MRI Shoulder

Updated 06/15/17

Reviewed 05/14/25

For an order for without and with IV imaging, please confirm that the exam is not for tumor or arthrogram before proceeding with this protocol.

Use field-of-view (FOV) and angulations as in the images below.

Go to MRIMaster.com for a guide of proper positioning.

Routine Shoulder:

Pulse Sequence	PACS Name	plane	fat sat	slice (mm)	gap (mm)	first slice
T1	T1 AX	ax	no	4	0.5	top
PD	PD FS SAG	sag	yes	4	0.5	lateral
DESS/PD	DESS FS AX / PD FS AX	ax	yes	4	0.5	top
PD	PD COR	cor	no	4	0.5	front
T2	T2 FS COR	cor	yes	4	0.5	front

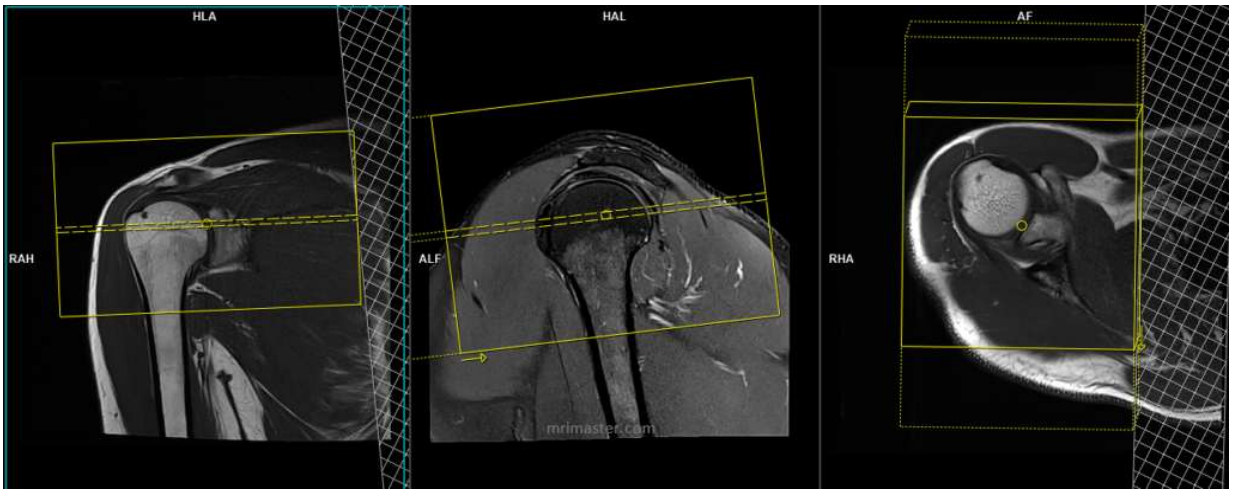
CONTRAST - 2 mL/sec standard dose gadolinium (0.2 mL/kg Clariscan or 0.1 mL/kg Gadavist) followed by 20 mL saline flush.

T1	T1 FS POST AX	ax	yes	4	0.5	top
T1	T1 FS POST COR	cor	yes	4	0.5	front

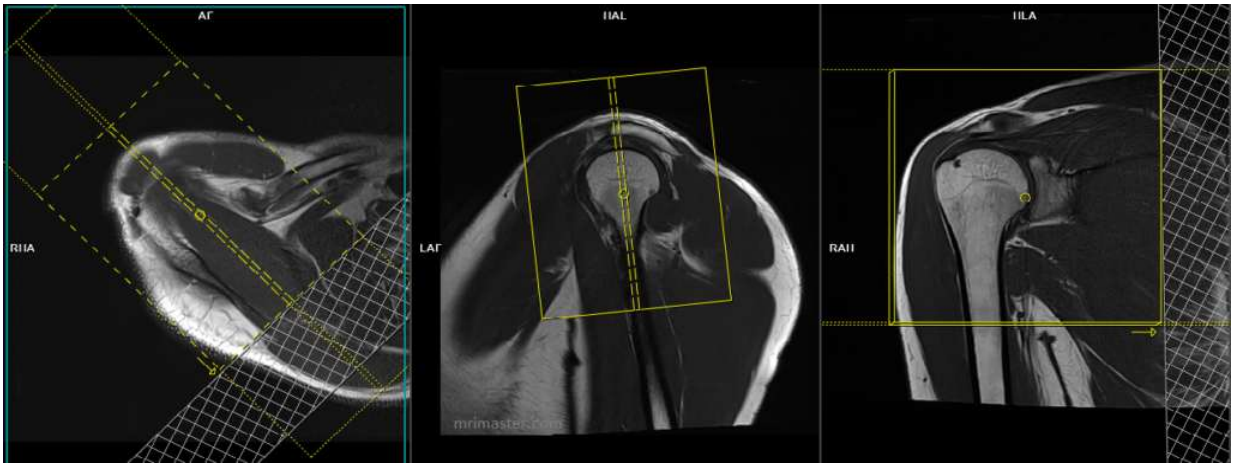
Shoulder Arthrogram:

Pulse Sequence	PACS Name	plane	fat sat	slice (mm)	gap (mm)	first slice
T1	T1 FS AX	ax	yes	4	0.5	top
T1	T1 FS SAG	sag	yes	3	0.3	lateral
T1	T1 FS COR	cor	yes	3	0.3	front
T2	T2 FS COR	cor	yes	3	0.3	front
T1	T1 FS ABER	ax	yes	4	0.5	top

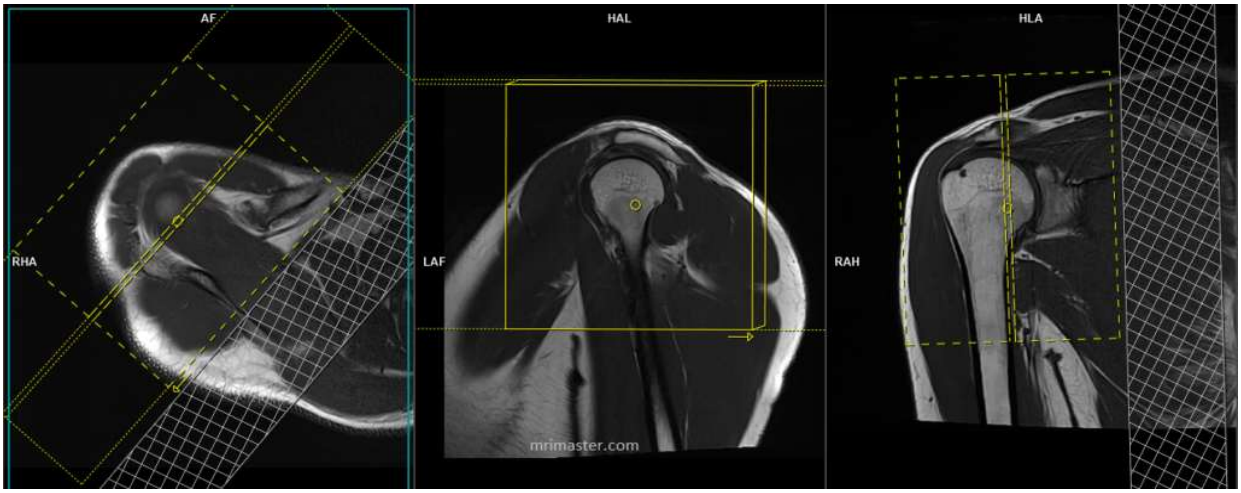
MRI Shoulder



axial FOV and angulation (perpendicular to the glenohumeral joint in the coronal plane)



coronal FOV and angulation (parallel to the supraspinatus tendon in the axial plane)



sagittal FOV and angulation (perpendicular to the supraspinatus tendon in the axial plane)

MRI Elbow

Updated 03/14/19
Reviewed 05/14/25

For an order for without and with IV imaging, please confirm that the exam is not for tumor or arthrogram before proceeding.
Use field-of-view (FOV) and angulations as in the images below
Go to MRIMaster.com for a guide of proper positioning.

Routine Elbow:

Pulse Sequence	PACS Name	plane	fat sat	slice (mm)	gap (mm)	first slice
T1	T1 AX	ax	no	4	0.5	top
STIR	STIR AX	ax	no	4	0.5	top
T1	T1 COR	cor	no	4	0.5	front
T2	T2 FS COR	cor	yes	4	0.5	front
DESS/PD	DESS FS COR / PD FS COR	cor	yes	1	0.0	front
T2	T2 FS SAG	sag	yes	4	0.5	lateral

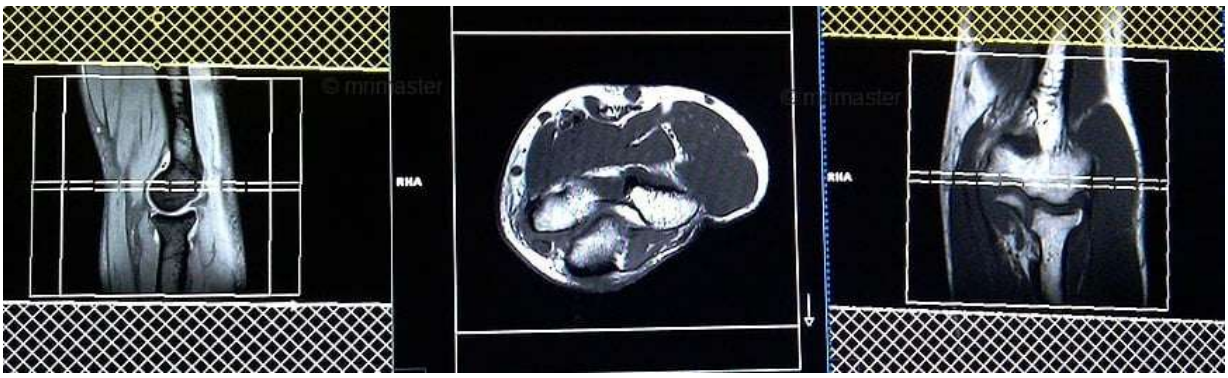
CONTRAST - 2 mL/sec standard dose gadolinium (0.2 mL/kg Clariscan or 0.1 mL/kg Gadavist) followed by 20 mL saline flush.

T1	T1 FS POST AX	ax	yes	4	0.5	top
T1	T1 FS POST SAG	sag	yes	4	0.5	front

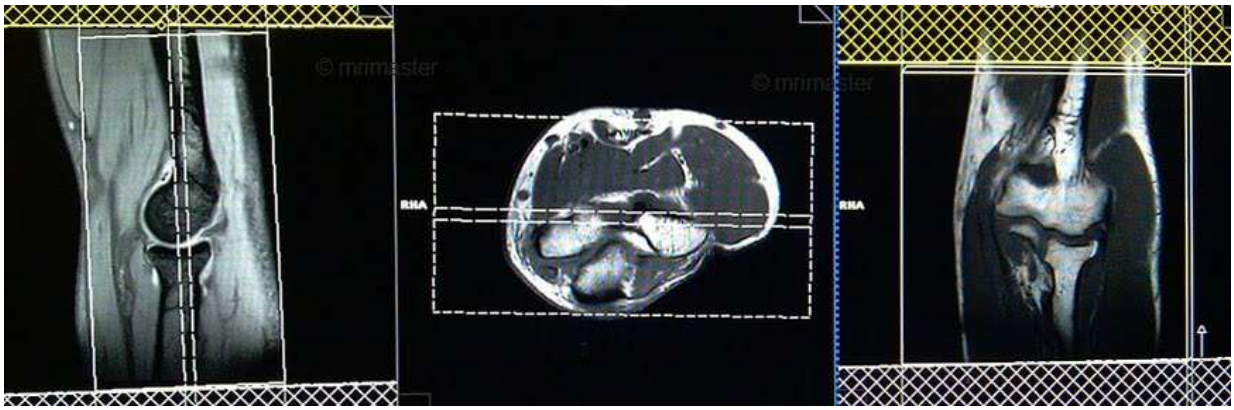
Elbow Arthrogram:

Pulse Sequence	PACS Name	plane	fat sat	slice (mm)	gap (mm)	first slice
T1	T1 FS AX	ax	yes	4	0.5	top
T1	T1 FS COR	cor	yes	4	0.5	front
T1	T1 FS SAG	sag	yes	4	0.5	lateral
T1	T1 COR	cor	no	4	0.5	front
T2	T2 FS COR	cor	yes	4	0.5	front

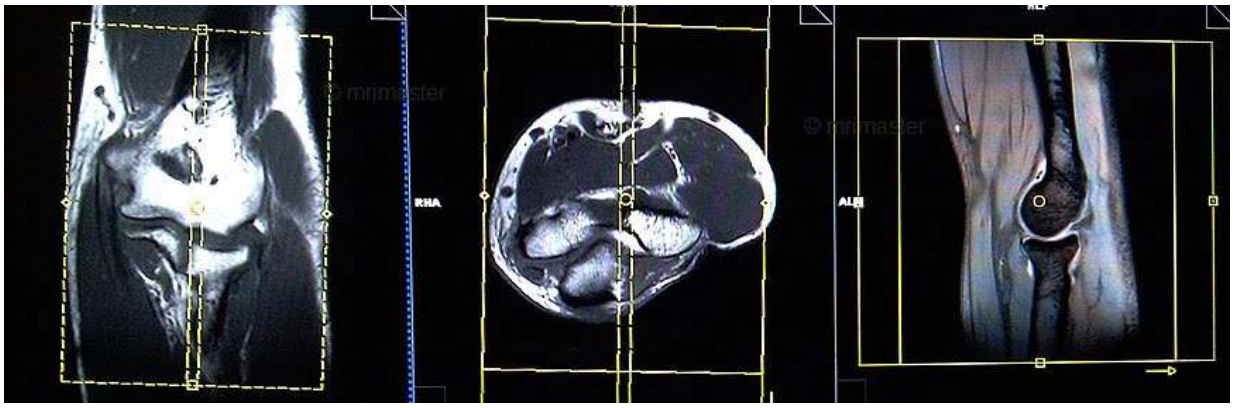
MRI Elbow



axial FOV and angulation (parallel to the medial and lateral humeral epicondyle in the coronal plane)



coronal FOV and angulation (parallel to the medial and lateral humeral epicondyles in the axial plane)



sagittal FOV and angulation (perpendicular to the medial and lateral humeral epicondyles in the axial plane)

MRI Wrist

Updated 05/26/20
Reviewed 05/14/25

For an order for without and with IV imaging, please confirm that the exam is not for tumor or arthrogram before proceeding.
Use field-of-view (FOV) and angulations as in the images below.
Go to MRIMaster.com for a guide of proper positioning.

