

# **CTA Pulmonary Embolus (PE)**

Updated  
5/2/2024

Indications - shortness of breath, dyspnea, chest pain, tachycardia, pulmonary embolus, DVT, elevated D-dimer, pulmonary hypertension.

**Hemoptysis indication uses CTA thoracic aorta protocol.** If indication is PE and hemoptysis, tech should contact ordering clinician to pick either PE or hemoptysis which will determine which protocol to use.

## **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 apices through diaphragm (obtained during end inspiration).

Craniocaudal scan coverage:

Regular patients - lung apices through adrenal glands (**just have patient stop breathing**).

**Pregnant patient** - lung apices through **lung bases** (**just have patient stop breathing**).

Having the patient just stop breathing rather than taking in a deep breath reduces the influx of unopacified contrast from the abdomen into the pulmonary arteries.

**Scan caudal to cranial to reduce motion artifact in lung bases where PEs are more common.**

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 **right atrium** triggered at **95 HU**.

*Test Bolus Method – Give 20 mL contrast bolus followed by saline flush. Track enhancement curve off pulmonary artery with target 100 HU to get timing delay. Give another 80 mL contrast and begin scanning caudal-cranial after timing delay.*

*Use 25 mL contrast for test bolus and 100 mL contrast for actual scan in patients weighing over 250 lbs.*

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.

# CTA Pulmonary Embolus (PE)

## SIEMENS PARAMETERS & RECONS

	Scan Mode	kV	mAs	Care Dose	Care kV & Lvl	Pitch	Acq	Coll	Rot Time	Scan Time
Sensation 16	spiral	120	150	on	NA	1.15	16	0.75	0.5	10.9
Go Up 32	spiral	110	56	on	on 70	1.50	32	0.7	0.8	7.1
Sensation 64	spiral	120	150	on	NA	1.20	64	0.6	0.5	6.5
Definition 64	spiral	120	127	on	on	1.40	64	0.6	0.3	3.3
Go Top 64	spiral	100	62	on	on 70	1.50	64	0.6	0.33	1.7
Drive 128	spiral	100	105	on	on	1.20	128	0.6	0.28	1.8
Force 192	spiral	100	105	on	on	1.20	192	0.5	0.25	1.3

Name of Series	Thick	Interval	Kernel	Window	IR Lvl	Recon Direction
AX LUNG	3.0	3.0	Br57 / B70f	lung	3	head/feet
AX ANGIO	3.0	3.0	Br40 / B41f	mediastinum	3	head/feet
AX ANGIO THINS	1.5	1.5	Br40 / B41f	mediastinum	3	head/feet
COR SOFT	3.0	3.0	Br40 / B41f	mediastinum	3	front/back
SAG SOFT	3.0	3.0	Br40 / B41f	mediastinum	3	left/right
AX MIPS	5.0	3.0	Br40 / B41f	mediastinum	3	head/feet
3D VRT (spin)	0.75	0.5	Bv36 / B31f	CT angio		

## GE PARAMETERS & RECONS

	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	100-440	16.36	on	2.5	20	1.375	27.50	0.5	NA	NA	5.5
Opt 540	helical	large	120	100-440	16.36	on	2.5	20	1.375	27.50	0.5	NA	NA	5.5
LS VCT 64	helical	large body	120	100-600	14.14	on	2.5	40	0.984	39.375	0.5	40	40	3.8
Disc VCT 64	helical	large body	120	100-600	14.14	on	2.5	40	0.984	39.375	0.5	40	40	3.8

Name of Series	Thickness	Interval	Recon Algorithm	Window Width/Level	Recon Direction
AX LUNG	2.5	2.5	lung	1600/-600	head/feet
AX ANGIO	2.5	2.5	std full	400/40	head/feet
AX ANGIO THINS	1.25	1.25	std full	400/40	head/feet
COR SOFT	2.5	2.5	std full	400/40	front/back
SAG SOFT	2.5	2.5	std full	400/40	left/right
AX MIPS	5.0	3.0	std full	1600/-600	head/feet
3D VRT (spin)	0.625	0.625	std full	400/40	

**Must be first recon.**

# CTA Pulmonary Embolus (PE)

## PHILLIPS PARAMETERS & RECONS

	Scan Mode	kV	Avg mAs	Dose Index	3D Dose	Pitch	Detect	Colli	Rot Time	Scan Time
Incisive 128	helical	120	103	20	on	1.20	64	0.625	0.50	3.1

Name of Series	Thick	Interval	Filter	Window	iDose	Recon Direction
AX LUNG	3.0	3.0	YA	lung	3	head/feet
AX ANGIO	3.0	3.0	B	mediastinum	3	head/feet
AX ANGIO THINS	1.5	1.5	B	mediastinum	3	head/feet
COR SOFT	3.0	3.0	B	mediastinum	3	front/back
SAG SOFT	3.0	3.0	B	mediastinum	3	left/right
AX MIPS	5.0	3.0	B	mediastinum	3	head/feet
3D VRT (spin)	0.75	0.5	B			

# CT Superior Vena Cava (SVC)

Updated  
5/2/2024

Indications - SVC thrombus/occlusion, SVC syndrome.

Use CT Chest w/ Contrast charge. Do not use CT Angiography Chest 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 apices through diaphragm (obtained during end inspiration).

Craniocaudal scan coverage - lung apices through adrenal glands (obtained during end inspiration).

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

Scan parameters are the same as PE protocol.

IV Contrast:

Administer **125 mL contrast mixture**.

Pharmacy prepares contrast mixture - 15 mL **Omnipaque-300** diluted to 150 mL with normal saline.

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

**30 secs** scan delay.

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.

