

| Protocols                               | Scan # | FOV (CM) | Slice Thickness (mm) | Spacing (mm) | Special Instructions/Comments   |
|---|--------|----------|----------------------|--------------|---|
| <b>Abdomen</b>                          |        |          |                      |              | Any abdomen study without an organ specific indication. Otherwise, see organ specific protocol.   |
| Ax Fiesta/ True FISP                    |        | ~30-40   | 5                    | 1            |   |
| Ax 3D Dual Echo                         |        | ~30-40   | 5                    | 2.5          |   |
| Ax T2 SSFSE/HASTE                       |        | ~30-40   | 5                    | 1            |   |
| Cor T2 SSFSE/HASTE                      |        | ~30-40   | 4                    | 1            |   |
| Ax T2 FS Propeller/T2 Haste FS          |        | ~30-40   | 5                    | 1            |   |
| Ax DWI (50/1000)                        |        | ~30-40   | 8                    | 2            | Only send B50 and 1000  |
| ADC                                     |        | ~30-40   | 8                    | 2            |   |
| Ax Pre (Lava or sim)                    |        | ~30-40   | 5                    | 2.5          | If there is a "mask" phase you don't need to complete pre-contrast LAVA. If not, we need a separate pre-contrast LAVA.  |
| Ax Post Dyn (20 sec, 1 min 3 min)       |        | ~30-40   | 5                    | 2.5          |   |
| Cor Post 5 min                          |        | ~30-40   | 4                    | 2            |   |
| Ax Post 10 min                          |        | ~30-40   | 5                    | 2.5          |   |
| Ax T1 Lava 20 min (Eovist only)         |        | ~30-40   | 5                    | 2.5          | FYI: All Vibes/Lavas should be Fat Sat or "water only" images for all MRI body protocols  |
| <b>Adrenal</b>                          |        |          |                      |              |   |
| Ax Fiesta/ True FISP                    |        | ~30-40   | 5                    | 1            |   |
| Ax 3D Dual Echo                         |        | ~30-40   | 5                    | 2.5          |   |
| Coronal 3D Dual Echo                    |        | ~30-40   | 5                    | 2.5          |   |
| Ax T2 SSFSE/HASTE                       |        | ~30-41   | 5                    | 1            |   |
| Cor T2 SSFSE/HASTE                      |        | ~30-40   | 4                    | 1            |   |
| Ax T2 FS Propeller/T2 Haste FS          |        | ~30-40   | 5                    | 1            |   |
| Ax DWI (50/1000)                        |        | ~30-40   | 8                    | 2            | Only send B50 and 1000  |
| ADC                                     |        | ~30-40   | 8                    | 2            |   |
| Ax Lava or similar                      |        | ~30-40   | 5                    | 2.5          |   |
| <b>Liver</b>                            |        |          |                      |              |   |
| Ax Fiesta/ True FISP                    |        | ~30-40   | 5                    | 1            | Please refer to Liver & Abdominal MRI Clinical Guidelines for Gadolinium Based Contrast Agents  |
| Ax 3D Dual Echo                         |        | ~30-40   | 5                    | 2.5          | For dedicated liver indication, axial coverage can be from lung bases to below liver. Does not need to cover below kidneys  |
| Ax T2 SSFSE/HASTE                       |        | ~30-41   | 5                    | 1            |   |
| Cor T2 SSFSE/HASTE                      |        | ~30-40   | 4                    | 1            |   |
| Ax T2 FS Propeller/T2 Haste FS          |        | ~30-40   | 5                    | 1            |   |
| Ax DWI (50/1000)                        |        | ~30-40   | 8                    | 2            | Only send B50 and 1000  |
| ADC                                     |        | ~30-40   | 8                    | 2            |   |
| Ax Pre (Lava or sim)                    |        | ~30-40   | 5                    | 2.5          |   |
| Ax Post Dyn (20 sec, 1 min 3 min)       |        | ~30-40   | 5                    | 2.5          |   |
| Cor Post 5 min                          |        | ~30-40   | 4                    | 2            |   |
| Ax Post 10 min                          |        | ~30-40   | 5                    | 2.5          |   |
| Ax T1 Lava 20 min (Eovist only)         |        | ~30-40   | 5                    | 2.5          |   |
| <b>Pancreas with MRCP</b>               |        |          |                      |              |   |