Routine Wrist:

Pulse Sequence	PACS Name	plane	fat sat	slice (mm)	gap (mm)	first slice
T1	T1 AX	ax	no	3	0.5	top
PD	PD FS AX	ax	yes	3	0.5	top
T1	T1 COR	cor	no	3	0.5	front
PD	PD FS COR	cor	yes	3	0.5	front
T2	T2 FS COR	cor	yes	3	0.5	front
STIR	T2 STIR SAG	sag	no	3	0.5	lateral
DESS/PD	DESS FS COR / PD FS COR	cor	yes	1	0.0	front

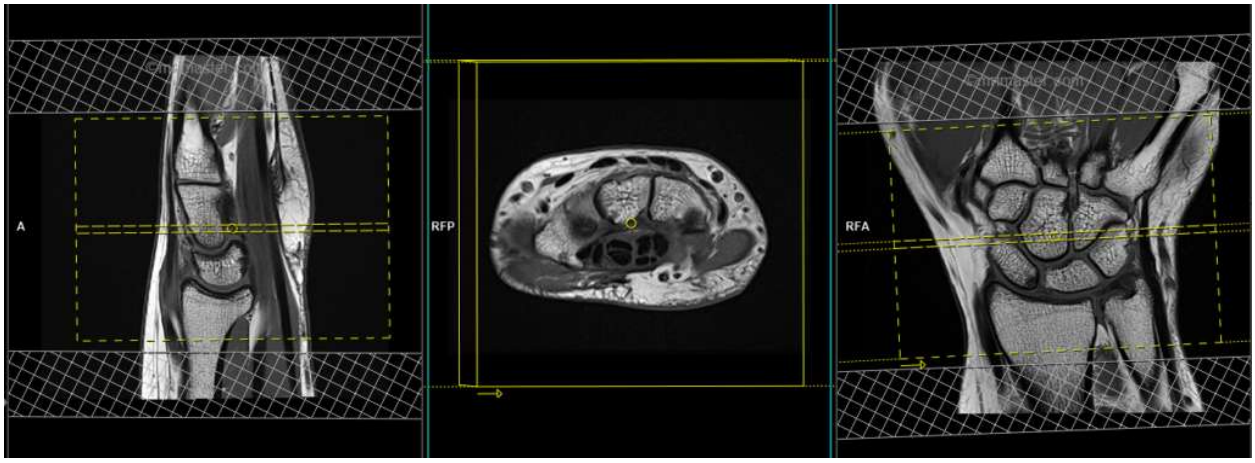
CONTRAST - 2 mL/sec standard dose gadolinium (0.2 mL/kg Clariscan or 0.1 mL/kg Gadavist) followed by 20 mL saline flush.

T1	T1 FS POST COR	cor	yes	3	0.5	front
T1	T1 FS POST AX	ax	yes	3	0.5	top

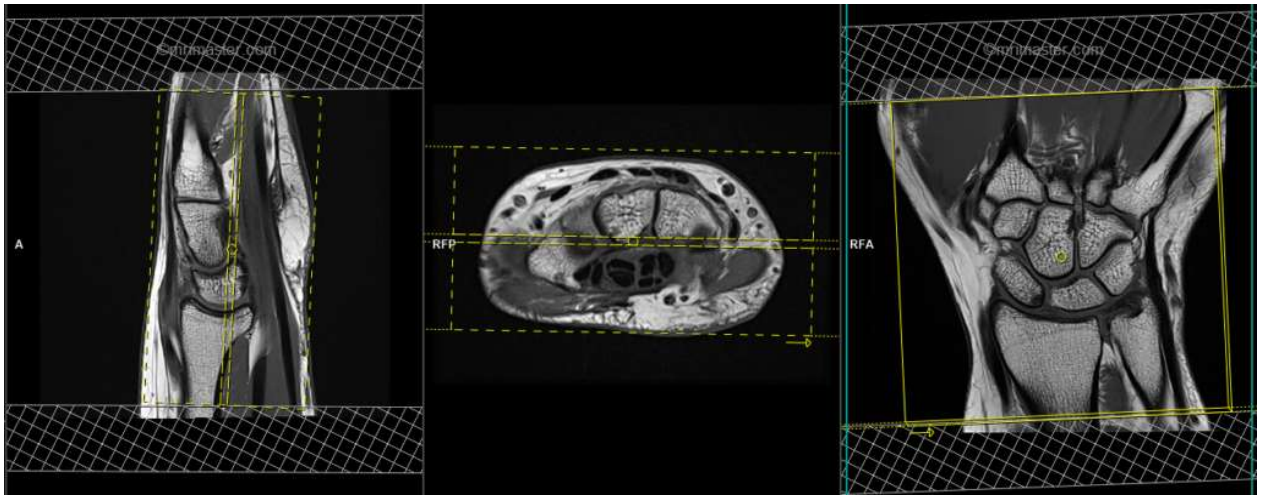
Wrist Arthrogram:

Pulse Sequence	PACS Name	plane	fat sat	slice (mm)	gap (mm)	first slice
T1	T1 FS AX	ax	yes	3	0.6	top
T1	T1 FS COR	cor	yes	3	0.3	front
T1	T1 FS SAG	sag	yes	3	0.6	lateral
T2	T2 COR	cor	no	3	0.3	front
PD	PD FS COR	cor	yes	3	0.6	front
PD	PD FS SAG	sag	yes	3	0.6	lateral
3D MERGE	3D MERGE COR	cor	no	3	none	front

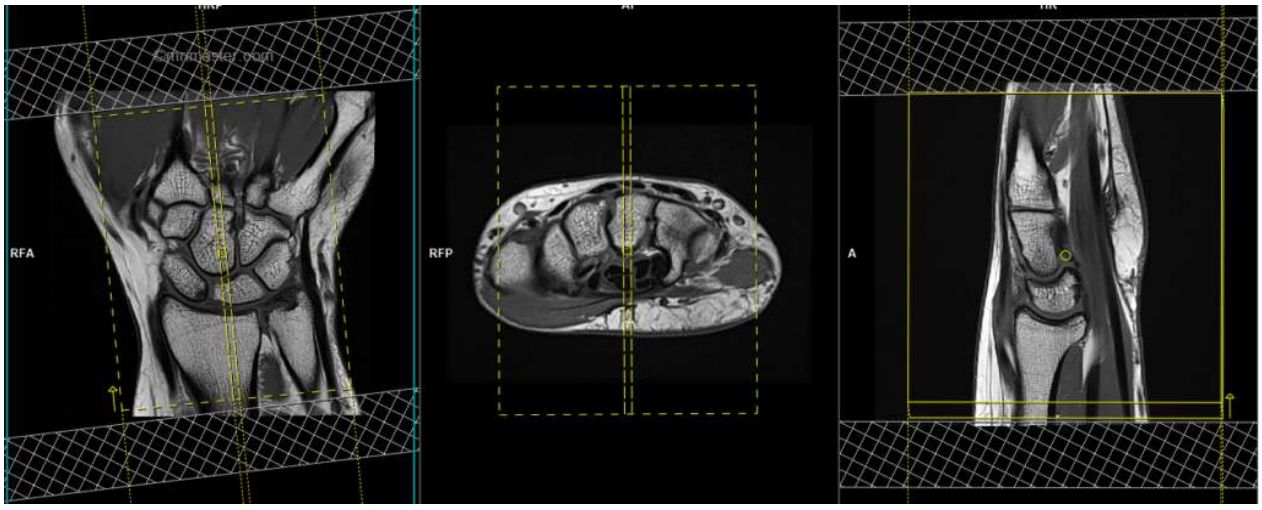
MRI Wrist



axial FOV and angulation (horizontally across the carpal bones in the coronal plane)



coronal FOV and angulation (horizontally across the carpal bones in the axial plane)



sagittal FOV and angulation (vertically across the carpal bones in the axial plane)

MRI Hand

Updated 03/01/21

Reviewed 05/14/25

Routine Hand:

Use field-of-view (FOV) and angulations as in the images below.

Go to MRIMaster.com for a guide of proper positioning.

Pulse Sequence	PACS Name	plane	fat sat	slice (mm)	gap (mm)	first slice
T1	T1 COR	cor	no	3	0.3	front
STIR	STIR COR	cor	no	3	0.3	front
DESS/PD	DESS FS COR / PD FS COR	cor	yes	3	0.3	front
STIR	STIR SAG	sag	no	3	0.3	lateral
T1	T1 SAG	sag	no	3	0.3	lateral
T1	T1 AX	ax	no	4	0.0	top
T2	T2 FS AX	ax	yes	4	0.0	top

CONTRAST - 2 mL/sec standard dose gadolinium (0.2 mL/kg Clariscan or 0.1 mL/kg Gadavist) followed by 20 mL saline flush.

T1	T1 FS POST COR	cor	yes	3	0.3	front
T1	T1 FS POST AX	ax	yes	4	0.0	top
T1	T1 FS POST SAG	ax	yes	3	0.3	top

Both Hands for Arthritis:

Use field-of-view (FOV) and angulations as in the images below.

Place both hands prone in the superman position with fingers slightly separated.

Include all skin superior to inferior.

Mid wrist through distal finger tips.

All fingers must be included in the FOV.

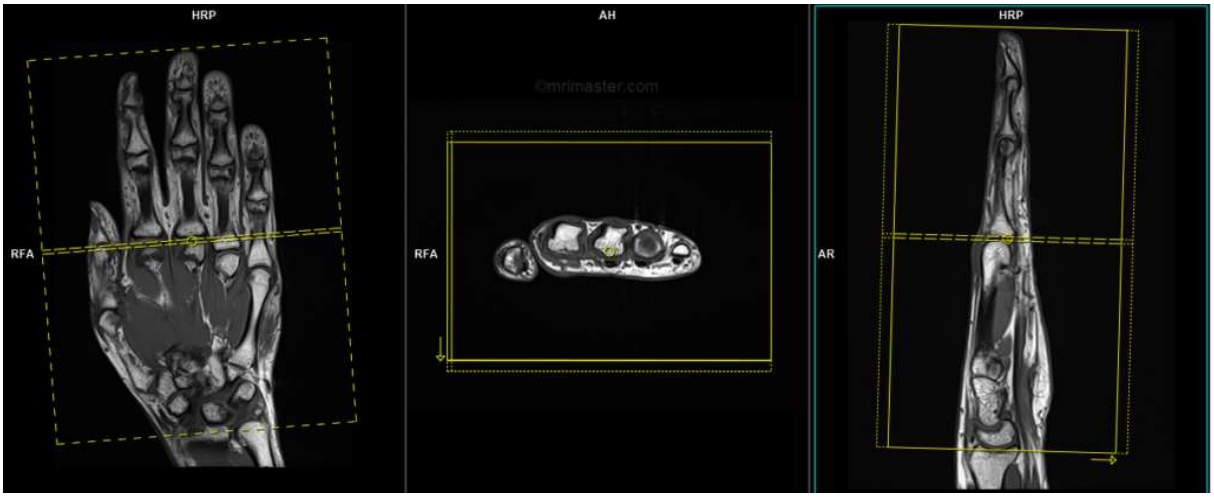
Go to MRIMaster.com for a guide of proper positioning.

Pulse Sequence	PACS Name	plane	fat sat	slice (mm)	gap (mm)	first slice
T1	T1 COR	cor	no	3	0.3	front
STIR	STIR COR	cor	no	3	0.3	front
T1	T1 AX	ax	no	4	0.5	top
T2	T2 FS AX	ax	yes	4	0.5	top

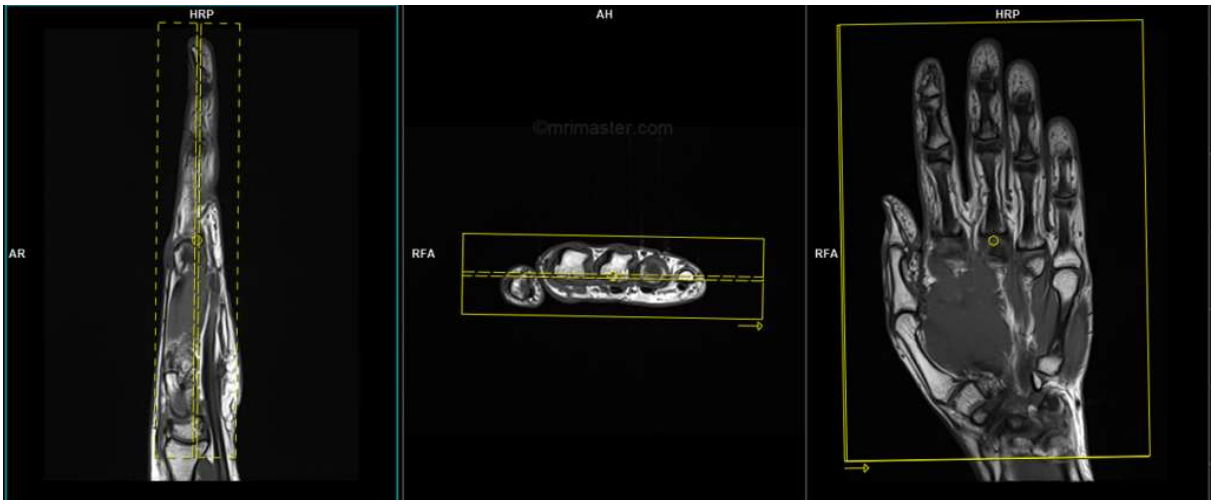
CONTRAST - 2 mL/sec standard dose gadolinium (0.2 mL/kg Clariscan or 0.1 mL/kg Gadavist) followed by 20 mL saline flush.

