

MR SIM: Prostate Bed

09/21/2016 EP

It is critical to keep the time between CT SIM and MR SIM as short as possible in order to maintain the same degree of bladder filling. Therefore, **prior to both the CT SIM and MR SIM:**

- Have patient change into a gown and robe and complete the MR screening form.
- Confirm patient's GFR > 60 within 45 should be verified.
- If patient signed consent for research, place IV into patient's arm and fill injector.
- If patient voids between CT and MR sim, or if MR sim is scheduled on a different day than CT sim, patient must drink (2) 16 oz cups of water 30 minutes prior to MR sim.

Equipment (Coils, Immobilization Devices, etc):

- Spine array coil
- (2) Large flex (surface) coils
- (2) Nylon (locking) straps
- G9 fiberglass flat table insert
- Patient-specific immobilization devices (vac-fix or alpha cradle)

Setup and Landmark:

1. Remove everything from MR table except spine array coil.
2. Secure G9 fiberglass table insert in place over spine array.
3. Setup patient head-first supine, making sure that entire pelvis is **above S8** on spine coil.
4. Immobilize patient's lower extremities in vac-fix or alpha cradle.
5. Call radiation therapists (x53809) to verify patient setup and DICOM send the planning CT to the MR simulator.
6. Place **RF coil bridges** over pelvis in scanner table slots and adjust to conform to patient surface anatomy.
7. Arrange **both** body flex coils circumferentially over RF coil bridges and secure with two Nylon straps.
8. Landmark over center of surface coil.

Protocol:

- USER → MR SIM → PELVIS → PROSTATE BED

Scans:

- LOC
- AX T2 BLADDER FILL CHECK:
 - Position over bladder. Register to planning CT and compare bladder and rectum volumes. If similar, proceed with MR sim exam. If different, perform intervention (ask patient to use restroom, and/or have patient drink additional water and rescan after 10 minutes).
- LOC
- SAG T2 FRFSE (3:00):
 - Prescribe to cover gland (used for delineation of prostate/rectal interface).
- AX T2 FRFSE (5:00):
 - Prescribe from pubic symphysis/ischium superior through the bladder. Do not oblique. Confirm **R-L phase encode** direction.
- COR T2 FRFSE (3:00):
 - Prescribe to cover gland (used for delineation of apex)
- AX DIXON CAIPI (2:00)
 - Position superior border to include L3. Confirm all patient anatomy is included within FOV with no clipping. Do not change prescribed FOV or slices.
- v----- **If Order States Prostate Bed and Nodes** -----v
- AX DWI b=200/600/1000 (4:00)
 - Copy AX T2 FRFSE prescription.
- AX B0 Map (1:00)
 - Copy AX T2 FRFSE prescription.

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**.