| Ax Fiesta/ True FISP                    |        | ~30-40   | 3                    | 1            | * Use Gadavist and have Body Radiologist review last set of images to determine if delayed images need to take place, if no bile leak identified.   |
| Ax 3D Dual Echo                         |        | ~30-40   | 4                    | 2            | Pancreatic protocol must include MRCP in order  |
| Ax T2 SSFSE/HASTE                       |        | ~30-41   | 5                    | 1            | FUL IPMN, pancreatic cyst, chronic pancreatitis, pancreatic mass.   |
| Cor T2 SSFSE/HASTE                      |        | ~30-40   | 4                    | 1            | For dedicated pancreas indication, axial coverage can be from bottom of heart/left hemidiaphragm to below C-loop of duodenum. Plan from coronal localizer. Coronal images must cover pancreas from front to back using axial images for planning. Do not need to cover skin to skin on coronal. Smallest FOV as possible. |
| Ax T2 FS Propeller/T2 Haste FS          |        | ~30-40   | 4                    | 1            |   |
| Ax DWI (50/1000)                        |        | ~30-40   | 7                    | 1            | Only send B50 and 1000  |
| 2D MRCP                                 |        | ~30-40   | 40                   | 0            | 3 Oblique views. See planning images  |
| Cor 3D MRCP                             |        | ~30-40   | 1.4                  | 0.7          | Focus on pancreatic duct  |
| 3D MIP                                  |        | ~30-40   | 7                    | 1            | Single thick slab from 3D images  |
| ADC                                     |        | ~30-40   | 7                    | 1            |   |
| Ax Pre (Lava or sim)                    |        | ~30-40   | 3                    | 1            |   |
| Ax Post Dynamic (45 sec, 80 sec, 3 min) |        | ~30-40   | 4                    | 1.5          |   |
| Cor Post 5 min                          |        | ~30-40   | 4                    | 2            |   |
| Ax Post 10 min                          |        | ~30-40   | 3                    | 1            |   |
| <b>Renal</b>                            |        |          |                      |              |   |
| Ax Fiesta/ True FISP                    |        | ~30-40   | 4                    | 1            | For dedicated renal indication (usually renal mass), axials must cover from above adrenal glands to below kidneys. Plan from localizer. Does not need to cover entire abdomen. Coronal images must cover both kidneys from front to back using axial images for planning. Do not need to cover skin to skin.              |
| Ax 3D Dual Echo                         |        | ~30-40   | 6                    | 1.5          |   |
| Ax T2 SSFSE/HASTE                       |        | ~30-41   | 5                    | 1            |   |
| Cor T2 SSFSE/HASTE                      |        | ~30-40   | 4                    | 1            |   |
| Ax T2 FS Propeller/T2 Haste FS          |        | ~30-40   | 4                    | 1            |   |
| Ax DWI (50/1000)                        |        | ~30-40   | 7                    | 1            | Only send B50 and 1000  |
| ADC                                     |        | ~30-40   | 7                    | 1            |   |
| Ax Pre (Lava or sim)                    |        | ~30-40   | 3                    | 1            |   |
| Cor Pre (Lava or sim)                   |        | ~30-40   | 3                    | 1            |   |
| Ax Post Dyn (20 sec, 60 sec, 90 sec)    |        | ~30-40   | 3                    | 1            |   |
| Cor Post 3 min                          |        | ~30-40   | 3                    | 1            |   |
| Ax Post (acquired after Cor Post 3 min) |        | ~30-40   | 3                    | 1            |   |
| Post process subtraction                |        |          |                      |              | Cor post minus pre; Ax post minus pre   |
| <b>Liver with MRCP</b>                  |        |          |                      |              |   |
| Ax Fiesta/True FISP                     |        | ~30-40   | 5                    | 1            | * Use Eovist and have Body Radiologist review last set of images to determine if delayed images need to take place, if no bile leak identified.   |
| Ax 3D Dual Echo                         |        | ~30-40   | 5                    | 2.5          | Any MRCP study without a pancreas specific indication (otherwise use Pancreas with MRCP protocol). Must cover entire liver axial and coronal. Does not need to include entire kidney on axial unless needed to cover liver. Does not need skin to skin coverage on coronal.   |
