

Chest CT Protocols

STANDARD	CTA/CTV	CARDIAC
Chest	CTA Thorax	Calcium Score
Pectus Excavatum	CTA Thorax Dissection	CTA Coronary
Chest Low Dose	CTV Chest	TAVR
Lung Screening	CTA Pulmonary Arteries	Watchman/Pulmonary vein
High Res Chest	Thoracic Outlet	Lead Extraction
Chest & Neck	TMVR	
Tracheobronchomalacia	CARDIAC RESEARCH	
Esophogram	ENCIRCLE	
	TRICUSPID/EVOQUE	
	RESTORE	
	ENVISION	
		Coronary Artery Helper—Rm4

CALCIUM SCORE REVISED 1/15/26

SCAN	ENTIRE HEART
PATIENT POSITIONING	SUPINE/FEET FIRST/HANDS OVERHEAD/ECG LEADS/GROUNDING BRACELET
SCOUTS	AP & LATERAL
LANDMARK	STERNAL NOTCH
BREATHING INSTRUCTIONS	INSPIRATION
START SCAN	CARINA
END SCAN	BELOW HEART
DFOV	25
PREP GROUP DELAY/BOLUS TRACKING	N/A
ORAL CONTRAST	N/A
IV CONTRAST	N/A
IV SIZE	N/A
INJECTION RATE	N/A
RECON	2.5mm/3mm AXIAL RECONS-STANDARD ALGORITHM
REFORMAT	NONE
PACS IMAGES	SCOUTS, AXIAL IMAGES, DOSE REPORT, 3D
3D	YES
SPECIAL NOTES	
ESTIMATED DLP	
ESTIMATED CTDI	

CHEST & NECK

REVISED 1/15/26

SCAN	ENTIRE CHEST TO ADRENALS & ENTIRE NECK
PATIENT POSITIONING	SUPINE/ARMS UP FOR CHEST---ARMS DOWN FOR NECK
SCOUTS	AP & LATERAL, SCOUT WITH ARMS AT SIDES
LANDMARK	STERNAL NOTCH
BREATHING INSTRUCTIONS	INSPIRATION (CHEST)---DO NOT SWALLOW (NECK)
START SCAN	CHEST: ABOVE APICES NECK: TOP OF EAR
END SCAN	CHEST: BELOW ADRENALS NECK: BELOW CLAVICLES
DFOV	CHEST: TO PATIENT NECK: 20
PREP GROUP DELAY/BOLUS TRACKING	CHEST: 25s AFTER START OF INJECTION NECK: 90s after start of injection
ORAL CONTRAST	N/A
IV CONTRAST	110CC OMNIPAQUE 350
IV SIZE	APPROPRIATE TO PATIENT
INJECTION RATE	3cc/sec
RECON	CHEST: 3mm/3.75 AXIAL STD, 0.625mm AXIAL STD, 3mm AXIAL LUNG NECK: 2mm AXIAL STD, 0.625mm AXIAL STD, 0.625mm AXIAL BONE (HYOID TO TOP OF SCAN), ANGLE CUTS/IMAR
REFORMAT	CHEST: 3mm CORONAL & SAGITTAL NECK: 2mm CORONAL & SAGITTAL
PACS IMAGES	CHEST: AXIAL STD 3mm, AXIAL THN, AXIAL LUNG, COR, SAG NECK: AXIAL STD 2mm, AXIAL STD THN, HYOID, ANGLE/IMAR, COR, SAG
3D	N/A
SPECIAL NOTES	
ESTIMATED DLP	
ESTIMATED CTDI	

CHEST LOW DOSE

REVISED 1/15/26

SCAN	CHEST THROUGH DIAPHRAGM
PATIENT POSITIONING	SUPINE/ARMS OVERHEAD
SCOUTS	AP & LATERAL
LANDMARK	STERNAL NOTCH
BREATHING INSTRUCTIONS	INSPIRATION
START SCAN	ABOVE APICES
END SCAN	THROUGH LUNG BASES
DFOV	TO PATIENT
PREP GROUP DELAY/BOLUS TRACKING	N/A
ORAL CONTRAST	N/A
IV CONTRAST	N/A
IV SIZE	N/A
INJECTION RATE	N/A
RECON	2.5mm AXIAL STD, 1.25mm AXIAL STD, 2.5mm AXIAL LUNG
REFORMAT	3mm CORONAL AND SAGITTAL, AXIAL MIP LUNG WINDOW 6mm thickness/3mm spacing
PACS IMAGES	ALL RECONS LISTED ABOVE; ALL REFORMATS LISTED ABOVE
3D	N/A
SPECIAL NOTES	
ESTIMATED DLP	
ESTIMATED CTDI	

CHEST WITH OR WITHOUT CONTRAST

REVISED 1/15/26

SCAN	CHEST THROUGH ADRENAL GLANDS
PATIENT POSITIONING	SUPINE, ARMS OVERHEAD
SCOUTS	AP & LATERAL
LANDMARK	STERNAL NOTCH
BREATHING INSTRUCTIONS	INSPIRATION
START SCAN	ABOVE APICES
END SCAN	BELOW ADRENAL GLANDS
DFOV	TO PATIENT
PREP GROUP DELAY/BOLUS TRACKING	25sec AFTER START OF INJECTION—NON-CONTRAST, SAME SCAN PARAMETERS NO PREP GROUP DELAY
ORAL CONTRAST	N/A
IV CONTRAST	60cc OMNIPAQUE 350
IV SIZE	APPROPRIATE TO PATIENT
INJECTION RATE	2-3CC/sec
RECON	3mm AXIAL STD, 3mm AXIAL LUNG, 1.25mm AXIAL STD
REFORMAT	3mm CORONAL & SAGITTAL
PACS IMAGES	ALL RECONS LISTED ABOVE; ALL REFORMATS LISTED ABOVE
3D	N/A
SPECIAL NOTES	PECTUS EXCAVATUM: Start scan above Manubrium, extend below the tip of the Xyphoid (do not need apices or all of ribs), in bone 5.0mm q 5.0mm in a standard algorithm recons and thin bone recons. **Per Dr. Czum CHEST CT MODIFICATIONS: PLEURAL EFFUSION WORK-UP: To Look for underlying lung pathology in the setting of known or unknown etiology. Prone (preferred) or decubitus (if prone not possible) ESOPHAGEAL MASS WORK-UP: Oral Barium contrast administered on table immediately before scan. ESOPHAGEAL POST-OP LEAK: Oral water soluble contrast administered on table immediately before scan. SOLITARY PULMONARY NODULE: 12 cm FOV reconstruction covering known focal pathology 1.25mm thick by 1.25mm interval, limited to target lesion of interest.
ESTIMATED DLP/CTDI	

