Medical Imaging
In partnership with
MWHC Radiologic Associates of Fredericksburg

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CT HEAD WITHOUT CONTRAST

INDICATIONS: Trauma/ Alzheimer's/ALoC /Memory Loss/VP Shunt evaluation/Hydrocephalus/Headache/Seizure/ Code Stroke

Preparation: No preparation needed, except remove all metal objects, such as Pins, earrings for scanning area.

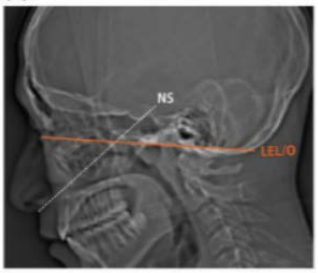
Coverage: Base of skull to vertex

Acquisition Parameters:

kVp	140
mAs	315
Thickness/Interval	5mmx5mm
FOV	250mm
Tube Rotation	.75 sec
Pitch	.673
Collimation	64x.625

Reconstruction Algorithm:

AXIAL Plane is tangential line from anterior edge of lower eyelid to the inner table of the occipital base (LEL/O Line). Line should be close to parallel with the planum sphenoidale



Recons:	Routine	5mm	x	5mm
	Head Bone	2mm	x	2mm
	Thins	2mm	x	1mm
Reformats	AXIAL	2mm	x	1mm
	COR	3mm	x	3mm
	SAG	3mm	x	3mm

CT Head with Contrast

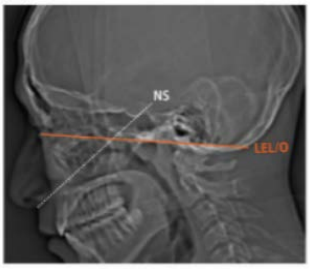
INDICATIONS:	Trauma/ Alzheimer's/ALoC /Memory Loss/VP Shunt evaluation/Hydrocephalus/Headache/Seizure/Space Occupying Lesion
Preparation:	NPO 2 hours prior to scan
Coverage:	Base of skull to vertex
Injection Rate:	1.5 – 3 ml per second
Contrast amount:	80 mLs
Contrast Selection:	Please see most recent version of Contrast Selection Flow Chart
Scan Delay:	90 -120 seconds

Acquisition Parameters:

kVp	140
mAs	315
Thickness/Interval	5mm x 5mm
FOV	250mm
Tube Rotation	.75 sec
Pitch	0.673
Collimation	64x.625

Reconstruction Algorithm Brain Standard (UB)

AXIAL Plane is tangential line from anterior edge of lower eyelid to the inner table of the occipital base (LEL/O Line). Line should be close to parallel with the planum sphenoidale.



Recons:

Routine	5mm x 5mm
Head Bone	2mm x 2mm

Reformats:

Thins/AXIAL	2mm x 1mm
COR/SAG	3mm x 3mm

CT NECK WITH CONTRAST

INDICATIONS: Mass/ Infection/ Abscess/ Salivary gland /Adenopathy/Mets/Lymphoma

Preparation: NPO 2 hours prior to scan

Coverage: Mid orbits to carina

Injection Rate: Neck only: Split bolus technique

If combo with chest, CAP: 1.5 – 3 ml per second

Contrast amount: Split bolus technique: 50ml at 2ml/sec, 30 sec delay, 30ml at 2ml/sec, 20 sec delay

If combo with chest, CAP: 100ml Neck: 50ml at 2ml/sec, 50 second delay (150ml Total)

Contrast Selection:)Please see most recent version of Contrast Selection Flow Charthart

Scan Delay: Neck only: per split bolus technique

If combo with chest, CAP: 70 seconds

Acquisition Parameters:

	kVp:	120
	mAs:	300
	Thickness/Interval:	3mm x -3mm
	FOV:	20mm
	Tube Rotation:	.75 sec
	Pitch:	.891
	Collimation	64x.625

Reconstruction Algorithm:

Standard (B)

Recons:	Routine	3mm x 3mm
	Soft Tissue	3mm x 3mm
	Thins	2mm x 1mm
Reformats:	COR /SAG	2mm x 1mm

CT NECK WITHOUT CONTRAST

INDICATIONS: Mass/ Infection/ Abscess/ Salivary gland /Adenopathy/Mets/Lymphoma

Preparation: No preparation needed, except remove all metal objects

Coverage: Mid orbits to carina

Acquisition Parameters:

	kVp:	120
	mAs:	300
	Thickness/Interval:	3mm x -3mm
	FOV:	20mm
	Tube Rotation:	.75 sec
	Pitch:	.891
	Collimation	64x.625

Reconstruction Algorithm:

	Standard (B)	
Recons:	Routine	3mm x 3mm
	Soft Tissue	3mm x 3mm
	Thins	2mm x 1mm
Reformats:	COR	2mm x 1mm
	SAG	2mm x 1mm

SINUSES WITHOUT CONTRAST

INDICATIONS: Sinusitis/ Ostiomeatal complex pathology

Preparation: No preparation needed, except remove all metal objects, such as Pins, earrings for scanning area.

Coverage: Mandible to vertex

Acquisition Parameters:

	kVp	120
	mAs	200
	Thickness/Interval	1mm x .5mm
	FOV	180mm
	Tube Rotation	.75 sec
	Pitch	.639
	Collimation	64x.625

Reconstruction Algorithm:

	Bone (D)	
Recons:	Routine	3mm x 3mm
	Soft Tissue	3mm x 3mm
	Landmark	1mm x 1mm
Reformats:	COR	1mm x 1mm
	SAG	1mm x 1mm

IAC/TEMPORAL BONES WITHOUT CONTRAST

INDICATIONS: Hearing Loss/Cholesteatoma

Preparation: No preparation needed, except remove all metal objects, such as Pins, earrings for scanning area.

Coverage: Mastoid tip through petrous pyramids

Acquisition Parameters:

	kVp	120
	mAs	300
	Thickness/Interval	.675mm x .34mm
	FOV	180mm
	Tube Rotation	.75 sec
	Pitch	.639
	Collimation	64x.625

Reconstruction Algorithm:

	Bone (D)	
Recons:	Routine	0.8mm x 0.4mm
	Soft Tissue	2mm x 1mm
Reformats:	COR/SAG	Less than 1mm

Reformat the RT and LT Temporal Bones separately (cor and axial), with magnification, less than 1mm

IAC/TEMPORAL BONES WITH CONTRAST

INDICATIONS: Hearing Loss/Cholesteatoma

Preparation: 2 Hours NPO

Coverage: Mastoid tip through petrous pyramids

Injection Rate: 1.5 – 3 ml per second

Contrast amount: 100 mLs

Contrast Selection: Please see most recent version of Contrast Selection Flow Chart

Scan Delay: 50 seconds

Acquisition Parameters:

	kVp	120
	mAs	300
	Thickness/Interval	.675mm x .34mm
	FOV	180mm
	Tube Rotation	.75 sec
	Pitch	.639
	Collimation	64x.625

Reconstruction Algorithm:

	Bone (D)	
Recons:	Routine	0.8mm x 0.4mm
	Soft Tissue	2mm x 1mm
Reformats:	COR/SAG	Less than 1mm

Reformat the RT and LT Temporal Bones separately (cor and axial), with magnification, less than 1mm

FACIAL BONES WITHOUT CONTRAST

INDICATIONS: Trauma/ Cellulitis/ Infection

Preparation: No preparation needed, except remove all metal objects, such as Pins, earrings for scanning area.

Coverage: Tip of Mandible to just above frontal sinuses

Acquisition Parameters:

	KVp	120
	mAs	200
	Thickness/Interval	1mm x .5mm
	FOV	180mm
	Tube Rotation	.75sec
	Pitch	.639
	Collimation	64x.625

Reconstruction Algorithm:

	BONE (D)	
Recons:	Routine	3mm x 3mm
	Soft Tissue	3mm x 3mm
	Thins	1.25mm x 0.75mm

Reformats:	COR / SAG	1mm x 1mm

FACIAL BONES WITH CONTRAST

INDICATIONS: Mass/Trauma/ Cellulitis/ Infection

Preparation: NPO 2 hours prior to scan

Coverage: Tip of Mandible to just above frontal sinuses

Injection Rate: 1.5 – 3 ml per second

Contrast amount: 100 mls

Contrast Selection: t Please see most recent version of Contrast Selection Flow Chart

Scan Delay: 50 seconds

Acquisition Parameters:

	kVp:	120
	mAs:	200
	Thickness/Interval:	1mm x .5mm
	FOV:	180mm
	Tube Rotation:	.75 sec
	Pitch:	.639
	Collimation	64x.625

Reconstruction Algorithm:

BONE (D)

Recons:	Routine	3mm x 3mm
	Soft Tissue	3mm x 3mm
	Soft Tissue Thins	1.25mm x 0.75mm
	Thins	1.25mm x 0.75mm
Reformats:	Soft Tissue COR / SAG	x 1mm x 1mm x 0.75mm

ORBITS WITHOUT CONTRAST

INDICATIONS: Trauma/ Cellulitis/ Infection

Preparation: No preparation needed, except remove all metal objects, such as Pins, earrings for scanning area.

Coverage: Alveolar of maxilla to 1” above frontal sinuses

Acquisition Parameters:

	kVp	120
	mAs	250
	Thickness/Interval	1mm x .5mm
	FOV	180
	Tube Rotation	.75sec
	Pitch	.639
	Collimation	64x.625

Reconstruction Algorithm:

	SHARP (C)	
Recons:	Routine	3mm x 3mm
	Soft Tissue	3mmx3mm 1
	Thins	1.25mm 0.75mm.25mm x 0.75mm
Reformats:	COR / SAG	1mm x 1mm

ORBITS WITH CONTRAST

INDICATIONS: Trauma/ Cellulitis/ Infection

Preparation: 2 hours NPO

Coverage: Alveolar of maxilla to 1” above frontal sinuses

Injection Rate: 1.5 – 3 ml per second

Contrast amount: 100 mls

Contrast Selection: Please see most recent version of Contrast Selection Flow Chart

Scan Delay: 50 seconds

Acquisition Parameters:

	kVp	120
	mAs	250
	Thickness/Interval	1mm x .5mm
	FOV	180
	Tube Rotation	.75sec
	Pitch	.639
	Collimation	64x.625

Reconstruction Algorithm:

SHARP (C)

Recons:	Routine	3mm x 3mm
	Soft Tissue	3mm x 3mm
	Soft Tissue Thinsins	1.25mm x 0.75mm
	Thins	1.251.25mm x 0.75mmm x
Reformats:	Soft Tissue COR / SAG	0.75mm 1mm x 1mm

CT 4D PARATHYROID

Indications: Parathyroid Adenoma
(Parathyroid adenomas tend to be hypervascular and should enhance on the arterial phase.)

Preparation: NPO 2 hours prior to examination. All metal objects are removed from scanning area.
IV - 20G angiocath in a RT antecubital vein.

