

PROTOCOL: MRI LUMBAR SPINE WO-ROUTINE

CLINICAL INDICATIONS/ HISTORY LOW BACK PAIN, RADICULOPATHY, LOWER EXTREMITY WEAKNESS, FOOT DROP, HNP, TRAUMA, DISC DISEASE

TIPS: Localizer not optional; should include skull base to as far down as FOV allows to let radiologist count vertebral levels.
 For scoliosis, add a coronal T2.
 Hospitals should be using STIR + T2, NOT T2 DIXON fat suppression techniques.
 If metal hardware, scan on 1.5T magnet rather than 3T magnet:
 If metal hardware and fat-suppression obscures canal, then skip fat suppression on post contrast scans.
 If metal hardware, scan on 1.5T magnet with metal suppression techniques (extended bandwidth or echo train; metal suppression software like MARS or MAVRIC or WARP), DIXON, or IDEAL. If those no available, skip fat suppression

SCAN ORDER	PLANE	IMAGE CONTRAST/WEIGHTING	MODE	PULSE SEQ	COVERAGE	TR RANGE	TE RANGE	TI	FLIP ANGLE	THICKNESS/GAP (mm)	FOV (cm)	Max Pixel (mm) Fr x Ph	PHASE AXIS	SEND TO PACS	Max scan time (target)
1	SAG	T1	2D	FSE	COVER BONY LUMBAR SPINE	<790	MIN	-	>130	4/1	24-26	.9X.9	IS	FULL SERIES	3:00
2	SAG	T2	2D	FSE	COVER BONY LUMBAR SPINE	4000-7000	90-110	-	>130	4/1	24-26	.9X.9	IS	FULL SERIES	3:00
3	SAG	STIR	2D	FSE	COVER BONY LUMBAR SPINE	3000-6000	50-70	150	>130	4/1	24-26	1.0X1.0	IS	FULL SERIES	3:30
2/3A (ISJ alternate)	SAG	T2 DIXON/IDEAL	2D	FSE	COVER BONY LUMBAR SPINE	4000-7000	90-110	-	>130	4/1	24-26	.9X.9	IS	IN-PHASE AND WATER ONLY	4:30
4	AX	T2	2D	FSE	ANGLED TO EACH DISC SPACE FROM MID T1 THRU MID S1	4000-7000	90-110	-	>130	4/1	14-15	1.0X1.1	PA	FULL SERIES	3:00
5	AX	T2	2D	FSE	SINGLE STACK ABOVE L1 THRU S1	4000-7001	90-111	-	>131	4/1	14-16	1.0X1.2	PA	FULL SERIES	3:30
6	AX	T1	2D	FSE	7-9 SLICES ANGLED AT EACH OF LOWEST 3 LEVELS	<790	MIN	-	>130	3.5/1	14-16	1.0X1.0	PA	FULL SERIES	3:00
* (IF SCOLIOSIS)	COR	T2	2D	FSE	COVER BONY CERVICAL SPINE	4000-7000	90-110	-	>130	4/0	20-22	.8X.8	RL	FULL SERIES	3:00