CT ESOPHOGRAM

REVISED 7/14/26

SCAN	Series 1: Have patient sit upright on table and drink 100cc oral contrast then lie down and scan non-contrast chest Series 2: While supine, have patient drink 50cc oral contrast with head turned to side and then scan chest with contrast: 50 sec delay Series 3: While prone, have patient drink 50cc oral contrast with head turned and then scan chest, no additional IV
PATIENT POSITIONING	Supine for Series 1 & 2, Prone for Series 3
SCOUTS	AP & Lateral
LANDMARK	EAM
BREATHING INSTRUCTIONS	Inspiration
START SCAN	Angle of mandible
END SCAN	Through diaphragm
DFOV	To body
PREP GROUP DELAY/BOLUS TRACKING	Series 1: no delay Series 2: 50 sec delay Series 3: no delay
ORAL CONTRAST	100cc prior to non contrast scan (Series 1), additional 50cc prior to contrast injection for Series 2
IV CONTRAST	50cc
INJECTION RATE	3cc/sec
RECON	Series 1: 1.25mm/1.0mm Axial standard, 1.25mm/1.0mm Axial bone algorithm/kernel (lung window) Series 2: 1.25mm/1.5mm Axial standard and 2.5mm/2.0mm Axial standard Series 3: 1.25mm/1.5mm Axial standard
REFORMAT	Series 1: 2x2 Sagittal, 2x2 Coronal bone window Series 2 & 3: 2x2 Sagittal, 2x2 Coronal standard window Series 2 & 3: Axial MIPS 6mm x 3mm lung window of entire scan
PACS IMAGES	All recon and reformat images
3D	None
SPECIAL NOTES	**this is primarily done on ED patients overnight when fluoro is not available. If ordered outside of that timeframe, consult with radiologist to confirm this is the correct study. CT is NOT preferred over fluoro.
ESTIMATED DLP/CTDI	

CTA PULMONARY ARTERIES

REVISED 1/15/26

SCAN	CHEST THROUGH LUNG BASES
PATIENT POSITIONING	SUPINE, ARMS OVERHEAD
SCOUTS	AP & LATERAL
LANDMARK	STERNAL NOTCH
BREATHING INSTRUCTIONS	INSPIRATION
START SCAN	ABOVE APICES
END SCAN	THROUGH LUNG BASES
DFOV	TO PATIENT
PREP GROUP DELAY/BOLUS TRACKING	BOLUS TRACKING OFF MAIN PULMONARY ARTERY
ORAL CONTRAST	N/A
IV CONTRAST	WEIGHT BASED
IV SIZE	18g-20g
INJECTION RATE	WEIGHT BASED
RECON	** COLLIMATE TO RIBS FOR RECONS**2.5mm AXIAL STD, 3mm AXIAL LUNG, 1.25mm AXIAL STD
REFORMAT	** COLLIMATE TO RIBS FOR REFORMATS** 3mm thickness x 1.5mm spacing CORONAL & SAGITTAL MIPS 3mm CORONAL AND SAGITTAL MPR
PACS IMAGES	ALL RECONS AND REFORMATS LISTED ABOVE
3D	N/A
ESTIMATED DLP/CTDI	

CTA THORAX

REVISED 1/15/26

SCAN	
PATIENT POSITIONING	SUPINE, ARMS OVERHEAD
SCOUTS	AP & LATERAL
LANDMARK	STERNAL NOTCH
BREATHING INSTRUCTIONS	INSPIRATION
START SCAN	ABOVE APICES
END SCAN	BELOW DIAPHRAGM
DFOV	TO PATIENT
PREP GROUP DELAY/BOLUS TRACKING	BOLUS TRACKING ON DESCENDING AORTA
ORAL CONTRAST	N/A
IV CONTRAST	WEIGHT BASED
IV SIZE	18g OR 20g
INJECTION RATE	4-5cc/sec
RECON	2.5mm AXIAL STD, 3mm AXIAL LUNG, 0.625mm AXIAL STD
REFORMAT	3mm thickness x 1.5mm spacing MIPS
PACS IMAGES	ABOVE RECONS, REFORMATS AND 3D IMAGES
3D	YES
SPECIAL NOTES	**IF REQUESTED TO MINIMIZE AORTIC PULSATION ARTIFACT BY AORTIC ROOT OR FOR SINUS OF VALSALVA ANEURYSM, DO GATED CTA THORACIC AORTA
ESTIMATED DLP/CTDI	

CTA THORAX DISSECTION

REVISED 1/15/26

SCAN	
PATIENT POSITIONING	SUPINE, ARMS OVERHEAD
SCOUTS	AP & LATERAL
LANDMARK	STERNAL NOTCH
BREATHING INSTRUCTIONS	INSPIRATION
START SCAN	ABOVE APICES
END SCAN	BELOW DIAPHRAGM*OR FURTHER IF PROTOCOL DIRECTS
DFOV	TO PATIENT
PREP GROUP DELAY/BOLUS TRACKING	NON-CONTRAST CT CHEST, FOLLOWED BY CTA: BOLUS TRACKING ON DESCENDING AORTA
ORAL CONTRAST	N/A
IV CONTRAST	WEIGHT BASED
IV SIZE	18g OR 20g
INJECTION RATE	4-5cc/sec
RECON	NON-CONTRAST CHEST: 3mm AXIAL STD CTA: 2.5mm AXIAL STD, 3mm AXIAL LUNG, 0.625mm AXIAL STD
REFORMAT	NON-CONTRAST: NONE CTA: 3mm thickness x 1.5mm spacing MIPS
PACS IMAGES	ABOVE RECONS, REFORMATS AND 3D IMAGES
3D	YES
SPECIAL NOTES	
ESTIMATED DLP/CTDI	

