positioned directly next to each other with toes pointing straight up and taped together
- FOV on all axial sequences should be small to preserve spatial resolution.

Standard Imaging Planes



Ankle and Hindfoot MRI

Without Contrast

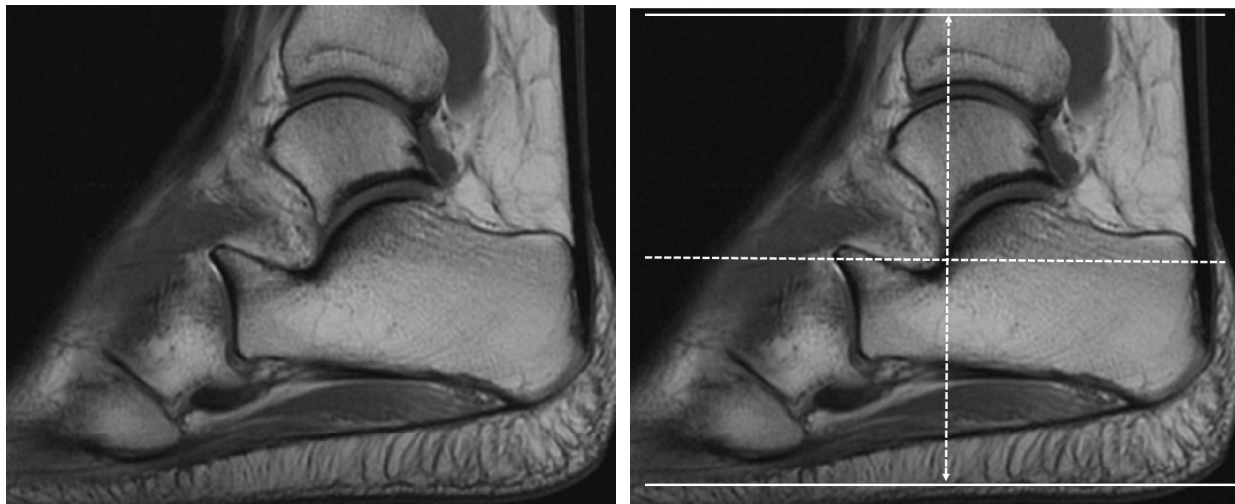
- 25. Sag T1
- 26. Sag STIR
- 27. Axial T1
- 28. Axial STIR
- 29. Cor PD FS
- 30. Axial Oblique PD

There are no indications for a contrasted exam other than mass or osteomyelitis, which is a separate protocol.

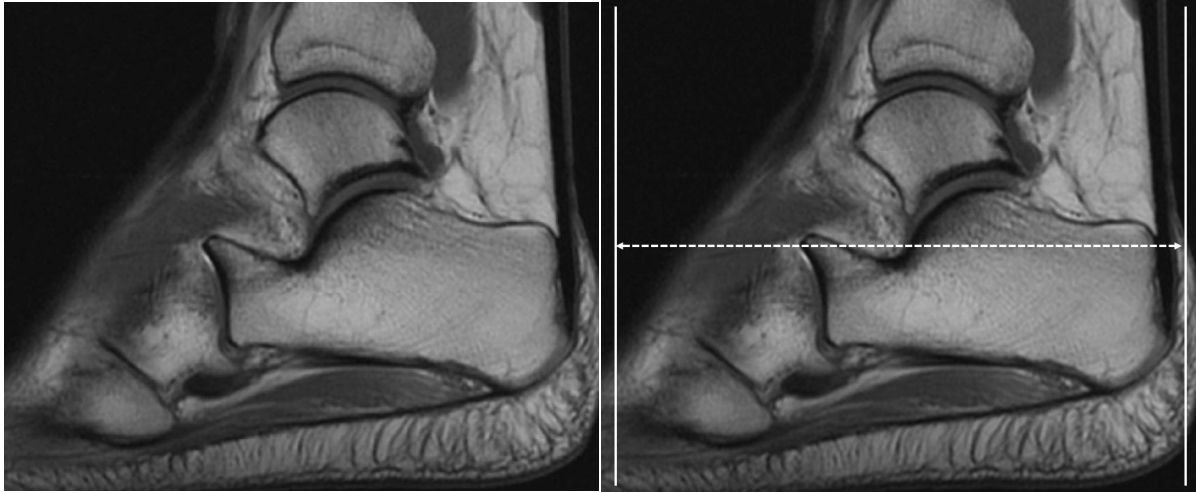
Coverage:

- FOV should only include only bases of the metatarsals

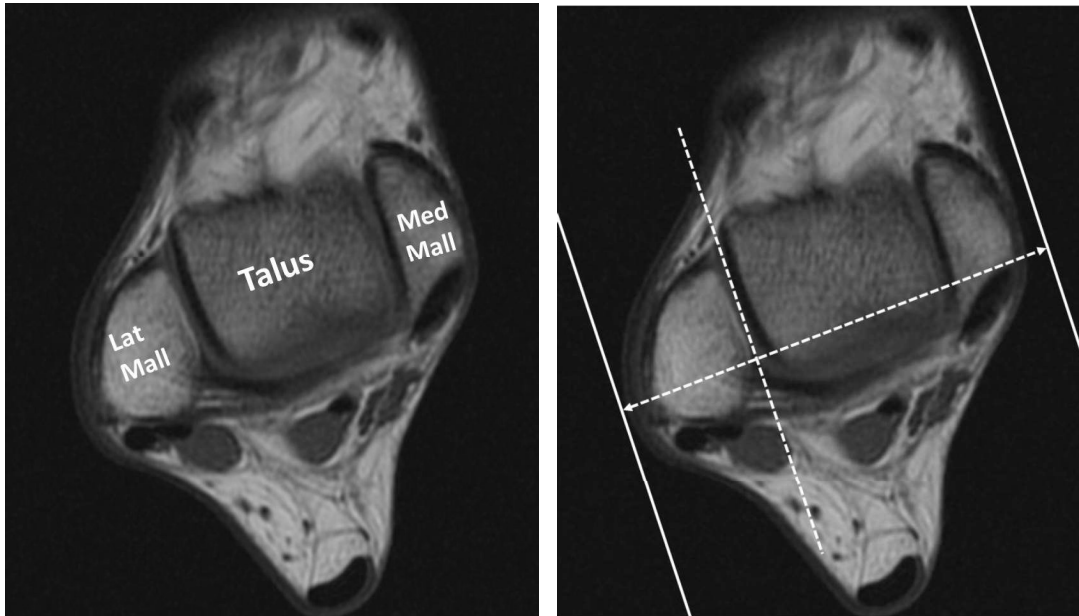
AXIAL IMAGING PLANE



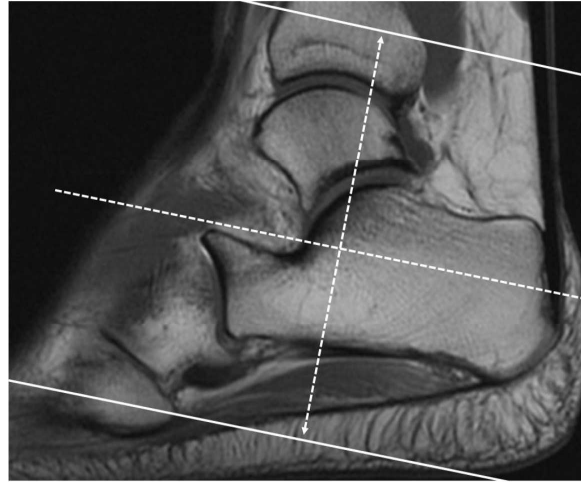
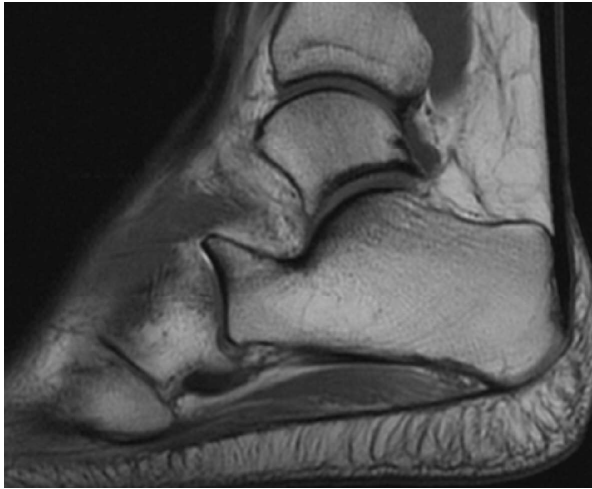
CORONAL IMAGING PLANE



SAGITTAL IMAGING PLANE



AXIAL OBLIQUE PLANE



Forefoot MRI

Without Contrast (stress fx, plantar plate injury, turf toe, metatarsalgia)

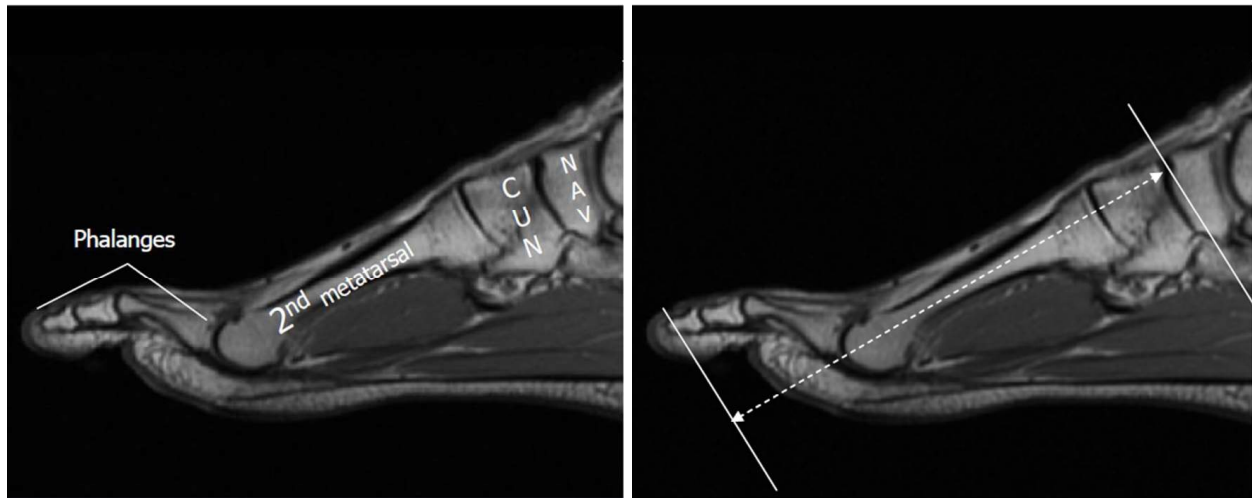
- Long axis T1
- Long axis PDFS
- Short Axis T1
- Short axis PDFS
- Sag T1
- Sag PDFS

