

**MR SIM: Lung**  
08/11/2016 EP

Patient Preparation:

- Have patient change into gown
- Confirm GFR > 60 within 45 days

Coils and Immobilization Devices:

- Spine array coil
- (2) Body flex (surface) coils
- (2) Coil bridges
- (2) Nylon straps
- G9 fiberglass flat table insert
- Patient-specific immobilization device (vac-fix or alpha cradle)

Setup and Landmark:

1. Remove everything from MR table except spine array coil.
2. Secure G9 fiberglass in place over spine array.
3. Setup the patient head-first supine.
4. Place IV line into patient arm. Fill injector.
5. Place ECG leads onto patient and connect transmitter.
6. Secure patient's upper extremities in the vac-fix or alpha cradle.
7. Call radiation therapists (x53809) to verify patient setup.
8. Place **RF coil bridges** over thorax in scanner table slots and adjust to conform to patient surface anatomy.
9. Arrange **two** body flex coils circumferentially over RF coil bridges and secure with two Nylon straps.
10. Place **head phones** on the patient, if possible, to help hear breathing instructions.
11. Attach **ECG leads and Bluetooth transceiver**
12. Landmark over thorax.

Protocol:

- USER → MR SIM → CHEST → LUNG (+ CMR)

Scans:

- LOC – Free Breathing
- LOC – Breath Hold at **end expiration**
- AX BH T2 HASTE (2:30):
  - Breath Hold at **end expiration**
- AX BH T2 Trufi (2:00):
  - Breath Hold at **end expiration**
- AX Neurography (4:30):
  - Free-Breathing. Apical tumors only. Prescribe from C5 through T2.
- **\*\*\* Acquire research sequences if patient consented (4D-MRI) \*\*\***
- **\*\*\* Pre-Contrast Cardiac MRI \*\*\***
- AX T1 VIBE Pre (0:17):
  - Breath hold at **end expiration**. Center prescription over lung.
- AX Timing Bolus
- AX T1 VIBE Arterial (0:17):
  - Breath hold at **end expiration**. Copy AX T1 (FatSat) VIBE pre prescription. Inject, wait for delay, scan.
- AX T1 VIBE Venous (0:17):
  - Breath hold at **end expiration**. Copy AX T1 (FatSat) VIBE pre prescription. Begin scanning immediately.
- AX T1 VIBE Equil (0:17):
  - Breath hold at **end expiration**. Copy AX T1 (FatSat) VIBE pre prescription. Begin scanning immediately.
- **\*\*\* Post-Contrast Cardiac MRI \*\*\***

Post-Scanning:

- **Distortion-correct all images** (in the Browser window, select a series and then go to Evaluation → 3D Distortion Correction. Note: After correction the corrected images will have a “\_DIS3D” suffix).
- Send the distortion-corrected images (i.e., those with a “\_Dis3d” suffix) to **MIM Clinical** and **PACS**.
- **If advanced imaging performed**, transfer raw k-space data with Yarra client (Ctrl+Esc → Transfer Raw Data).