T1	T1 FS POST COR	cor	yes	3	0.3	front
T1	T1 FS POST AX	ax	yes	4	0.5	top

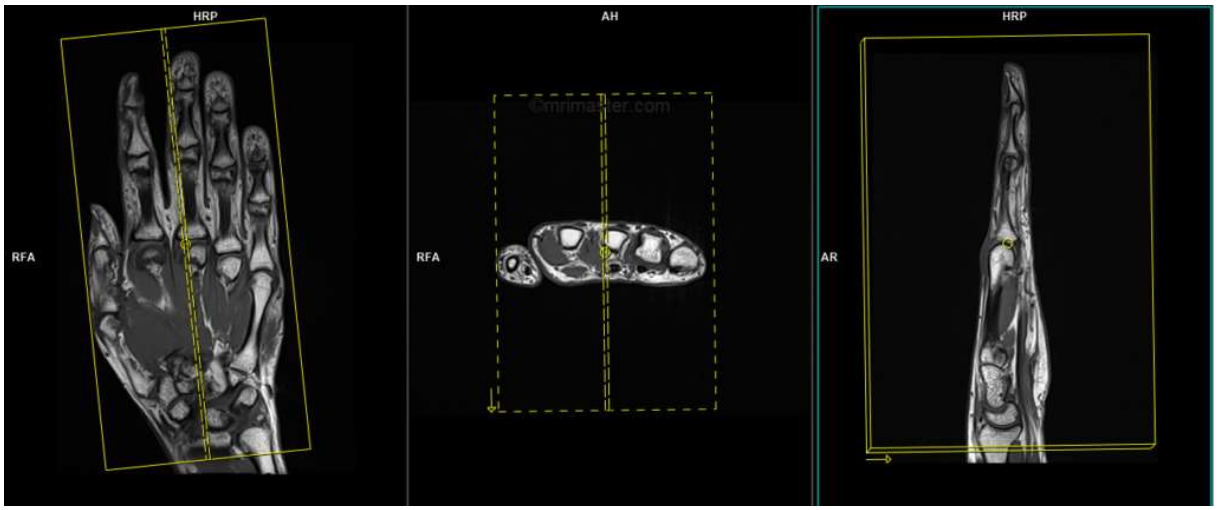
MRI Hand



axial FOV and angulation (perpendicular to the metacarpal and phalangeal bones in the coronal plane)



coronal FOV and angulation (parallel to a line across the metacarpal bones in the axial plane)



sagittal FOV and angulation (perpendicular to the pectoralis muscle in the axial plane)

MRI Thumb/UCL

Updated 07/17/17

Reviewed 05/14/25

Use field-of-view (FOV) and angulations as in the images below.

Use sesamoid bones for guide for choosing angles.

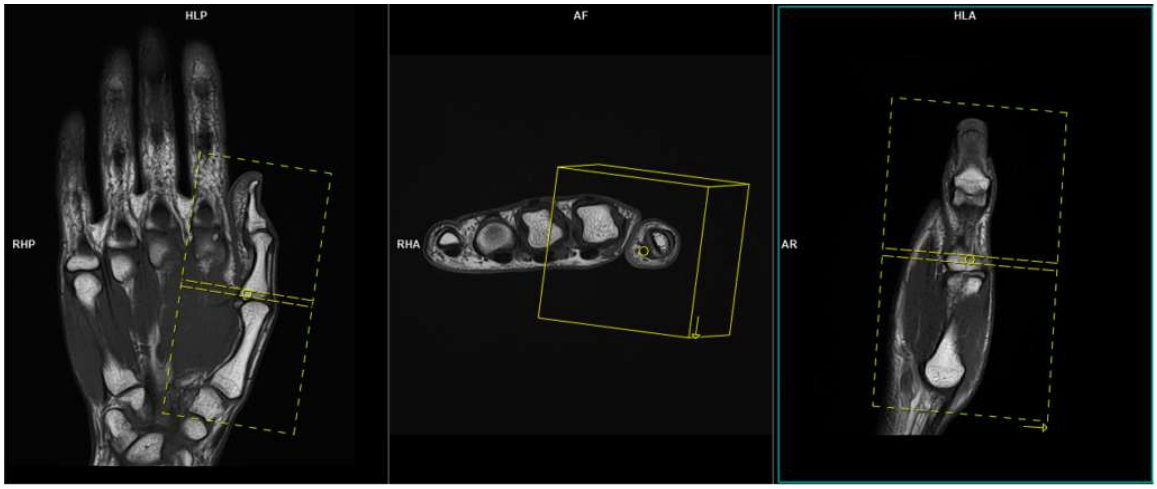
Confirm the planes with a MSK Radiologist before proceeding.

IV contrast is not given for this protocol.

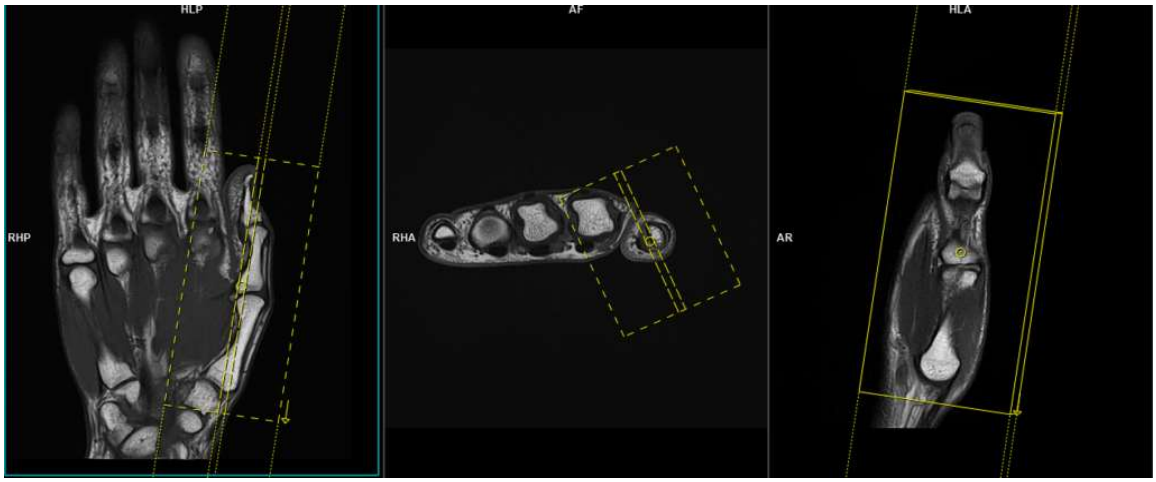
Go to MRIMaster.com for a guide of proper positioning.

Pulse Sequence	PACS Name	plane	fat sat	slice (mm)	gap (mm)	first slice
T1	T1 AX	ax	no	3	0.3	top
T2	T2 FS AX	ax	yes	3	0.3	top
T1	T1 COR	cor	no	3	0.3	front
T2	T2 COR	cor	no	3	0.3	front
STIR	STIR SAG	sag	no	3	0.3	lateral

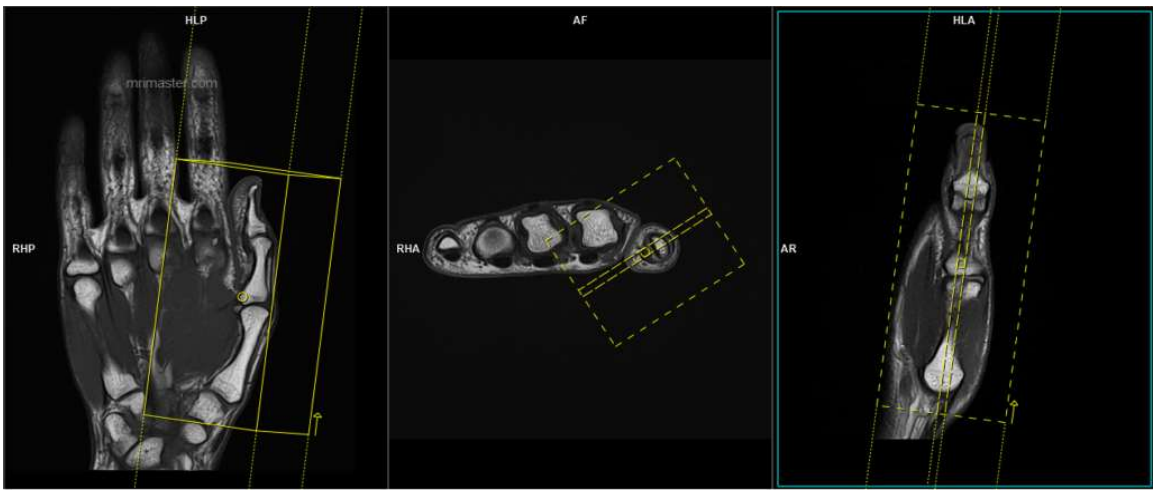
MRI Thumb/UCL



axial FOV and angulation (perpendicular to the metacarpal and phalanx bones in the sagittal plane)



coronal FOV and angulation (parallel to the metacarpal and phalanx bones in the sagittal plane)



sagittal FOV and angulation (perpendicular to the pectoralis muscle in the axial plane)

MRI Hip

Updated 06/10/21
Reviewed 05/14/25

For an order for without and with IV imaging, please confirm that the exam is not for tumor or arthrogram before proceeding.
Use field-of-view (FOV) and angulations as in the images below (unless otherwise specified in protocol):
Go to MRIMaster.com for a guide of proper positioning.

Routine Hip:

Pulse Sequence	PACS Name	plane	fat sat	slice (mm)	gap (mm)	first slice	Field of View
T1	T1 COR	cor	no	5	1	front	whole pelvis
T1	T1 AX	ax	no	5	1	top	hip joint
T2	T2 FS AX	ax	yes	5	1	top	
STIR	STIR COR	cor	no	5	1.5	front	
T1	T1 SAG	sag	no	4.5	1	lateral	
T2	T2 FS SAG	sag	yes	4.5	1	lateral	

CONTRAST - 2 mL/sec standard dose gadolinium (0.2 mL/kg Clariscan or 0.1 mL/kg Gadavist) followed by 20 mL saline flush.

T1	T1 FS POST AX	ax	yes	5	1	top	hip joint
T1	T1 FS POST SAG	sag	yes	4.5	1	lateral	
T1	T1 FS POST COR	cor	yes	5	1.5	front	

MARS AND/OR PSEUDOTUMOR EVALUATION:

Pulse Sequence	PACS Name	plane	fat sat	slice (mm)	gap (mm)	first slice	Field of View
T1	T1 COR	cor	no	5	1	front	whole pelvis
T1	T1 AX	ax	no	6	1.5	top	hip joint
T2	T2 AX	ax	no	6	1.5	top	
STIR	STIR AX	ax	no	6	1.5	top	
T1	T1 COR	cor	no	5	1	front	
T2	T2 COR	cor	no	5	1	front	
PD	PD SAG	sag	no	5	1	lateral	

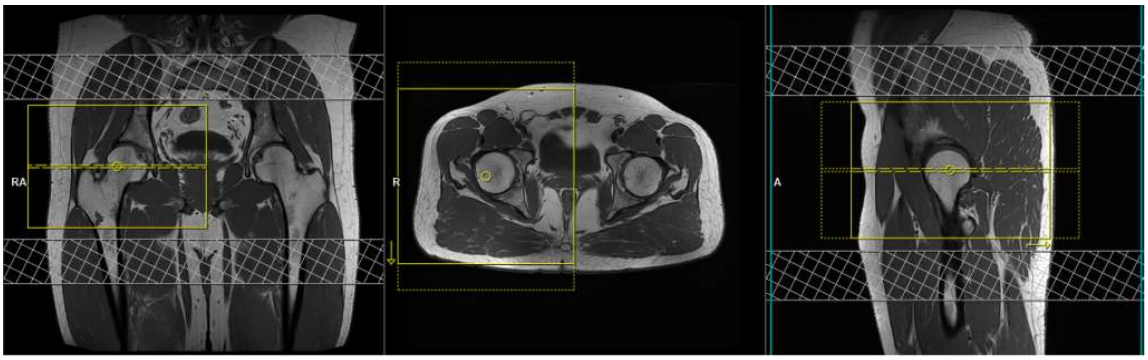
CONTRAST - 2 mL/sec standard dose gadolinium (0.2 mL/kg Clariscan or 0.1 mL/kg Gadavist) followed by 20 mL saline flush.