There are no indications for a contrasted exam other than mass or osteomyelitis, which is a separate protocol.

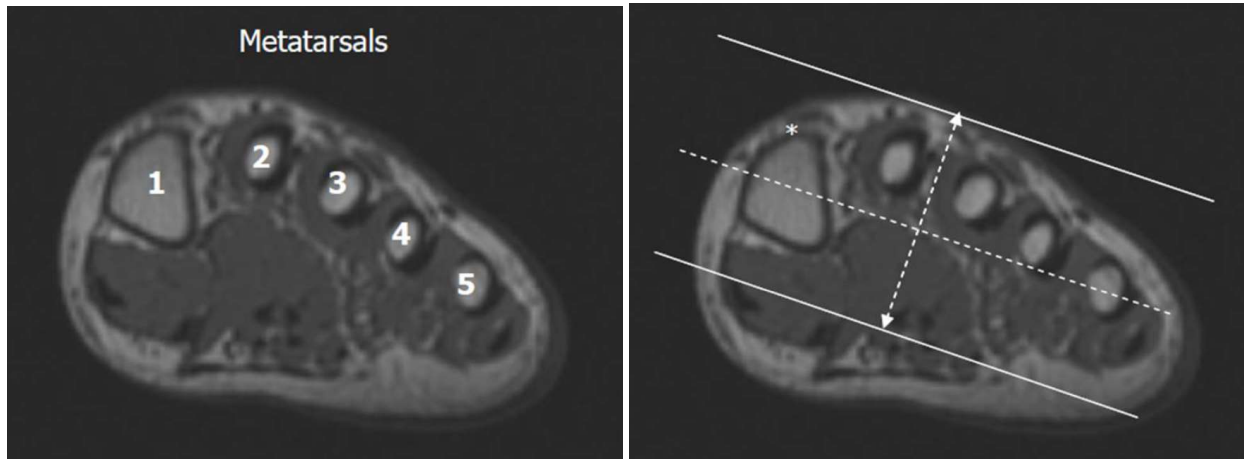
Coverage:

- FOV should only include from TMT joints through toes

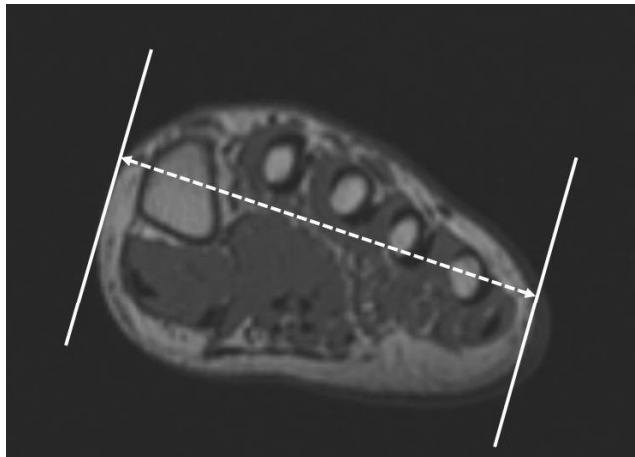
SHORT AXIS IMAGING PLANE



LONG AXIS IMAGING PLANE



SAGITTAL IMAGING PLANE (Perpendicular to Long Axis)



Osteomyelitis

Examination should be performed without contrast unless they are specifically looking for a soft tissue abscess.

Without contrast:

- 3 planes of T1 and either T2 FS or STIR. Imaging planes should be according to anatomic location (forefoot, hindfoot, tib/fib, hand, etc)

With contrast:

- 3 planes of T1
- 3 planes of STIR or T2 FS
- 3 planes of T1 FS
- 3 planes of T1 FS post

Soft Tissue Mass MRI

Place Vitamin E tablet on skin over area of concern

Perform standard MRI Protocol of the area in question PLUS:

- Axial T1 FS
- Axial T1 FS post
- Sag T1 FS
- Sag T1 FS post
- Cor T1 FS
- Cor T1 FS post

Notes:

- If mass is small and the body part is large (e.g. pelvis) the above additional sequences may require a smaller FOV centered on the mass