Coverage: see procedures below

Injection Rate: 4 mls/sec

Contrast Amount: 75 mls Omnipaque 350/Visipaque 320 followed by 25 ml saline chaser

Parameters:

DFOV	20 cms
Scan thickness	0.625 mm
Tube Rotation time	0.4 secs
Pitch	0.516:1
kV	120 Kv
mA	100 mA (Minimum), 400 mA (maximum) on GE scanners

Procedure: **UNENHANCED**
Coverage: From the hyoid bone to the clavicular head
RECON: ROUTINE 2.5mm x2.5mm
UTHINS 1.25mm x 0.625mm (GE) 1mm x 0.5mm (Philips)

Procedure: **ARTERIAL**
Coverage: Angle of the mandible to the carina
Scan Delay: 25 seconds after start of injection
RECON: ROUTINE 2.5mm x2.5mm
ATHINS 1.25mm x 0.625mm (GE) 1mm x 0.5mm (Philips)

Procedure: **VENOUS (delayed) phase**
Coverage: Angle of mandible to the carina
Scan Delay: 80 seconds from start of the injection
RECON: Venous 2.5mm x2.5mm
THINS 1.25mm x 06.25mm (GE) 1mm x 0.5mm (Philips)

REFORMATS: **ARTERIAL AND VENOUS THINS**
COR MPR 2.5mm x 2.5mm
SAG MPR 2.5mm x 2.5mm

CT Brain Lab Protocol

***** MAKE SURE THAT ALL SOFT TISSUE IS SEEN ON THE SCAN- EARS, NOSE, AND SCALP. ****

INDICATIONS:	**Specifically asked for by ordering Physician**
Patient Position:	Supine with patient's head in neutral position (NO TILT). Use the flat head sponge with the dent in the center to ensure that there is no table in the scan field.
Coverage:	Topo: C2-3 through vertex including all soft tissue and entire nose. (Please refer to image below)
Scan:	The entire head including the entire skin surface but none of the table in the scan field.
Scan Delay:	2-minute delay: if contrast is indicated.
Injection Rate:	1.5ml/ per second: if contrast is indicated.
Contrast amount:	100 mLs
Contrast Selection:	Please see most recent version of Contrast Selection Flow Chart

Acquisition Parameters:

kVp	120
mAs	300
Thickness/Interval	1mm x 1mm
FOV	220
Tube Rotation	0.75sec
Pitch	0.923
Collimation	64 x 0.625

Reformats:

AXIAL	2 mm x 1 mm
COR	3mm x 3 mm
SAG	3mm x 3 mm

SCAN RANGE:

CT CERVICAL SPINE WITHOUT CONTRAST

INDICATIONS: Trauma/ Pain/ Assess bony degenerative changes

Preparation: No preparation needed, except remove all metal objects, such as Pins, earrings for scanning area.

Coverage: Foramen Magnum through T2

Acquisition Parameters:

	kVp:	140
	mAs:	275
	Thickness/Interval:	3mm x -3mm
	FOV:	140-160mm
	Tube Rotation:	.5sec
	Pitch:	0.969:1
	Collimation:	64x.625

Reconstruction Algorithm:

Sharp (C)

Recons:

	Routine	3mm x 3mm
	Soft Tissue	3mm x 3mm
	Thins	1x 0.5mm
Reformats	SAG	2mm x 1mm
	COR	
	AXIAL REFORMATS	Only for myelograms or at physician request
	Soft Tissue SAG	2mm x 1mm

CERVICAL SPINE WITH CONTRAST

INDICATIONS: Trauma/ Pain/ Assess bony degenerative changes

Preparation: 2 hours NPO

Coverage: Foramen Magnum through T2

Injection Rate: 1.5 – 3 ml per second

Contrast amount: 100 mls

Contrast Selection: Please see most recent version of Contrast Selection Flow Chart

Scan Delay: 50 seconds

Acquisition Parameters:

	kVp:	140
	mAs:	275
	Thickness/Interval:	3mm x 3mm
	FOV:	140-160mm
	Tube Rotation:	.5sec
	Pitch:	0.969:1
	Collimation:	64x.625

Reconstruction Algorithm:

	Sharp (C)	
Recons:	Routine	3mm x 3mm
	Soft Tissue	3mm x 3mm
	Thins	1x 0.5mm
Reformats	SAG/COR	2mm x 1mm
	AXIAL REFORMATS	Only for myelograms or at physician request
	Soft Tissue SAG	2mm x 1mm

THORACIC SPINE WITHOUT CONTRAST

INDICATIONS: Trauma/pain/asses bony degenerative changes

Preparation: No preparation needed, except remove all metal objects

Coverage: Topo: C6-sacrum

Scan: C6-L2

Acquisition Parameters:

	kVp	140
	mAs	300
	Thickness/Interval	3mm x 3mm
	FOV	200mm
	Tube Rotation	1 sec
	Pitch	1.235
	Collimation	64 x .625

Reconstruction Algorithm:

	Sharp (C)	
Recons:	Routine	3mm x 3mm
	Soft Tissue	3mm x 3mm
	Thins	1 x 0.5mm
Reformats:	SAG/COR	2mm x 1mm
	Soft Tissue SAG	2mm x 1mm

THORACIC SPINE WITH CONTRAST

INDICATIONS: Trauma/pain/asses bony degenerative changes

Preparation: No preparation needed, except remove all metal objects

Coverage: Topo: C6-sacrum

Scan: C6-L2

Injection Rate: 1.5 – 3 ml per second

Contrast amount: 100 mls

Contrast Selection: Please see most recent version of Contrast Selection Flow Chart)

Scan Delay: 50 seconds

Acquisition Parameters:

	kVp	140
	mAs	300
	Thickness/Interval	3mm x 3mm
	FOV	200mm
	Tube Rotation	1 sec
	Pitch	1.235
	Collimation	64 x .625

Reconstruction Algorithm:

	Sharp (C)	
Recons:	Routine	3mm x 3mm
	Soft Tissue	3mm x 3mm
	Thins	1 x 0.5mm
Reformats:	SAG/COR	2mm x 1mm
	Soft Tissue SAG	2mm x 1mm

LUMBAR SPINE WITHOUT CONTRAST

INDICATIONS: Trauma/pain/asses bony degenerative changes

Preparation: No preparation needed, except remove all metal objects

Coverage: Topo: T6-sacrum

Scan: T11-S2

Acquisition Parameters:

	kVp	140
	mAs	300
	Thickness/Interval	3mm x 3mm
	FOV	200mm
	Tube Rotation	1 sec
	Pitch	1.235
	Collimation	64x.625

Reconstruction Algorithm:

	Sharp (C)	
Recons:	Routine	3mm x 3mm
	Soft Tissue	3mm x 3mm
	Thins	1 x 0.5mm
Reformats:	SAG/COR	2mm x 1mm
	Soft Tissue SAG	2mm x 1mm

LUMBAR SPINE WITH CONTRAST

INDICATIONS: Trauma/pain/asses bony degenerative changes

Preparation: No preparation needed, except remove all metal objects

Coverage: Topo: T6-sacrum

Scan: T11-S2

Injection Rate: 1.5 – 3 ml per second

Contrast amount: 100 mls

Contrast Selection: Please see most recent version of Contrast Selection Flow Chart)
art)

Scan Delay: 50 seconds

Acquisition Parameters:

	kVp	140
	mAs	300
	Thickness/Interval	3mm x 3mm
	FOV	200mm
	Tube Rotation	1 sec
	Pitch	1.235
	Collimation	64x.625

Reconstruction Algorithm:

	Sharp (C)	
Recons:	Routine	3mm x 3mm
	Soft Tissue	3mm x 3mm
	Thins	1 x 0.5mm
Reformats:	SAG/COR	2mm x 1mm
	Soft Tissue SAG	2mm x 1mm

CT ABDOMEN & PELVIS WITH CONTRAST

INDICATIONS: Abdominal pain/ Mass/ Abscess

Note: If the tech sees a liver lesion - NO NEED to do delays through the liver.

Preparation: 32 oz. of water 30 minutes before scan. (30 minute prep time waived in cases of ED patients) **In cases of pediatric patient (17 and under) or suspected bowel perforation, then prep is 50 mL Omnipaque 240 given 90 minutes prior to scan.** Also give water when patient cannot get IV contrast for some reason (poor renal function, allergy, no IV access).

Coverage: 2" above xiphoid through symphysis pubis

Injection Rate: 2 – 4 ml/ sec

Contrast amount: 100 mls

Contrast Selection: Please see most recent version of Contrast Selection Flow Chart)
art

Scan Delay: 60 - 75 seconds

Acquisition Parameters:

	kVp	120
	mAs	300
	Thickness/Interval	3mm x 3mm
	FOV	350mm
	Tube Rotation	.75sec
	Pitch	.891
	Collimation	64x.625

Reconstruction Algorithm: Standard (B)

Recons:	Routine	3mm x 3mm
	Thins	2mm x 1mm
Reformats:	MPR -SAG/COR	3mm x 3mm (TeraRecon)

Arterial Phase

Arterial Phase should be done prior to venous phase for ct abd/pelvis in the following cases:

Ocular Melanoma

Scan delay: 30 seconds

Injection rate: 3-4 mLs per second

CT ABDOMEN & PELVIS WITHOUT CONTRAST

INDICATIONS: Abdominal pain/ Mass/ Abscess

Preparation: 32 oz. of water 30 minutes before scan. (30 minute prep time waived in cases of ED patients) **In cases of pediatric patient (17 and under) or suspected bowel perforation, then prep is 50 mL Omnipaque 240 given 90 minutes prior to scan.** Also give positive oral contrast when patient cannot get IV contrast for some reason (poor renal function, allergy, no IV access).

Coverage: 2" above xiphoid through symphysis pubis

Acquisition Parameters:

	kVp	120
	mAs	300
	Thickness/Interval	3mm x 3mm
	FOV	350mm
	Tube Rotation	.75sec
	Pitch	.891
	Collimation	64x.625

Reconstruction Algorithm:

	Standard (B)	
Recons:	Routine	3mm x 3mm
	Thins	2mm x 1mm
Reformats:	MPR -SAG/COR	3mm x 3mm (TeraRecon)

CT ABDOMEN WITH CONTRAST

INDICATIONS: Abdominal pain/ Mass/ Abscess

Preparation: 32 oz. of water 30 minutes before scan. (30 minute prep time waived in cases of ED patients) **In cases of pediatric patient (17 and under) or suspected bowel perforation, then prep is 50 mL Omnipaque 240 given 90 minutes prior to scan.** Also give positive oral contrast when patient cannot get IV contrast for some reason (poor renal function, allergy, no IV access).

Coverage: 2" above xiphoid to ASIS

Injection Rate: 2 – 4 ml/ sec

Contrast amount: 100 mls

Contrast Selection: Please see most recent version of Contrast Selection Flow Chart)

Scan Delay: 60 - 75 seconds

Acquisition Parameters:

	kVp	120
	mAs	300
	Thickness/Interval	3mm x 3mm
	FOV	350mm
	Tube Rotation	.75sec
	Pitch	.891
	Collimation	64x.625

Reconstruction Algorithm:

	Standard (B)	
Recons:	Routine	3mm x 3mm
	Thins	2mm x 1mm
Reformats:	MPR -SAG/COR	3mm x 3mm (TeraRecon)

CT ABDOMEN WITHOUT CONTRAST

INDICATIONS: Abdominal pain/ Mass/ Abscess

Preparation: 32 oz. of water 30 minutes before scan. (30 minute prep time waived in cases of ED patients) **In cases of pediatric patient (17 and under) or suspected bowel perforation, then prep is 50 mL Omnipaque 240 given 90 minutes prior to scan.** Also give positive oral contrast when patient cannot get IV contrast for some reason (poor renal function, allergy, no IV access).