CTV CHEST

REVISED 1/15/26

SCAN	
PATIENT POSITIONING	SUPINE, ARMS OVERHEAD
SCOUTS	AP & LATERAL
LANDMARK	STERNAL NOTCH
BREATHING INSTRUCTIONS	INSPIRATION
START SCAN	ABOVE APICES
END SCAN	BELOW ADRENAL GLANDS
DFOV	TO PATIENT
PREP GROUP DELAY/BOLUS TRACKING	60sec AFTER INJECTION
ORAL CONTRAST	N/A
IV CONTRAST	110cc OMNIPAQUE 350
IV SIZE	18g OR 20g
INJECTION RATE	4cc/sec
RECON	3mm AXIAL STD, 3mm AXIAL LUNG, 1.25mm AXIAL STD
REFORMAT	3mm thickness x 1.5mm spacing MIPS 3mm CORONAL & SAGITTAL
PACS IMAGES	ABOVE LISTED RECONS, REFORMATS AND 3D IMAGES
3D	YES
SPECIAL NOTES	
ESTIMATED DLP/CTDI	

CTA CORONARY ARTERIES

REVISED 1/15/26

SCAN	ENTIRE HEART
PATIENT POSITIONING	SUPINE, ARMS OVERHEAD, ECG LEADS, GROUNDING BRACELET
SCOUTS	AP & LATERAL
LANDMARK	STERNAL NOTCH
BREATHING INSTRUCTIONS	INSPIRATION
START SCAN	CARINA
END SCAN	BELOW HEART
DFOV	20
PREP GROUP DELAY/BOLUS TRACKING	CALCIUM SCORE: NO PREP GROUP DELAY CTA: BOLUS TRACK ON DESCENDING AORTA
ORAL CONTRAST	N/A
IV CONTRAST	WEIGHT BASED
IV SIZE	18g OR 20g DIFFUSICS
INJECTION RATE	WEIGHT BASED
RECON	2.5mm AXIAL STD CA SCORE, SS FREEZE, BEST SYSTOLIC/DIASTOLIC, FULL FOV AXIAL LUNG FOR DR. O'LOUGHLIN
REFORMAT	NONE
PACS IMAGES	ABOVE LISTED RECONS, REFORMATS AND 3D IMAGES
3D	YES
SPECIAL NOTES	Medicated coronaries will need nursing to administer additional IV Metoprolol and sublingual nitro if patient meets criteria
ESTIMATED DLP/CTDI	

CTA TAVR

REVISED 1/15/26

SCAN	ENTIRE HEART
PATIENT POSITIONING	SUPINE, ARMS OVERHEAD, ECG LEADS, GROUNDING BRACELET
SCOUTS	AP & LATERAL
LANDMARK	STERNAL NOTCH
BREATHING INSTRUCTIONS	INSPIRATION
START SCAN	CARINA
END SCAN	BELOW HEART
DFOV	20
PREP GROUP DELAY/BOLUS TRACKING	CALCIUM SCORE: NO PREP GROUP DELAY CTA HEART: BOLUS TRACK ON DESCENDING AORTA CTA CAP: BUILT IN DELAY ~4-5sec AFTER CORONARY
ORAL CONTRAST	N/A
IV CONTRAST	WEIGHT BASED
IV SIZE	18g OR 20g DIFFUSICS
INJECTION RATE	WEIGHT BASED
RECON	CA SCORE: 2.5mm AXIAL STD CTA HEART: 0.625mm AXIAL STD, SS FREEZE, BEST SYSTOLIC/DIASTOLIC, 2.5mm AXIAL LUNG (FULL FOV FOR DR. O'LOUGHLIN) CTA CAP: 0.625mm AXIAL STD, 2.5mm AXIAL LUNG
REFORMAT	NONE
PACS IMAGES	ABOVE LISTED RECONS, REFORMATS AND 3D IMAGES
3D	YES
SPECIAL NOTES	
ESTIMATED DLP/CTDI	

CTA TMVR

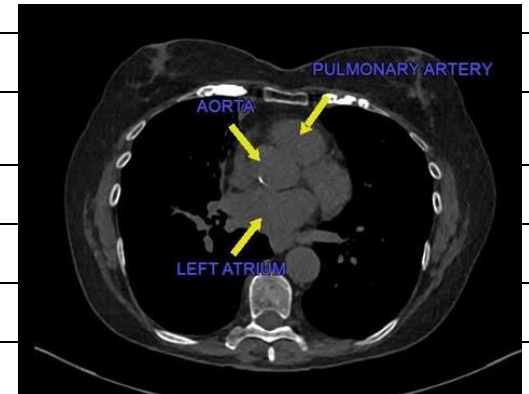
REVISED 1/15/26

SCAN	ENTIRE HEART
PATIENT POSITIONING	SUPINE, ARMS OVERHEAD, ECG LEADS, GROUNDING BRACELET
SCOUTS	AP & LATERAL
LANDMARK	STERNAL NOTCH
BREATHING INSTRUCTIONS	INSPIRATION
START SCAN	CARINA
END SCAN	BELOW HEART
DFOV	20
PREP GROUP DELAY/BOLUS TRACKING	CALCIUM SCORE: NO PREP GROUP DELAY CTA HEART: BOLUS TRACK ON ASCENDING AORTA CTA CAP: BUILT IN DELAY AFTER CORONARY
ORAL CONTRAST	N/A
IV CONTRAST	WEIGHT BASED
IV SIZE	18g OR 20g DIFFUSICS
INJECTION RATE	WEIGHT BASED
RECON	CA SCORE: 2.5mm AXIAL STD CTA HEART: 0.625mm AXIAL STD, SS FREEZE, BEST SYSTOLIC/DIASTOLIC, 2.5mm AXIAL LUNG (FULL FOV FOR DR. O'LOUGHLIN) CTA CAP: 0.625mm AXIAL STD, 2.5mm AXIAL LUNG
REFORMAT	NONE
PACS IMAGES	ABOVE LISTED RECONS, REFORMATS AND 3D IMAGES
3D	YES
SPECIAL NOTES	
ESTIMATED DLP/CTDI	Ca Score: DLP 19.51 CTDI: 1.22 TAVR : DLP 342.31 CTDI 21.39

