Pfizer anti-NGF Program: Quick Reference Guide for MRI Acquisition

Characteristics of Acceptable MR Images
- Adequate Signal to Noise
- No motion artifact
- No phase wrap
- Acceptable slice thickness and spacing/gap

Patient's General Preparation
- Provide pads, positioning aids, blankets and cushions to make the subject as comfortable as possible and to ensure immobility during imaging.
- Use earplugs or music through headphones along with pillows, blankets, and verbal reassurance. These measures usually help alleviate some of the subject's anxiety.
- All loose metal objects including metal-containing clothing (zippers, hooks, belts, snaps) and jewelry should be removed.
- If possible, subject should be dressed in a hospital gown for the MRI exam.
- Monitor the subject during imaging at all times.

Important Note for MRI acquisition
The MRI protocol outlined below is based on usual acquisition parameters typical for clinical scanners. Depending on specific hardware/software versions and magnet brand, some settings may vary. Bandwidth, FOV, NEX, TR, and TE settings can be optimized on your patient/scanner to achieve an optimal signal-to-noise ratio, anatomic coverage and image quality. Deviations from the requested slice thickness or spacing/gap will result in re-scan requests. Please save the imaging protocol on the scanner at study initiation and use for all subjects. Consistency in acquisition across all visits is especially very important.

Shoulder MRI
- The laterality of the target shoulder for imaging should be entered.
- The subject should be positioned supine with the hand extended by the side of the torso or on the stomach.
- A dedicated shoulder coil should be used for imaging.
- The target shoulder should be as close as possible to the center of the magnet bore.
- The padding should be used to elevate the elbow and align the humerus parallel to the table.
- When moving the table inside the scanner, use laser lights to zero in on the shoulder joint.

Sequences: Left and Right Shoulder Exams (each shoulder imaged separately)				
Please note: Deviations from the requested slice thickness or spacing/gap will result in re-scan requests.				
Plane	**Type**	**Thickness (mm)**	**Spacing/gap (mm)**	**Comments**
Oblique Coronal	T1-weighted TR=450-500 ms; TE=15-30 ms	3.0	0.5-1.0	Non-fat sat
Oblique Coronal	Intermediate weighted/proton density-weighted TR=3000-4000 ms; TE=12-35 ms	3.0	0.5-1.0	Fat sat ETL (turbo factor) 7-9

Comments:
- Field of View (FOV) must be appropriate to subject size, usually around 16 cm
- Matrix=512 x 256
- 2 averages (NEX)
- bandwidth=250 Hz/pixels

Knee MRI

- The laterality of the target knee for imaging should correctly be entered through the scanner console.
- Subject positioning inside the scanner should be Feet First Supine.
- In the coil the knee should be positioned so that the apex of the patella is aligned with the center of the coil.
- The leg should be in a relaxed, neutral position. The most comfortable (and sustainable) one is attained when the knee is slightly flexed. Many coils are designed to accommodate this. However, if the base of your coil is flat, use the pads/pillows to slightly elevate and flex the knee to attain optimal positioning.
- Use pads as needed to immobilize the knee.
- NEVER insert a cushion or pad under the heel (ankle).
- Position the coil as close as possible to the center of the table. To achieve this, offset the patient toward the contralateral side.
- When moving the table inside the scanner, use laser lights to zero on the center of the coil (apex of the patella).

Sequences: Left and Right Knee Exams (each knee imaged separately)

NOTE: If a subject has a Right or Left total joint replacement, do not image the joint and indicate this on the MRI DTF in the comments field.

Note: Deviations from the requested slice thickness or spacing/gap will result in re-scan requests.

Plane	Type	Thickness (mm)	Spacing/gap (mm)	Comments
Coronal	T1-weighted TR=400-600 ms TE=8-15 ms	3.0	0.5-1.5	Non-fat sat
Coronal	Intermediate weighted/proton density-weighted R=2800-4000 ms TE=25-40 ms	3.0	0.5-1.5	Fat sat Echo Train Length (ETL)=5-7
Sagittal	Intermediate weighted/proton density-weighted TR=2800-4000 ms TE=25-40 ms	3.0	0.5-1.0	Fat sat Echo Train Length (ETL)=5-7

Comments:
- Field of View (FOV) must be appropriate to subject size, in general 14-18 cm
- Matrix=256 x 256
- Average NEX=1

Hip MRI

- The subject and coil should be centered to the table.
- The pelvic or body (phased-array) coil should be used for imaging.
- Subject positioning inside the scanner should be (feet- or head-first) supine.
- The feet should be strapped to provide immobility and correct positioning.
- When moving the table inside the scanner, use laser lights to center midway between the ASIS and pubic symphysis.

Sequences: Bi-lateral Hip Exam

Please note: As the hip scanning is a bi-lateral acquisition, if the subject has Right and Left total joint replacement, do not image the hips and indicate this on the MRI DTF in the comments field. If the subject has only Right or Left total joint replacement follow the standard imaging procedure.

Deviations from the requested slice thickness or spacing/gap will result in re-scan requests.

Plane	Type	Thickness (mm)	Spacing/gap (mm)	Comments
Coronal	T1-weighted TR=400-600 ms TE=8-15 ms	3.0	0.5-1.0	Non-fat sat
Coronal	Intermediate or proton density—weighted TR=3000-4000 ms TE=30-40 ms	3.0	0.5-1.0	Fat sat Echo train length (ETL)=5-7
Axial	Intermediate weighted/proton density-weighted TR=3000-3800 ms TE=25-40 ms	3.0	0.5-1.0	Fat sat Echo train length (ETL)=5-7

Comments:
- FOV must be appropriate to subject size, in general 35 x 28 cm.
- Matrix=256 x 256.
- Both hips should be captured in a single field-of-view.
- Torso phased array or large flex coil.
- Average NEX=1