Coverage: 2" above xiphoid to ASIS

Acquisition Parameters:

	kVp	120
	mAs	300
	Thickness/Interval	3mm x 3mm
	FOV	350mm
	Tube Rotation	.75sec
	Pitch	.891
	Collimation	64x.625

Reconstruction Algorithm:

	Standard (B)	
Recons:	Routine	3mm x 3mm
	Thins	2mm x 1mm
Reformats:	MPR -SAG/COR	3mm x 3mm (TeraRecon)

CT PELVIS WITH CONTRAST

INDICATIONS:	Pelvic pain/ Mass/ Abscess	
Preparation:	NPO 2 hours prior to scan/oral contrast may be indicated symptom dependent	
Coverage:	2” above iliac crest through symphysis pubis	
Injection Rate:	2 – 4 ml/ sec	
Contrast amount:	100 mls	
Contrast Selection:	Please see most recent version of Contrast Selection Flow Chart)	
Scan Delay:	60 - 75 seconds	
Acquisition Parameters:		
	kVp	120
	mAs	300
	Thickness/Interval	3mm x 3mm
	FOV	350mm
	Tube Rotation	.75sec
	Pitch	.891
	Collimation	64x.625
Reconstruction Algorithm:		
	Standard (B)	
Recons:	Routine	3mm x33mm
	Thins	2mm x 1mm
Reformats:	MPR -SAG/COR	3mm x 3mm (TeraRecon)

CT PELVIS WITHOUT CONTRAST

INDICATIONS:	Pelvic pain/ Mass/ Abscess/Inguinal Hernia	
Preparation:	NPO 2 hours prior to scan/oral contrast may be indicated symptom dependent	
Coverage:	2” above iliac through symphysis pubis	
Acquisition Parameters:		
	kVp	120
	mAs	300
	Thickness/Interval	3mm x 33mm
	FOV	350mm
	Tube Rotation	.75sec
	Pitch	.891
	Collimation	64x.625
Reconstruction Algorithm:		
	Standard (B)	
Recons:	Routine	3mm x33mm
	Thins	2mm x 1mm
Reformats:	MPR -SAG/COR	3mm x 3mm (TeraRecon)

KIDNEY STONE

INDICATIONS:	Flank pain/ Hematuria/ Pain w history of renal calculus	
Preparation:	None	
Coverage:	Just above the adrenals through the symphysis pubis	
Acquisition Parameters:		
	kVp	120
	mAs	300
	Thickness/Interval	3mm x 3mm
	FOV	350mm
	Tube Rotation	.75sec
	Pitch	.891
	Collimation	64x.625
Reconstruction Algorithm:		
	Standard (B)	
Recons:	Routine	3mm x 3mm
	Thins	2mm x 1mm
Reformats:	MPR -SAG/COR	3mm x 3mm (TeraRecon)

****Low Dose Technique is to be used for pregnant patients and at the direction of the ordering provider****

ADRENALS

INDICATIONS: Adrenal mass/ Phaeochromocytoma

Preparation: No oral contrast

Coverage: Dome of liver through symphysis pubis **(half, full, half)**

UNENHANCED: Abdomen only, above adrenals through the kidneys

Unenhanced	3mm x 3mm
UTHINS	2mm x 1mm
COR	3mm x 3 mm

*******Check unenhanced with radiologist to determine if IV contrast is needed*******

If contrast is used:

Contrast amount: 100 mls

Contrast Selection: Please see most recent version of Contrast Selection Flow Chart)

art

ROUTINE ABDOMEN & PELVIS

Routine	3mmx33mm
THINS	2mm x 11mm
COR/SAG (TeraRecon)	3mm x 3mm

DELAYED (WASHOUT PHASE) Delay time: 15 minutes (abd only)

DTHINS	2mm x 1mm
COR	3mmx3mm

AcquisitionParameters:

kVp	120
mAs	300
Thickness/Interval	33mm x33mm
FOV	350mm
Tube Rotation	.75 sec
Pitch	.891
Collimation	64x.625

Reconstruction Algorithm:

Standard (B)

PANCREAS/ PANCREATIC MASS PROTOCOL

INDICATIONS: Pancreatic mass/Pseudocyst/Pancreatitis

Preparation: Water given on table

NPO 2 hours prior to scan

Coverage: 2" above xiphoid through symphysis pubis

Injection Rate: 3 ml/ sec

Contrast amount: 100 mls

Contrast Selection: Please see most recent version of Contrast Selection Flow Chart)

Scan Delay: 30 seconds (Arterial Phase)

60 seconds (Venous Phase)

RECONS: ARTERIAL 3mm x 3mm

ATHINS 2mm x 1mm

ROUTINE (Venous) 3mm x 33mm

THINS 2mm x 1mm

Acquisition Parameters:

kVp	120
mAs	280
Thickness/Interval	3mmx3mm
FOV	350mm
Tube Rotation	.75 sec
Pitch	1.157
Collimation	32x1.25

Reconstruction Algorithm:

Standard (B)

Reformats MIP COR / SAG 7mmx3mm Arterial phase

MPR -SAG/COR 3mm x 3mm (TeraRecon) Venous phase

PANCREATITIS

INDICATIONS: Pseudocyst/ epigastric pain/Elevated lipase/Elevated amylase

ROUTINE ABDOMEN/PELVIS unless specifically asked to use Pancreatic Mass Protocol

THINS

MPR – COR/SAG (TeraRecon)

Urogram

INDICATIONS: painless hematuria/chronic renal lithiasis/eval malignance

Preparation: 32 oz. of water 30 minutes before scan. (30 minute prep time waived in cases of ED patients) **In cases of pediatric patient (17 and under) or suspected bowel perforation, then prep is 50 mL Omnipaque 240 given 90 minutes prior to scan.** Also give positive oral contrast when patient cannot get IV contrast for some reason (poor renal function, allergy, no IV access).

Coverage: **(full, half, full)**

Unenhanced: just above adrenal to top of symphysis pubis

33mm x 33mm

UTHINS 2mm x1 mm

Nephrogram Phase: just above adrenals through ASIS

Scan delay 100seconds

3mm x33mm

Thins 2mm x 1mm

MPR COR 3mmx3mm

Urographic Phase: just above adrenals to top of symphysis pubis. 10 MIN after nephrogram phase is finished

2.5mmx2.5mm (DO NOT SEND THIS PHASE TO PACS-FOR AQUISTION ONLY)

Recons 33mm x33mm

DTHINS 2mm x 1mm

COR/SAG 3mmx3mm

MIP COR 7mmx3mm

3D Urogram (Tera Recon)

Injection Rate: 3 ml per second

Contrast amount: 100 mls contrast

150-200mLs saline at 1.5-2mLs/sec

Contrast Selection: Please see most recent version of Contrast Selection

Flow Chart)

Acquisition Parameters:

kVp 120

mAs	300
Thickness/Interval	3mm x 3mm
FOV	350mm
Tube Rotation	.75 sec
Pitch	.891
Collimation	64x.625

Reconstruction Algorithm:

Standard (B)

SPLIT BOLUS UROGRAM

Indications: Same as for Urogram, except patient has to be <40 years old and already had an initial Urogram.

Preparation: Patient drinks 900 ml water prior to scanning.
Empty bladder just prior to scanning.
IV contrast only.

UNENHANCED

Coverage: Just above the adrenals through the symphysis pubis 33mm x 33mm

UTHINS

2.0mm x 1mm

UROGRAPHIC PHASE

Coverage: From the top of adrenals through symphysis pubis

Contrast: Please see most recent version of Contrast Selection Flow Chart)

Method: Inject **40 mls contrast, wait 8 minutes** and then inject the remaining **60mls of contrast**

Scan Delay: 100m seconds post 2nd injection.

2mm x 1mm

DTHINS 2mm x 1mm

Reformat: **COR URO**
3D VOLUME RENDERING OF THE URINARY TRACT.

Liver

INDICATIONS: Liver mass/cirrhosis/hepatitis/follow up of malignancy

Preparation: NPO 2 hours prior to scan

Coverage: dome of liver to ASIS (if abd only ordered)

Through to symphysis pubis (if pelvis also) **(half, full, half)**

Arterial: abd w/ only

30 sec post injection delay

3mmx33mm

Thins 2mmx1mm

MIP COR 7mmx3mm

MPR COR/SAG 3mmx3mm (TeraRecon)

Routine: abd/pelvis

70 sec post injection delay

3mmx33mm

Thins 2mmx1mm

MPR COR/SAG 3mmx3mm (TeraRecon)

Delays: abd only

3 min delay

3 mmx33mm

Thins 2mmx1mm

MPR COR/SAG 3mmx3mm (TeraRecon)

Injection Rate: 3 ml per second

Contrast amount: 100 mls

Contrast Selection: Please see most recent version of Contrast Selection Flow Chart)

Acquisition Parameters:

kVp 120

mAs	300
Thickness/Interval	3mm x 3mm
FOV	350mm
Tube Rotation	.75sec
Pitch	.891
Collimation	64x.625

Reconstruction Algorithm:

Standard (B)

Renal Mass Protocol

INDICATIONS: Evaluate and characterize potential renal mass

Preparation: NPO 2 hours prior to scan – no oral contrast

Coverage: Just above adrenals to ASIS

Unenhanced: 3mmx33mm

UTHINS 2mmx1mm

COR/SAG 3mmx3mm (TeraRecon)

Routine: Dome of liver though ASIS (though symphisis pubis if pelvis is ordered)

3mmx33mm

THINS 2mmx1mm

COR/SAG 3mmx3mm (TeraRecon)

Delay: 5 min delay from injection time

Adrenals though ASIS

3mmx33mm

DTHINS 2mmx1mm

COR/SAG 3mmx3mm (TeraRecon)

Injection Rate: 3 ml per second

Contrast amount: 100 mls

Contrast Selection: Please see most recent version of Contrast Selection Flow Chart)

Acquisition Parameters:

kVp	120
mAs	300
Thickness/Interval	3mm x 3mm
FOV	350mm
Tube Rotation	.75 sec

Pitch	.891
Collimation	64x.625

Reconstruction Algorithm:

Standard (B)

Renal mass protocol clarification:

1. If the order says "renal mass protocol" CT, then perform the renal mass protocol (unenhanced, 100 sec, and delayed). No arterial phase

2. If the order mentions or if the study is being performed as a follow up to prior cryoablation or radiofrequency ablation or PARTIAL nephrectomy then also perform the same renal mass protocol as in #1 above.

3. The ARTERIAL PHASE is only in those cases where the patient has had a prior COMPLETE nephrectomy or no prior surgery but known history of renal cell cancer AND the order is specific for "renal cell cancer" follow up. Then it would be routine CT abd/pelv with added arterial phase of abdomen. However, remember that if the written order states "renal mass protocol CT" then that trumps everything and refer to #1 above.

4. Never hesitate to call me or another radiologist if you or other tech is unsure of what protocol to use.

Cystogram

INDICATIONS: Trauma/bladder ca/evaluate the bladder/bladder morphology/bladder diverticula/bladder fistula/bladder outlet obstruction/evaluation of post void residual volume

Preparation: catheter usually in place when enters department

Coverage: Iliac Crest through symphysis pubis

Unenhanced: 33mm x33mm

UTHINS 2mmx1mm

COR/SAG 3mmx3mm (TeraRecon)

Routine: clamp catheter and introduce 200-300 mLs contrast mixture or until patient feels uncomfortably full

3mmx33mm

THINS 2mmx1mm

COR/SAG 3mmx3mm (TeraRecon)

Post drain: unclamp catheter and allow contrast to drain

3mmx33mm

DTHINS 2mmx1mm

COR/SAG 3mmx3mm

Contrast amount: 50 mLs onmipaque 240 mixed with 500mLs .9% NaCl saline bag

Contrast Selection: Omnipaque 240

Acquisition Parameters:

kVp	120
mAs	300
Thickness/Interval	3mm x 3mm
FOV	350mm
Tube Rotation	.75sec
Pitch	.891

Collimation	64x.625

Reconstruction Algorithm: Standard (B)

CT Enterography (small intestines)

INDICATIONS: Crohn's disease/ulcerative colitis/IBD/small bowel pathology/internal or external hernia

Preparation: NPO 4 hours prior to scan

Patient drinks 3 bottles Volumen (call MIF for contrast), timed as follows:

0 minutes	450 mLs
20 minutes	450 mLs
40 minutes	225 mLs
50 minutes	225 mLs
65 minutes	SCAN

Coverage: Dome of the liver through symphysis pubis

Injection Rate: 4 ml per second

Contrast Selection: Please see most recent version of Contrast Selection Flow Chart)

Contrast Amount: 100 mLs contrast

100 mLs saline

Scan Delay: 45 Seconds

Acquisition Parameters:

kVp	140
mAs	300
Thickness/Interval	3mm x 3mm
FOV	350mm
Tube Rotation	.75sec
Pitch	.891
Collimation	64x.625

Reconstruction Algorithm

Recons:

	Routine	0.625mm x 0.625mm
	Thins	2mm x 1mm
Reformats:	COR/SAG	3mm x 3mm

CHEST with contrast

INDICATIONS: COPD/chest wall mass/cough/mets/sarcoidosis/nodule (initial workup)

Preparation: NPO 2 hours prior to scan

Coverage: apices through upper pole of kidney to include adrenals

Injection Rate: 2 – 4 ml per second

Contrast amount: 80 mLs

Contrast Selection: Please see most recent version of Contrast Selection Flow Chart)

rt

Scan Delay: 45 seconds

Acquisition Parameters:

kVp	120
mAs	250
Thickness/Interval	3mm x 3mm
FOV	350mm
Tube Rotation	.75 sec
Pitch	1.172
Collimation	64x.625