CTA WATCHMAN/PULMONARY VEIN

REVISED 1/15/26

SCAN	ENTIRE HEART, 2 PHASES
PATIENT POSITIONING	SUPINE, ARMS OVERHEAD, ECG LEADS, GROUNDING BRACELET
SCOUTS	AP & LATERAL
LANDMARK	STERNAL NOTCH
BREATHING INSTRUCTIONS	INSPIRATION
START SCAN	1cm ABOVE CARINA
END SCAN	BELOW HEART **CLIP APEX IF NEEDED TO OBTAIN PROPER ANATOMY**
DFOV	20
PREP GROUP DELAY/BOLUS TRACKING	PHASE ONE: BOLUS TRACK OFF LEFT ATRIUM SECOND PHASE: 60 SECOND DELAY AFTER INJECTION
ORAL CONTRAST	N/A
IV CONTRAST	WEIGHT BASED
IV SIZE	18g OR 20g DIFFUSICS
INJECTION RATE	WEIGHT BASED
RECON	3mm AXIAL STD, 3mm AXIAL LUNG, 0.625mm AXIAL STD
REFORMAT	1 ST PHASE: 3mm thickness x 1.5mm spacing CORONAL & SAGITTAL MIPS 2 ND PHASE: NONE
PACS IMAGES	ABOVE LISTED RECONS, REFORMATS AND 3D IMAGES
3D	YES
SPECIAL NOTES	
ESTIMATED DLP/CTDI	DLP: 83.26 CTDI: 5.20



LEAD EXTRACTION

REVISED 1/15/26

SCAN	ABOVE PACEMAKER TO BELOW HEART
PATIENT POSITIONING	SUPINE / FEET FIRST
SCOUTS	A/P & LATERAL
LANDMARK	GE. STERNAL NOTCH, SIEMENS: ABOVE THE SHOULDERS
BREATHING INSTRUCTIONS	INSPIRATION
START SCAN	ABOVE PACEMAKER
END SCAN	BELOW HEART
DFOV	18.5
PREP GROUP DELAY/BOLUS TRACKING	70 SEC
ORAL CONTRAST	N/A
IV CONTRAST	150CC OMNIPAQUE 350
IV SIZE	18GA /20GA
INJECTION RATE	4CC/SEC
RECON	(1)3.0mm AXIAL RECON – STANDARD ALGORITHM, (2) 0.6mm AXIAL RECON – STANDARD ALGORITHM- PHASES (3) 0.6mm AXIAL RECON – STANDARD ALGORITHM
REFORMAT	
PACS IMAGES	SCOUTS, RECONS, AND DOSE REPORT
3D	3mm q 1.5mm MIP CORONAL AND SAGITTAL 3D ROTATION HEART AND PACEMAKER SAX, 2CH AND 4CH CARDIAC REFORMATS 3mm q 1.5mm MIP CORONAL AND SAGITTAL REFORMATS
SPECIAL NOTES	
ESTIMATED DLP/CTDI	

ENCIRCLE

REVISED 1/15/26

SCAN	CALCIUM SCORE, CTA HEART
PATIENT POSITIONING	SUPINE, ARMS OVERHEAD, ECG LEADS, GROUNDING BRACELET
SCOUTS	AP & LATERAL
LANDMARK	STERNAL NOTCH
BREATHING INSTRUCTIONS	INSPIRATION
START SCAN	CARINA
END SCAN	BELOW HEART
DFOV	20
PREP GROUP DELAY/BOLUS TRACKING	BOLUS TRACKING ON ASCENDING AORTA
ORAL CONTRAST	N/A
IV CONTRAST	WEIGHT BASED
IV SIZE	18g OR 20g DIFFUSICS
INJECTION RATE	WEIGHT BASED
RECON	CA SCORE: 2.5mm AXIAL STD CTA HEART: 2.5mm AXIAL STD, 0.625mm AXIAL STD
REFORMAT	NONE
PACS IMAGES	ABOVE LISTED RECONS, REFORMATS AND 3D IMAGES
3D	YES
SPECIAL NOTES	
ESTIMATED DLP/CTDI	Ca Score: DLP 19.51 CTDI 1.22 Encircle: DLP 342.31 CTDI 21.39

TRICUSPID/EVOQUE

REVISED 1/15/26

SCAN	CALCIUM SCORE, CTA HEART, CAP
PATIENT POSITIONING	SUPINE, ARMS OVERHEAD, ECG LEADS, GROUNDING BRACELET
SCOUTS	AP & LATERAL
LANDMARK	STERNAL NOTCH
BREATHING INSTRUCTIONS	INSPIRATION
START SCAN	CA SCORE AND CTA HEART: CARINA CAP: ABOVE APICES
END SCAN	CA SCORE AND CTA HEART: BELOW HEART CAP: BELOW SYMPHIS PUBIS
DFOV	CA SCORE AND CTA HEART: 20 CAP: TO BODY
PREP GROUP DELAY/BOLUS TRACKING	CTA HEART: BOLUS TRACKING ON MAIN PULMONARY ARTERY CAP: 90 SECONDS POST INJECTION
ORAL CONTRAST	N/A
IV CONTRAST	WEIGHT BASED
IV SIZE	18g OR 20g DIFFUSICS
INJECTION RATE	WEIGHT BASED
RECON	CA SCORE: 2.5mm AXIAL STD CTA HEART: 2.5mm AXIAL STD, 0.625mm AXIAL STD CAP: 3mm AXIAL STD, 3mm AXIAL LUNG, 0.625mm AXIAL STD
REFORMAT	3mm CORONAL & SAGITTAL MPR
PACS IMAGES	ABOVE LISTED RECONS, REFORMATS AND 3D IMAGES
3D	YES
SPECIAL NOTES	
ESTIMATED DLP/CTDI	Ca Score: DLP 19.51 CTDI 1.22 TAVR: DLP 342.31 CTDI 21.39