## SIEMENS PARAMETERS & RECONS

	Scan Mode	kV	mAs	Care Dose	Care kV & Lvl	Pitch	Acq	Coll	Rot Time	Scan Time
Sensation 16	spiral	120	150	on	NA	1.15	16	0.75	0.5	10.9
Go Up 32	spiral	110	56	on	on 70	1.50	32	0.7	0.8	7.1
Sensation 64	spiral	120	150	on	NA	1.20	64	0.6	0.5	6.5
Definition 64	spiral	120	127	on	on	1.40	64	0.6	0.3	3.3
Go Top 64	spiral	100	62	on	on 70	1.50	64	0.6	0.33	1.7
Drive 128	spiral	100	105	on	on	1.20	128	0.6	0.28	1.8
Force 192	spiral	100	105	on	on	1.20	192	0.5	0.25	1.3

Name of Series	Thick	Interval	Kernel	Window	IR Lvl	Recon Direction
AX LUNG	3.0	3.0	Br57 / B70f	lung	3	head/feet
AX SOFT	3.0	3.0	Br40 / B41f	mediastinum	3	head/feet
COR SOFT	3.0	3.0	Br40 / B41f	mediastinum	3	front/back
SAG SOFT	3.0	3.0	Br40 / B41f	mediastinum	3	left/right
AX THINS	1.0	0.8	Br40 / B41f	mediastinum	3	head/feet
AX MIPS	8.0	3.0	Br40 / B41f	lung	3	head/feet

# CT Superior Vena Cava (SVC)

## GE PARAMETERS & RECONS

	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	100-440	16.36	on	2.5	20	1.375	27.50	0.5	NA	NA	5.5
Opt 540	helical	large	120	100-440	16.36	on	2.5	20	1.375	27.50	0.5	NA	NA	5.5
LS VCT 64	helical	large body	120	100-600	14.14	on	2.5	40	0.984	39.375	0.5	40	40	3.8
Disc VCT 64	helical	large body	120	100-600	14.14	on	2.5	40	0.984	39.375	0.5	40	40	3.8

Name of Series	Thickness	Interval	Recon Algorithm	Window Width/Level	Recon Direction
<b>AX LUNG</b>	<b>2.5</b>	<b>2.5</b>	<b>lung</b>	<b>1600/-600</b>	<b>head/feet</b>
AX SOFT	2.5	2.5	std full	400/40	head/feet
COR SOFT	2.5	2.5	std full	400/40	front/back
SAG SOFT	2.5	2.5	std full	400/40	left/right
AX THINS	1.25	1.0	std full	400/40	head/feet
AX MIPS	8.0	3.0	std full	1600/-600	head/feet

**Must be first recon.**

## PHILIPS PARAMETERS & RECONS

	Scan Mode	kV	Avg mAs	Dose Index	3D Dose	Pitch	Detect	Colli	Rot Time	Scan Time
Incisive 128	helical	120	103	20	on	1.20	64	0.625	0.50	3.1

Name of Series	Thick	Interval	Filter	Window	iDose	Recon Direction
AX LUNG	3.0	3.0	YA	lung	3	head/feet
AX SOFT	3.0	3.0	B	mediastinum	3	head/feet
COR SOFT	3.0	3.0	B	mediastinum	3	front/back
SAG SOFT	3.0	3.0	B	mediastinum	3	left/right
AX THINS	1.0	0.75	B	mediastinum	3	head/feet
AX MIPS	8.0	2.0	B	lung	3	head/feet

# CT Inferior Vena Cava (IVC)

Updated  
5/2/2024

Indications - IVC, iliac or renal vein thrombus, malfunctioning IVC filter.

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

**If only the abdomen is ordered, only image the abdomen regardless of what coverage areas below indicate.**

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

IV Contrast:

Administer weight-based **Omnipaque-300** - 1 mL/kg up to 150 mL (100 mL minimum).

Inject at **2.5 mL/sec**.

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.

## SIEMENS PARAMETERS & RECONS

For the **Pre Contrast** and **Delay (120 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	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

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

## DELAY PHASE (120 secs)

AX 120 SECS	3.0	3.0	Br40 / B41f	mediastinum	3	head/feet
COR 120 SECS	3.0	3.0	Br40 / B41f	mediastinum	3	front/back
SAG 120 SECS	3.0	3.0	Br40 / B41f	mediastinum	3	left/right

# CT Inferior Vena Cava (IVC)

## GE PARAMETERS & RECONS

For the **Pre Contrast** and **Delay (120 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

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.**

### DELAY PHASE (120 secs)

AX 120 SECS	2.5	2.5	std full	400/40	head/feet
COR 120 SECS	2.5	2.5	std full	400/40	front/back
SAG 120 SECS	2.5	2.5	std full	400/40	left/right

**Must be first recon.**

## PHILIPS PARAMETERS & RECONS

For the **Pre Contrast** and **Delay (120 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

AX PRE	3.0	3.0	B	mediastinum	3	head/feet
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### DELAY PHASE (120 secs)

Name of Series	Thick	Interval	Filter	Window	iDose	Recon Direction
AX 120 SECS	3.0	3.0	B	mediastinum	3	head/feet
COR 120 SECS	3.0	3.0	B	mediastinum	3	front/back
SAG 120 SECS	3.0	3.0	B	mediastinum	3	left/right

# **CTA Full Aorta (CAP)**

Updated  
5/2/2024

Indications - chest pain, aneurysm, dissection, aneurysm repair including open repair and endograft.  
Bill under CT Angio CAP w/ and 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 apices through pubic symphysis (obtained during end inspiration).

Craniocaudal scan coverage:

Pre contrast phase - CAP (obtained during end inspiration).

Angio phase - CAP (obtained during end inspiration).

**Only do a delayed phase if there is a stent/endograft in the aorta.**

Delay phase

**Chest only** if the stent is in the chest (obtained during end inspiration).

**Abdomen/pelvis** only if the stent is in the abdomen (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 **ascending 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.