Reconstruction Algorithm

	Sharp (C)	
Recons:	Routine/Lung	3mm x 3mm
	Thins	1.5x.75mm
	COR/SAG	3mm x 3mm (TeraRecon)
Reformats:	Axial MIP	8mm x 4mm (TeraRecon)

CHEST without contrast

INDICATIONS: PNA/follow up lung nodule/cough/pleural effusion

Preparation: No preparation needed, except remove all metal objects

Coverage: apices through upper pole of kidney to include adrenals

Acquisition Parameters:

	kVp	120
	mAs	250
	Thickness/Interval	3mm x 33mm
	FOV	350mm
	Tube Rotation	.75 sec
	Pitch	1.172
	Collimation	64x.625

Reconstruction Algorithm

	Sharp (C)	
Recons:	Routine/Lung	3mm x 33mm
	Thins	1.5mmx.0.75mm
Reformats:	COR/SAG	3mm x 3mm(TeraRecon)
	Axial MIP	8mm x 4mm (TeraRecon)

CT Chest WO IV Contrast (REDUCED DOSE)

INDICATIONS: PNA/follow up lung nodule/cough/pleural effusion
*** Patient BMI <30

Preparation: No preparation needed, except remove all metal objects

Coverage: apices through upper pole of kidney to include adrenals

Acquisition Parameters:

	kVp	120
	mA	70(140GE VCT)
	Thickness/Interval	3mmx 3mm
	FOV	350mm
	Tube Rotation	.75sec
	Pitch	1.172
	Collimation	64. x .625

Reconstruction Algorithm

	Sharp (C)	
Recons:	Routine/Lung	3mm x 3mm
	Thins	1.5mm x .70.75mms
Reformats:	COR/SAG	3mm x 3mm (TeraRecon)
	Axial MIP	8mm x 4mm (TeraRecon)

The CTDI should be 4-5mGy

ZEPHYR Valve Chest without contrast

INDICATIONS: ZEPHYR VALVE Protocol – Preop testing

Preparation: No preparation needed, except remove all metal objects: NO artifacts can be present on this exam

Coverage: Apices through upper pole of kidney to include adrenals / Ensure entire lung field is present on the images

Acquisition Parameters:

	kVp	120
	mAs	250
	Thickness/Interval	1.5mm x 0.75mm
		1.25 x 0.625 (GE)
	FOV	350mm
	Tube Rotation	.5 sec or less
	Pitch	1.172 (<1.375 GE)
	Collimation	64x.625

Reconstruction Algorithm

	Standard B	
Recons:	Thins	1.5mm x 0.75mm
	Routine/Lung	3mm x 3mm)

Reformats:	COR/SAG	3mm x 3mm (Terarecon)
	Axial MIP	8mm x 4mm (Terarecon)

** Dose need to be < 4.o mSv (See following pages)

General Information

1. Ensure all files are in standard .DICOM format
2. Only SUPINE position chest CT scans are supported. Scans obtained in PRONE position can NOT be analyzed.
3. The CT scans must not have a slice thickness greater than 1.5mm.
4. The input image should NOT be reconstructed with a slice spacing larger than the slice thickness (no gaps in the 3D volume are allowed).
5. The complete lungs must be present on the CT scan. If parts of the lung are missing, the output parameters will be compromised.
6. Ensure the CT scan is not of poor quality (e.g. movement artifacts, artifacts due to metal, high noise levels due to dose level etc.).
7. Please ensure the CT scan does NOT suffer from image artifacts such as streak artifacts from implants.
8. Scans taken from CT scanners with less than 16 detector rows are not recommended.

CT Scanner Specific Information

CT Scan Parameters WITHOUT Iterative Reconstruction

3-4mSv Dose

Parameters	Siemens	Philips	Toshiba	GE
KV	120	120	120	120
Dose Modulation	CareDose ON CarekV OFF	Z-Dom ON	SURE Exposure ON	Smart mA ON
Pitch	Range: 0.8-1.2	Range: 0.8-1.2	Range: 0.8-1.0	Range: 0.9-1.375
Rotation or Gantry Speed (sec)	≤0.5	≤0.5	≤0.5	≤0.5
Kernel Standard	B35 or B31	B	FC 17	Standard
Slice Thickness	Range: 0.5 to 1.50mm	Range: 0.5 to 1.50mm	Range: 0.5 to 1.50mm	Range: 0.625 to 1.50mm Recon mode: Plus
Slice Spacing	20% less than slice thickness	20% less than slice thickness	20% less than slice thickness	20% less than slice thickness
Average mSv	<4.0	<4.0	<4.0	<4.0
Contrast	None	None	None	None

Parameters WITH Iterative Reconstruction

1-2mSv Dose

Parameters	Siemens	Philips	Toshiba	GE
KV	120	120	120	120
Dose Modulation	CareDose ON CarekV OFF	V-Dom ON	SURE Exposure ON	Smart mA ON
Pitch	Range: 0.8-1.2	Range: 0.8-1.2	Range: 0.8-1.0	Range: 0.9-1.375
Rotation or Gantry Speed (sec)	≤0.5	≤0.5	≤0.5	≤0.5
Iterative Reconstruction	Use SAFIRE	Use IMR	Use ADIR 3D standard	Use VEO, ASiR
Iterative Strength	3	Routine 2	Standard	30-50
Iterative Kernel Standard	Q30 or I	N/A	FC 17	Standard
Iterative Kernel Sharp	Q70	N/A	FC 52	Bone or Bone+
Slice Thickness	Range: 0.5 to 1.50mm	Range: 0.5 to 1.50mm	Range: 0.5 to 1.50mm	Range: 0.625 to 1.50mm Recon mode: Plus
Slice Spacing	20% less than slice thickness	20% less than slice thickness	20% less than slice thickness	20% less than slice thickness
Average mSv	<2.0	<2.0	<2.0	<2.0
Contrast	None	None	None	None

HiRes Chest: (requisition must be for HiRes Chest not Chest w/o)

INDICATIONS: ILD/Pulmonary Fibrosis/Asbestosis/Bronchiectasis Tracheomalacia/Tracheal Stenosis

*****Pulmonologist, Rheumatologist orders study – do as ordered.**

*****Non- Pulmonologist: if ordered as CT Chest, dx: ILD, pulmonary fibrosis, do**

Preparation: HRCT No preparation needed, except remove all metal objects

Coverage:

Prone Inspiration: Carina through lung bases

1mmx10mm

Supine Inspiration: Apices through lung bases

1mmx10mm

Supine Expiration: Apices through lung bases

1mmx10mm

Dx of Tracheomalacia or Tracheal Stenonis proceed to:

Dynamic End Exp1: Apices through lung bases

1mmx10mm

Dynamic End Exp2: Apices through lung bases

1mmx10mm

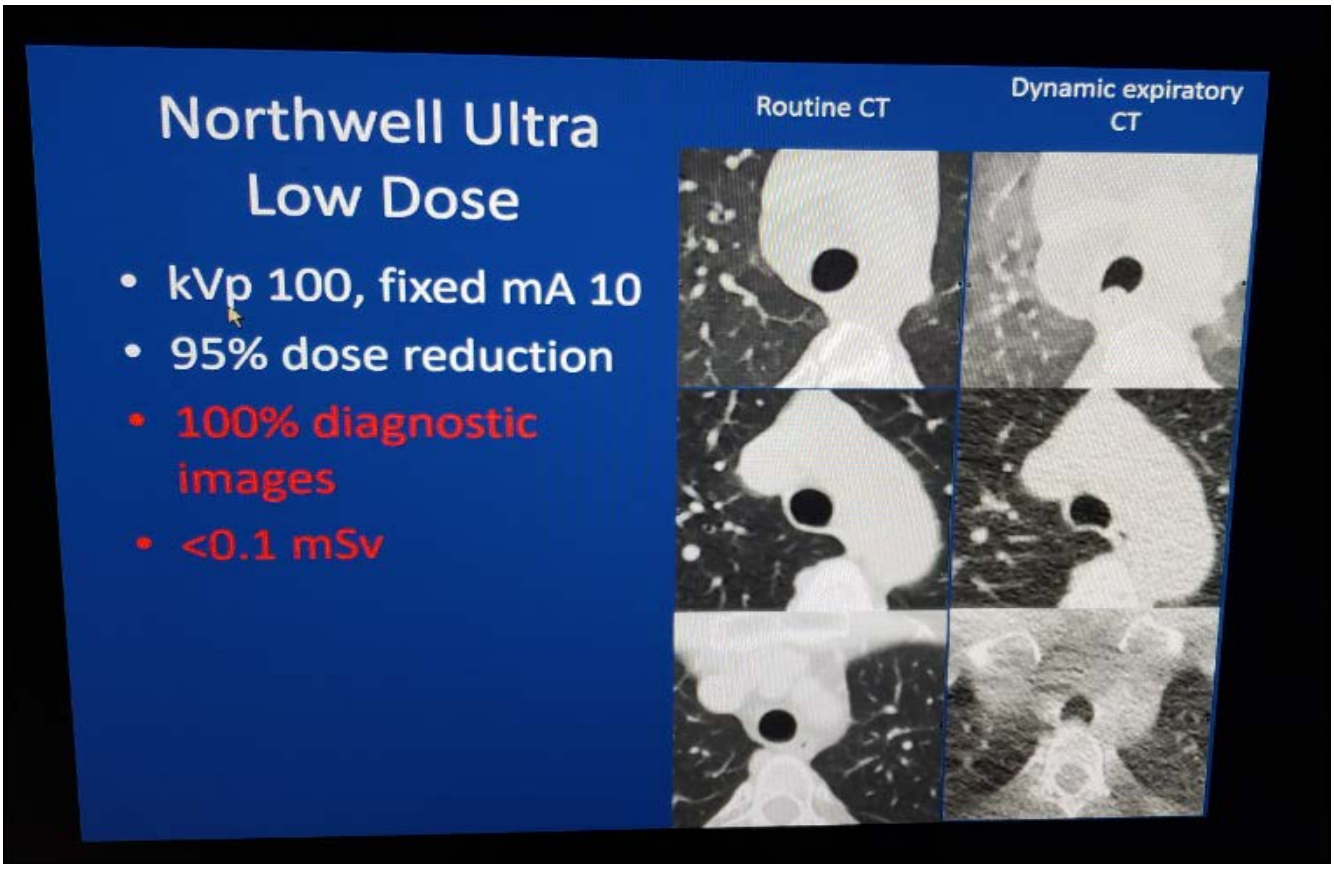
Routine Chest Apices though upper pole of kidney to include adrenals 5mmx5mm

Recons:	Routine/Lung	3mm x 3mm
	Thins	1.5mm x 0.755mmx
Reformats:	COR/SAG	3mm x 3mm 0.75mm
	Axial MIP	8mm x 4mm

Acquisition Parameters:

kVp 120	mAs 300
FOV	350
Tube	1.0 sec
Rotation	.673
Pitch	64x.625
Collimation	

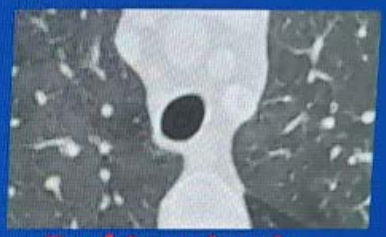
Reconstruction Algorithm: Lung Enhanced (L)



Tracheal Physiology

Tracheal shape dependent on:

- Airway (luminal) pressure:
  - airflow
- Pleural (intrathoracic) pressure:
  - respiratory muscles and lung volumes
- **End inspiration:** Airway pressure > pleural pressure → expands trachea
- **End expiration:** Airway pressure = pleural pressure → unstressed trachea
- **Dynamic expiration:** Airway pressure < pleural pressure → trachea compression