RESTORE

REVISED 1/15/26

SCAN	HEART AND CTA CAP
PATIENT POSITIONING	SUPINE, FEET FIRST
SCOUTS	A/P & LATERAL
LANDMARK	(GE) STERNAL NOTCH
BREATHING INSTRUCTIONS	INSIRATION
START SCAN	(HEART) ASCENDING AORTA (CTA CAP) ABOVE THE CLAVICLES
END SCAN	(HEART) BASE OF THE HEART (CTA CAP) GREATER TROCHANTER
DFOV	20cm
PREP GROUP DELAY/BOLUS TRACKING	ASENDING AORTA
ORAL CONTRAST	N/A
IV CONTRAST	WEIGHT BASED
IV SIZE	18ga / 20ga RIGHT SIDE PREFFERED
INJECTION RATE	WEIGHT BASED
RECON	(HEART) MULTI PHASE (20 INCREMENTS OF 5%) (CAP) .625mm STD AXIAL CTA HEART: 0.625mm AXIAL STD, SS FREEZE, BEST SYSTOLIC/DIASTOLIC, 2.5mm AXIAL LUNG (FULL FOV FOR DR. O'LOUGHLIN)
REFORMAT	3mm CORONAL AND SAGITTAL MPR
PACS IMAGES	ABOVE LISTED RECONS, REFORMATS, DOSE REPORT AND SCOUTS
3D	YES
SPECIAL NOTES	
ESTIMATED DLP/CTDI	

ENVISION

REVISED 1/15/26

SCAN	NON-CON CALCIUM SCORE, ENHANCED HEART, CTA CAP
PATIENT POSITIONING	SUPINE FEET FIRST
SCOUTS	A/P & LATERAL
LANDMARK	(GE) STERNAL NOTCH
BREATHING INSTRUCTIONS	INSPIRATION
START SCAN	ENTIRE AORTIC ROOT/HEART, (CAP) UPPER THORACIC INLET, SUBCLAVIAN ARTERIES SHOULD BE INCLUDED IN THE SCAN
END SCAN	BELOW HEART, CTA- THE LESSER TROCHANTER
DFOV	CALCIUM SCORE AND CTA HEART 20 FOV CTA CAP: TO THE PATIENT
PREP GROUP DELAY/BOLUS TRACKING	DESCENDING AORTA AT THE LEVEL OF THE LEFT MAIN CORONARY
ORAL CONTRAST	N/A
IV CONTRAST	WEIGHT BASED
IV SIZE	18ga OR 20ga PREFERRED RIGHT SIDED OVER LEFT SIDE
INJECTION RATE	WEIGHT BASED
RECON	CA SCORE: 2.5mm AXIAL STD CTA HEART: 2.5mm AXIAL STD, 0.625mm AXIAL STD CAP: 3mm AXIAL STD, 3mm AXIAL LUNG, 0.625mm AXIAL STD
REFORMAT	3mm CORONAL & SAGITTAL MPR
PACS IMAGES	ABOVE LISTED RECONS, REFORMATS AND 3D IMAGES
3D	YES
SPECIAL NOTES	
ESTIMATED DLP/CTDI	

HIGH-RES CHEST

REVISED 1/15/26

SCAN	CHEST, I- SUPINE INSPIRATION, I- SUPINE EXPIRATION, AND I- PRONE INSPIRATION
PATIENT POSITIONING	FEET FIRST, SUPINE AND PRONE, ARMS OVERHEAD
SCOUTS	AP & LATERAL
LANDMARK	STERNAL NOTCH
BREATHING INSTRUCTIONS	INSPIRATION, AND EXPIRATION
START SCAN	SUPINE INSPIRATION AND PRONE INSPIRATION: ABOVE APICES SUPINE EXPIRATION: BELOW DIAPHRAGM
END SCAN	SUPINE INSPIRATION AND PRONE INSPIRATION: BELOW DIPAHHRAGM SUPINE EXPIRATION: ABOVE APICES
DFOV	TO PATIENT
PREP GROUP DELAY/BOLUS TRACKING	N/A
ORAL CONTRAST	N/A
IV CONTRAST	N/A
IV SIZE	N/A
INJECTION RATE	N/A
RECON	INSPIRATION: 2.5/3mm AXIAL RECON – STANDARD ALGORITHM, 1.25mm AXIAL RECON BONE ALGORITHM, , 1.25mm AXIAL RECON-STANDARD ALGORITHM, 6mm AXIAL STANDARD MIPS EXPIRATION: 1.25mm AXIAL BONE ALGORITHM PRONE INSPIRATION: 1.25mm BONE ALGORITHM
REFORMAT	INSPIRATION: 2mm CORONAL AND SAGITTAL
PACS IMAGES	ABOVE LISTED RECONS, REFORMATS
3D	N/A
SPECIAL NOTES	INSTRUCT THE PATIENT ON PROPER BREATHING INSTRUCTIONS
ESTIMATED DLP/CTDI	

LUNG SCREENING

REVISED 5/1/26

SCAN	CHEST
PATIENT POSITIONING	SUPINE, FEET FIRST
SCOUTS	A/P & LATERAL
LANDMARK	STERNAL NOTCH
BREATHING INSTRUCTIONS	INSPIRATION
START SCAN	ABOVE APICES
END SCAN	BELOW DIAPHRAGM
DFOV	TO PATIENT
PREP GROUP DELAY/BOLUS TRACKING	N/A
ORAL CONTRAST	N/A
IV CONTRAST	N/A
IV SIZE	N/A
INJECTION RATE	N/A
RECON	(1) 2.0mm AXIAL RECON – STANDARD ALGORITHM, (2) 2.0mm AXIAL RECON – LUNG ALGORITHM (3) 1.25mm AXIAL RECON – STANDARD ALGORITHM
REFORMAT	(1) 3.0 CORONAL AND SAGITTAL (2) 6.0mm q 3.0 AXIAL MIP LUNG
PACS IMAGES	ALL RECONS, REFORMATS, DOSE REPORT AND SCOUTS IMAGES
3D	N/A
SPECIAL NOTES	
ESTIMATED DLP/CTDI	