# CTA Full Aorta (CAP)

## SIEMENS PARAMETERS & RECONS

For the Pre Contrast, Angio and Delay (5 mins) phases:

	Scan Mode	kV	mAs	Care Dose	Care kV & Lvl	Pitch	Acq	Coll	Rot Time	Scan Time
Sensation 16	spiral	120	150	on	NA	1.15	16	1.5	0.5	14.5
Go Up 32	spiral	110	92	on	on 115	1.50	32	0.7	0.8	19.0
Sensation 64	spiral	120	150	on	NA	1.20	64	0.6	0.5	17.4
Definition 64	spiral	120	120	on	on	1.40	64	0.6	0.5	14.9
Go Top 64	spiral	100	101	on	on 115	1.50	64	0.6	0.33	4.6
Drive 128	spiral	120	84	on	on	1.20	128	0.6	0.5	8.7
Force 192	spiral	110	90	on	on	1.20	192	0.6	0.5	5.8

### PRE CONTRAST

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

### ANGIO PHASE

AX ANGIO	3.0	3.0	Br40 / B41f	mediastinum	3	CAP	head/feet
AX ANGIO THINS	1.0 2.0 (16 slice)	1.0 2.0 (16 slice)	Br40 / B41f	mediastinum	3	CAP	head/feet
COR ANGIO	3.0	3.0	Br40 / B41f	mediastinum	3	CAP	front/back
CANDY CANE ANGIO	3.0	3.0	Br40 / B41f	mediastinum	3	CAP	left/right
AX LUNG	3.0	3.0	Br57 / B70f	lung	3	chest	head/feet
AX MIPS	8.0	3.0	Br40 / B41f	lung	3	chest	head/feet
3D VRT (spin)	0.75	0.5	Bv36 / B31f	CT angio			

### DELAY PHASE (5 mins)

AX DELAY	3.0	3.0	Br40 / B41f	mediastinum	3	stent area	head/feet
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# CTA Full Aorta (CAP)

## GE PARAMETERS & RECONS

For the Pre Contrast, Angio and Delay (5 mins) 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	100-440	16.36	on	2.5	20	1.375	27.50	0.5	NA	NA	14.5
Opt 540	helical	large	120	100-440	16.36	on	2.5	20	1.375	27.50	0.5	NA	NA	14.5
LS VCT 64	helical	large body	120	100-700	14.14	on	2.5	40	1.375	55.00	0.5	50	50	7.3
Disc VCT 64	helical	large body	120	100-700	14.14	on	2.5	40	1.375	55.00	0.5	NA	NA	7.3

### PRE CONTRAST

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

This must be the first recon for the prescribed Noise Index to be valid.

### ANGIO PHASE

<b>AX ANGIO</b>	<b>2.5</b>	<b>2.5</b>	<b>std full</b>	<b>400/40</b>	<b>CAP</b>	<b>head/feet</b>
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This must be the first recon for the prescribed Noise Index to be valid.

AX ANGIO THINS	1.25	1.25	std full	400/40	CAP	head/feet
COR ANGIO	2.5	2.5	std full	400/40	CAP	front/back
CANDY CANE ANGIO	2.5	2.5	std full	400/40	CAP	left/right
AX LUNG	2.5	2.5	lung	1600/-600	chest	head/feet
AX MIPS	8.0	3.0	std full	1600/-600	chest	head/feet
3D VRT (spin)	0.625	0.625	std full	400/40		

### DELAY PHASE (5 mins)

<b>AX DELAY</b>	<b>2.5</b>	<b>2.5</b>	<b>std full</b>	<b>400/40</b>	<b>stent area</b>	<b>head/feet</b>
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This must be the first recon for the prescribed Noise Index to be valid.

# **CTA Full Aorta (CAP)**

## **PHILIPS PARAMETERS & RECONS**

For the **Pre Contrast, Angio** and **Delay (5 mins)** phases:

	Scan Mode	kV	Avg mAs	Dose Index	3D Dose	Pitch	Detect	Colli	Rot Time	Scan Time
Incisive 128	helical	120	103	20	on	1.00	64	0.625	0.75	15.0

### **PRE CONTRAST**

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

### **ANGIO PHASE**

AX ANGIO	3.0	3.0	B	mediastinum	3	CAP	head/feet
AX ANGIO THINS	1.0	1.0	B	mediastinum	3	CAP	head/feet
COR ANGIO	3.0	3.0	B	mediastinum	3	CAP	front/back
CANDY CANE ANGIO	3.0	3.0	B	mediastinum	3	CAP	left/right
AX LUNG	3.0	3.0	YA	lung	3	chest	head/feet
AX MIPS	8.0	3.0	B	lung	3	chest	head/feet
3D VRT (spin)	0.75	0.5					

### **DELAY PHASE (5 mins)**

AX DELAY	3.0	3.0	B	mediastinum	3	CAP	head/feet
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# **CTA Thoracic Aorta (Chest Only)**

Updated  
5/2/2024

Indications - chest pain, aneurysm, dissection, hemoptysis, aneurysm repair including open repair and endograft.  
If indication is PE and hemoptysis, tech should contact ordering clinician to pick either PE or hemoptysis which will determine which protocol to use.

Bill under CT Angiography Chest w/ and 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 apices through adrenal glands (obtained during end inspiration).

Craniocaudal scan coverage - lung apices through adrenal glands on all phases (obtained during end inspiration).

**Only do a delayed phase if there is a stent/endograft in the aorta.**

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

Scan parameters are the same as PE protocol.

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 **ascending aorta** triggered at **100 HU**.

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.

# CTA Thoracic Aorta (Chest Only)

## SIEMENS PARAMETERS & RECONS

For the Pre Contrast, Angio and Delay (5 mins) phases:

	Scan Mode	kV	mAs	Care Dose	Care kV & Lvl	Pitch	Acq	Coll	Rot Time	Scan Time
Sensation 16	spiral	120	150	on	NA	1.15	16	0.75	0.5	10.9
Go Up 32	spiral	110	56	on	on 70	1.50	32	0.7	0.8	7.1
Sensation 64	spiral	120	150	on	NA	1.20	64	0.6	0.5	6.5
Definition 64	spiral	120	127	on	on	1.40	64	0.6	0.3	3.3
Go Top 64	spiral	100	62	on	on 70	1.50	64	0.6	0.33	1.7
Drive 128	spiral	100	105	on	on	1.20	128	0.6	0.28	1.8
Force 192	spiral	100	105	on	on	1.20	192	0.5	0.25	1.3

### PRE CONTRAST

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

### ANGIO PHASE

AX ANGIO	3.0	3.0	Br40 / B41f	mediastinum	3	head/feet
AX ANGIO THINS	1.0	1.0	Br40 / B41f	mediastinum	3	head/feet
COR ANGIO	3.0	3.0	Br40 / B41f	mediastinum	3	front/back
CANDY CANE ANGIO	3.0	3.0	Br40 / B41f	mediastinum	3	left/right
AX LUNG	3.0	3.0	Br57 / B70f	lung	3	head/feet
AX MIPS	8.0	3.0	Br40 / B41f	lung	3	head/feet
3D VRT (spin)	0.75	0.5	Bv36 / B31f	CT angio		