End Inspiration

End Expiration

Dynamic Expiration

Normal expiration, images from cine

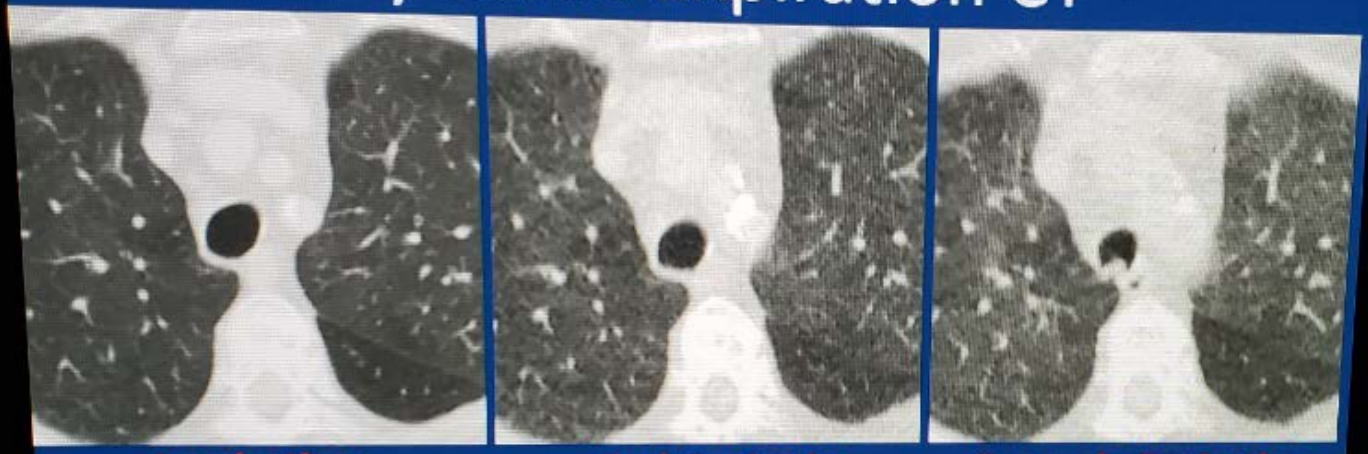
Airway collapse

Crescent Saber sheath Circumferential

Dynamic Expiration CT

- ULD/ALARA
- Timing
- Practice with patients!
- Recognize tracheal inspiratory and expiratory appearance
- Technologist training
- Check Cases!
- +/- Cine

Dynamic Expiration CT



Inspiration | End-Expiration | Dynamic-Expiration

- Dynamic expiration greater degree and extent of airway collapse than end expiration
- End expiration does not predict maximum collapse
- Maximum degree of collapse is important
  - Some intervene only with >90% collapse

CT CHEST ESOPHAGRAM

if aspiration is a risk, please speak with Radiologist

INDICATIONS:	Esophageal perforation, anatomical assessment, stenk, leak, erosive disease, stricture
Preparation:	2 hours NPO
Coverage:	Mid-neck through stomach
Oral Contrast Amount:	250 mLs Omnipaque 240 oral prep mixture immediately before scan
IV Contrast Amount:	100 mLs (if ordered by requesting doctor)
Contrast Selection:	Please see most recent version of Contrast Selection Flow Chartt
Scan Delay:	45 seconds

LOW DOSE LUNG SCAN

INDICATIONS: Age 50-80/Former or current smokers/20-pack year smoking history/ No cancer diagnosis in past 5 years/No pneumonia in past 3 months/Have 20 pack year smoker history (pack years = packs per day x years smoked)

Patients who graded 4a or are 3-6 month f/u should be done as Low Dose Lung Scan

Preparation: No preparation needed, except remove all metal objects

Coverage: Apices through base of lungs

Acquisition Parameters:

kVp	120
mA	50 (average)/65 (large)
Thickness/interval	3mmx3mm
FOV	350mm
Tube Rotation	.5sec
Pitch	0.984

Reconstruction Algorithm:

Sharp (C)

Recons:	Routine/Lung	3mmx3mm
	Thins:	1.5mmx.75mm
Reformats:	**COR/SAG**	3mmx3mm(Terarecon)
	Axial MIP	8mmx4mm (Terarecon)

The CTDI should NOT exceed 3mGy

CTA Head

v5.8 Updated 2.23.24

INDICATIONS: TIA/CVA/vascular malformation/AVM/Aneurysm/ venous thrombosis/Pulsatile Tinnitus - See Below

Preparation: NPO 2 hours prior to scan

18G-20G angiocath in AC or higher

Coverage: Topo: Aortic Arch through vertex

Scan: C4-vertex

Tracker: Arch of aorta

Injection Rate: 4 mLs per second

Contrast amount: 100 mLs

Contrast Selection: Please see most recent version of Contrast Selection Flow Chartrt

Acquisition Parameters:

kVp	120
mAs	300
Thickness/Interval	1mm x .5mm
FOV	220
Tube Rotation	.75sec
Pitch	.923
Collimation	64x.625

Reconstruction Algorithm

Standard (B)

Recons:	Thins	1.25mm x 0.625mm****
	Routinetine	5mm x 5mm
Reformats:	COR/SAG MIP	7mmx3mm
	BAV MIP Axial	7mmx3mm 7m
	MIP	7mmx3mm mx3mm

** If neck CTA is also done, include axial thin series with contiguous head and neck CTA imagess

Recons:	Routine	0.8mm x 0.4mm 1.25mm x 0.625mm (E)
	Soft Tissue	2mm x 1mm
Reformats:	Cor/Sag	Less than 1 mm

Reformat the RT and LT Temporal Bones separately (cor and axial), with magnification, less than 1mm

CTA Neck

INDICATIONS: Carotid stenosis/bruit/stroke/CVA/TIA

Preparation: NPO 2 hours prior to scan

18G-20G angiocath in **RAC** or higher

Coverage: Aortic arch to above sella

Tracker: Arch of aorta

Injection Rate: 4 mLs per second

Contrast amount: 100 mLs

Contrast Selection: rt Please see most recent version of Contrast Selection Flow Chart

Acquisition Parameters:

	kVp	120
	mAs	300
	Thickness/Interval	1mm x .5mm
	FOV	250mm
	Tube Rotation	.75sec
	Pitch	1.108
	Collimation	64x.625

Reconstruction Algorithm:

	Sharp (C)	
Recons:	Thins	1.25mm x .625mm**
	Routines	5mm x 5mm
Reformats:	COR/SAG MIP	7mm x 3mm
	Right/Left Bifur MIP	7mmx3mm
	Origins MIP	7mmx3mm
	SAG MPR C-Spine	2mmx1mm

** If head CTA is also done, include axial thin series with contiguous head and neck CTA images..

CTA CHEST PE

INDICATIONS: Chest pain/dyspnea/SOB/elevated D-Dimer/DVT

Preparation: NPO 2 hours prior to scan

18G-20G angiocath in AC or higher

Coverage: Apices through upper poles of kidney

Tracker: Pulmonary artery

Injection Rate: 4-5 mLs per second (if patient has BMI >35, then 5 mLs per second)

Contrast amount: 80 mLs (if patient has BMI >35, then 100 mLs)

Contrast Selection: Please see most recent version of Contrast Selection Flow Chart

Saline- 20 cc pre, 30 cc post injection

Acquisition Parameters:

kVp	120
mAs	300
Thickness/Interval	1.5 mm x .75mm
FOV	350
Tube Rotation	.75sec
Pitch	.797
Collimation	64x.625

Reconstruction Algorithm
Standard (B)
Recons:

	THINS	1.5 mm x .75mm
	Routines	3mm x 3mm
Reformats:	COR/SAG MPR	3mm x 3mm (TeraRecon)
	AXIAL MIP	8mm x4mm (TeraRecon)
	LPA/RPA MIP	7mm x 3mm

CTA CHEST TRAUMA

INDICATIONS: Trauma / Aortic injury

Preparation: NPO 2 hours prior to scan (unless STAT order)

18G-20G angiocath in AC or higher

Coverage: Apices through upper poles of kidney

Tracker: Descending Aorta 2-3 inches below the arch

Injection Rate: **3-4** mLs per second

Contrast amount: 100 mls

Contrast Selection: Please see most recent version of Contrast Selection Flow Chart ow

hart

Saline- 20 cc pre, 70 cc post injection

Acquisition Parameters:

kVp	120
mAs	300
Thickness/Interval	1.5 mm x -.75mm
FOV	350
Tube Rotation	.75sec
Pitch	.797
Collimation	64x.625

Reconstruction Algorithm

Standard (B)

Recons:	THINS	1.5 mm x .75mm
	Routines	3mm x 3mm
Reformats:	COR/SAG MIP	7mm x 3mm (TeraRecon)

AXIAL MIP	8mm x4mm (TeraRecon)
Oblique MIP (Candy Cane)	7mm x 3mm

v5.8 Updated 2.23.24

CTA CHEST with ECG-GATING
(ASCENDING TAA AND FOLLOW UP KNOWN ASCENDING AORTIC DISSECTION)

INDICATIONS: Aortic Dissection/TAA/vascular anomalies/evaluate subclavian vessels

Note: EKG Gating should be performed only when an aneurysm or dissection involves the ASCENDING AORTA.

Preparation:	NPO 2 Hours Prioror
	18G-20G angiocath in AC or higher
Coverage:	Apices through renal arteries
Tracker:	Aortic Arch
Injection Rate:	4-5 mLs PER SECOND
Contrast amount:	80 mLs
Contrast Selection:	Please see most recent version of Contrast Selection Flow Chart
	Saline- 20 cc pre, 30 cc post injection

Acquisition Parameters:

kVp	120
mAs	300
Thickness/Interval	3mm x 3mm
FOV	350
Tube Rotation	.75sec
Pitch	1.172
Collimation	64x.625

Reconstruction Algorithm:

ENHANCED: Sharp (C)

Recons:	Thins	1.5mm x .75mm
Routines:		3mm x 3mm
Reformats:	AXIAL MIP	8mm x 4mm
	COR/SAG/OBL MIP	7mm x 3mm
	(Candy Cane)	
	3D THORAX (TRAUMA))	TERARECON

CTA AORTA (AORTIC DISSECTION)

v5.8 Updated 2.23.24

**** UNENHANCED and ENHANCED - Acute Aortic Dissection**

**** ENHANCED only - Non-acute/Known Dissections for follow-up**

**** Note: EKG Gating should be performed only when an aneurysm or dissection involves Ascending Aorta**

INDICATIONS:	Aortic Dissection
Preparation:	NPO 2 hours prior to scan
	18G-20G angiocath in AC or higher
Coverage:	Non Con: Apices through renal arteries
Tracker:	Contrast: Apices through bifurcation of aorta Aortic Arch
Injection Rate:	4-5 mLs per second
Contrast amount:	100 mLs
Contrast Selection:	Contrast Selection: Please see most recent version of Contrast
	Selection Flow Chart

Acquisition Parameters:

kVpp	120
mAss	300

Thickness/Interval	5 mm x 5mm
FOV	350
Tube Rotation	.75sec
Pitch	1.172
Collimation	64x.625

UNENHANCED: **** Acute Aortic Dissection only**

Reconstruction Algorithm:		Sharp (C)
Recons:	Routine	3mm x 3mm
	Thins	1.5mm x ..75m
Reformats:	COR/SAG	3mm x 3mm (TeraRecon)

ENHANCED:

Reconstruction Algorithm:	Sharp (C)	
Recons:	**THINS**	1.5 mm x .75mm
Reformats:	Routines	3mm x 33
	AXIAL MIP	8mm x 44mm
	COR/ SAG/ Oblique (candy cane) MIP	
		7mmx3mm
	3D Thorax (Trauma)	TERARECON

Thoracic Outlet CTA

*** THIS WILL YIELD 4 TOTAL SCANS with 2 SEPARATE INJECTIONS ***

INDICATIONS: Arm pain/swelling, weakness/Paresthesia of the Upper Extremity

Preparation: NPO 2 hours prior to scan

18G-20G angiocath in contralateral arm (**OPPOSITE** side of symptoms).

Coverage: **Carina through elbow of abducted arm (above the head)**

Widen FOV to include subclavian arteries.

1st Injection:

Patient Positioning: Patient should lay supine with the **affected** arm at the patient's side and the palm of the hand facing up. The **unaffected** arm should be positioned above the patient's head, as straight as possible.

