

Protocol Reason for Exam & Scanning Parameters

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Protocol Reason for Exam & Scanning Parameters

Protocol	Reason for Exam	Scanning Parameters
Abdominal Wall	Breast Cancer Breast Reconstruction Deep Inferior Epigastric Artery Perforator (DIEAP) Vascular Anatomy for flap creation	2.0mm or less slice thickness
AIF Runoff MRA	Ankle-Brachial Index (ABI) Claudication Cold Feet or Toes Dorsalis Pedis (DP) Peripheral Arterial Disease (PAD) Posterior Tibial (PT) Pulses Peripheral Vascular Disease (PVD) Ulcers	2.0mm or less MR images
AIF Runoff Routine	Ankle-Brachial Index (ABI) Claudication Cold Feet or Toes Dorsalis Pedis (DP) Peripheral Arterial Disease (PAD) Posterior Tibial (PT) Pulses Peripheral Vascular Disease (PVD) Trauma Ulcers	2.0mm or less slice thickness CT images
AIF Runoff STAT	Ankle-Brachial Index (ABI) Atherosclerosis Claudication Cold Feet or Toes Dorsalis Pedis (DP) Peripheral Arterial Disease (PAD) Posterior Tibial (PT) Pulses Peripheral Vascular Disease (PVD) Trauma Ulcers	2.0mm or less slice thickness CT images
Aorta Abdomen	Abdomen Pain Acute Aortic Syndrome (AAS) Ancure Procedure Bladder Coiling Calcified Uterine Fibroid Celiac Artery Colon Endoleak Endovascular Abdominal Aortic Aneurysm Repair (EVAR) Fibromuscular Dysplasia (FMD)	2.0mm or less slice thickness Pre-op AAA will be added on if facility allows AND the aorta measures 40mm or greater between the lowest renal and bifurcation. Post op AAA will be added on if the facility allows AND stent is present between renals and bifurcation. CT Images



Protocol Reason for Exam & Scanning Parameters

Protocol	Reason for Exam	Scanning Parameters
Aorta Abdomen	GI Bleed Hernia Hypertension (HTN) Ischemic Bowel Post op AAA Pre op AAA Renal Artery Stenosis (RAS) Renal Infarct Renals SMA Splenic Artery Stent Evaluation Weight Loss	2.0mm or less CT images

Aorta Abdomen MRA	Abdomen Pain Ancure Procedure Bladder Coiling Uterine Fibroid Colon Endoleak Endovascular Abdominal Aortic Aneurysm Repair (EVAR) Fibromuscular Dysplasia (FMD) GI Bleed Hernia Hypertension (HTN) Ischemic Bowel Post op AAA Pre op AAA Renal Artery Stenosis (RAS) Renal Infarct Renals Weight Loss	2.0 mm or less MR images
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Protocol Reason for Exam & Scanning Parameters

Protocol	Reason for Exam	Scanning Parameters
Arterial Iliac Access Measurements ONLY	Transcatheter Mitral Valve Replacement (TMVR) Arterial Access Transcatheter Aortic Valve Replacement (TAVR) Access Only No Heart	CT Images Non-gated CAP images 2.5mm or less slice thickness
Atrial Septal Defect	Evaluation of Known ASD Evaluation of Post-Op Leak	2.0mm or less slice thickness
Brain Perfusion CT	Acute Ischemic Stroke Pre surgical planning/EC/IC bypass	2D Perfusion=2.0mm or greater slice thickness Must have a minimum of 9 passes/series Max 80 images per series (subseries) 4D Perfusion=2.0mm or less slice thickness Must have a minimum of 9 passes/series No max amount of images per series (subseries)
Brain Perfusion Olea CT	Acute Stroke ONLY MisMatch Ratio	2.0mm or greater slice thickness
Brain Perfusion Olea MR	Stroke Tumor	2.0mm or greater slice thickness
Calcium Score (CAC) - Order with Coronary CTA	Calcium Score (CAC) Bundle Heart Vessel Calcium Quantification	Do you want a calcium score for the coronaries or the aortic valve? This protocol is for the coronaries. 3mm or less slice thickness ≥120 kVp
Calcium Score (CAC) ONLY - No Coronary CTA	Calcium Score (CAC) Only - No CCTA Work up	3mm or less slice thickness ≥120 kVp
Calcium Aortic Valve Score	Calcium Quantification of the Aortic Valve	CT Non-Con Images through heart. 3.0mm or less slice thickness Do you want a calcium score for the Ao Valve or the coronaries? This protocol is for the aortic valve.
CABG/Sternotomy	CABG-Sternotomy Re-do	1.5mm or less slice thickness



