

**PROTOCOL: MR UROGRAPHY WWO**

**CLINICAL INDICATIONS/ HISTORY:** HEMATURIA, RENAL OR URETERAL MASS (IF ORDERED AS ABDOMEN+PELVIS); **\*\*IF STONES ARE SUSPECTED, PATIENT MUST HAVE A NON-CON CT STONE STUDY AS WELL\*\***

SCAN ORDER	PLANE	IMAGE CONTRAST / WEIGHTING	MODE	PULSE SEQ	COVERAGE	TR RANGE	TE RANGE	FLIP ANGLE	THICKNESS / GAP (mm)	FOV (cm)	Max Pixel (mm) Ph	Fr x PHASE AXIS	SEND TO PACS	Max scan time (target)
1	COR	T2	2D	SSFSE/ HASTE	COVER ENTIRE A-P DIMENSION OF ABDOMEN FROM TOP OF KIDNEYS TO PUBIC SYMPHYSIS	>1000	100	>130	5/1	40-50	1.0X2.0	RL	FULL SERIES	<18s BH
2A/B	AX	T2	2D	SSFSE/ HASTE	IN 2 GROUPS (UPPER+LOWER) COVER FROM TOP OF KIDNEYS TO PUBIC SYMPHYSIS	>1000	100	>130	5/1	32-40	1.25X2.25	RL	FULL SERIES	<18s BH
3	COR	T1	3D	LAVA / VIBE	COVER ENTIRE A-P DIMENSION OF ABDOMEN FROM TOP OF KIDNEYS TO PUBIC SYMPHYSIS	MIN	AUTO	8-15	3-4/OVLP	40-50	1.2X2.0	IS	FULL SERIES	<18s BH
4A/B	AX	T1 DIXON/FLEX	3D	LAVA FLEX/ VIBE DIXON	IN 2 GROUPS (UPPER+LOWER) COVER FROM TOP OF KIDNEYS TO PUBIC SYMPHYSIS	MIN	AUTO	8-15	3-4/OVLP	32-40	1.25X2.25	RL	IN PHASE+OUT ON ABDOMEN	<18s BH
5A/B	AX	DWI b50/800	2D	EPI DWI	SAME	>5000/ BH	MIN	180	5/1	32-40	2.75X2.75	RL	FULL SERIES+ADC	<18s BH
<p>Inject Furosemide - 1 mg/kg IV for max dose 20 mg (hospital setting only).</p> <p>Consult a radiologist prior to administering furosemide if the patient has a history of chronic kidney disease or decompensated liver disease.</p> <p>Furosemide is CONTRAINDICATED in anuric patients (those who do not produce urine).</p>														
6	COR	T2 FS	3D	SPACE/CUBE/FSE	COVER KIDNEYS, URETERS, BLADDER IN FOV AND IN AP COVERAGE; FREE-BREATHE/TRIGGER/NAV IS PREFERRED. THIS WILL BE A LONG SCAN. DO NOT ATTEMPT TO CUT CORNERS!	AUTO	>180	>130	1.4-2.0/OVLP	36-48	1.4x2.0	RL/PA	FULL SERIES+ AX/SPIN MIP	8:00 (NAVI)
INJECT CONTRAST- CAREBOLUS/FLUORO TRIGGER IS NOT REQUIRED.														
7-8-9+C	AX	T1FS DIXON/FLEX 25s, 70s, 120s	3D	LAVA FLEX/ VIBE DIXON	ENTIRE ABDOMEN/LIVER/KIDNEYS	MIN	AUTO	8-15	3-4/OVLP	32-40	1.25X2.25	PA	WATER	<18s BH
10+C	COR	T1FS DIXON/FLEX IMMEDIATELY AFTER DYNAMICS	3D	LAVA FLEX/ VIBE DIXON	COVER ENTIRE A-P DIMENSION OF ABDOMEN FROM TOP OF KIDNEYS TO PUBIC SYMPHYSIS	MIN	AUTO	8-15	3-4/OVLP	40-50	1.2X2.0	IS	WATER	<18s BH
<p>NEXT SERIES: If Furosemide was given, perform 7 minutes after contrast injection.                      If no Furosemide was given, perform 15 minutes after contrast injection.                      Have tech check images to see if ureters and bladder are opacified with contrast. If not, repeat 10-15 minutes later.</p>														
11+C	COR	T1FS DIXON/FLEX (SEE TIMING INSTRUCTIONS ABOVE)	3D	LAVA FLEX/ VIBE DIXON	SAME AS ABOVE	MIN	AUTO	8-15	3-4/OVLP	40-50	1.2X2.0	IS	WATER	<18s BH
12A/B+C	AX	T1FS DIXON/FLEX DELAYED	3D	LAVA FLEX/ VIBE DIXON	IN 2 GROUPS (UPPER+LOWER) COVER FROM TOP OF KIDNEYS TO PUBIC SYMPHYSIS	MIN	AUTO	8-15	3-4/OVLP	32-40	1.25X2.25	RL	WATER	<18s BH