T1	T1 POST AX	ax	no	6	1.5	top	hip joint
T1	T1 POST COR	cor	no	5	1	and	
T1	T1 POST SAG	sag	no	4	0.5	lateral	

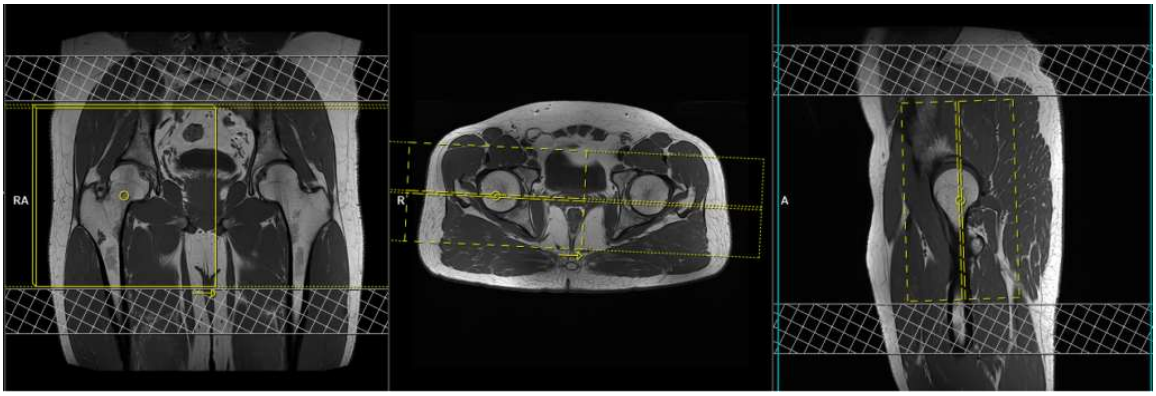
RECON (for MARS):

axial and coronal subtractions

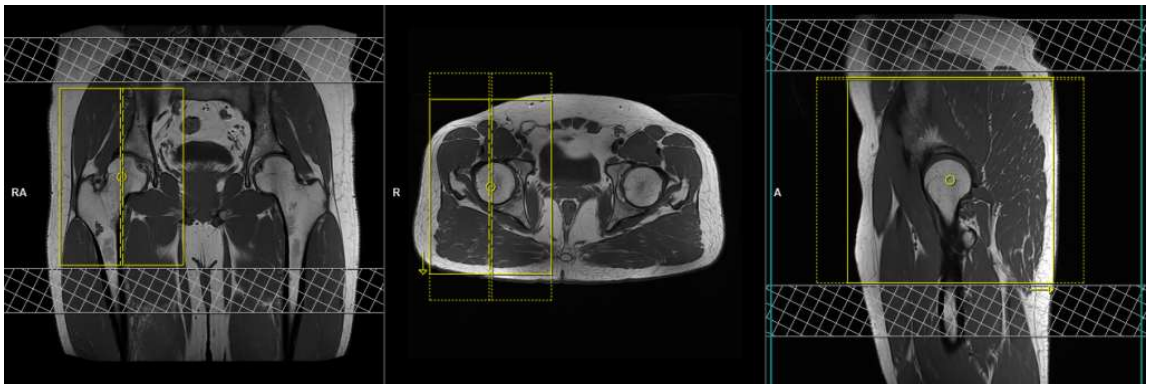
MRI Hip



axial FOV and angulation (horizontal across the femoral heads in the coronal plane)



hip coronal FOV and angulation (perpendicular to the acetabulum in the axial plane)



hip sagittal FOV and angulation (parallel across the femoral heads in the coronal plane)

MRI Hip Arthrogram

Updated 10/08/19

Reviewed 05/14/25

Use field-of-view (FOV) and angulations as in the images in the hip routine protocol.

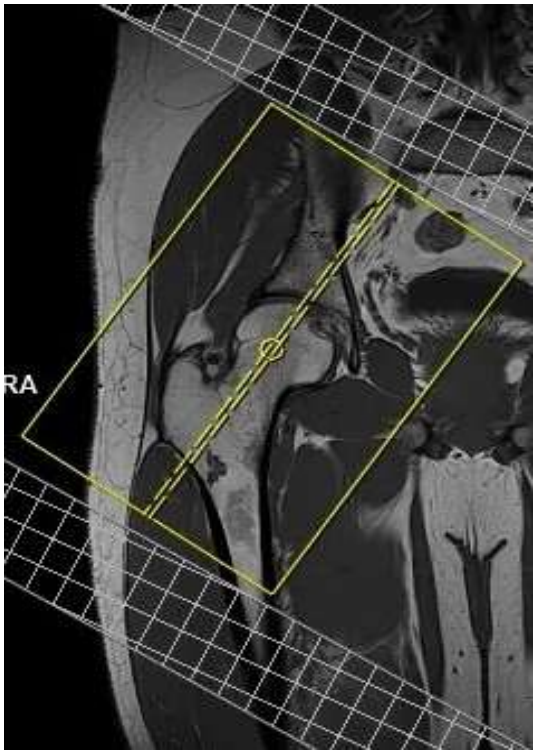
The oblique planes are relative to the long axis of the femoral neck as visualized in the coronal plane (see below images):

The axial oblique plane is parallel to the long axis of the femoral neck

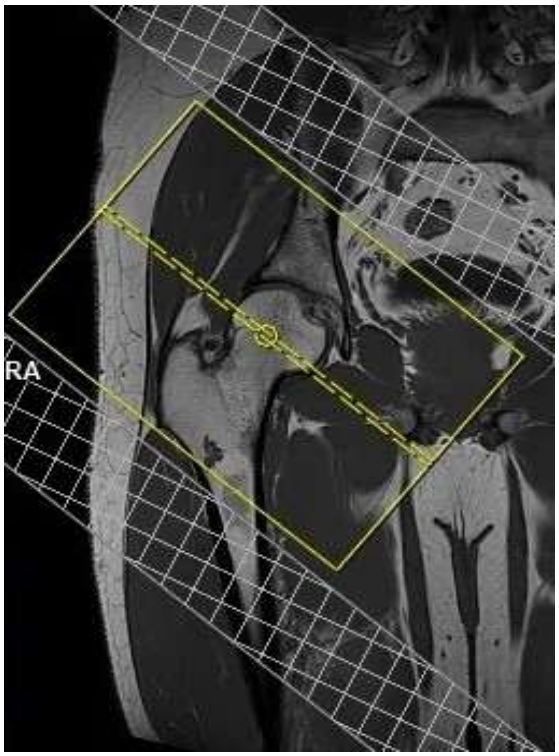
The sagittal oblique plane is perpendicular to the long axis of the femoral neck

Go to MRIMaster.com for a guide of proper positioning.

Pulse Sequence	PACS Name	plane	fat sat	slice (mm)	gap (mm)	first slice
T1	T1 FS AX	ax	yes	5	1	top
T1	T1 SAG	sag	no	4	0.5	lateral
T1	T1 FS SAG	sag	yes	4	0.5	lateral
T1	T1 FS COR	cor	yes	5	1.5	front
T2	T2 FS COR	cor	yes	5	1.5	front
T1	T1 FS OBL AX	obl ax	yes	4	0.5	top
T1	T1 FS OBL SAG	obl sag	yes	4	0.5	front



Axial Oblique
(parallel to long axis of the femoral neck)



Sagittal Oblique
(perpendicular to long axis of the femoral neck)

MRI Knee

Updated 03/04/21
Reviewed 05/14/25

For an order for without and with IV imaging, please confirm that the exam is not for tumor or arthrogram before proceeding.
Use field-of-view (FOV) and angulations as in the images below.
Go to MRIMaster.com for a guide of proper positioning.

Routine Knee:

Pulse Sequence	PACS Name	plane	fat sat	slice (mm)	gap (mm)	first slice
PD	PD FS AX	ax	yes	4	1	top
T1	T1 COR	cor	no	4	0.5	front
DESS/PD	DESS FS AX / PD FS COR	COR	yes	1	0.5	top
PD	PD FS SAG	sag	yes	4	0.5	lateral
T2	T2 SAG	sag	no	4	0.5	lateral

CONTRAST - 2 mL/sec standard dose gadolinium (0.2 mL/kg Clariscan or 0.1 mL/kg Gadavist) followed by 20 mL saline flush.

T1	T1 FS POST AX	ax	yes	4	0.5	top
T1	T1 FS POST COR	cor	yes	4	0.5	front

MARS:

Pulse Sequence	PACS Name	plane	fat sat	slice (mm)	gap (mm)	first slice
PD	PD AX	ax	no	4	1	top
STIR	STIR AX	ax	no	4	1	front
T1	T1 COR	cor	no	4	1	front
PD	PD COR	cor	no	4	1	front
T2	T2 COR	cor	no	4	1	front
PD	PD SAG	sag	no	4	1	lateral
T1	T2 SAG	sag	no	4	1	lateral

CONTRAST - 2 mL/sec standard dose gadolinium (0.2 mL/kg Clariscan or 0.1 mL/kg Gadavist) followed by 20 mL saline flush.

T1	T1 AX	ax	no	4	1	top
T1	T1 COR	cor	no	4	1	front

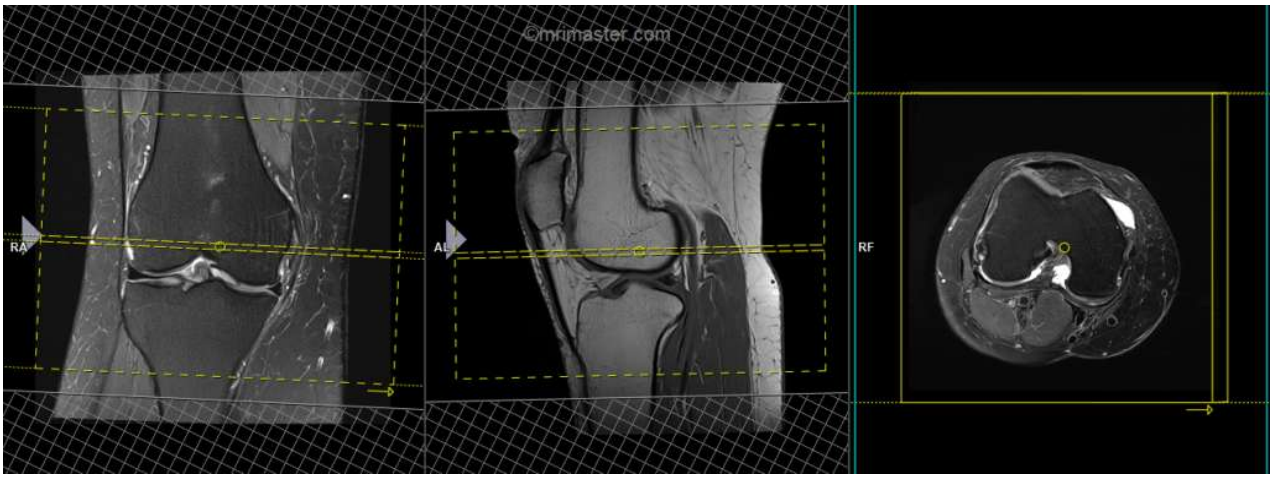
RECON (for MARS):

coronal subtractions

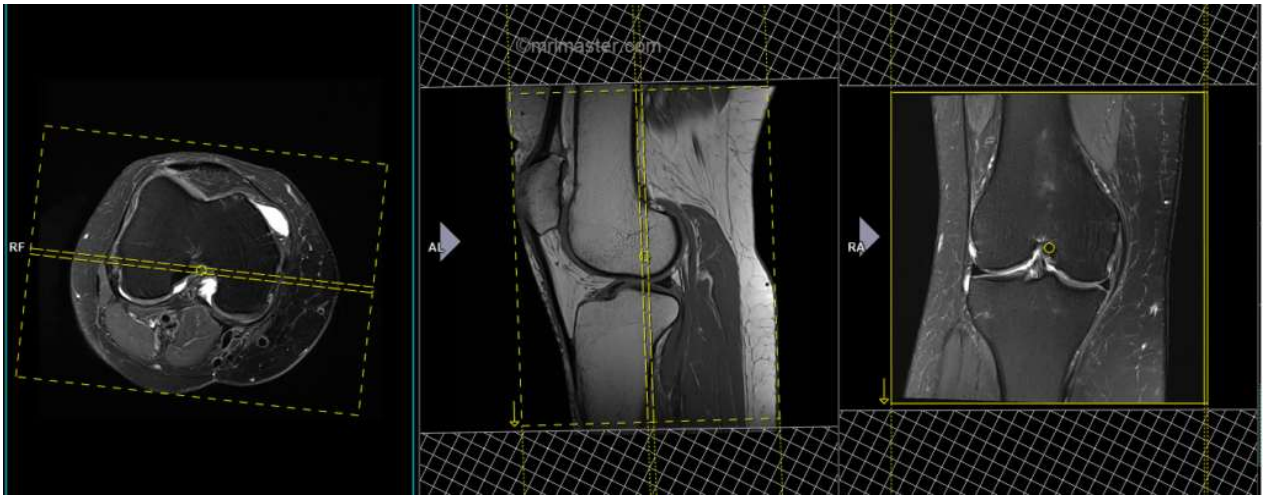
Knee Arthrogram:

Pulse Sequence	PACS Name	plane	fat sat	slice (mm)	gap (mm)	first slice
T1	T1 FS AX	ax	yes	4	0.5	top
T1	T1 FS SAG	sag	yes	4	0.5	lateral
T1	T1 FS COR	cor	yes	4	0.5	front
T2	T2 FS AX	ax	yes	4	0.5	top
T2	T2 FS SAG	sag	yes	4	0.5	lateral
T2	T2 FS COR	cor	yes	4	0.5	front