### DELAY PHASE (5 mins)

AX DELAY	3.0	3.0	Br40 / B41f	mediastinum	3	head/feet
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# CTA Thoracic Aorta (Chest Only)

## GE PARAMETERS & RECONS

For the Pre Contrast, Angio and Delay (5 mins) 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	100-440	16.36	on	2.5	20	1.375	27.50	0.5	NA	NA	5.5
Opt 540	helical	large	120	100-440	16.36	on	2.5	20	1.375	27.50	0.5	NA	NA	5.5
LS VCT 64	helical	large body	120	100-600	14.14	on	2.5	40	0.984	39.375	0.5	40	40	3.8
Disc VCT 64	helical	large body	120	100-600	14.14	on	2.5	40	0.984	39.375	0.5	40	40	3.8

### PRE CONTRAST

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

**Must be first recon.**

### ANGIO PHASE

<b>AX ANGIO</b>	<b>2.5</b>	<b>2.5</b>	<b>std full</b>	<b>400/40</b>	<b>head/feet</b>
AX ANGIO THINS	1.25	1.25	std full	400/40	head/feet
COR ANGIO	2.5	2.5	std full	400/40	front/back
CANDY CANE ANGIO	2.5	2.5	std full	400/40	left/right
AX LUNG	2.5	2.5	lung	1600/-600	head/feet
AX MIPS	8.0	3.0	std full	1600/-600	head/feet
3D VRT (spin)	0.625	0.625	std full	400/40	

**Must be first recon.**

### DELAY PHASE (5 mins)

<b>AX DELAY</b>	<b>2.5</b>	<b>2.5</b>	<b>std full</b>	<b>400/40</b>	<b>head/feet</b>
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**Must be first recon.**

# **CTA Thoracic Aorta (Chest Only)**

## **PHILIPS PARAMETERS & RECONS**

For the **Pre Contrast, Angio** and **Delay (5 mins)** phases:

	Scan Mode	kV	Avg mAs	Dose Index	3D Dose	Pitch	Detect	Colli	Rot Time	Scan Time
Incisive 128	helical	120	103	20	on	1.00	64	0.625	0.75	5.6

### **PRE CONTRAST**

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

### **ANGIO PHASE**

AX ANGIO	3.0	3.0	B	mediastinum	3	head/feet
AX ANGIO THINS	1.0	1.0	B	mediastinum	3	head/feet
COR ANGIO	3.0	3.0	B	mediastinum	3	front/back
CANDY CANE ANGIO	3.0	3.0	B	mediastinum	3	left/right
AX LUNG	3.0	3.0	YA	lung	3	head/feet
AX MIPS	8.0	3.0	B	lung	3	head/feet
3D VRT (spin)	0.75	0.5				

### **DELAY PHASE (5 mins)**

AX DELAY	3.0	3.0	B	mediastinum	3	head/feet
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# **CTA Abdominal Aorta (Abdomen/Pelvis)**

Updated  
4/27/2024

Indications - chest pain, aneurysm, dissection, aneurysm repair including open repair and endograft.  
Bill under CT Angio Combo AP w/ and 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).

**Only do a delayed phase if there is a stent/endograft in the aorta.**

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.



# CTA Abdominal Aorta (Abdomen/Pelvis)

## SIEMENS PARAMETERS & RECONS

For the Pre Contrast, Angio and Delay (5 mins) phases:

	Scan Mode	kV	mAs	Care Dose	Care kV & Lvl	Pitch	Acq	Coll	Rot Time	Scan Time
Sensation 16	spiral	120	150	on	NA	1.15	16	0.75	0.5	18.1
Go Up 32	spiral	110	92	on	on 115	1.50	32	0.7	0.8	11.9
Sensation 64	spiral	120	150	on	NA	1.20	64	0.6	0.5	10.9
Definition 64	spiral	120	120	on	on	1.40	64	0.6	0.5	9.3
Go Top 64	spiral	100	101	on	on 115	1.50	64	0.6	0.33	2.9
Drive 128	spiral	120	84	on	on	1.20	128	0.6	0.5	5.4
Force 192	spiral	110	90	on	on	1.20	192	0.6	0.5	3.6

### PRE CONTRAST

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

### ANGIO PHASE

AX ANGIO	3.0	3.0	Br40 / B41f	mediastinum	3	head/feet
AX ANGIO THINS	1.0	1.0	Br40 / B41f	mediastinum	3	head/feet
COR ANGIO	3.0	3.0	Br40 / B41f	mediastinum	3	front/back
SAG ANGIO	3.0	3.0	Br40 / B41f	mediastinum	3	left/right
3D VRT (spin)	0.75	0.5	Bv36 / B31f	CT angio		

### DELAY PHASE (5 mins)

AX DELAY	3.0	3.0	Br40 / B41f	mediastinum	3	head/feet
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# CTA Abdominal Aorta (Abdomen/Pelvis)

## GE PARAMETERS & RECONS

For the Pre Contrast, Angio and Delay (5 mins) 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	100-440	16.36	on	2.5	20	1.375	27.50	0.5	NA	NA	9.1
Opt 540	helical	large	120	100-440	16.36	on	2.5	20	1.375	27.50	0.5	NA	NA	9.1
LS VCT 64	helical	large body	120	100-700	14.14	on	2.5	40	1.375	55.00	0.5	50	50	4.5
Disc VCT 64	helical	large body	120	100-700	14.14	on	2.5	40	1.375	55.00	0.5	50	50	4.5

### PRE CONTRAST

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

**Must be first recon.**

### ANGIO PHASE

<b>AX ANGIO</b>	<b>2.5</b>	<b>2.5</b>	<b>std full</b>	<b>400/40</b>	<b>head/feet</b>
COR ANGIO	2.5	2.5	std full	400/40	front/back
SAG ANGIO	2.5	2.5	std full	400/40	left/right
AX ANGIO THINS	1.25	1.25	std full	400/40	head/feet
3D VRT (spin)	0.625	0.625	std full	400/40	

**Must be first recon.**

### DELAY PHASE (5 mins)

<b>AX DELAY</b>	<b>2.5</b>	<b>2.5</b>	<b>std full</b>	<b>400/40</b>	<b>head/feet</b>
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**Must be first recon.**

