

# CTA Liver Pre-SIRT

Updated  
5/2/2024

Indications - pre procedure planning for radioembolization of liver mass.

Use CT Angio Combo AP w/ + w/o Contrast charge. Do not use CT AP w/ + w/o Contrast charge.

## GENERAL SCAN NOTES

Move the patient's arms over his/her head if possible. Remove any metal from the imaging field of view.

Topogram - lung bases through pubic symphysis (obtained during end inspiration).

Craniocaudal scan coverage - Lung bases through pubic symphysis on both phases (obtained during end inspiration).

Adjust FOV (field of view) on topogram to smallest without cropping anatomy.

IV Contrast:

Administer weight-based **Omnipaque-350 - 1 mL/kg** up to **150 mL** (100 mL minimum).

Inject at **4 mL/sec** followed by 40 mL saline flush, 20-gauge or larger in forearm or more proximal.

Bolus track off proximal abdominal aorta triggered at **100 HU**.

Oral Contrast: generally not given for this protocol.

For **GE scanners**, it is essential for the 1st recon thickness on the scanner to match the 1st recon thickness in this protocol book for the prescribed Noise Index to be valid. The 1st recon should generally be the thickest recon in the protocol.

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## SIEMENS PARAMETERS & RECONS

For the **Arterial** phase:

	Scan Mode	kV	mAs	Care Dose	Care kV & Lvl	Pitch	Acq	Coll	Rot Time	Scan Time
Sensation 16	spiral	120	200	on	NA	0.80	16	0.75	0.5	26.0
Go Up 32	spiral	130	92	on	on 145	0.80	32	0.7	0.8	22.3
Sensation 64	spiral	120	200	on	NA	1.20	64	0.6	0.5	5.4
Definition 64	spiral	120	180	on	on	0.60	64	0.6	0.5	21.7
Go Top 64	spiral	120	112	on	on 145	0.80	64	0.6	0.5	8.1
Drive 128	spiral	120	147	on	on	0.60	128	0.6	0.5	10.9
Force 192	spiral	120	147	on	on	0.60	192	0.6	0.5	7.2

For the **Venous (70 secs)** phase:

	Scan Mode	kV	mAs	Care Dose	Care kV & Lvl	Pitch	Acq	Coll	Rot Time	Scan Time
Sensation 16	spiral	120	200	on	NA	0.80	16	1.5	0.5	13.0
Go Up 32	spiral	130	92	on	on 145	0.80	32	0.7	0.8	22.3
Sensation 64	spiral	120	200	on	NA	1.20	24	1.2	0.5	7.2
Definition 64	spiral	120	180	on	on	0.60	64	0.6	0.5	21.7
Go Top 64	spiral	120	112	on	on 145	0.80	64	0.6	0.5	8.1
Drive 128	spiral	120	147	on	on	0.60	128	0.6	0.5	10.9
Force 192	spiral	120	147	on	on	0.60	192	0.6	0.5	7.2

### ARTERIAL PHASE

Name of Series	Thick	Interval	Kernel	Window	IR Lvl	Recon Direction
AX ARTERIAL	1.0	1.0	Br40 / B41f	mediastinum	3	head/feet
3D VRT (& spin)	0.75	0.5	Bv36 / B31f	CT angio		

### VENOUS PHASE (70 secs)

AX VENOUS	3.0	3.0	Br40 / B41f	mediastinum	3	head/feet
COR VENOUS	3.0	3.0	Br40 / B41f	mediastinum	3	front/back
SAG VENOUS	3.0	3.0	Br40 / B41f	mediastinum	3	left/right

**Volume series on whole liver and on right lobe only.**

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## GE PARAMETERS & RECONS

For the **Arterial** phase:

	Scan Type	SFOV	kV	mA Range	Noise Index	Smart mA	Slice Thick	Beam Coll	Pitch	Speed	Rot Time	Dose Red	ASIR	Scan Time
LS 16	helical	large	120	50-440	23.14	on	1.25	20	1.375	27.50	0.6	NA	NA	10.9
Opt 540	helical	large	120	50-440	23.14	on	1.25	20	1.375	27.50	0.6	NA	NA	10.9
LS VCT 64	helical	large body	120	50-650	23.14	on	1.25	40	1.375	55.00	0.5	50	50	4.5
Disc VCT 64	helical	large body	120	50-650	23.14	on	1.25	40	1.375	55.00	0.5	NA	NA	4.5

For the **Venous (70 secs)** phase:

	Scan Type	SFOV	kV	mA Range	Noise Index	Smart mA	Slice Thick	Beam Coll	Pitch	Speed	Rot Time	Dose Red	ASIR	Scan Time
LS 16	helical	large	120	50-440	16.36	on	2.5	20	1.375	27.50	0.6	NA	NA	10.9
Opt 540	helical	large	120	50-440	16.36	on	2.5	20	1.375	27.50	0.6	NA	NA	10.9
LS VCT 64	helical	lrg body	120	50-650	16.36	on	2.5	40	1.375	55.00	0.5	50	50	4.5
Disc VCT 64	helical	lrg body	120	50-650	16.36	on	2.5	40	1.375	55.00	0.5	NA	NA	4.5

### ARTERIAL PHASE

Name of Series	Thickness	Interval	Recon Algorithm	Window Width/Level	Recon Direction
<b>AX ARTERIAL</b>	<b>1.25</b>	<b>1.25</b>	<b>std full</b>	<b>400/40</b>	<b>head/feet</b>
3D VRT (& spin)	0.625	0.625	std full	400/40	

**Must be first recon.**

### VENOUS PHASE (70 secs)

<b>AX VENOUS</b>	<b>2.5</b>	<b>2.5</b>	<b>std full</b>	<b>400/40</b>	<b>head/feet</b>
COR VENOUS	2.5	2.5	std full	400/40	front/back
SAG VENOUS	2.5	2.5	std full	400/40	left/right

**Must be first recon.**

**Volume series on whole liver and on right lobe only.**

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## PHILIPS PARAMETERS & RECONS

For the Arterial and Venous (70 secs) phases:

	Scan Mode	kV	Avg mAs	Dose Index	3D Dose	Pitch	Detect	Colli	Rot Time	Scan Time
Incisive 128	helical	120	115	20	on	1.00	64	0.625	0.75	9.4

### ARTERIAL PHASE

AX ARTERIAL	1.0	1.0	B	mediastinum	3	head/feet
3D VRT (spin)	0.75	0.5	B			

### VENOUS PHASE (70 secs)

AX VENOUS	3.0	3.0	B	mediastinum	3	head/feet
COR VENOUS	3.0	3.0	B	mediastinum	3	front/back
SAG VENOUS	3.0	3.0	B	mediastinum	3	left/right

**Volume series on whole liver and on right lobe only.**