

CTA Mesenteric Ischemia

Updated 03/09/25

Reviewed 05/14/25

Indications - mesenteric ischemia, celiac or superior mesenteric artery stenosis, chronic abdominal pain, abdominal pain after eating, intestinal/mesenteric angina.

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 all 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 **120 HU**.

Oral Contrast:

If the patient can tolerate, give him/her 24 oz water 30 mins prior to imaging.

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 Pre Contrast and Venous (70 secs) phases:

	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	off	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 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

PRE CONTRAST PHASE

Name of Series	Thick	Interval	Kernel	Window	IR Lvl	Recon Direction
AX PRE	3.0	3.0	Br40 / B41f	mediastinum	3	head/feet

ARTERIAL PHASE

AX ARTERIAL	3.0	3.0	Br40 / B41f	mediastinum	3	head/feet
SAG ARTERIAL	3.0	3.0	Br40 / B41f	mediastinum	3	left/right
AX ART MIPS	5.0	3.0	Br40 / B41f	mediastinum	3	head/feet
3D VRT (& spin)	0.75	0.5	Bf37f / 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

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GE PARAMETERS & RECONS

For the Pre Contrast, Arterial and Venous (70 secs) phases:

	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	large body	120	50-650	16.36	on	2.5	40	1.375	55.00	0.5	50	50	4.5
Disc VCT 64	helical	large body	120	50-650	16.36	on	2.5	40	1.375	55.00	0.5	NA	NA	4.5

PRE CONTRAST PHASE

Name of Series	Thickness	Interval	Recon Algorithm	Window Width/Level	Recon Direction
AX PRE	2.5	2.5	std full	400/40	head/feet

Must be first recon.

ARTERIAL PHASE

AX ARTERIAL	2.5	2.5	std full	400/40	head/feet
SAG ARTERIAL	2.5	2.5	std full	400/40	left/right
AX ART MIPS	5.0	3.0	std full	400/40	head/feet
3D VRT (spin)	0.625	0.625	std full	400/40	

Must be first recon.

VENOUS PHASE (70 secs)

AX VENOUS	2.5	2.5	std full	400/40	head/feet
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.

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PHILIPS PARAMETERS & RECONS

For the Pre Contrast, 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

PRE CONTRAST PHASE

Name of Series	Thick	Interval	Filter	Window	iDose	Recon Direction
AX PRE	3.0	3.0	B	mediastinum	3	head/feet

ARTERIAL PHASE

AX ARTERIAL	3.0	3.0	B	mediastinum	3	head/feet
SAG ARTERIAL	3.0	3.0	B	mediastinum	3	left/right
AX ART MIPS	5.0	3.0	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