THORACIC OUTLET

REVISED 1/15/26

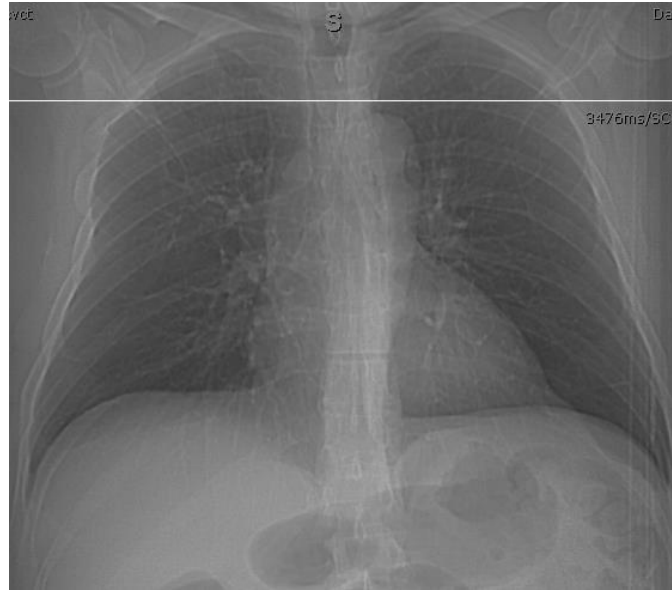
SCAN	ARTERIAL PHASE (ARMS DOWN), ARTERIAL PHASE (ARMS UP)
PATIENT POSITIONING	SUPINE / FEET FIRST
SCOUTS	A/P & LATERAL
LANDMARK	(GE) STERNAL NOTCH, (SEIMENS) ABOVE SHOULDER
BREATHING INSTRUCTIONS	INSPIRATION
START SCAN	CARINA
END SCAN	ABOVE SHOULDERS
DFOV	TO PATIENT, INCLUDE ARMPITS
PREP GROUP DELAY/BOLUS TRACKING	SMART PREP @ DESCENDING AORTA
ORAL CONTRAST	N/A
IV CONTRAST	100cc OMNIPAQUE 350—split 50/50 for each phase
IV SIZE	20ga or 18ga
INJECTION RATE	4cc/SEC
RECON	(1) 2.5mm/3.0mm AXIAL RECON -STANDARD ALGORITHM, (2) 1.25mm/1.5mm AXIAL RECON – STANDARD ALGORITHM
REFORMAT	(1) 3mm q 1.5mm MIP CORONAL AND SAGITTAL (2) 3mm CORONAL AND SAGITTAL
PACS IMAGES	ALL REFORMATS, RECONS, SCOUTS AND DOSE REPORT
3D	3D ROTATION ARCH AND VESSELS, SUBCLAVIAN CENTERLING REFORMATS FOR EACH ARM POSITION
SPECIAL NOTES	
ESTIMATED DLP/CTDI	

TRACHEOBRONCHOMALACIA

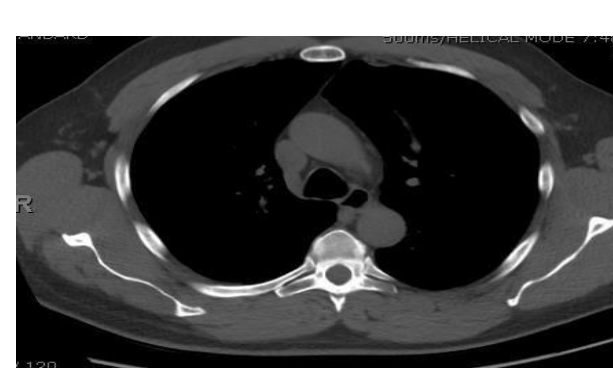
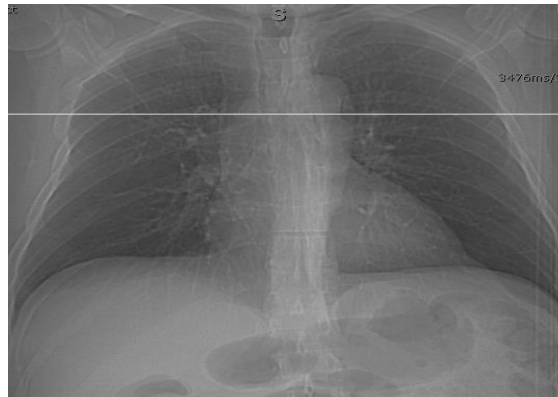
REVISED 1/15/26

SCAN	(1) INSPIRATORY – FULL COVERAGE, (2) EXPIRATORY -FULL COVERAGE, (3) DYNAMIC SERIES (DS) #1, UPPER TO MID-INTRATHORACIC TRACHEA, (4) DS#2, MID TO LOWER INTRATHORACIC TRACHEA (5) DS#3, JUST BELOW CARINA
PATIENT POSITIONING	SUPINE/ARMS UP
SCOUTS	A/P & LATERAL
LANDMARK	(GE) STERNAL NOTCH, (SIEMENS) ABOVE SHOULDERS
BREATHING INSTRUCTIONS	INSPIRATION / EXPIRATION / FREE BREATHING***
START SCAN	ABOVE APICES
END SCAN	BELOW ADRENAL
DFOV	TO PATIENT
PREP GROUP DELAY/BOLUS TRACKING	N/A
ORAL CONTRAST	N/A
IV CONTRAST	N/A
IV SIZE	N/A
INJECTION RATE	N/A
RECON	(1) (INSPIRATORY) 3.75mm AXIAL RECON – STANDARD, AND LUNG ALGORITHM, 1.25mm AXIAL RECON CHEST ALGORITHM, 1.25 q 10mm AXIAL RECON - BONE ALGORITHM, (2) (EXPIRATORY) 2.5mm AXIAL RECON – STANDARD ALGORITHM (3) 5.0mm AXIAL RECON - STANDARD ALGORITHM (EACH DYNAMIC SET)
REFORMAT	3MM SAGITTAL AND CORONAL (INSPIRATION)
PACS IMAGES	SCOUTS, REFORMATS, RECON, AND DOSE REPORT
3D	N/A
SPECIAL NOTES	*** FREE BREATHING: ASK PATIENT TO TAKE A BREATH IN, LET IT OUT, BREATH IN LET IT OUT (SLIGHTLY FASTER THAN INSTRUCTIONS FOR REGULAR CT) AND THEN BREATH IN AND OUT NORMALLY DURING THE SCAN
ESTIMATED DLP/CTDI	