Tracker: Aortic Arch

Injection Rate: 4-5 mLs per second

Contrast amount: **75** mLs

Contrast Selection: Please see most recent version of Contrast Selection Flow Chartart

Saline- 30cc pre to **check IV patency**

Acquisition Parameters:

kVp	120
mAs	300
Thickness/Interval	3mm x 3mm
FOV	350
Tube Rotation	.75sec
Pitch	1.172
Collimation	64x.625

Reconstruction Algorithm:

ENHANCED: Sharp (C)

Recons: THINS 1.5 mm x .75mm

Routines 33mm x 33mm

VENOUS PHASE: 90 seconds post-injection.

Coverage: **Carina through elbow of abducted arm (above the head)**

Widen FOV to include subclavian arteries.

Acquisition Parameters:

kVp	120
mAs	250
Thickness/Interval 3	3mm x 33mm
FOV	350mm
Tube Rotation	.75 sec
Pitch	1.172
Collimation	64x.625

Reconstruction Algorithm:

Sharp (C)

Recons: Routine 33mm x 33mm

	Thins 1.5	1.5mm x 0.75mm
Reformats:	AXIAL MIP	8mm x 4mm (Tera Recon)
ARTERIAL:	COR/SAG MIPS 7	7mm x 3mmmm x 3mm

COR/ SAG/ Right or Left Subclavian Artery (The Subclavian artery reformats are centerline reconstructions of the aortic arch through the affected side subclavian artery)

VENOUS: COR/SAG MPR 3mm x 3mm (Tera Recon)

2nd Injection:

Patient Positioning: Patient should lay supine with the **unaffected** arm at the patient's side and the palm of the hand facing up. The **affected** arm should be positioned above the patient's head, as straight as possible.

Tracker: Aortic Arch

Coverage: **Carina through elbow of abducted arm (above the head)**

Injection Rate: 4-5 mLs per second

Contrast amount: **75** mLs

Contrast Selection: Please see most recent version of Contrast Selection Flow Chart

Acquisition Parameters:

kVp	120
mAs	300
Thickness/Interval	3mm x 3mm
FOV	350
Tube Rotation	.75sec
Pitch	1.172
Collimation	64x.625

Reconstruction Algorithm:

ENHANCED: Sharp (C)

Recons:

THINS	1.5 mm x .75mm
Routine 3	3mm x 33mm

VENOUS PHASE: **90** seconds post-injection.

Coverage: **Carina through elbow of abducted arm (above the head)**

Widen FOV to include subclavian arteries.

Acquisition Parameters:

kVp	120
mAs	250
Thickness/Interval 3	3mm x 33mm
FOV	350mm
Tube Rotation	.75 sec
Pitch	1.172
Collimation	64x.625

Reconstruction Algorithm

Sharp (C)

Recons:	Routine/Lung 33mm x 33mm	
	Thins 1.5	1.5mm x 0.75mm Reformats
Reformats:	AXIAL MIP	8mm x4mm (Tera Recon)
ARTERIAL:	COR/SAG MIPS 7	7mm x 3mmmm x 3mm

**COR/ SAG/ Right or Left Subclavian Artery (The Subclavian artery reformats are centerline reconstructions of the aortic arch through the affected side subclavian artery)

VENOUS:	COR/SAG MPR 3mm x 3mm (Tera Recon)

CTA ABDOMEN/PELVIS

INDICATIONS: AAA/leak/post endograph stent placement eval/aortic dissection/mesenteric ischemia/renal artery stenosis

Preparation: NPO 2 hours prior to scan

18G-20G angiocath in AC or higher

Coverage:

Diaphragm through pubic symphysis

Venous 3D recon 1.5mm

Tracker: Descending Aorta

Injection Rate: 4-5 mLs per second

Contrast amount: 100 mLs

Contrast Selection: t Please see most recent version of Contrast Selection Flow Chart

Acquisition Parameters:

	kVp	120
	mAs	300
	Thickness/Interval	1.5 mm x .75mm
	FOV	350
	Tube Rotation	.75sec
	Pitch	.891
	Collimation	64x.625

Reconstruction Algorithm

	Sharp (C)	
Recons:	THINS	1.5 mm x .75mm
	Routines	3mm x 3mm

Reformats:

AAA/Mesenteric Ischemia

COR/SAG MIP	7mm x 3mm

Renal Arteries:

COR MIP	7mm x 3mm (orient to main axis of aorta on sag view)
SAG MIP	7mm x 3mm
CURVED	7mm x 3mm through renal arteries
RRA/LRA	7mm x 3mm through R/L renal artery ostium

******Post Endograft Studies ONLY: Delayed Venous phase imaging must be done to determine leaks-Delayed phase should occur at 300 seconds post injection******

CTA RUNOFF UPPER EXTREMITY

INDICATIONS: PAD/Ischemia to extremity/pain/claudication/cold extremity/arterial stenosis

Preparation: NPO 2 hours prior to scan

18G-20G angiocath in AC or higher of opposite extremity

Coverage: From arch to the finger tips with arm extended over the headrm arch to

Tracker: Aortic arch

Injection Rate: 4-5 mLs per second

Contrast amount: 100 mLs

Contrast Selection: Please see most recent version of Contrast Selection Flow Chartrt

Acquisition Parameters:

	kVp	120
	mAs	300
	Thickness/Interval	2 mm x 1mm
	FOV	350
	Tube Rotation	.75sec
	Pitch	.797
	Collimation	64x.625

Reconstruction Algorithm

	Sharp (C)	
Recons:	ANGIORUNOFF 2.0	2 mm x 1mm
	ANGIORUNOFF 5.0	5mm x 5mm
Reformats:	CHEST COR/SAG MIP	7mm x 3mm
	AXIAL MIP	8mm x4mm (TeraRecon)
	COR UPPER ARM MIP	7mm x 3mm
	COR FOREARM MIP	7mm x 3mm

CTA RUNOFF LOWER EXTREMITY

INDICATIONS: PAD/Ischemia to extremity/pain/claudication/arterial stenosis

Preparation: NPO 2 hours prior to scan

18G-20G angiocath in AC or higher

Coverage: Dome of liver through toes

Tracker: Descending Aorta

Injection Rate: 4-5 mLs per second

Contrast amount: 100 mLs

Contrast Selection: Please see most recent version of Contrast Selection Flow Chart

Acquisition Parameters:

	kVp	120
	mAs	300
	Thickness/Interval	2 mm x 1mm
	FOV	350
	Tube Rotation	.75sec
	Pitch	.797
	Collimation	64x.625

Reconstruction Algorithm

Sharp (C)

Recons:	ANGIORUNOFF 2.0	2 mm x 1mm
	ANGIORUNOFF 5.0	5mm x 5mm
Reformats:	ABD/PELV COR MIP	7mm x 3mm
	ABD/PELV SAG MIP	7mm x 3mm
	THIGHS MIP	7mm x 3mm
	(from superior acetabulum to just below knee joint)	
	CALVES MIP	7mm x 3mm
	[just below knee joint through the toes(end of data set)]	

*****Post Endograft Studies ONLY: Delayed Venous phase imaging must be done to determine leaks-Delayed phase should occur at 300 seconds post injection*****

CTA ABDOMEN & PELVIS WO/W CONTRAST
ACUTE GASTROINTESTINAL BLEED (EMERGENCY)

Indication: Acute GI bleed

Preparation: None, except removal of metal objects from scanning area

Coverage: Diaphragm to inferior pubic ramus.

Injection Rate: 4 ml/sec
IV – 20g angiocath in antecubital vein.

Contrast Volume: 100 mL

Contrast Selection Please see most recent version of Contrast Selection Flow Chart

Parameters:

kVp:	120kV
mA	250mAs
Thickness/Interval:	1mm x 0.8mm
Pitch:	0.828
Rotation Time:	0.5 seconds
Collimation:	64 x 0.625mm

Automatic tube current modulation and Iterative reconstruction(30%-40%) are utilized (GE)

Procedure: **UNENHANCED**
Diaphragm to inferior pubic ramus
…to depict any preexisting intraluminal hyperattenuating material, such as foreign bodies, opaque pills, hemostatic clips, suture material from previous surgery or residual barium in diverticula, that could be misinterpreted as active bleeding."

Low dose technique is used for the unenhanced series. 120 kV

ARTERIAL
Automated Bolus Triggering at 150 HU(using proximal aorta)

VENOUS

Scan Delay: 40-60 seconds after arterial phase (70-90 seconds post start of injection)

REFORMATS: **COR**
SAG

CTA Rectal Artery Embolization

INDICATIONS: Treatment for chronic hemorrhoidal disease, Chronic rectal bleeding, Internal hemorrhoids.

Preparation: NPO 2 hours prior to scan
18G-20G angiocath in AC or higher

Coverage: Diaphragm through pubic symphysis (rectum)

Tracker: Descending Aorta at the level of the liver *** Post injection of delay of sec*** **Threshold/ Hounsfield units (HU) of 175**

Injection Rate: 4-5 mLs per second

Contrast amount: 100 mLs

Contrast Selection: Please see most recent version of Contrast Selection Flow Chart

Acquisition Parameters:

	kVp	120
	mAs	300
	Thickness/Interval	1.5 mm x .0.5mm
	FOV	350
	Tube Rotation	0 .5sec
	Pitch	.8
	Collimation	64x.625

Reconstruction Algorithm:

Sharp (C)

Recons:	THINS	1.5mm x 0.5mm
	Routines	3mm x 3mm
Reformats:		
	COR MIP	7mm x 3mm
	COR/SAG MPR	3mm x 3mm

**Please refer to the images below of Rectal artery anatomy

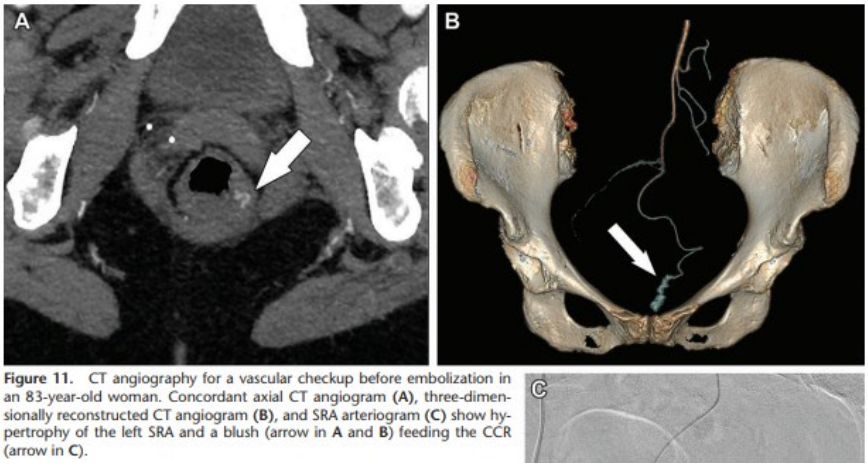


Figure 11. CT angiography for a vascular checkup before embolization in an 83-year-old woman. Concordant axial CT angiogram **(A)**, three-dimensionally reconstructed CT angiogram **(B)**, and SRA arteriogram **(C)** show hypertrophy of the left SRA and a blush (arrow in **A** and **B**) feeding the CCR (arrow in **C**).

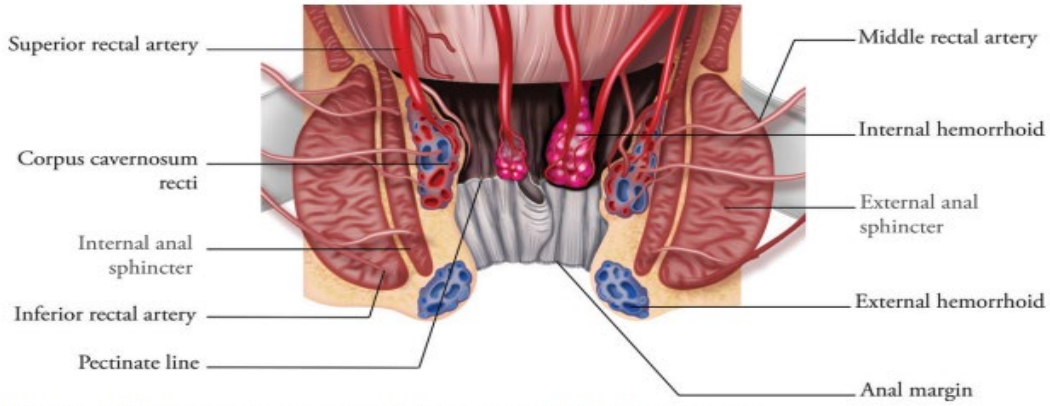


Figure 1. Illustration depicts the rectum, anal canal, and internal and external venous plexuses.