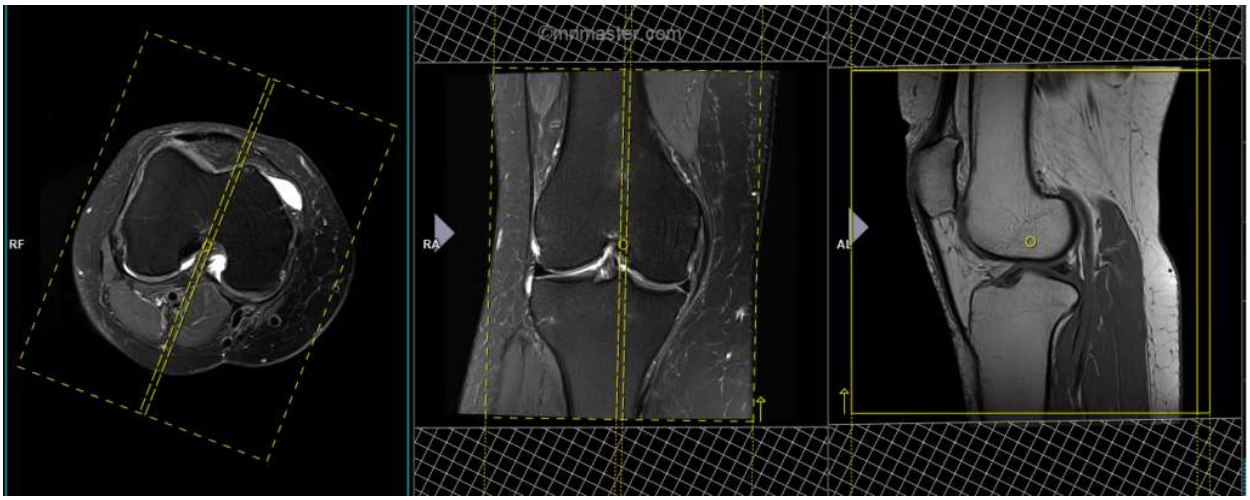
MRI Knee



axial FOV and angulation (parallel to the medial and lateral condyles in the coronal plane)



coronal FOV and angulation (parallel to the medial and lateral condyles in the axial plane)



sagittal FOV and angulation (parallel to ACL in the axial plane)

MRI Ankle/Hindfoot

Updated 02/10/20

Reviewed 05/14/25

Use field-of-view (FOV) and angulations as in the images below.

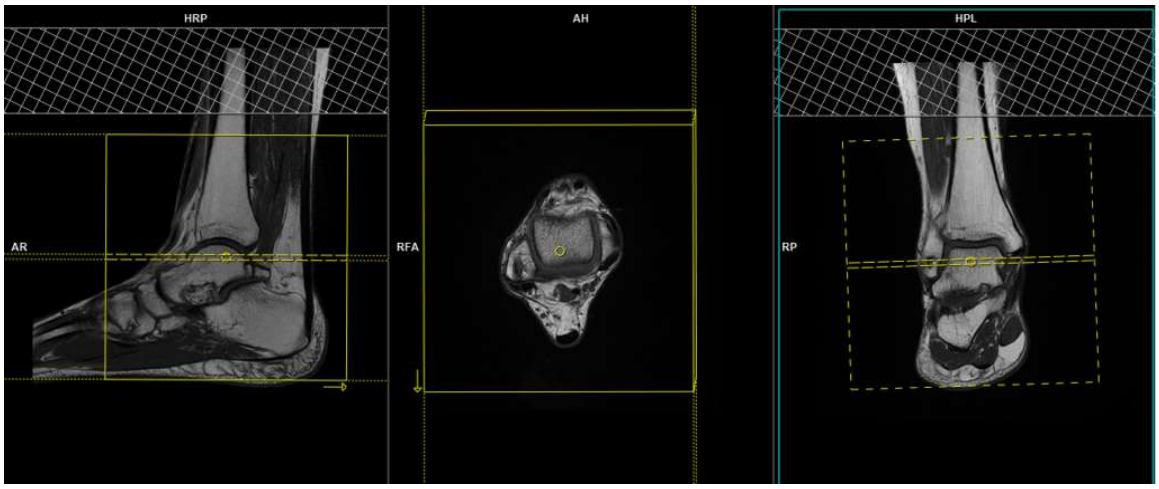
Go to MRIMaster.com for a guide of proper positioning.

Pulse Sequence	PACS Name	plane	fat sat	slice (mm)	gap (mm)	first slice
T1	T1 SAG	sag	no	3	0.3	lateral
PD	PD FS SAG	sag	yes	3	0.3	lateral
PD	PD AX	ax	no	4	0.5	top
PD	PD FS AX	ax	yes	4	0.5	top
T2	T2 FS AX	ax	yes	4	0.5	top
T1	T1 COR	cor	no	4	0.5	front
DESS/PD	DESS FS COR / PD FS COR	cor	yes	4	0.5	front

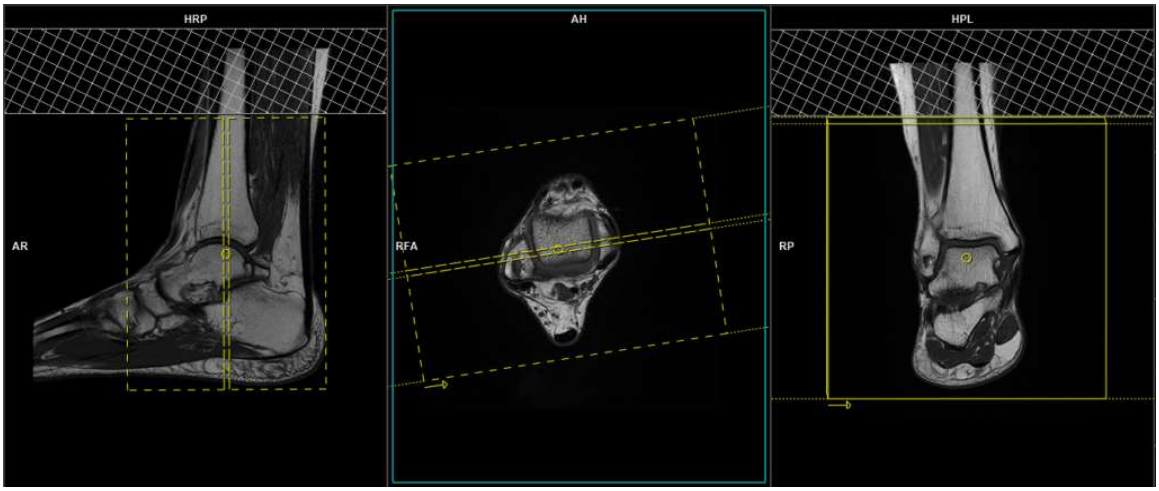
CONTRAST - 2 mL/sec standard dose gadolinium (0.2 mL/kg Clariscan or 0.1 mL/kg Gadavist) followed by 20 mL saline flush.

T1	T1 FS POST AX	ax	yes	4	0.5	top
T1	T1 FS POST COR	cor	yes	4	0.5	front
T1	T1 FS POST SAG	sag	yes	3	0.3	sag

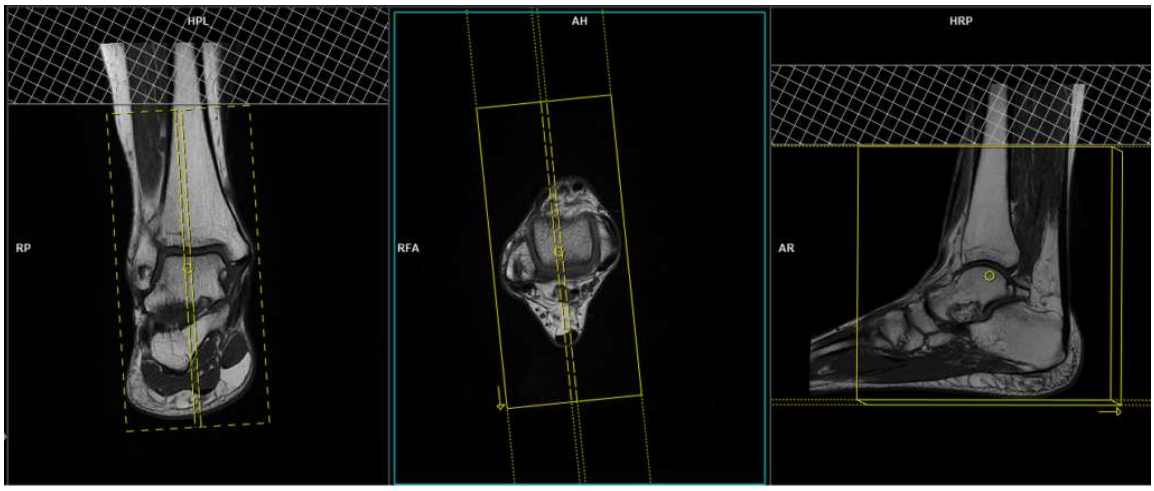
MRI Ankle/Hindfoot



axial FOV and angulation (parallel to the tibio-talar joint in the coronal plane)



coronal FOV and angulation (parallel to the line along the medial and lateral malleoli in the axial plane)



sagittal FOV and angulation (perpendicular to the pectoralis muscle in the axial plane)

MRI Forefoot/Midfoot

Updated 02/18/21

Reviewed 05/14/25

Use field-of-view (FOV) and angulations as in the images below.

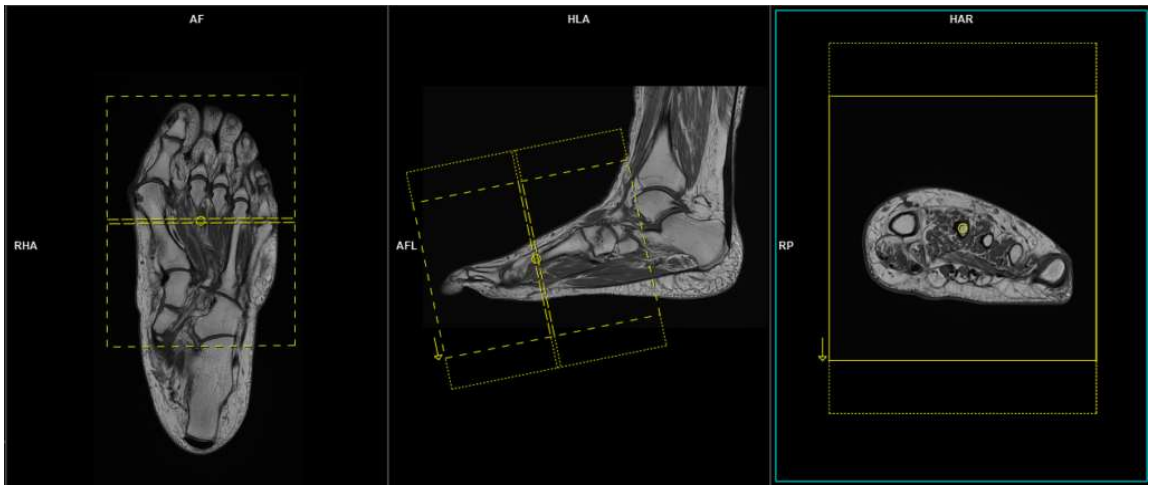
Go to MRIMaster.com for a guide of proper positioning.

Pulse Sequence	PACS Name	plane	fat sat	slice (mm)	gap (mm)	first slice
T1	T1 AX	ax	no	5	1	top
STIR	STIR AX	ax	no	5	1	top
T1	T1 COR	cor	no	5	1	front
STIR	STIR COR	cor	no	5	1	front
T1	T1 SAG	sag	no	3	0.5	lateral
T2	T2 FS SAG	sag	yes	3	0.5	lateral

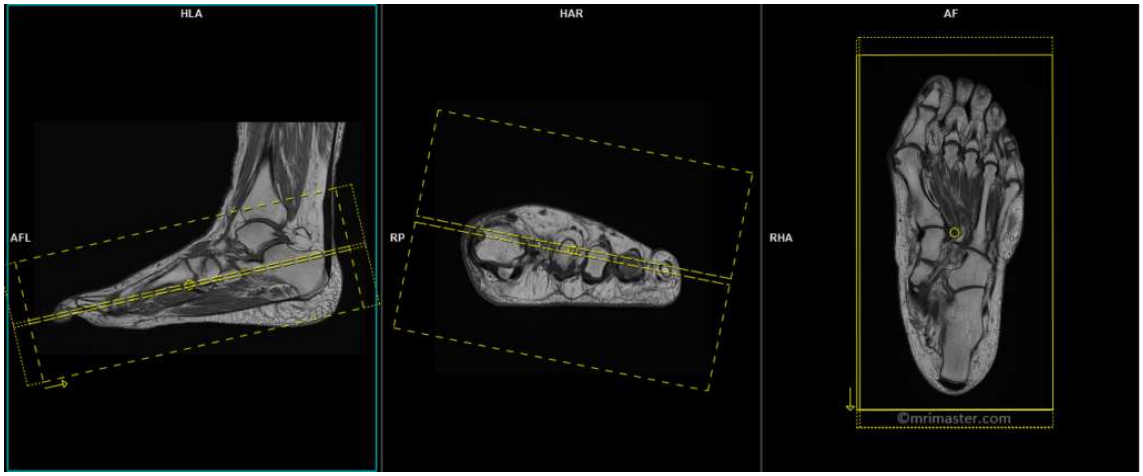
CONTRAST - 2 mL/sec standard dose gadolinium (0.2 mL/kg Clariscan or 0.1 mL/kg Gadavist) followed by 20 mL saline flush.