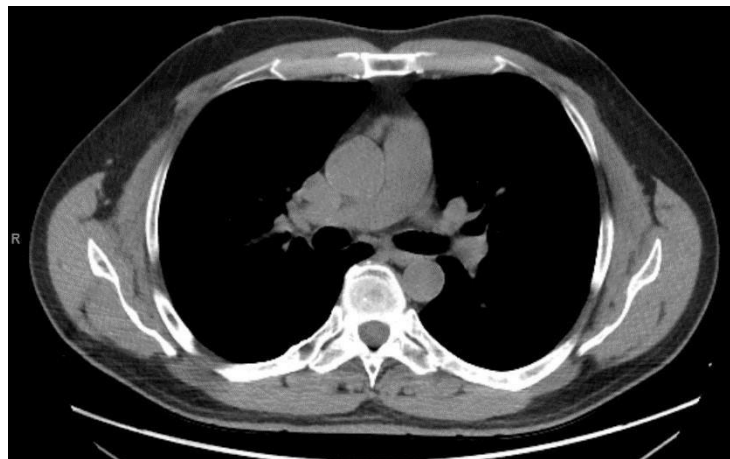
DYNAMIC #1: UPPER TO MID INTRATHORACIC TRACHEA. BETWEEN CLAVICLES AND AORTIC ARCH



DYNAMIC #2: MID TO LOWER INTRATHORACIC TRACHEA. JUST ABOVE CARINA



DYNAMIC #3: JUST BELOW CARINA



Coronary Artery Helper (Rm 4—Force)

PREP:

- Question patient on Caffeine intake – check with Rad if +caffeine
- Place **18 G** IV on **RIGHT AC**
- Place leads on patient with their arms up
- Place grounding bracelet on their wrist
- Explain the breathing technique and stress importance of a good breath hold □ Select CCTA P3T (under cardiac) on injector – WEIGHT BASED INJECTION.
 - Must use 5cc+/second injection rate – INJECTOR WILL CALCULATE RATE, BE SURE TO USE WIDE BORE INJECTOR COILS

CALCIUM SCORE:

- ****Rm4****Run Flash Check ○ **MUST DO** – this evaluates heartrate during table movement. Keep an eye on heartrate during flash check. □ **Flash Check:**
- **Green = Recommended for scanning**
- **Yellow = Ok to scan**
- **Red = Not recommended to scan** (but you can still scan).

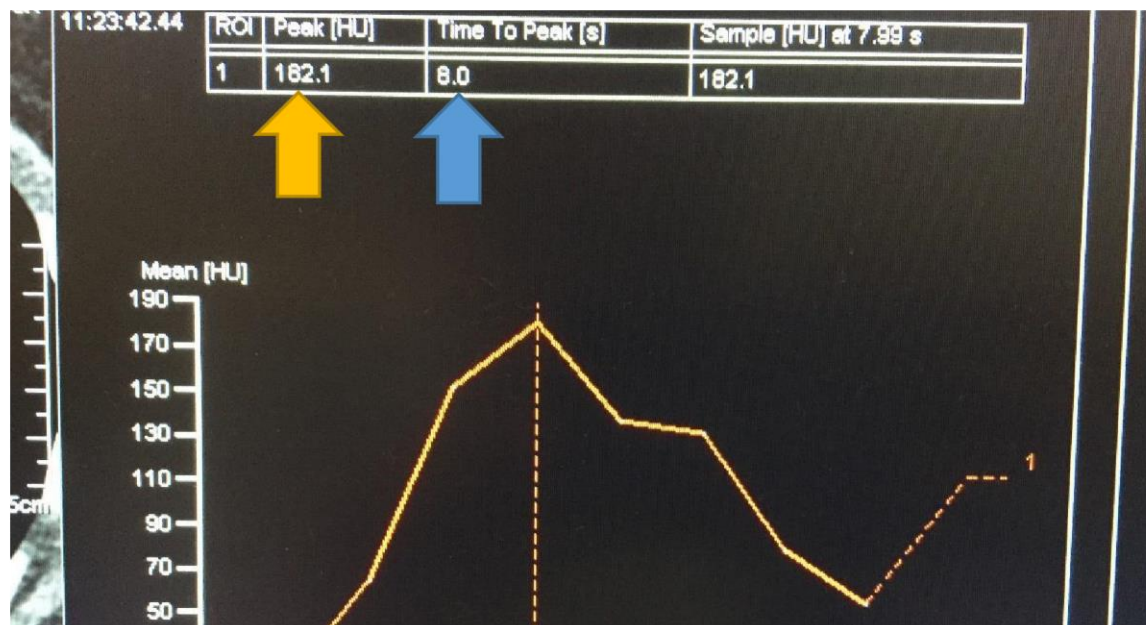
- Attempt flash check again to get green. ○ Will not turn green if heartrate is fast/abnormal.
- If you can't get a green light after two tries, continue on to Calcium Score and scan.

- Calcium scoring: Carina to below heart

TEST BOLUS:

- *****Rm4***DO NOT PUT CONTRAST INTO SCAN YET – AMOUNT MAY CHANGE*****
- In Ascending aorta @ level of the LAD (locate this on the calcium scoring images)
 - ****See different protocols for research protocols which may need test bolus in different location****
- ****Rm 4**Must have at least 3 images to be able to load into DynEva**
- ****Rm 4**Watch Contrast in Aorta. YOU MUST HAVE A VISIBLE PEAK. Stop scan after contrast starts to wash out of the Aorta.**
- ****Rm 4** Load into DynEva:**

- Click Patient Menu
- Browser
- Local Database
- Select series labeled Test Bolus RTD
- Click the DynEva button 
- Click on Elliptical ROI button 
- Draw ROI on Ascending Aorta



□ SET UP INJECTOR **Rm 4**:

- Input the HU from the DynEVA (↑)