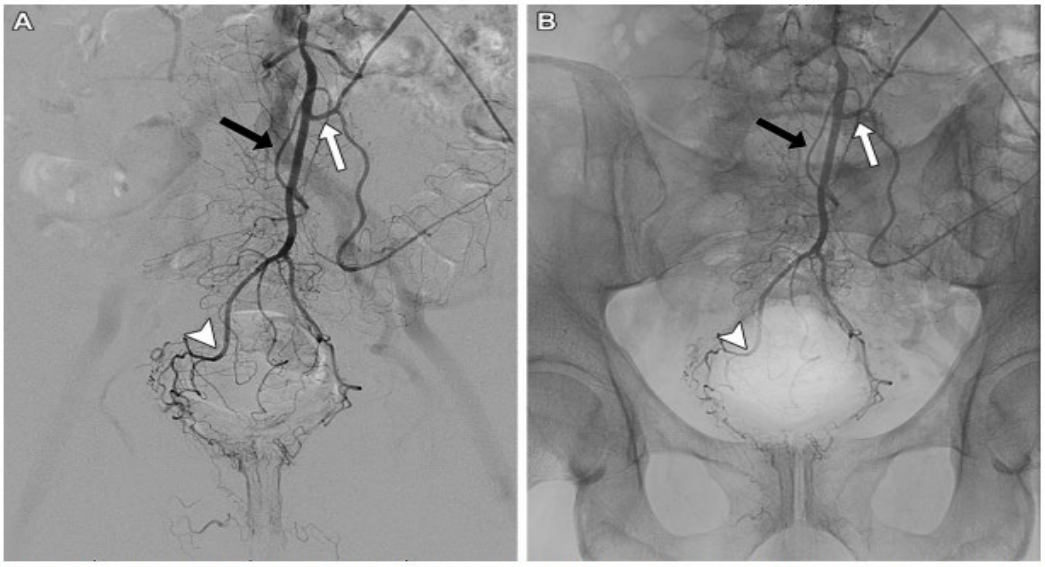


Figure 2. Anatomy of the IMA. Frontal digital subtraction angiography (DSA) **(A)** and angiographic **(B)** images show, in order, the left colonic artery (white arrow) and then the sigmoid artery (black arrow). The SRA (arrowhead) is the terminal branch of the IMA that ends in projection from the pubic bone.

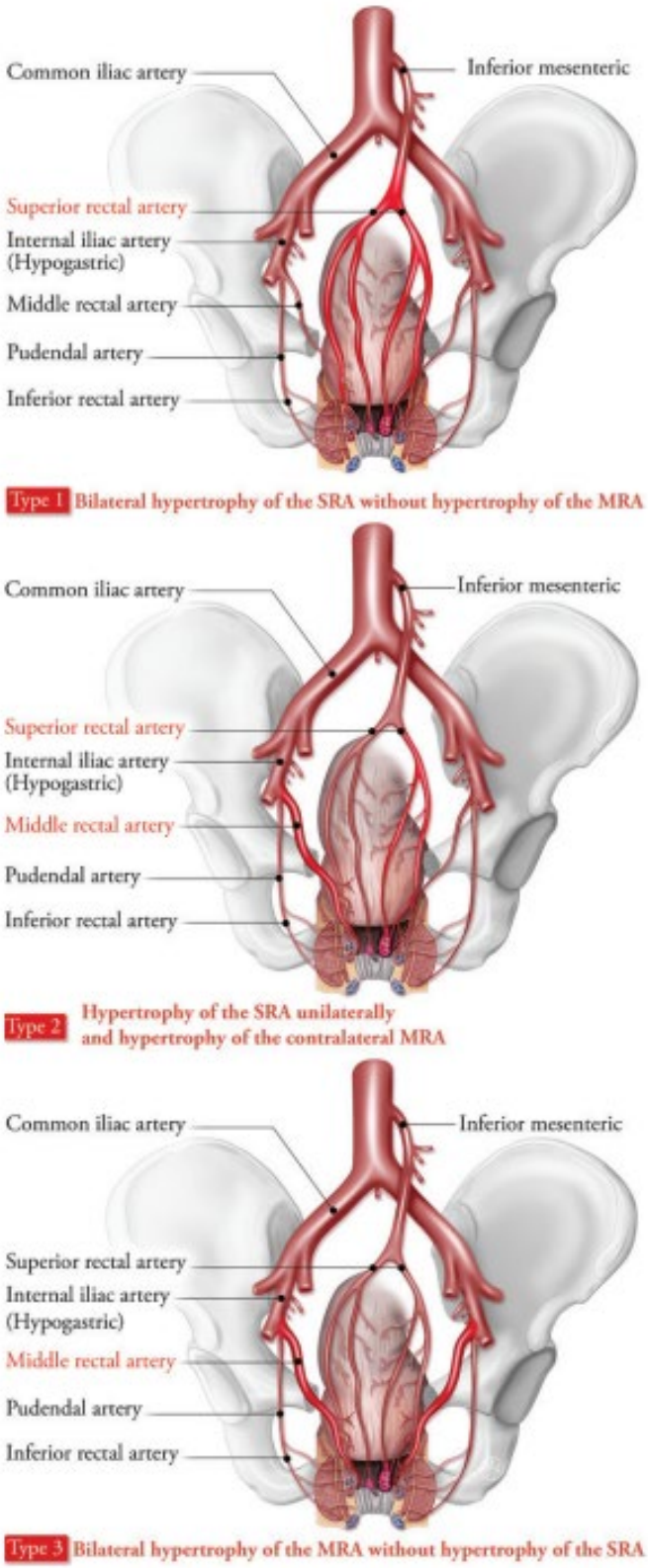


Figure 3. Drawings illustrate the types of arterial vascularization of hemorrhoids: type 1 involves bilateral hypertrophy of the SRA without hypertrophy of the MRA; type 2, hypertrophy of a unilateral SRA and hypertrophy of the contralateral MRA; and type 3, bilateral hypertrophy of the MRA without hypertrophy of the SRA.

WBLDCT

INDICATIONS: Assessment of Patients with Multiple Myeloma and other plasma cell disorders

Preparation: No preparation needed, except remove all metal objects

Coverage: Cranial Vault to Proximal tibial mataphysis

(Vertex through knees, including humeri in the field of view)

Acquisition Parameters:

kVp	120
mA	70(140 GE VCT)
Thickness/Interval	3mm x 3mm
FOV	350mm
Tube Rotation	0.5 sec
Pitch	0.984984
Collimation	0.5mm-1.5mm.5 mm-1.5mm

Reconstruction Algorithm

	Sharp (C)	
Recons:	Routine	3mm x 33mm
	Thins/Bone	2mm x 1mm or 2.5mm x 1.25mm Reformats
Reformats:	COR/SAG	3mm x 3mm (TeraRecon)

CT Venogram Head

INDICATIONS: Venous sinus thrombosis

Preparation: NPO 2 hours prior to scan

18G-20G angiocath in AC or higher

Coverage: Topo: Aortic Arch through vertex

Scan: C4-vertex

Delay: 45 seconds

Injection Rate: 4 mLs per second

Contrast amount: 100 mLs

Contrast Selection: Please see most recent version of Contrast Selection Flow Chart

Acquisition Parameters:

	kVp	120
	mAs	300
	Thickness/Interval	1mm x .5mm
	FOV	220
	Tube Rotation	.75sec
	Pitch	.923
	Collimation	64x.625

Reconstruction Algorithm

	Standard (B)	
Recons:	Thins	1.25mm x .625mm
	Routines	5mm x 5mm
Reformats:	COR/SAG MIP	7mm x 3mm
	BAV MIP	7mmx3mm
	Axial MIP	7mmx3mm

CT VENOGRAM CHEST

INDICATIONS: **SVC obstruction/Facial and arm swelling**

Preparation: NPO 2hrs Prior to IV Contrast ADM

Coverage: Lung apices through upper pole of kidneys to include adrenals

Injection Rate: 3 ml/ sec

Contrast amount: 100 mls

Contrast Selection: Please see most recent version of Contrast Selection Flow Chartrt

Scan Delay: 60 seconds (CAUDAL-CRANIAL)

Acquisition Parameters:

	kVp	100 (<140 lbs.) 120 (>140 lbs.)
	mAs	300
	Thickness/Interval	3mm x 33mm
	FOV	350mm
	Rotation	Tube .75sec
	Pitch	.891
	Collimation	64x.625

Reconstruction Algorithm:
Standard (B)

Recons:	Routine/Lung	3mm x 3mm
	Thins	1.5mm x .75mm
Reformats:	MPR COR/SAG	3mm x 3mm (TeraRecon
	Axial MIP	8mm x 4mm (CHEST)

CT VENOGRAM ABDOMEN PELVIS

INDICATIONS: Evaluate extent of deep venous thrombosis, evaluate venous anatomy (i.e., evaluate for May-Thurner syndrome)

Note: If the tech sees a liver lesion - NO NEED to do delays through the liver.

Preparation: NPO 2hrs Prior to IV Contrast ADM. 32 oz. of water 30 minutes before scan. (30 minute prep time waived in cases of ED patients)

Patient Position: Supine, feet down with arms above head

Coverage: 1 cm above diaphragm through lesser trochanter

Injection Rate: 3 ml/ sec

Contrast amount: 100 mls

Contrast Selection: Please see most recent version of Contrast Selection Flow Chartrt

Scan Delay: 110 seconds (CRANIAL-CAUDAL)

Acquisition Parameters:

kVp	100 (<140 lbs.) 120 (>140 lbs.)
mAs	300
Thickness/Interval	3mm x 3mm
FOV	350mm
Tube Rotation	.75sec
Pitch	.891
Collimation	64x.625

Reconstruction Algorithm:
Standard (B)

Recons:	Routine/Lung	3mm x 3mm
	Thins	2mm x 1mm
Reformats:	MPR COR/SAG	3mm x 3mm (TeraRecon)
	Axial MIP	8mm x 4mm (CHEST)

CT VENOGRAM CHEST ABDOMEN PELVIS

INDICATIONS: Evaluate extent of deep venous thrombosis, evaluate venous anatomy (i.e., evaluate for May-Thurner syndrome)

Note: If the tech sees a liver lesion - NO NEED to do delays through the liver.