T1	T1 FS POST AX	ax	yes	5	1	top
T1	T1 FS POST COR	cor	yes	5	1	front
T1	T1 FS POST SAG	sag	yes	3	0.5	sag

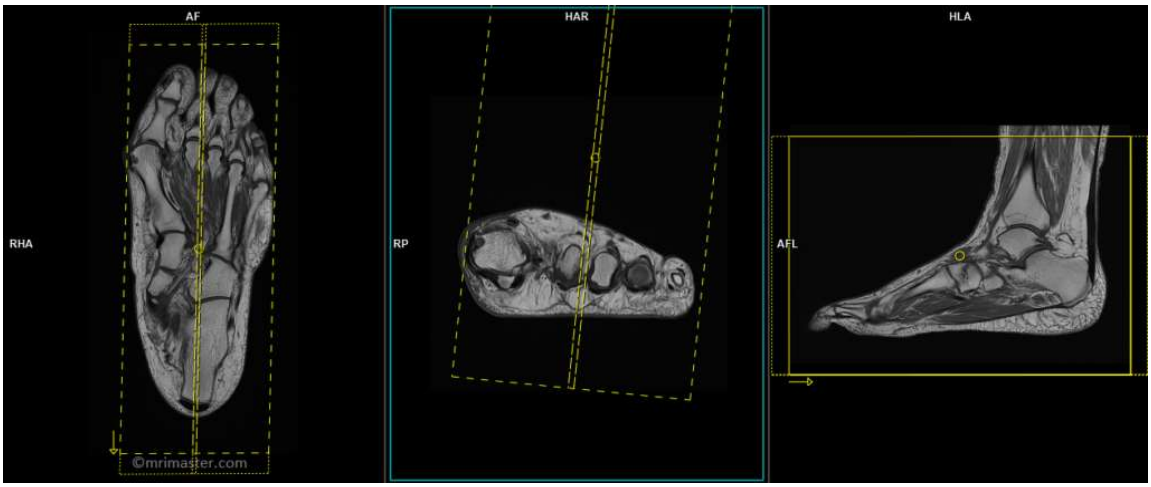
MRI Forefoot/Midfoot



axial FOV and angulation (perpendicular to the metatarsal and phalanges bones in the sagittal plane)



coronal FOV and angulation (parallel to the metatarsal and phalanges bones in the sagittal plane)



sagittal FOV and angulation (perpendicular to the pectoralis muscle in the axial plane)

MRI Long Bones

Updated 11/23/23

Reviewed 05/14/25

Use this protocol for non tumor/infection indications involving the humerus, forearm, femur or tibia/fibula.

If the indication is for a focal concern, use a small field-of-view (FOV) centered on the area of interest.

Otherwise use a field-of-view (FOV) centered on the long bone with coverage as follows:

include the joints on both ends of the bone (top/bottom coverage)

include anterior and posterior soft tissues (front/back coverage)

include lateral and medial soft tissues (right/left coverage)

Go to MRIMaster.com for a guide of proper positioning.

Pulse Sequence	PACS Name	plane	fat sat	slice (mm)	gap (mm)	first slice
T1	T1 AX	ax	no	6	2	top
T2	T2 FS AX	ax	yes	6	2	top
T1	T1 COR	cor	no	6	1	front
T2	T2 FS COR	cor	yes	6	1	front
T1	T1 SAG	sag	no	6	1	lateral
STIR	STIR SAG	sag	no	6	1	lateral

CONTRAST - 2 mL/sec standard dose gadolinium (0.2 mL/kg Clariscan or 0.1 mL/kg Gadavist) followed by 20 mL saline flush.

T1	T1 FS POST AX	ax	yes	6	2	top
T1	T1 FS POST COR	cor	yes	6	1	front
T1	T1 FS POST SAG	sag	yes	6	1	lateral

MRI Bony Pelvis Routine

Updated 05/14/25

Reviewed 05/14/25

Use field-of-view (FOV) centered on the pelvis.

Go to MRIMaster.com for a guide of proper positioning.

Pulse Sequence	PACS Name	plane	fat sat	slice (mm)	gap (mm)	first slice
T1	T1 COR	cor	no	5	1	front
STIR	STIR COR	cor	no	5	1	front
T1	T1 AX	ax	no	5	1	top
T2	T2 FS AX	ax	yes	5	1	top

CONTRAST - 2 mL/sec standard dose gadolinium (0.2 mL/kg Clariscan or 0.1 mL/kg Gadavist) followed by 20 mL saline flush.

T1	T1 FS POST COR	cor	yes	5	1	front
T1	T1 FS POST AX	ax	yes	5	1	top

MRI Bony Pelvis Infection

Updated 06/15/17
Reviewed 05/14/25

Use small field-of-view (FOV) centered on the area of interest.

Craniocaudal - iliac crests through lesser trochanters.

Anteroposterior - anterior to pubic symphysis through posterior to coccyx.

Right left - lateral trochanter to lateral trochanter.

Go to MRIMaster.com for a guide of proper positioning.

Pulse Sequence	PACS Name	plane	fat sat	slice (mm)	gap (mm)	first slice
T1	T1 AX	ax	no	5	1	top
T2	T2 FS AX	ax	yes	5	1	top
T1	T1 COR	cor	no	5	1	front
STIR	STIR COR	cor	no	5	1	front
*T1	T1 SAG	sag	no	6	1.5	right

CONTRAST - 2 mL/sec standard dose gadolinium (0.2 mL/kg Clariscan or 0.1 mL/kg Gadavist) followed by 20 mL saline flush.

T1	T1 FS POST AX	ax	yes	5	1	top
T1	T1 FS POST COR	cor	yes	5	1	front

*Add T1 sagittal sequence if the sacrum is the area of concern.

MRI Bony Pelvis Mass

Updated 06/15/17

Reviewed 05/14/25

Use small field-of-view (FOV) centered on the area of interest with borders marked with skin capsule.

Angle imaging planes as per routine protocols.

Go to MRIMaster.com for a guide of proper positioning.

Pulse Sequence	PACS Name	plane	fat sat	slice (mm)	gap (mm)	first slice
T1	T1 AX	ax	no	5	1	top
T1	T1 FS AX	ax	yes	5	1	top
T2	T2 AX	ax	no	5	1	top
T2	T2 FS AX	ax	yes	5	1	top
T1	T1 COR	cor	no	5	1	front
T2	T2 FS COR	cor	yes	6	1	front

CONTRAST - 2 mL/sec standard dose gadolinium (0.2 mL/kg Clariscan or 0.1 mL/kg Gadavist) followed by 20 mL saline flush.

T1	T1 FS POST AX	ax	yes	5	1	top
T1	T1 FS POST COR	cor	yes	5	1	front

RECONS:

axial subtractions

MRI Sacrum

Updated 02/02/21

Reviewed 05/14/25

Use field-of-view (FOV) centered on the sacrum.

Go to MRIMaster.com for a guide of proper positioning.

Pulse Sequence	PACS Name	plane	fat sat	slice (mm)	gap (mm)	first slice
T1	T1 SAG	sag	no	5	1	right
T2	T2 SAG	sag	no	5	1	right
STIR	STIR SAG	sag	no	5	1	right
T1	T1 AX	ax	no	5	1	top
T1	T1 FS AX	ax	yes	5	1	top
T2	T2 FS AX	ax	yes	5	1	top
T2	T2 FS COR	cor	yes	5	1	front
T1	T1 COR	cor	no	5	1	front

CONTRAST - 2 mL/sec standard dose gadolinium (0.2 mL/kg Clariscan or 0.1 mL/kg Gadavist) followed by 20 mL saline flush.

T1	T1 FS POST AX	ax	yes	5	1	top
T1	T1 FS POST SAG	sag	yes	5	1	right
T1	T1 FS POST COR	cor	yes	5	1	front

RECONS:

axial subtractions

MRI SI Joints

Updated 07/16/17
Reviewed 05/14/25

Use field-of-view (FOV) centered on the sacrum & SI Joints.
Angle to the plane of the sacrum for the coronal sequences.
Go to MRIMaster.com for a guide of proper positioning.

Pulse Sequence	PACS Name	plane	fat sat	slice (mm)	gap (mm)	first slice	Field of View
STIR	STIR AX	ax	no	7	1	top	whole pelvis
T1	T1 COR	cor	no	7	1	front	
T1	T1 AX	ax	no	3	1.5	top	SI joints
T2	T2 FS AX	ax	yes	3	1.5	top	
T1	T1 COR	cor	no	3	0	front	
T2	T2 FS COR	cor	yes	3	0	front	
T1	T1 SAG	sag	no	3	1	right	
STIR	STIR SAG	sag	no	3	1	right	

CONTRAST - 2 mL/sec standard dose gadolinium (0.2 mL/kg Clariscan or 0.1 mL/kg Gadavist) followed by 20 mL saline flush.

T1	T1 FS POST AX	ax	yes	3	1.5	top	SI joints
T1	T1 FS POST COR	cor	yes	3	0	right	

MRI Clavicle

Updated 05/13/19

Reviewed 05/14/25

Use field-of-view (FOV) and angulations as in the images below.

Go to MRIMaster.com for a guide of proper positioning.

Pulse Sequence	PACS Name	plane	fat sat	slice (mm)	gap (mm)	first slice
T1	T1 SAG	sag	no	3	1	lateral
STIR	STIR SAG	sag	no	3	1	lateral
T1	T1 AX	ax	no	4	1.5	ax
T1	T1 FS AX	ax	yes	4	1.5	ax
T2	T2 AX	ax	no	4	1.5	ax
T2	T2 FS AX	ax	yes	4	1.5	ax

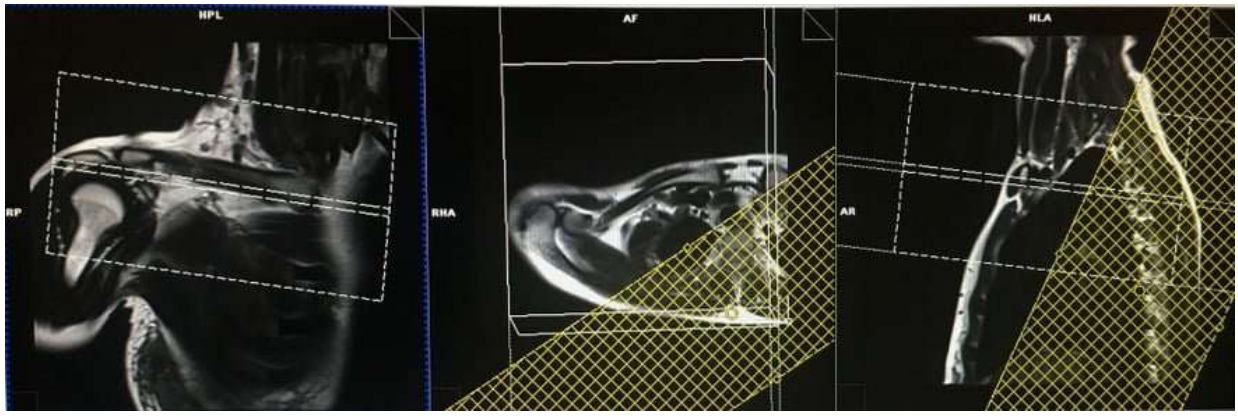
CONTRAST - 2 mL/sec standard dose gadolinium (0.2 mL/kg Clariscan or 0.1 mL/kg Gadavist) followed by 20 mL saline flush.

T1	T1 FS POST AX	ax	yes	4	1.5	top
T1	T1 FS POST COR	cor	yes	3	1	front
T1	T1 FS POST SAG	sag	yes	3	0.8	lateral

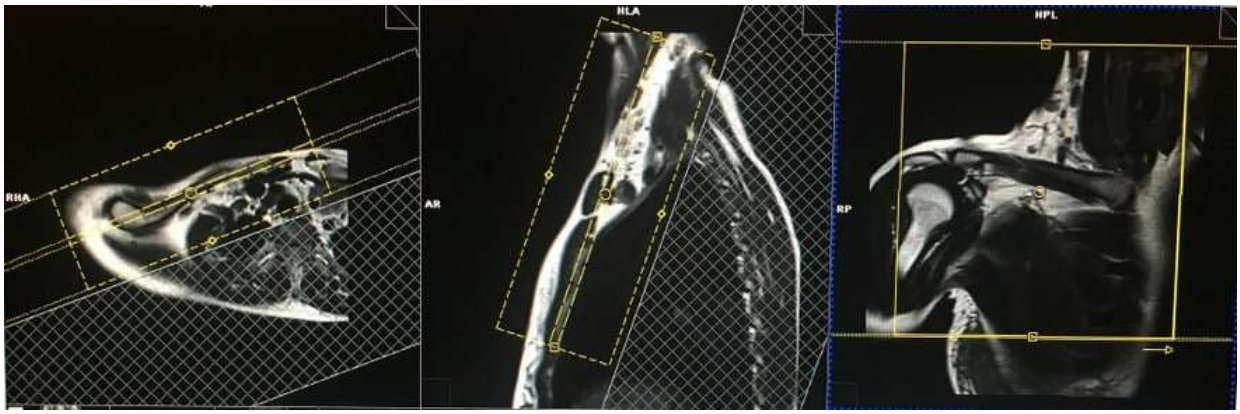
RECON:

axial subtractions

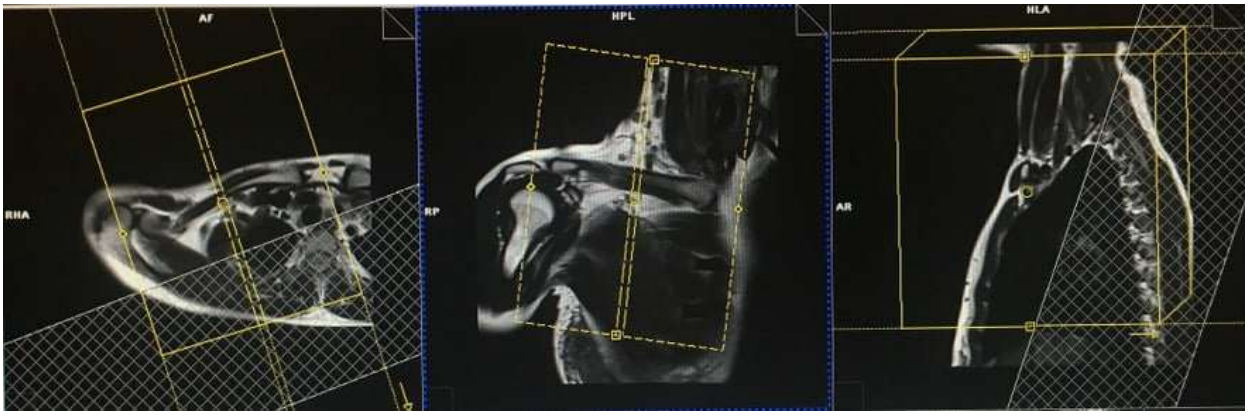
MRI Clavicle



axial FOV and angulation (parallel to the clavicle in the coronal plane)



coronal FOV and angulation (parallel to the clavicle in the axial plane)



sagittal FOV and angulation (perpendicular to the clavicle in the axial plane)

MRI Sternum

Updated 06/15/17

Reviewed 05/14/25

Image prone if possible to decrease respiratory motion.