# **CTA Abdominal Aorta (Abdomen/Pelvis)**

## **PHILIPS PARAMETERS & RECONS**

For the **Pre Contrast, Angio** and **Delay (5 mins)** phases:

	Scan Mode	kV	Avg mAs	Dose Index	3D Dose	Pitch	Detect	Colli	Rot Time	Scan Time
Incisive 128	helical	120	103	20	on	1.00	64	0.625	0.75	9.4

### **PRE CONTRAST**

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

### **ANGIO PHASE**

AX ANGIO	3.0	3.0	B	mediastinum	3	head/feet
AX ANGIO THINS	1.0	1.0	B	mediastinum	3	head/feet
COR ANGIO	3.0	3.0	B	mediastinum	3	front/back
SAG ANGIO	3.0	3.0	B	mediastinum	3	left/right
3D VRT (spin)	0.75	0.5				

### **DELAY PHASE (5 mins)**

AX DELAY	3.0	3.0	B	mediastinum	3	head/feet
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# CTA Renal Artery

Updated  
4/27/2024

Indications - renal artery stenosis or aneurysm, hypertension, fibromuscular dysplasia.  
Bill under CT Angio Combo AP w/ and 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).

**If only abdomen ordered, only image the abdomen regardless of what coverage areas below indicate.**

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

Scan parameters are the same as CTA abdominal aorta.

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.

# CTA Renal Artery

## SIEMENS PARAMETERS & RECONS

For the Pre Contrast and Angio phases:

	Scan Mode	kV	mAs	Care Dose	Care kV & Lvl	Pitch	Acq	Coll	Rot Time	Scan Time
Sensation 16	spiral	120	150	on	NA	1.15	16	0.75	0.5	18.1
Go Up 32	spiral	110	92	on	on 115	1.50	32	0.7	0.8	11.9
Sensation 64	spiral	120	150	on	NA	1.20	64	0.6	0.5	10.9
Definition 64	spiral	120	120	on	on	1.40	64	0.6	0.5	9.3
Go Top 64	spiral	100	101	on	on 115	1.50	64	0.6	0.33	2.9
Drive 128	spiral	120	84	on	on	1.20	128	0.6	0.5	5.4
Force 192	spiral	110	90	on	on	1.20	192	0.6	0.5	3.6

### PRE CONTRAST

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

### ANGIO PHASE

AX ANGIO	2.0	2.0	Br40 / B41f	mediastinum	3	head/feet
AX ANGIO THINS	1.0	1.0	Br40 / B41f	mediastinum	3	head/feet
COR ANGIO	2.0	2.0	Br40 / B41f	mediastinum	3	front/back
SAG ANGIO	2.0	2.0	Br40 / B41f	mediastinum	3	left/right
CURVED RIGHT ANGIO MIPS	2.0	2.0	Br40 / B41f	mediastinum	3	front/back
CURVED LEFT ANGIO MIPS	2.0	2.0	Br40 / B41f	mediastinum	3	front/back
3D VRT (spin)	0.75	0.5	Bv36 / B31f	CT angio		

# CTA Renal Artery

## GE PARAMETERS & RECONS

For the Pre Contrast and Angio 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	100-440	16.36	on	2.5	20	1.375	27.50	0.5	NA	NA	9.1
Opt 540	helical	large	120	100-440	16.36	on	2.5	20	1.375	27.50	0.5	NA	NA	9.1
LS VCT 64	helical	large body	120	100-700	14.14	on	2.5	40	1.375	55.00	0.5	50	50	4.5
Disc VCT 64	helical	large body	120	100-700	14.14	on	2.5	40	1.375	55.00	0.5	50	50	4.5

### PRE CONTRAST

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

**This must be the first recon for the prescribed Noise Index to be valid.**

### ANGIO PHASE

<b>AX ANGIO</b>	<b>2.5</b>	<b>2.5</b>	<b>std full</b>	<b>400/40</b>	<b>head/feet</b>
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**This must be the first recon for the prescribed Noise Index to be valid.**

COR ANGIO	2.5	2.5	std full	400/40	front/back
SAG ANGIO	2.5	2.5	std full	400/40	left/right
AX ANGIO THINS	1.25	1.25	std full	400/40	head/feet
CURVED RIGHT ANGIO MIPS	2.5	2.5	std full	400/40	front/back
CURVED LEFT ANGIO MIPS	2.5	2.5	std full	400/40	front/back
3D VRT (spin)	0.625	0.625	std full	400/40	

# CTA Renal Artery

## PHILIPS PARAMETERS & RECONS

For the Pre Contrast and Angio phases:

	Scan Mode	kV	Avg mAs	Dose Index	3D Dose	Pitch	Detect	Colli	Rot Time	Scan Time
Incisive 128	helical	120	103	20	on	1.00	64	0.625	0.75	9.4

### PRE CONTRAST

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

### ANGIO PHASE

AX ANGIO	2.0	2.0	B	mediastinum	3	head/feet
AX ANGIO THINS	1.0	1.0	B	mediastinum	3	head/feet
COR ANGIO	2.0	2.0	B	mediastinum	3	front/back
SAG ANGIO	2.0	2.0	B	mediastinum	3	left/right
CURVED RIGHT ANGIO MIPS	2.0	2.0	B	mediastinum	3	front/back
CURVED LEFT ANGIO MIPS	2.0	2.0	B	mediastinum	3	front/back
3D VRT (spin)	0.75	0.5				

# **CTA Runoff (Aorta/Iliofemoral)**

Updated  
4/27/2024

Indications - peripheral artery disease, claudication, ischemia, absent pulses, aneurysm, trauma.  
Bill under CT Angiography Abd Aorta + Iliofemoral 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 toes (obtained during end inspiration).

Craniocaudal scan coverage - lung bases through toes (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.