Preparation: NPO 2hrs Prior to IV Contrast ADM. 32 oz. of water 30 minutes before scan. (30 minute prep time waived in cases of ED patients)

Patient Position: Supine, feet down with arms above head

Coverage: Lung apices through lesser trochanter

Injection Rate: 3 ml/ sec

Contrast amount: 100 mls

Contrast Selection: Please see most recent version of Contrast Selection Flow Chartrt

Scan Delay: Chest- 60 seconds (CAUDAL-CRANIAL)
Abdomen-Pelvis- 110 seconds (CRANIAL-CAUDAL)

Acquisition Parameters:

kVp	100 (<140 lbs.) 120 (>140 lbs.)
mAs	300
Thickness/Interval	3mm x 33mm
FOV	350mm
Tube Rotation	.75sec
Pitch	.891
Collimation	64x.625

Reconstruction Algorithm:
Standard (B)

Recons:	Routine/Lung	3mm x 3mm
	Super D	1.5mm x 0.75mm Chest Only
Reformats:	Thinshins	2mm x 1mmnly 2mm x 1mm
	MPR COR/SAG	3mm x 3mm(TeraRecon)
	Axial MIP	8mm x 4mm (CHEST)

Chest/Abdomen/Pelvis with Contrast

v5.8 Updated 2.23.24

Indications:	COPD/chest wall mass/cough/mets/sarcoidosis/ Abdominal pain/ Mass/ Abscess
Preparation:	NPO 2 hours prior to scan
Coverage:	Apices through symphysis pubis
Injection Rate:	2 – 4 ml per second
Contrast amount:	100 mLs
Contrast Selection:	Please see most recent version of Contrast Selection Flow Chart
Scan Delay:	Scan Delay: 70 seconds

Acquisition Parameters:	KVPvp	112020
	mAss	225050
	Thickness/Interval	3mm x 3mm 3mm x 3mm
	FOV	350mm 350mm
	Tube Rotation	0.75 sec 0.75 sec
	Pitch	1.172 1.172
	Collimation	64x.625 64x.625
Reconstruction Algorithm	ation Sharp (C))	
Recons	Routinee	3mm x 3mm
	Thinsins	2mm x 1mm Reformats
	SuperD	1.5mm x 0.75mm (apices through lung bases only)ces
Reformats		through lung bases only)
	COR/SAGG	3mm x 3mm (TeraRecon)
	Axial MIP	8mm x 4mm (TeraRecon) (apices through lung bases only)ly)

Chest/Abdomen/ Pelvis without Contrast

v5.8 Updated 2.23.24

Indications	COPD/chest wall mass/cough/mets/sarcoidosis/ Abdominal pain/ Mass/ Abscess
Preparation:	NPO 2 hours prior to scan
Coverage:	Apices through symphysis pubis

Acquisition Parameters:	Sharp C)	
Recons	Routineoutine	3mm x3mm
	Thineshins	2mm x 1mm Reformats
	SuperD	1mm x0.75mm (apices through lung bases only)
Reformats	COR/SAGG	3mm x3mm (Terarecon) mm)
	Axial MIP	8mm x4mm (Terarecon)(apices through lung bases only)only)

CTA Head and Neck Combo

v5.8 Updated 2.23.24

INDICATIONS: Code Neuro/TIA/CVA/vascular malformation/AVM/Aneurysm/ venous thrombosis/Pulsatile Tinnitus - See Below

Preparation: NPO 2 hours prior to scan
18G-20G angiocath in RAC or higher

Coverage: Topo: Aortic Arch through vertex

Tracker: Arch of aorta

Injection Rate: 4 mLs per second
rt

Contrast amount: Please see most recent version of Contrast Selection Flow Chart

Acquisition Parameters:

kVp	120	120
mAs	300	300
Thickness/Interval	1mm	1mm x 0.5mm
FOV	220	220
Tube Rotation	0.75sec	0.75sec
Pitch	0.923	0.923
Collimation	64 x 0.625	64 x 0.625

Reconstruction Algorithm: Standard (B))

Recons:

Thins	1.25mm x 0.625 (**)	1.25mm x 0.625 (**)5mm x
Routineoutine	5mm x 5mm	

Reformats:

COR/SAG MIP	7mm x 3mm	7mm x 3mm
BAV MIP axial	7mm x 3mm	7mm x 3mm
Right/Left Bifur MIP	7mm x 3mm	7mm x 3mm
Origins MIP	7mm x 3mm	7mm x 3mm
SAG MPR C-Spine	2mm x 1mm	2mm x 1mme

** axial thin series with contiguous head and neck CTA images**

**** Pulsatile Tinnitis - IAC Reformats for ENT of Fredericksburg only**

Recons:

Routine	0.8mm x 0.4mm
	1.25mm x 0.625mm (GE)
Soft Tissue	2mm x 1mm

Reformats:

COR/SAG Less than 1 mm

Reformat the RT and LT Temporal Bones separately (COR AND AXIAL), with magnification, less than 1mm.gnification, less than 1mm.

CT Virtual Colonoscopy

v5.8 Updated 2.23.24

INDICATIONS: Incomplete Colonoscopy, tortuous colon, redundant colon, Colon cancer screening

Coverage: Dome of liver through pubic symphysis

Preparation: **Please refer to VC prep below**

Patient Position: Supine and Prone (Decubitus only when requested by Radiologist)

Acquisition Parameters:

kVp	100
mAs	58
Thickness/Interval	2mm x 1mm
FOV	350mm
Tube Rotation	0.75 sec
Pitch	1.172
Collimation	64x.625
iDose	Level 5
Abdomen Window	WL 60 /WW 360
Colon Window	WL 0/WW 2500dow

Reconstruction Algorithm:

Recons: Sharp (C)

Thins 2mm x 1mm

Reformats:

ndow only)

SUPINE AND PRONE COR/SAG 3mm x 3mm (Tera Recon) (Colon window only)

MWHC Health Scan™ Medical Imaging of Fredericksburg

PATIENT NAME: _____

APPOINTMENT: _____
DAY **DATE** **TIME**

PREPARATION FOR VIRTUAL COLONOSCOPY

PLEASE NOTE:
To ensure the highest quality study, it is very important that you strictly follow the directions below.

****IF YOU HAVE HAD A COLOSTOMY, PLEASE INFORM US. YOU WILL NOT BE ABLE TO HAVE A VIRTUAL COLONOSCOPY. ****

- If you have **DIABETES, please call your doctor to discuss how your diabetes medicine (oral diabetes pills and /or insulin) doses should change before the VC.**

- If you take **PRESCRIPTION BLOOD THINNERS OR ANTI-PLATELET MEDICINES, do not stop taking them** unless your doctor tells you to stop them. Some examples include: Coumadin (warfarin), Plavix (clopidogrel), Effient (Prasugrel), Pradaxa (Dabigatran). VC can safely evaluate your colon without stopping these medications. Please stop iron tablets 5days before your VC exam, only if you will also be stopping the blood thinner or anti-platelet medication. Otherwise you may keep taking iron.

- If you get **DIVERTICULITIS** before your VC Exam, contact your doctor first for treatment. Then contact the VC office to reschedule our exam for at least six weeks after your treatment is complete to allow your colon to heal.

THE DAY BEFORE YOUR EXAM: (Prep Day)
Starting at midnight the entire day **before** your exam (prep day), you may drink as many clear liquids as you want unless you are on a fluid restriction by your doctor. If you are on a fluid restriction, please speak with your doctor to make sure this prep is right for you. Drink **only clear liquids** for breakfast, lunch, dinner and snacks. **Do not eat any solid foods**. Drink plenty of fluid to avoid dehydration and to make the laxative work better. Avoid red or purple liquids (i.e., red Jell-O, cranberry juice, purple sports drinks).

CLEAR LIQUIDS INCLUDE:
- Gatorade, Powerade (sports drinks with electrolytes are recommended to help with hydration)
- Water, tea, or coffee (**no** cream or milk; sugar or honey is okay to add)
- Vitamin Water, Crystal Light
- Bouillon or broth (chicken, beef, or vegetable)
- Jell-O, Popsicles (**no** fruit or cream added)
- Apple, white grape, or white cranberry juice (**no** orange, tomato, grapefruit, or prune juice)
- Soda such as Sprite, 7-Up, or ginger ale

Clear hard candy, gum
- Lemonade (with **no** pulp), iced tea
- Clear liquid protein drinks such as Ensure Clear, or Resource Breez

MWHC Health Scan™ Medical Imaging of Fredericksburg

Prep Day: _____

Helpful Hints:

- Drink with a straw to lessen the taste.
- For a sore bottom after a bowel movement, cleanse with baby wipes and apply a protective ointment such as A+D or Vaseline. TUCKS medicated cooling pads may also provide relief.

Follow the Bowel Prep medicine schedule. If you take other medicines, take them at least one hour before or at least one hour after taking the laxative (magnesium citrate). You may wish to place the kit in the refrigerator to make the contents more pleasant to drink. Or, you may drink them at room temperature. You may have as many clear liquids as you like between each step and up until midnight.

❖ **Step 1– 11:00AM take the two bisacodyl tablets (5mg each) with 1 glass (8 ounces) of clear liquids**.

- Do not chew or crush them.
- Do not take them within 1 hour of taking an antacid.

This will gently help move your bowels (6-8 hours after you take this medicine) to help the laxative taken in Step 2 work better. You can take these tablets and still do normal activities because they will rarely cause diarrhea.

❖ **Step 2 – 4:00PM**

- Drink one bottle (238mg) **of MiraLAX**
- Drink 4 to 6 cups of clear liquids before Step 3.

This is a laxative, so you should begin to have closely spaced bowel movements. You will want to be near a restroom. The time it takes for the laxative to start working varies for each person.

- **PLEASE PURCHASE MIRALAX AT WALMART, TARGET, ANY STORE CARRIES IT* 1 BOTTLE ONLY (238mg)**

❖ **Step 3 – 7:00PM:**

- Drink the second bottle (238mg) of **MiraLAX**
- Drink 4 to 6 cups of clear liquids before Step 4.

This is a laxative and will continue the process of cleaning out the colon.

❖ **Step 4 – 10:00PM:**

- Drink the one bottle (30mL) of **diatrizoate** undiluted followed with 1 (8ounces) clear juice, soda or water **OR** you may mix **diatrizoate** with clear juice, soda or water you **MUST drink the entire amount.**

MWHC Health Scan™ Medical Imaging of Fredericksburg

THE DAY OF THE EXAM

Do not eat or drink anything after midnight on your exam day until you are advised to after your exam. You may take your daily medicines as prescribed with small sips of water. If you haven't been able to have a bowel movement or to finish the prep kit, please call to schedule the exam for a later date.

If you have diabetes, test your blood glucose level more often when you can't eat as well as before your exam. You should adjust your insulin or oral diabetes pills as discussed with your doctor. If your glucose level is low (less than 70 mg/dl) or you have symptoms, please drink a clear liquid that contains sugar or take glucose tablets. We can still do the exam unless you need to eat solid food to maintain your blood glucose. It is better to maintain your blood glucose than to have the exam. We can always schedule your VC in the future.

You do not need to have a family member or friend drive you to and from the VC exam, as you will not be given any medicine that will make you sleepy.

During the VC Exam

You should allow yourself 45 minutes to 1 hour total for changing clothes and talking with the CT technologist. You will not need pain or sedation medicine. You will be asked to change into a hospital gown and then taken to the CT exam room where you will lie on the CT exam table. A small tube will be gently placed a very short distance into your rectum. Carbon dioxide will be placed slowly into your colon. The exam should not be painful though you may have some abdominal fullness, discomfort, or cramping during the exam. You may feel the urge to have a bowel movement. These feelings should go away as soon as the exam is over. Pictures are taken of your abdomen and pelvis while you are lying on your back and then on your stomach. You will be asked to hold your breath for about 10 seconds while the CT scanner takes pictures.

After the Exam

Many patients return to work or other activities after the exam is over. VC also allows the doctor to take a limited look outside the colon for problems in the abdomen and pelvis. The results will be sent your doctor in the full VC report. We suggest you call his or her office to schedule a follow-up appointment.

CT PEDIATRIC ABDOMEN & PELVIS WITH CONTRAST

INDICATIONS: Abdominal pain/ Mass/ Abscess

Preparation: Pediatric patients (16 and under) prep is 50 mL Omnipaque 240 mixed in 1 liter of water and administered as recommended below:

0-6 months	40-60 ml
6-18 months	120-160 ml
18 months -3 years	150-240 ml
3- 12 years	240-360 ml
12 years and above	480 ml

Scan 90 minutes after starting to drink contrast.

Coverage:2" above xiphoid through symphysis pubis

Injection Rate:1-2 ml per sec

Contrast amount: Weight based – 2 ml/kg.

Contrast Selection: Please see most recent version of Contrast Selection Flow Chart

Scan Delay:60 - 75 seconds

Acquisition Parameters:

****Ensure that all scans are utilizing care dose, i dose, or vendor equivalents.**

Patient weight	KvP
less than 10 kg	100
10-60 kg	100
60-70 kg	120

Thickness/Interval	3mm x 3mm
FOV	180 mm
Tube Rotation	0.75sec
Pitch	1.014
Collimation	64x.625

Reconstruction Algorithm:	Standard (B)	
Recons:	Routine	3mm x 3mm
	Thins	2mm x 1mm
Reformats:	MPR -SAG/COR	3mm x 3mm