Use field-of-view (FOV) and angulations as in the images below.

Go to MRIMaster.com for a guide of proper positioning.

Pulse Sequence	PACS Name	plane	fat sat	slice (mm)	gap (mm)	first slice
T1	T1 AX	ax	no	6	1	top
T2	T2 AX	ax	no	6	1	top
STIR	STIR AX	ax	no	6	1	top
T1	T1 COR	cor	no	2	0.5	front
STIR	STIR COR	cor	no	2	0.5	front
T1	T1 FS SAG	sag	yes	4	1	right

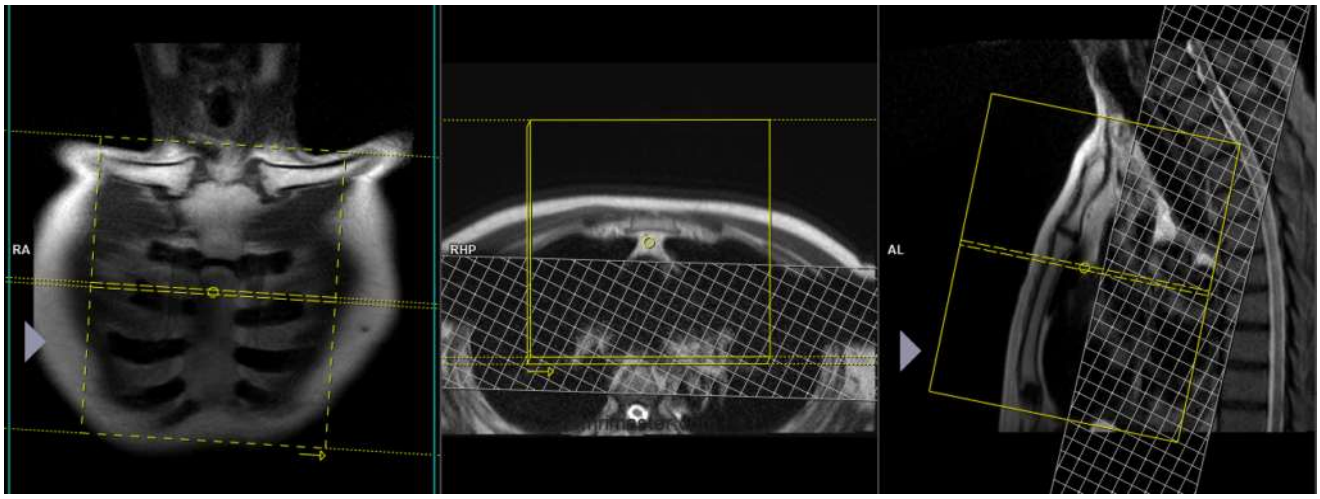
CONTRAST - 2 mL/sec standard dose gadolinium (0.2 mL/kg Clariscan or 0.1 mL/kg Gadavist) followed by 20 mL saline flush.

T1	T1 FS POST AX	ax	yes	6	1	top
T1	T1 FS POST SAG	sag	yes	4	1	right

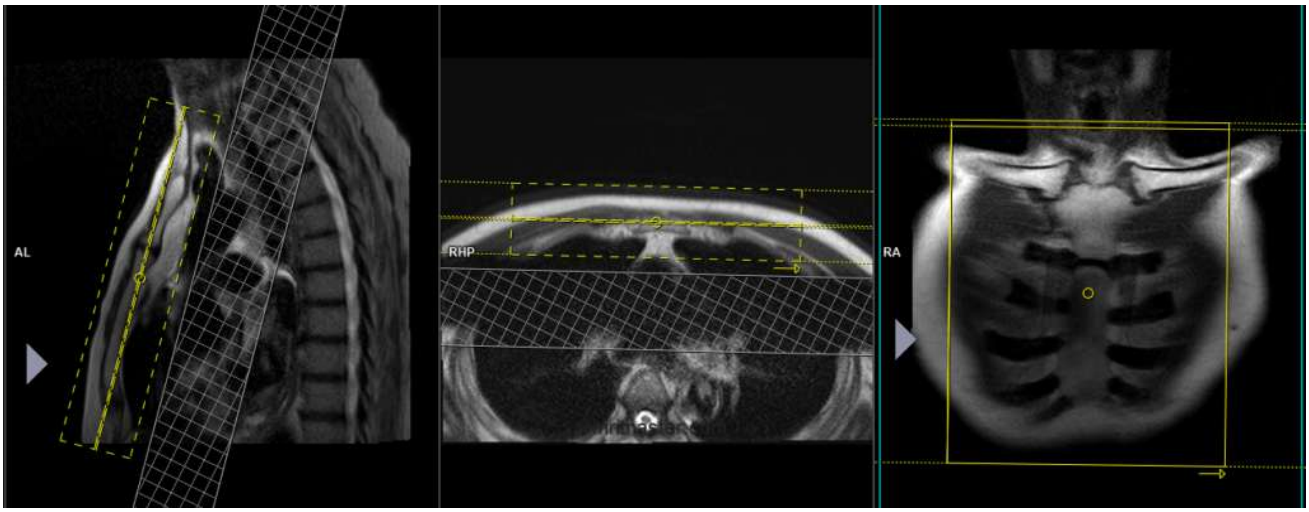
RECON:

sagittal subtractions

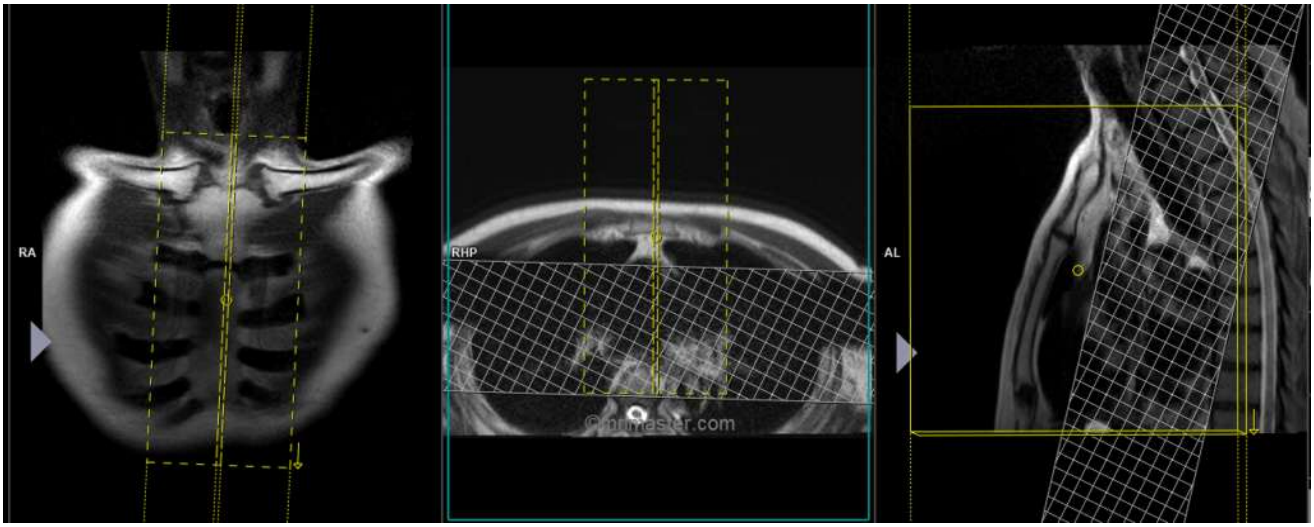
MRI Sternum



axial FOV and angulation (perpendicular to the sternum in the sagittal plane)



coronal FOV and angulation (parallel to the sternum in the sagittal plane)



sagittal FOV and angulation (parallel to the sternum in the coronal plane)

MRI Sternoclavicular Joints

Updated 07/30/23

Reviewed 05/14/25

Use field-of-view (FOV) and angulations as in the images below.

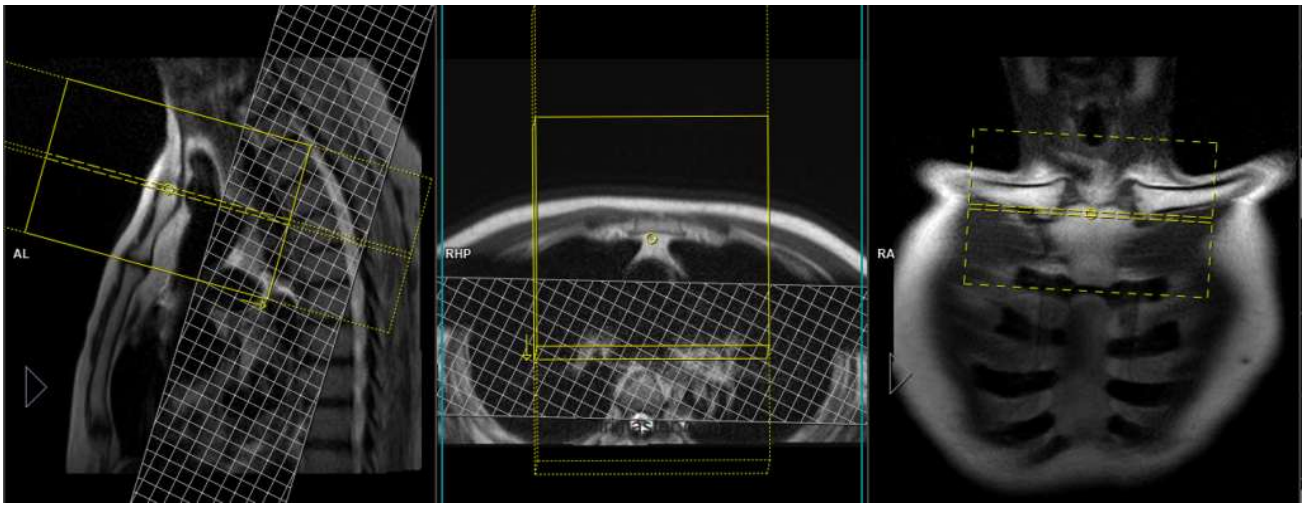
Go to MRIMaster.com for a guide of proper positioning.

Pulse Sequence	PACS Name	plane	fat sat	slice (mm)	gap (mm)	first slice
T1	T1 SAG	sag	no	3	1	right
STIR	STIR SAG	sag	no	3	1	right
T1	T1 COR	cor	no	3	0.8	front
T2	T2 FS COR	cor	yes	3	0.8	front
T1	T1 AX	ax	no	4	1.5	top
T2	T2 FS AX	ax	yes	4	1.5	top

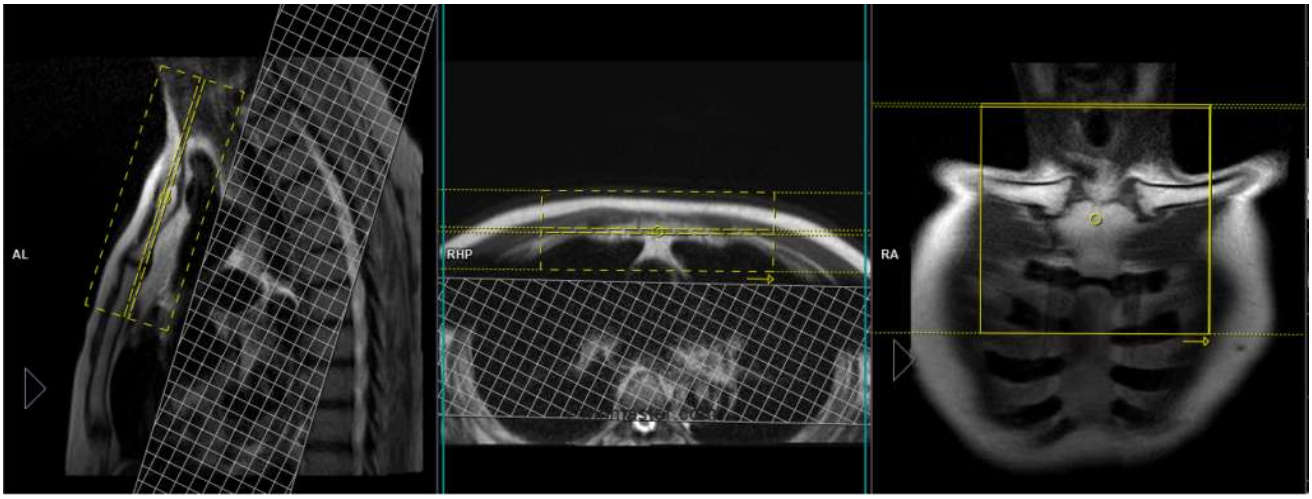
CONTRAST - 2 mL/sec standard dose gadolinium (0.2 mL/kg Clariscan or 0.1 mL/kg Gadavist) followed by 20 mL saline flush.

