

MRI Defecography (Pelvic Floor)

Updated 06/06/26

Reviewed 06/06/26

Indications: fecal/urinary incontinence, constipation, urinary stasis, rectocele, cystocele, vaginal/uterine prolapse.

IV contrast is not given for this protocol.

Bowel preparation:

NPO 4 hours prior to the exam.

Exam before noon - 1 Fleets enema night before and 1 Fleets enema 1 hrs prior to the exam.

Exam after noon - 1 Fleets enema 6 am morning of and 1 Fleets enema 1 hr prior to the exam.

Full Pelvis FOV: Iliac crests to few slices below introitus/anus (top/bottom coverage), greater trochanter to greater trochanter (right/left coverage), anterior pelvic wall skin to posterior buttock skin (front/back coverage).

Parameters for cine sequences (20 images per run, 1 image per sec).

The sagittal slice for the trueFISP is midline small FOV showing the lower rectum and anal canal. The pubic symphysis should be visualized anteriorly, and the sacrum/coccyx should be visualized posteriorly. See image below.

The coronal slice for the trueFISP is small FOV through the anal canal (see below image).

The axial slice for the trueFISP is small FOV through the upper anal canal (see below image).

First sagittal cine FISP sequences:

Start with the patient in a relaxed state, then ask him/her to "squeeze" or "clench" their pelvic floor / buttocks, as if he/she is trying to perform a Kegel, or trying to stop defecating and urinating, and then relax. You should see the pelvic floor lift up during the squeeze, and then drop back down as they relax. If you don't, repeat the instructions and reimage.

Subsequent sagittal cine FISP sequences:

You no longer ask the patient to "squeeze" for the "push" series. Instead for each series, he/she will start in the relaxed state, and then "bear down" or "push", as he/she would try to defecate or deliver a baby.

You should see the pelvic floor drop, and eventually gel should leave the rectum. If the initial "push" attempts are SUCCESSFUL, perform this "push" series with the same instructions a minimum of 3 times, then perform 1 in the axial plane, one in the coronal plane, then one more in the sagittal plane, for a total of AT LEAST 6 "push" cine series.

Sometimes the patient has a hard time with the "push" series. Sometimes he/she will continue to squeeze instead of bearing down. Sometimes he/she will "bear down" appropriately and the pelvic floor will drop, but no gel will leave the rectum. Sometimes he/she will simultaneously "bear down" and "squeeze", and little or no gel might come out. Sometimes, there will be no effective pelvic floor motion during his/her attempts to push. He/she should be instructed about these issues, and you should re-explain the instructions, and reassure and try to help the patient. You should continue to repeat the push series for at least 7 unsuccessful sagittal plane tries, then proceed to the axial, coronal, and final sagittal try.

If you are able to eventually get a successful push after failed attempts, then continue this "push" sagittal series with the same instructions as described above for the successful push, aiming for a minimum of 3 successful sagittal push series, then perform 1 in the axial plane, one in the coronal plane, then one more in the sagittal plane.

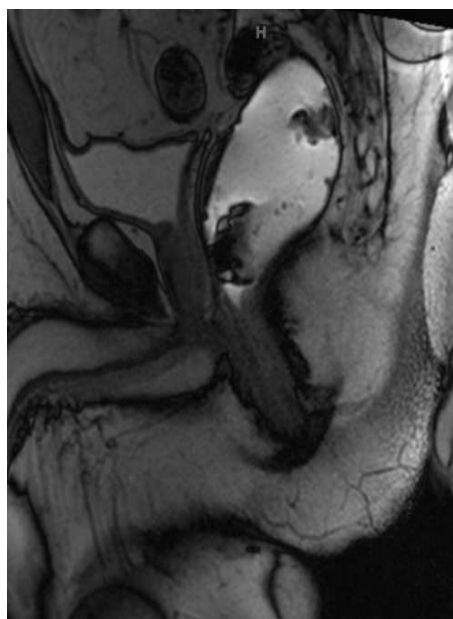
Many patients require multiple attempts before they understand and are comfortable enough to defecate on scanner.

Some patients are unable to defecate on the table no matter how many attempts they make.

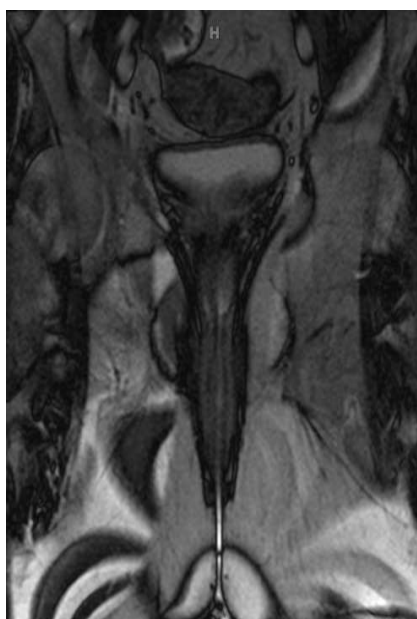
Pulse Sequence	PACS Name	plane	fat sat	slice (mm)	gap (mm)	first slice	Field of View
T2 HASTE/SSFSE	T2 COR	cor	no	7	1.4	front	full pelvis
T2 TSE	T2 SAG	sag	no	5	1	left	
T2 TSE	T2 AX	ax	no	5	1	top	
T2 HASTE/SSFSE	T2 FS AX	ax	yes	7	1	top	

Have the patient administer 120 mL US gel via syringe into her/his rectum. Make sure the US gel is present/visible and that the pubic symphysis & distal coccyx are present on the first cine sagittal images prior to continuing with the remaining cines.

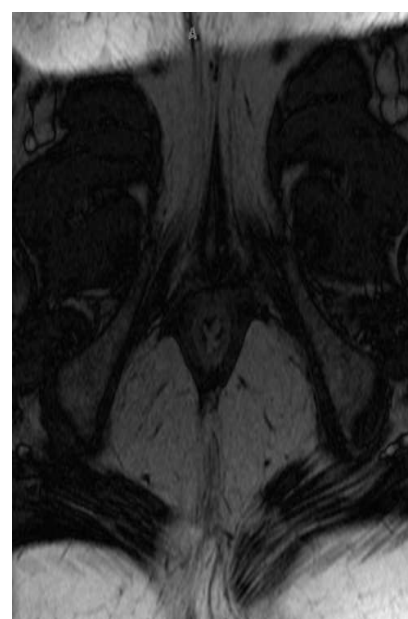
Cine True FISP	CINE SAG	sag	no	1.4	1	left	FOV and instructions as specified above
Cine True FISP	CINE SAG	sag	no	1.4	1	left	
Cine True FISP	CINE SAG	sag	no	1.4	1	left	
Cine True FISP	CINE COR	cor	no	1.4	1	front	
Cine True FISP	CINE AX	ax	no	1.4	1	top	
Cine True FISP	CINE SAG	sag	no	1.4	1	left	



sagittal FISP



coronal FISP



axial FISP