| Ax T2 SSFSE/HASTE                       |        | ~30-40   | 5                    | 1            |   |
| Cor T2 SSFSE/HASTE                      |        | ~30-40   | 4                    | 1            |   |
| Ax T2 FS Propeller/T2 Haste FS          |        | ~30-40   | 5                    | 1            |   |
| Ax DWI (50/1000)                        |        | ~30-40   | 8                    | 2            | Only send B50 and 1000  |
|   |        |          |                      |              |   |

| Abbreviated MRCP (w/o)  |                    |        |     |     |  |
|---|--------------------|--------|-----|-----|--|
| Ax T2 SSFSE/HASTE Fat Sat   |                    | ~30-41 | 5   | 1   | Any MRCP study without a pancreas specific indication (otherwise use Pancreas with MRCP protocol). Must cover entire liver   |
| Cor T2 SSFE/HASTE   |                    | ~30-40 | 4   | 1   | axial and coronal. Does not need to include entire kidney on axial unless needed to cover liver. Does not need skin to skin coverage on coronal.                                   |
| Ax DWI (50/1000)  |                    | ~30-40 | 8   | 2   | Only send B50 and 1000   |
| Ax Fiesta/True FISP   |                    | ~30-40 | 5   | 1   |  |
| Axial 3D Dual Echo  |                    | ~30-40 | 5   | 2.5 |  |
| 2D MRCP (Thick & Thin cuts)   |                    | ~30-40 | 40  | 0   | 3 Oblique views.   |
| Cor 3D MRCP   |                    | ~30-40 | 1.4 | 0.7 |  |
| Ax Lava   |                    | ~30-40 | 5   | 2.5 |  |
| Cor Lava  |                    | ~30-40 | 5   | 2.5 |  |
|   |                    |        |     |     |  |
| <b>Appendicitis (Order as MR Abd and Pelvis)</b>  |                    |        |     |     |  |
| Sag SSFSE   |                    | 42     | 4   | 1   |  |
| Cor 2D Fiesta   |                    | 42     | 4   | 1   |  |
| Cor SSFSE   |                    | 42     | 4   | 1   |  |
| Cor SSFSE FS  |                    | 42     | 4   | 1   |  |
| Ax Fiesta   |                    | 40     | 5   | 1   |  |
| Ax SSFSE  |                    | 40     | 5   | 1   |  |
| Ax SSFSE FS   |                    | 40     | 5   | 1   |  |
| Ax T1 Lava  |                    | 40     | 6   | 3   |  |
| Ax DWI (800 to 1000)  |                    | 40     | 8   | 2   |  |
|   |                    |        |     |     |  |
| <b>Enterography - Order as MR Abdomen and Pelvis</b>  |                    |        |     |     |  |
| Cor Fiesta Cine   |                    | 32     | 8   | 0   | * Coverage for all sequences to include stomach (as much stomach as possible) to perineum (through anus); axial images may need to be split into 2 stacks for appropriate coverage |
| (Give 5 mg Glucagon: IV preferred)  |                    |        |     |     | * Glucagon contraindications: Allergy to glucagon or history of pheochromocytoma, insulinoma, or glucagonoma.  |
| Cor SSFSE   |                    | 40     | 3   | 1   | * Glucagon relative contraindication to diabetes.  |
| Ax SSFSE  |                    | 40     | 4   | 1   | * Administration of glucagon via IV injected slowly, is preferred over IM, if possible.  |
| Ax SSFSE FS   |                    | 40     | 4   | 1   | * NPO 4 hours prior to exam  |
| Ax T1 Lava  |                    | 40     | 5   | 2.5 | * 2 bottles Breeze/Volumen over 1 - 1.5 hour as tolerated by patient prior to imaging, water if can't tolerate Breeze/Volumen (adult and peds)                                     |
| Cor SSFSE FS  |                    | 40     | 3   | 1   | * Please send images to PACS in appropriate orientation  |
| Ax T1 Lava +C (70 sec delay)  |                    | 40     | 5   | 2.5 |  |
| Cor T1 Lava +C  |                    | 40     | 5   | 2.5 |  |
| Axial DWI (50,1000)   |                    | 40     | 8   | 2   |  |
|   |                    |        |     |     |  |
| <b>Perianal Fistula or Perianal Abscess</b>   |                    |        |     |     |  |
| Sag T2 FSE  |                    | 22     | 4   | 0.5 | * Axial scan range from bladder base to gluteal skin, coronal scan range from pubic symphysis to coccyx  |
| Ax T2 propeller or FRFSE  |                    | 22     | 2   | 0.2 | * Oblique axial and coronal to <b>anal canal</b> based on sagittal image   |
| Ax T2 FS propeller or FRFSE   |                    | 22     | 2   | 0.2 | * Need surgeon note.   |
| Cor T2 propeller or FRFSE   |                    | 22     | 4   | 0.1 | * Does pt. have seton drain?   |