# CTA Runoff (Aorta/Iliofemoral)

## SIEMENS PARAMETERS & RECONS

	Scan Mode	kV	mAs	Care Dose	Care kV & Lvl	Pitch	Acq	Coll	Rot Time	Scan Time
Sensation 16	spiral	120	150	on	NA	1.15	16	1.5	0.5	23.6
Go Up 32	spiral	110	124	on	on 155	1.00	32	0.7	0.8	46.4
Sensation 64	spiral	120	150	on	NA	1.20	64	0.6	0.5	28.2
Definition 64	spiral	120	120	on	on	0.85	64	0.6	0.3	23.9
Go Top 64	spiral	100	136	on	on 155	0.35	64	0.6	0.5	48.4
Drive 128	spiral	120	84	on	on	0.60	128	0.6	0.5	28.2
Force 192	spiral	110	90	on	on	0.60	192	0.6	0.5	18.8

Name of Series	Thick	Interval	Kernel	Window	IR Lvl	Recon Anatomy	Recon Direction
AX ANGIO	3.0	3.0	Br40 / B41f	mediastinum	3	AP thru feet	head/feet
AX ANGIO THINS	1.0 2.0 (16 slice)	1.0 2.0 (16 slice)	Br40 / B41f	mediastinum	3	AP thru feet	head/feet
COR ANGIO AP	2.0	2.0	Br40 / B41f	mediastinum	3	AP	front/back
SAG ANGIO AP	2.0	2.0	Br40 / B41f	mediastinum	3	AP	left/right
3D VRT (spin)	0.75	0.5	Bv36 / B31f	CT angio			

COR ANGIO UPPER	2.0	2.0	Br40 / B41f	mediastinum	3	thighs	front/back
SAG ANGIO UPPER	2.0	2.0	Br40 / B41f	mediastinum	3	thighs	left/right
3D VRT (spin)	0.75	0.5	Bv36 / B31f	CT angio			

COR ANGIO LOWER	2.0	2.0	Br40 / B41f	mediastinum	3	lower legs	front/back
SAG ANGIO LOWER	2.0	2.0	Br40 / B41f	mediastinum	3	lower legs	left/right
3D VRT (spin)	0.75	0.5	Bv36 / B31f	CT angio			

# CTA Runoff (Aorta/Iliofemoral)

## GE PARAMETERS & RECONS

	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	50-380	16.36	on	2.5	20	1.750	35.00	0.6	NA	NA	22.3
Opt 540	helical	large	120	50-380	16.36	on	2.5	20	1.750	35.00	0.6	NA	NA	22.3
LS VCT 64	helical	large body	120	100-610	14.14	on	2.5	40	1.375	55.00	0.5	0	0	11.8
Disc VCT 64	helical	large body	120	100-515	14.14	on	2.5	40	1.375	55.00	0.5	0	0	11.8

Name of Series	Thickness	Interval	Recon Algorithm	Window Width/Level	Recon Anatomy	Recon Direction
<b>AX ANGIO</b>	<b>2.5</b>	<b>2.5</b>	<b>std full</b>	<b>400/40</b>	<b>AP thru feet</b>	<b>head/feet</b>

**This must be the first recon for the prescribed Noise Index to be valid.**

<b>AX ANGIO THINS</b>	<b>1.25</b>	<b>1.25</b>	<b>std full</b>	<b>400/40</b>	<b>AP thru feet</b>	<b>head/feet</b>
COR ANGIO AP	2.0	2.0	std full	400/40	AP	front/back
SAG ANGIO AP	2.0	2.0	std full	400/40	AP	left/right
3D VRT (spin)	0.625	0.625	std full	400/40		

COR ANGIO UPPER	2.0	2.0	std full	400/40	thighs	front/back
SAG ANGIO UPPER	2.0	2.0	std full	400/40	thighs	left/right
3D VRT (spin)	0.625	0.625	std full	400/40		

COR ANGIO LOWER	2.0	2.0	std full	400/40	lower legs	front/back
SAG ANGIO LOWER	2.0	2.0	std full	400/40	lower legs	left/right
3D VRT (spin)	0.625	0.625	std full	400/40		

# CTA Runoff (Aorta/Iliofemoral)

## PHILIPS PARAMETERS & RECONS

	Scan Mode	kV	Avg mAs	Dose Index	3D Dose	Pitch	Detect	Colli	Rot Time	Scan Time
Incisive 128	helical	120	103	20	on	1.00	64	0.625	0.75	24.4

Name of Series	Thick	Interval	Filter	Window	iDose	Recon Anatomy	Recon Direction
AX ANGIO	3.0	3.0	B	mediastinum	3	AP thru feet	head/feet
AX ANGIO THINS	1.0	1.0	B	mediastinum	3	AP thru feet	head/feet
COR ANGIO AP	2.0	2.0	B	mediastinum	3	AP	front/back
SAG ANGIO AP	2.0	2.0	B	mediastinum	3	AP	left/right
3D VRT (spin)	0.75	0.5					

COR ANGIO UPPER	2.0	2.0	B	mediastinum	3	thighs	front/back
SAG ANGIO UPPER	2.0	2.0	B	mediastinum	3	thighs	left/right
3D VRT (spin)	0.75	0.5					

COR ANGIO LOWER	2.0	2.0	B	mediastinum	3	lower legs	front/back
SAG ANGIO LOWER	2.0	2.0	B	mediastinum	3	lower legs	left/right
3D VRT (spin)	0.75	0.5					

# **CTA Lower Extremity**

Updated  
4/27/2024

Indications - peripheral artery disease, claudication, ischemia, absent pulses, aneurysm, trauma.  
Bill under CT Angiography LE charges.

## **GENERAL SCAN NOTES**

Remove any metal from the imaging field of view.

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

Craniocaudal scan coverage - iliac crests through toes (obtained during end inspiration).

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

Scan parameters are the same as CTA runoff.

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 **distal abdominal aorta** triggered at **100 HU**.

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.