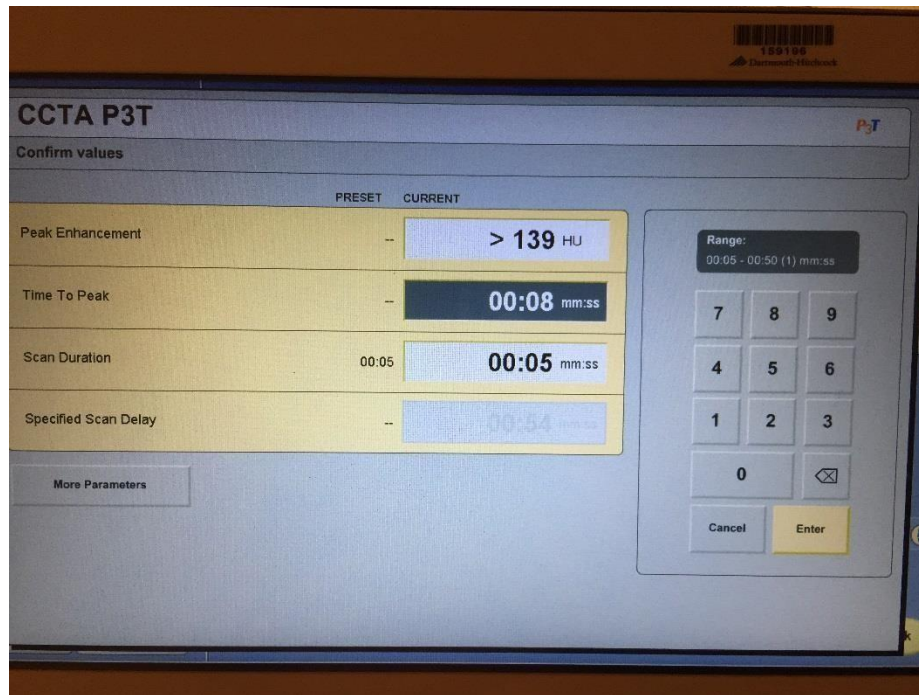
TO PEAK
from the
DynEVA ()

	PRESET	CURRENT
Peak Enhancement	--	-- HU
Time To Peak	--	-- mm:ss
Scan Duration	00:05	00:05 mm:ss
Specified Scan Delay	--	00:54 mm:ss

Buttons: < 80, 80 - 139, > 139, Cancel

- Input the TIME

- **Rm4** Remember this number – you will need it for your timing delay
- **Rm 4** Please note: you cannot input anything below 5 – if TTP is less, input 5 but use the actual TTP for your timing delay.



- Amount of contrast will change depending on time it takes to peak
- Use same injection rate as you used for the test bolus

SET UP SCAN:

- ****Rm 4**** Pick protocol depending on patient's heartrate (if different than what physician specified, contact physician). Cut (remove) the protocol you aren't using.

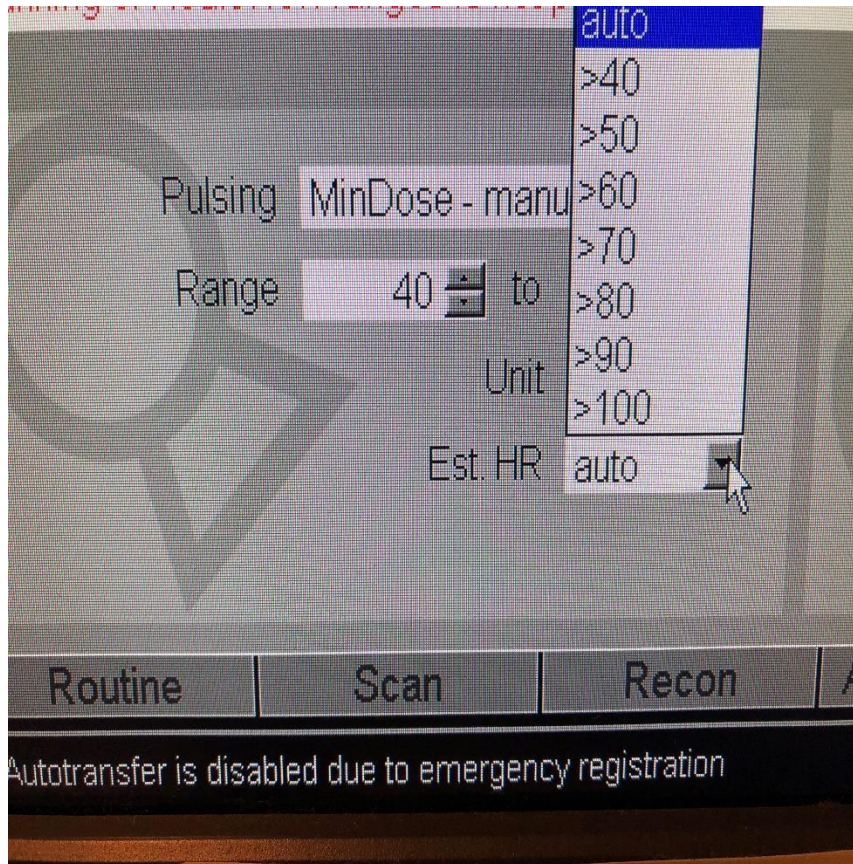
□ TURBO FLASH:

□ **PROSPECTIVE:** Steady heartrate: does not fluctuate more than 10-12 beats per second **during breath-hold** **AND** is under 80 bpm.

- Give all of contrast that was drawn up per weight-based protocol (add the difference to the full contrast portion on injector)

□ **RETROSPECTIVE:** heartrate that fluctuates more than 10-14 beats per second **during breath hold**, or heartrate is more than 80 bpm

- Change the Est. HR in the Trigger Tab to ~10 lower than the lowest HR you saw (>40 is the lowest)



- Add **14 seconds** to time to peak for delay – put this in the routine tab of the scan. ○

Scan 20mm above the LAD to 20mm below heart, unless otherwise requested by rad. ○ When putting contrast amount in scan, don't forget to add the 20cc you used for the timing series.

□ ****Rm 4** WHEN FINISHED:**

- Protect the exam
- Send ECG strips to PACS
- Email 3D lab with study and end time

****Please note:** Scanner will not gate a heartrate under 40bpm.