| Cor T2 FS propeller or FRFSE  |                    | 22     | 4   | 0.1 |  |
| Ax T1 SPGR FS sm FOV  |                    | 24     | 4   | 0.5 |  |
| Ax T1 SPGR FS +C  |                    | 42     | 5   | 1   |  |
| Cor T1 SPGR FS +C   |                    | 24     | 4   | 0.5 |  |
| Ax T1 Sm FOV FS +C  |                    | 24     | 4   | 0.5 |  |
|   |                    |        |     |     |  |
| <b>Prostate</b>   |                    |        |     |     |  |
| * Preferred prep: Microcena administered by the patient in the department, immediately before the scan.   |                    |        |     |     |  |
| * If microcena is not available in the department, full prep may be utilized which requires the patient to plan to purchase and perform the prep at home. |                    |        |     |     |  |
| * Prep: Nothing to eat or drink 12 hours prior, 1 bisacodyl suppository (Dulcolax) 10 hours prior to study, void just before exam                         |                    |        |     |     |  |
| * Special Instructions: No Caffeine the morning of the exam   |                    |        |     |     |  |
| Ax Global Lava  | 40 freq x 32 phase | 2.5    | 0   |     | Iliac Crest through Pubic Symphysis : <b>Scan in the plane of the magnet and 90 degrees from each other.</b>   |
| T2 Sag propeller or FRFSE   | 12cm - 20cm        | 3      | 0   |     | Entirety of Prostate gland including seminal vesicles  |
| T2 Cor propeller or FRFSE   | 12cm - 20cm        | 3      | 0   |     | Entirety of Prostate gland including seminal vesicles  |
| T2 Ax propeller or FRFSE  | 12cm - 20cm        | 3      | 0   |     | Entirety of Prostate gland including seminal vesicles: Diffusion/ Ax T2/Dynam are all same plane   |
| Ax Focus Diffusion (50/1000)  | 24                 | 4      | 1.5 |     | Entirety of Prostate gland including seminal vesicles: Diffusion/ Ax T2/Dynam are all same plane   |
| Ax Perfusion (Dynamic)  | (not specified)    | 3      | 0   |     | Entirety of Prostate gland including seminal vesicles: Diffusion/ Ax T2/Dynam are all same plane: <b>Include color mapping through CAD system</b>                                  |
| Ax Global Lava + Contrast   | 40 freq x 32 phase | 2.5    | 0   |     | Iliac Crest through Pubic Symphysis: Diffusion/ Ax T2/Dynam are all same plane   |
| <b>Each type for Diffusion</b>  |                    |        |     |     |  |
| Use B value of 1000 to calculate ADC map  |                    |        |     |     |  |
| Send B value of 1400 to PACS for diffusion. Do NOT use this B value to calculate ADC  |                    |        |     |     |  |
| If your MRI can extrapolate B values of 1400, use to save time. If not acquire 2 separate diffusion sequences   |                    |        |     |     |  |
| Please send "water only" LAVA images  |                    |        |     |     |  |
| If your MRI can extrapolate B values of 1400, use to save time. If not acquire 2 separate diffusion sequences   |                    |        |     |     |  |
| Only provide 10 sequences   |                    |        |     |     |  |
|   |                    |        |     |     |  |
| * If pelvic hardware present, the exam should be completed on 1.5T and not 3T MRI   |                    |        |     |     |  |







|                                     |  |        |       |        |  |
|-------------------------------------|--|--------|-------|--------|--|
| Urogram                             |  |        |       |        |  |
| Saline Bolus 100 ml                 |  |        |       |        |  |
| Cor SSFSE                           |  | ~30-40 | 6 mm  | 7 mm   |  |
| Axial SSFSE                         |  | ~30-40 | 6 mm  | 7 mm   |  |
| Axial DE                            |  | ~30-40 | 5 mm  | 2.5 mm |  |
| Axial LAVA                          |  | ~30-40 | 3 mm  | 1.5 mm |  |
| Axial T2                            |  | ~30-40 | 6 mm  | 7 mm   |  |
| Axial DWI                           |  | ~30-40 | 8 mm  | 10 mm  |  |
| Give Lasix 1 mg                     |  | ~30-40 |       |        |  |
| 2D Cor Oblique (MRCP)               |  | ~30-40 | 60 mm | 60 mm  |  |
| 3D Cor Oblique (MRCP)               |  | ~30-40 | 2 mm  | 2 mm   |  |
| Cor LAVA - Dynamic 5 min. & 10 min. |  | ~30-40 | 3 mm  | 1.5 mm |  |
| Axial LAVA 12 minute                |  | ~30-40 | 3 mm  | 1.5 mm |  |
| Cor Fiesta                          |  | ~30-40 | 6 mm  | 7 mm   |  |
| Axial Fiesta                        |  | ~30-40 | 6 mm  | 7 mm   |  |
| Cor LAVA - 15 min.                  |  | ~30-40 | 6 mm  | 7mm    |  |
|                                     |  |        |       |        |  |