# CTA Lower Extremity

## SIEMENS PARAMETERS & RECONS

	Scan Mode	kV	mAs	Care Dose	Care kV & Lvl	Pitch	Acq	Coll	Rot Time	Scan Time
Sensation 16	spiral	120	150	on	NA	1.15	16	1.5	0.5	19.9
Go Up 32	spiral	110	124	on	on 155	1.00	32	0.7	0.8	39.3
Sensation 64	spiral	120	150	on	NA	1.20	64	0.6	0.5	23.9
Definition 64	spiral	120	120	on	on	0.85	64	0.6	0.3	20.2
Go Top 64	spiral	100	136	on	on 155	0.35	64	0.6	0.5	40.9
Drive 128	spiral	120	84	on	on	0.60	128	0.6	0.5	23.9
Force 192	spiral	110	90	on	on	0.60	192	0.6	0.5	15.9

Name of Series	Thick	Interval	Kernel	Window	IR Lvl	Recon Anatomy	Recon Direction
AX ANGIO	3.0	3.0	Br40 / B41f	mediastinum	3	pelvis thru feet	head/feet
AX ANGIO THINS	1.0 (64 slice) 2.0 (16 slice)	1.0 (64 slice) 2.0 (16 slice)	Br40 / B41f	mediastinum	3	pelvis thru feet	head/feet
COR ANGIO PELV	2.0	2.0	Br40 / B41f	mediastinum	3	pelvis	front/back
SAG ANGIO PELV	2.0	2.0	Br40 / B41f	mediastinum	3	pelvis	left/right
3D VRT (spin)	0.75	0.5	Bv36 / B31f	CT angio			

COR ANGIO UPPER	2.0	2.0	Br40 / B41f	mediastinum	3	thighs	front/back
SAG ANGIO UPPER	2.0	2.0	Br40 / B41f	mediastinum	3	thighs	left/right
3D VRT (spin)	0.75	0.5	Bv36 / B31f	CT angio			

COR ANGIO LOWER	2.0	2.0	Br40 / B41f	mediastinum	3	lower legs	front/back
SAG ANGIO LOWER	2.0	2.0	Br40 / B41f	mediastinum	3	lower legs	left/right
3D VRT (spin)	0.75	0.5	Bv36 / B31f	CT angio			

# CTA Lower Extremity

## GE PARAMETERS & RECONS

	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	50-380	16.36	on	2.5	20	1.750	35.00	0.6	NA	NA	18.9
Opt 540	helical	large	120	50-380	16.36	on	2.5	20	1.750	35.00	0.6	NA	NA	18.9
LS VCT 64	helical	large body	120	100-610	14.14	on	2.5	40	1.375	55.00	0.5	0	0	10.0
Disc VCT 64	helical	large body	120	100-515	14.14	on	2.5	40	1.375	55.00	0.5	0	0	10.0

Name of Series	Thickness	Interval	Recon Algorithm	Window Width/Level	Recon Anatomy	Recon Direction
<b>AX ANGIO</b>	<b>2.5</b>	<b>2.5</b>	<b>std full</b>	<b>400/40</b>	<b>pelvis thru feet</b>	<b>head/feet</b>

**This must be the first recon for the prescribed Noise Index to be valid.**

<b>AX ANGIO THINS</b>	<b>1.25</b>	<b>1.25</b>	<b>std full</b>	<b>400/40</b>	<b>pelvis thru feet</b>	<b>head/feet</b>
COR ANGIO PELV	2.0	2.0	std full	400/40	pelvis	front/back
SAG ANGIO PELV	2.0	2.0	std full	400/40	pelvis	left/right
3D VRT (spin)	0.625	0.625	std full	400/40		

COR ANGIO UPPER	2.0	2.0	std full	400/40	thighs	front/back
SAG ANGIO UPPER	2.0	2.0	std full	400/40	thighs	left/right
3D VRT (spin)	0.625	0.625	std full	400/40		

COR ANGIO LOWER	2.0	2.0	std full	400/40	lower legs	front/back
SAG ANGIO LOWER	2.0	2.0	std full	400/40	lower legs	left/right
3D VRT (spin)	0.625	0.625	std full	400/40		

# CTA Lower Extremity

## PHILIPS PARAMETERS & RECONS

	Scan Mode	kV	Avg mAs	Dose Index	3D Dose	Pitch	Detect	Colli	Rot Time	Scan Time
Incisive 128	helical	120	103	20	on	1.00	64	0.625	0.75	20.6

Name of Series	Thick	Interval	Filter	Window	iDose	Recon Anatomy	Recon Direction
AX ANGIO	3.0	3.0	B	mediastinum	3	pelvis thru feet	head/feet
AX ANGIO THINS	1.0	1.0	B	mediastinum	3	pelvis thru feet	head/feet
COR ANGIO PELV	2.0	2.0	B	mediastinum	3	pelvis	front/back
SAG ANGIO PELV	2.0	2.0	B	mediastinum	3	pelvis	left/right
3D VRT (spin)	0.75	0.5					

COR ANGIO UPPER	2.0	2.0	B	mediastinum	3	thighs	front/back
SAG ANGIO UPPER	2.0	2.0	B	mediastinum	3	thighs	left/right
3D VRT (spin)	0.75	0.5					

COR ANGIO LOWER	2.0	2.0	B	mediastinum	3	lower legs	front/back
SAG ANGIO LOWER	2.0	2.0	B	mediastinum	3	lower legs	left/right
3D VRT (spin)	0.75	0.5					

# CT Venogram Lower Extremity

Updated  
4/27/2024

Indications - May-Thurner syndrome, deep venous thrombosis, venous outflow obstruction.

Include the following charges: CT Pelvis w/ Contrast, CT LE w/ Contrast Right and CT LE w/ Contrast Left.

## GENERAL SCAN NOTES

Remove any metal from the imaging field of view.

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

Craniocaudal scan coverage - iliac crests through ankles (obtained during end inspiration).

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

Scan parameters are the same as CTA lower extremities.

IV Contrast:

Administer weight-based **Omnipaque-350** - **1 mL/kg** up to **150 mL** (**120 mL** minimum).

Inject at **3 mL/sec** followed by 40 mL saline flush, 20-gauge or larger in forearm or more proximal.

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.