T1	T1 FS POST AX	ax	yes	4	1.5	top
T1	T1 FS POST COR	cor	yes	3	1	front
T1	T1 FS POST SAG	sag	yes	3	0.8	right

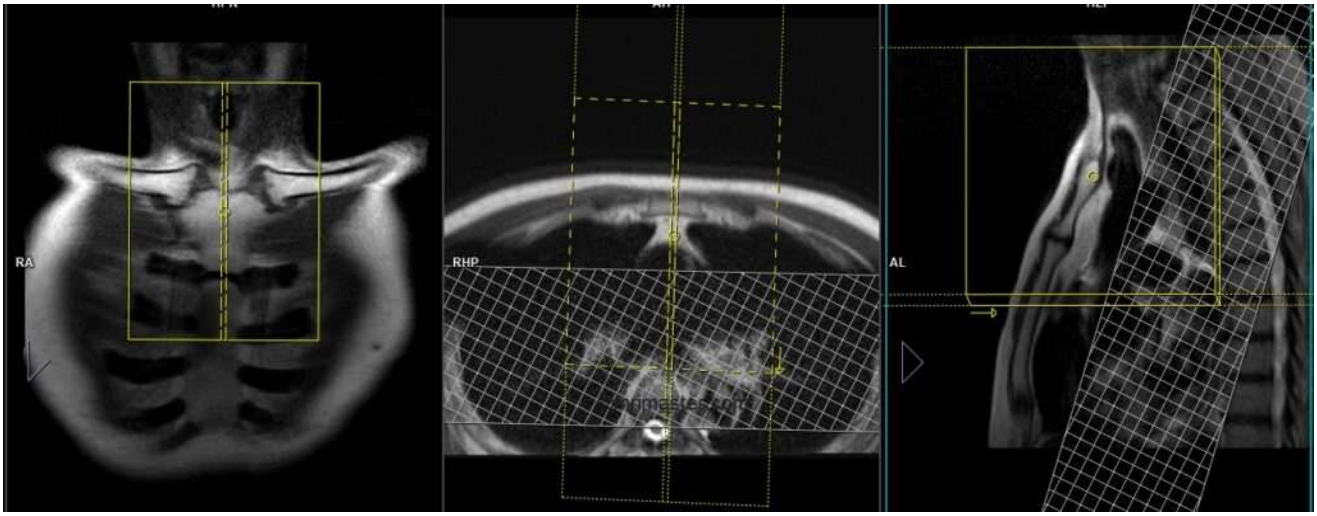
MRI Sternoclavicular Joints



axial FOV and angulation (perpendicular to the manubrium in the sagittal plane)



coronal FOV and angulation (parallel to the manubrium in the sagittal plane)



sagittal FOV and angulation (parallel to the manubrium in the coronal plane)

MRI Pectoralis

Updated 05/28/18
Reviewed 05/14/25

Use field-of-view (FOV) and angulations as in the images below.

Go to MRIMaster.com for a guide of proper positioning.

Pulse Sequence	PACS Name	plane	fat sat	slice (mm)	gap (mm)	first slice
T1	T1 SAG	sag	no	3	1	lateral
T1	T1 FS SAG	sag	yes	3	1	lateral
STIR	STIR SAG	sag	no	3	1	lateral
T1	T1 COR	cor	no	3	0.8	front
T2	T2 FS COR	cor	yes	3	0.8	front
T1	T1 AX	ax	no	4	1.5	top
T2	T2 FS AX	ax	yes	4	1.5	top

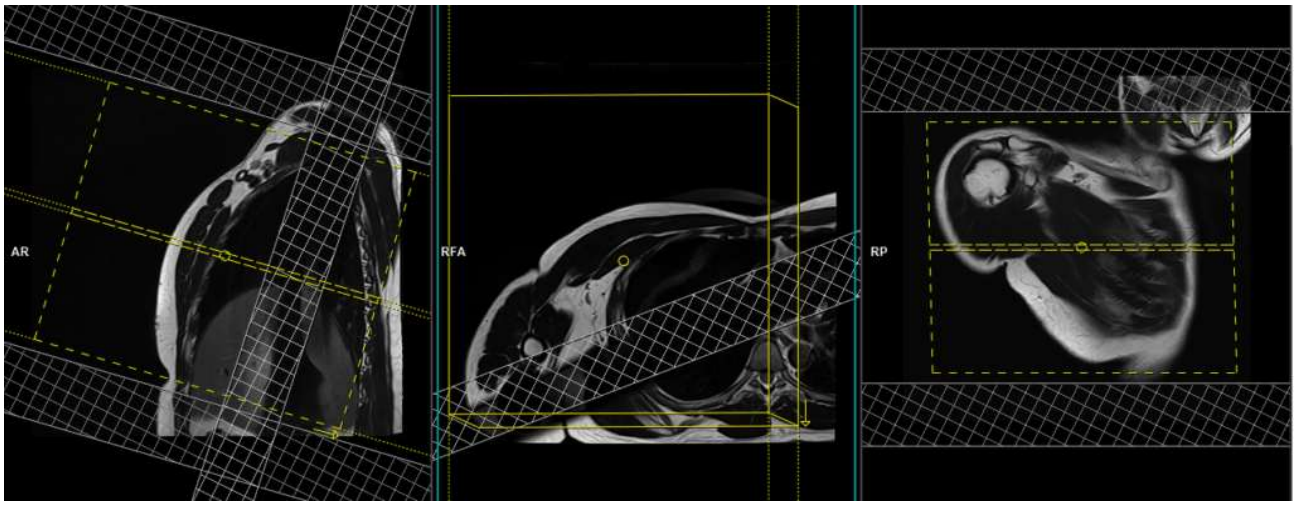
CONTRAST - 2 mL/sec standard dose gadolinium (0.2 mL/kg Clariscan or 0.1 mL/kg Gadavist) followed by 20 mL saline flush.

T1	T1 FS POST AX	ax	yes	4	1.5	top
T1	T1 FS POST SAG	sag	yes	3	1	lateral
T1	T1 FS POST COR	cor	yes	3	0.8	front

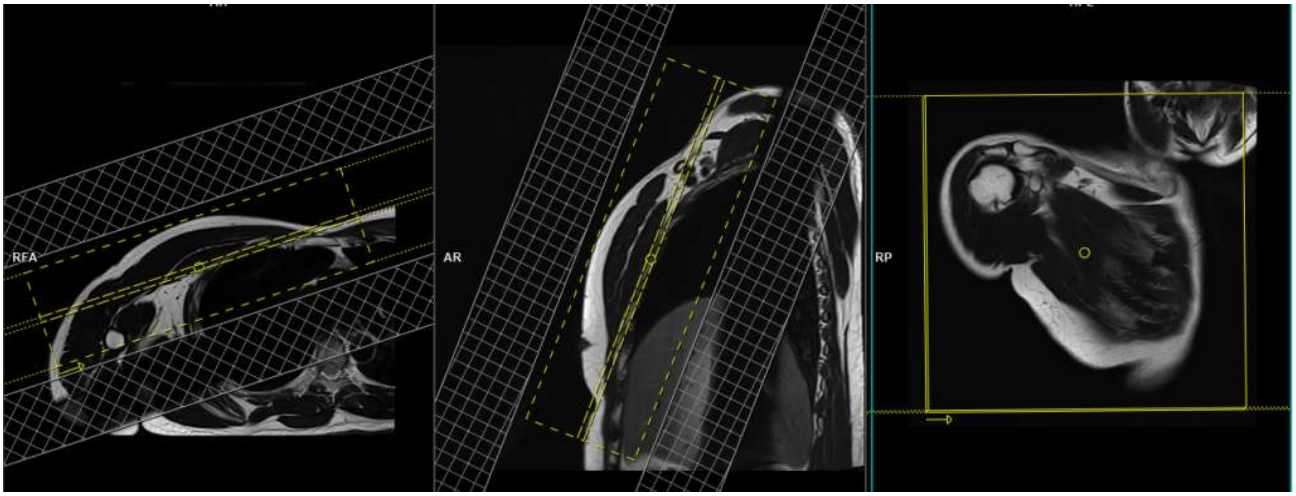
RECON:

sagittal subtractions

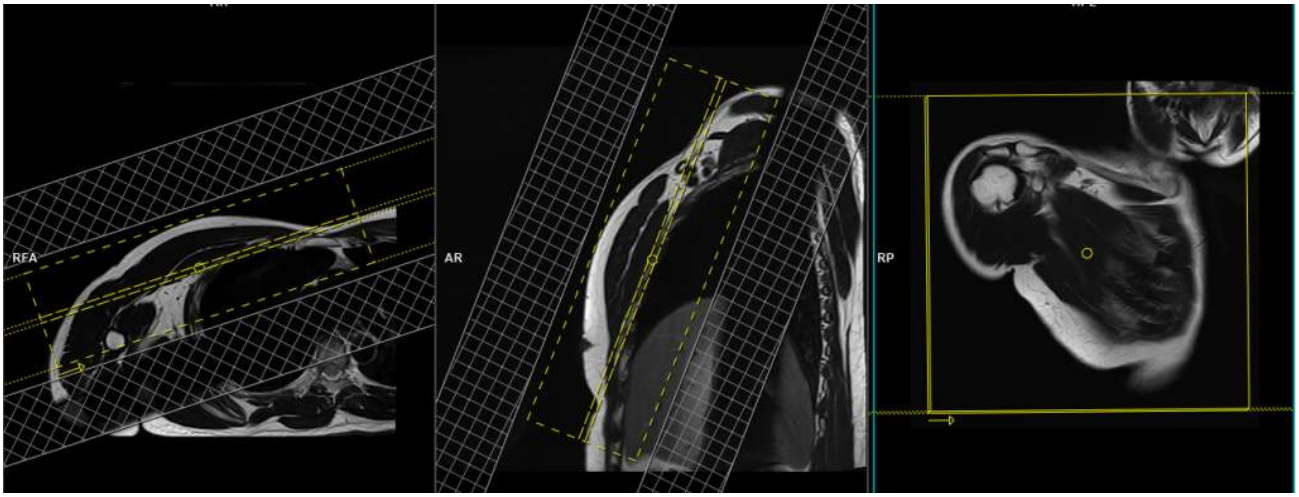
MRI Pectoralis



axial FOV and angulation (horizontally across the pectoralis muscle in the coronal plane)



coronal FOV and angulation (parallel to the pectoralis muscle in the axial plane)



sagittal FOV and angulation (perpendicular to the pectoralis muscle in the axial plane)

MRI MSK Infection/Osteomyelitis

Updated 07/20/20
Reviewed 05/14/25

Use small field-of-view (FOV) centered on the area of interest.

Angle imaging planes as per routine protocols.

Go to MRIMaster.com for a guide of proper positioning.

Pulse Sequence	PACS Name	plane	fat sat	slice (mm)	gap (mm)	first slice
T1	T1 AX	ax	no	5	1.5	top
STIR	STIR AX	ax	no	5	1.5	top
T1	T1 COR	cor	no	4	1	front
T2	T2 FS COR	cor	yes	4	1	front
T1	T1 SAG	sag	no	4	1	lateral
T2	T2 FS SAG	sag	yes	4	1	lateral

CONTRAST - 2 mL/sec standard dose gadolinium (0.2 mL/kg Clariscan or 0.1 mL/kg Gadavist) followed by 20 mL saline flush.

T1	T1 FS POST AX	ax	yes	5	1.5	top
T1	T1 FS POST COR	cor	yes	4	1	front
T1	T1 FS POST SAG	sag	yes	4	1	sag

MRI MSK Mass/Tumor

Updated 03/22/25
Reviewed 05/14/25

This protocols is for use with both osseous/bone and soft tissue masses/tumors.
Use small field-of-view (FOV) centered on the area of interest with borders marked with skin capsule.
Angle imaging planes as per routine protocols.
Go to MRIMaster.com for a guide of proper positioning.

Pulse Sequence	PACS Name	plane	fat sat	slice (mm)	gap (mm)	first slice
T1	T1 AX	ax	no	5	1	top
T1	T1 FS AX	ax	yes	5	1	top
T2	T2 AX	ax	no	5	1	top
T2	T2 FS AX	ax	yes	5	1	top
T1	*T1 PRE BEST LONG	vary	no	5	1	vary
T2	*T2 FS PRE BEST LONG	vary	yes	5	1	vary

CONTRAST - 2 mL/sec standard dose gadolinium (0.2 mL/kg Clariscan or 0.1 mL/kg Gadavist) followed by 20 mL saline flush.

T1	*T1 FS POST BEST LONG	vary	yes	5	1	vary
T1	T1 FS POST AX	ax	yes	5	1	top

* The best long axis plane is either coronal or sagittal depending on the location of the tumor:
    Do sagittal plane if the tumor is in the anterior or posterior soft tissues relative to the bones.
    Do coronal plane if the tumor is in the lateral or medial soft tissues relative to the bones.
    Ask a MSK radiologist if you are unsure which plane to use.

RECON:
    best long and axial subtractions