## SIEMENS PARAMETERS & RECONS

	Scan Mode	kV	mAs	Care Dose	Care kV & Lvl	Pitch	Acq	Coll	Rot Time	Scan Time
Sensation 16	spiral	120	150	on	NA	1.15	16	1.5	0.5	19.9
Go Up 32	spiral	110	124	on	on 155	1.00	32	0.7	0.8	39.3
Sensation 64	spiral	120	150	on	NA	1.20	64	0.6	0.5	23.9
Definition 64	spiral	120	120	on	on	0.85	64	0.6	0.3	20.2
Go Top 64	spiral	100	136	on	on 155	0.35	64	0.6	0.5	40.9
Drive 128	spiral	120	84	on	on	0.60	128	0.6	0.5	23.9
Force 192	spiral	110	90	on	on	0.60	192	0.6	0.5	15.9

## 120 SECS PHASE

Name of Series	Thick	Interval	Kernel	Window	IR Lvl	Recon Direction
AX 120 SECS	3.0	3.0	Br40 / B41f	mediastinum	3	head/feet
COR 120 SECS	3.0	3.0	Br40 / B41f	mediastinum	3	front/back
SAG 120 SECS	3.0	3.0	Br40 / B41f	mediastinum	3	left/right



# CT Venogram Lower Extremity

## GE PARAMETERS & RECONS

	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	50-380	16.36	on	2.5	20	1.750	35.00	0.6	NA	NA	18.9
Opt 540	helical	large	120	50-380	16.36	on	2.5	20	1.750	35.00	0.6	NA	NA	18.9
LS VCT 64	helical	large body	120	100-610	14.14	on	2.5	40	1.375	55.00	0.5	0	0	10.0
Disc VCT 64	helical	large body	120	100-515	14.14	on	2.5	40	1.375	55.00	0.5	0	0	10.0

## 120 SECS PHASE

Name of Series	Thickness	Interval	Recon Algorithm	Window Width/Level	Recon Direction
AX 120 SECS	2.5	2.5	std full	400/40	head/feet
COR 120 SECS	2.5	2.5	std full	400/40	front/back
SAG 120 SECS	2.5	2.5	std full	400/40	left/right

**Must be first recon.**

## PHILIPS PARAMETERS & RECONS

	Scan Mode	kV	Avg mAs	Dose Index	3D Dose	Pitch	Detect	Colli	Rot Time	Scan Time
Incisive 128	helical	120	103	20	on	1.00	64	0.625	0.75	20.6

## 120 SECS PHASE

Name of Series	Thick	Interval	Filter	Window	iDose	Recon Direction
AX 120 SECS	3.0	3.0	B	mediastinum	3	head/feet
COR 120 SECS	3.0	3.0	B	mediastinum	3	front/back
SAG 120 SECS	3.0	3.0	B	mediastinum	3	left/right

# CTA Upper Extremity

Updated  
4/27/2024

Indications - peripheral artery disease, claudication, ischemia, absent pulses, aneurysm, trauma.  
Bill under CT Angiography UE charges.

## GENERAL SCAN NOTES

Remove any metal from the imaging field of view.

Symptomatic arm (or both) over head with head tilted away from symptomatic arm.

Topogram - mid chest to cover arch through fingers (obtained during end inspiration).

Craniocaudal scan coverage - mid chest to cover arch through fingers (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 **aortic arch** triggered at **100 HU**.

**A peripheral IV must be on the side opposite from the more symptomatic arm.**

A central line used for injection can be in either arm.

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.

## SIEMENS PARAMETERS & RECONS

	Scan Mode	kV	mAs	Care Dose	Care kV & Lvl	Pitch	Acq	Coll	Rot Time	Scan Time
Sensation 16	spiral	120	150	on	NA	1.15	16	0.75	0.5	29.0
Go Up 32	spiral	110	111	on	on 145	1.20	32	0.7	0.8	23.8
Sensation 64	spiral	120	150	on	NA	1.20	64	0.6	0.5	17.4
Definition 64	spiral	120	120	on	on	1.40	64	0.6	0.3	8.9
Go Top 64	spiral	100	115	on	on 145	1.20	64	0.6	0.33	5.7
Drive 128	spiral	120	84	on	on	1.20	128	0.6	0.285	4.9
Force 192	spiral	120	84	on	on	1.20	128	0.6	0.25	4.3

Name of Series	Thick	Interval	Kernel	Window	IR Lvl	Recon Direction
AX ANGIO*	2.0	2.0	Br40 / B41f	mediastinum	3	shoulder/hand
AX ANGIO THINS*	1.0	1.0	Br40 / B41f	mediastinum	3	shoulder/hand
COR ANGIO	2.0	2.0	Br40 / B41f	mediastinum	3	front/back
SAG ANGIO	2.0	2.0	Br40 / B41f	mediastinum	3	left/right
3D VRT (spin)	0.75	0.5	Bv36 / B31f	CT angio		

\*The axial recons are along the long axis of the arms.

# CTA Upper Extremity

## GE PARAMETERS & RECONS

	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	100-440	16.36	on	2.5	20	1.375	27.50	0.5	NA	NA	14.5
Opt 540	helical	large	120	100-440	16.36	on	2.5	20	1.375	27.50	0.5	NA	NA	14.5
LS VCT 64	helical	large body	120	100-600	14.14	on	2.5	40	0.984	39.375	0.5	40	40	10.2
Disc VCT 64	helical	large body	120	100-600	14.14	on	2.5	40	0.984	39.375	0.5	40	40	10.2

Name of Series	Thickness	Interval	Recon Algorithm	Window Width/Level	Recon Direction
<b>AX ANGIO*</b>	<b>2.5</b>	<b>2.5</b>	<b>std full</b>	<b>400/40</b>	<b>shoulder/hand</b>
AX ANGIO THINS*	1.25	1.25	std full	400/40	shoulder/hand
COR ANGIO	2.5	2.5	std full	400/40	front/back
SAG ANGIO	2.5	2.5	std full	400/40	left/right
3D VRT (spin)	0.625	0.625	std full	400/40	

**Must be first recon.**

\*The axial recons are along the long axis of the arms.

## PHILIPS PARAMETERS & RECONS

	Scan Mode	kV	Avg mAs	Dose Index	3D Dose	Pitch	Detect	Colli	Rot Time	Scan Time
Incisive 128	helical	120	103	20	on	1.00	64	0.625	0.75	15.0

Name of Series	Thick	Interval	Filter	Window	iDose	Recon Direction
AX ANGIO*	2.0	2.0	B	mediastinum	3	shoulder/hand
AX ANGIO THINS*	1.0	1.0	B	mediastinum	3	shoulder/hand
COR ANGIO	2.0	2.0	B	mediastinum	3	front/back
SAG ANGIO	2.0	2.0	B	mediastinum	3	left/right
3D VRT (spin)	0.75	0.5				

\*The axial recons are along the long axis of the arms.