Protocol Reason for Exam & Scanning Parameters

Protocol	Reason for Exam	Scanning Parameters
Calcium Mitral Valve Score	Calcium Quantification of the Mitral Valve	CT Non-Con Image through heart -3.0mm or less slice thickness
Carotid (Neck)	1 st Rib Fracture Amaurosis Fugax Bow Hunter's Syndrome (BHS) Carotid Artery Aneurysm Carotid Stenosis Cerebral Vascular Accident (CVA) Clamp Injury Dissection FMD Hanging Hemorrhage Loss of Consciousness (LOC) Pulsatile Tinnitus Rotational Vertebral Artery Compression Stroke Trauma	1.5mm or less slice thickness CT images. Exams with contrast not meeting thresholds will be changed to a limited protocol.
Code Stroke Carotid (Neck)	Altered Mental State (AMS) Carotid Artery Stenosis (CAS) Cerebral Vascular Accident (CVA) Dissection Stroke Like Symptoms Transient Ischemic Attack (TIA) Trauma	1.5mm or less slice thickness Exams with contrast not meeting thresholds will be changed to a limited protocol. Can only be ordered by facilities who already have this protocol set up.
Code Stroke Carotid (Neck) MRA	Acute Stroke Altered Mental State (AMS) Cerebral Dissection Vascular Accident (CVA) Transient Ischemic Attack (TIA) Trauma Stroke Stroke Like Symptoms	Can only be ordered by facilities who already have this protocol set up. 1.5mm or less slice thickness
Carotid (Neck) MRA	Blood Clot Carotid Dissection Stenosis Cerebral Vascular Accident (CVA) Hemorrhage Loss of Consciousness (LOC) Pulsatile Tinnitus Stroke Transient Ischemic Attack (TIA) Trauma	Can only be ordered by facilities who already have this protocol set up. 1.5mm or less slice thickness
CCTA (Cardiac) Routine	Coronary Artery Disease (CAD) Chest Pain Elevated Troponin Family History of Cardiac Disease Heart Grafts High Calcium Score Pressure/Diaphoresis Prior Myocardial Infarction (MI)	1.5mm or less slice thickness

Protocol	Reason for Exam	Scanning Parameters
CCTA STAT	<ul style="list-style-type: none"> Coronary Artery Disease (CAD) Chest Pain Elevated Troponin Family History of Cardiac Disease Heart Grafts High Calcium Score Pressure/Diaphoresis Prior Myocardial Infarction (MI) 	1.5mm or less slice thickness
Cervical Spine	<ul style="list-style-type: none"> Spine Work Trauma Evaluate Cervical Anatomy Evaluate Post-Op Fusion 	<ul style="list-style-type: none"> Need soft tissue images 1.5mm or less slice thickness
CFA/Ejection Fraction - Left ONLY (Most Common)	<ul style="list-style-type: none"> Cardiac Functional Analysis Chest Pain Ejection Fraction Evaluation of Ventricular Output Heart Function Hypertrophic Cardiomyopathy (HCM) Myocardial Mass 	<ul style="list-style-type: none"> 5.0mm or less slice thickness Preferred 0-90% Functional Series
CFA/Ejection Fraction - Right + Left	<ul style="list-style-type: none"> Right Ventricle Function Right Ventricular/Left Ventricular Ejection Fraction & Volumes 	<ul style="list-style-type: none"> CT Images Need full function data set 5.0mm or less is acceptable Facility required to provide patient height, weight, and heart rate(bpm).
Chest Aorta Measurements MRA	<ul style="list-style-type: none"> Aortic Arch Thrombus Aortic Ectasia Aortic Insufficiency or Regurgitation Ascending Aorta Dilation or Enlarged Coarctation Dilated Aortic Root Dilation of the Arch Dissection/Transection Ehlers Danlos Syndrome Hx of Aneurysm in Chest Marfans Syndrome Thoracic Aortic Aneurysm (TAA) 	<ul style="list-style-type: none"> 5.0mm or less slice thickness MR images

Protocol	Reason for Exam	Scanning Parameters
Chest Aorta with Measurements	<ul style="list-style-type: none"> Abdominal Aortic Aneurysm (AAA) Acute Aortic Syndrome (AAS) Aortic Arch Thrombus Aortic Ectasia Aortic Insufficiency or Regurgitation Ascending Aorta Dilation or Enlarged Coarctation Dilated Aortic Root Dilation of the Arch Dissection/Transection Ehlers Danlos Syndrome Hx of Aneurysm in Chest Marfans Syndrome Thoracic Aortic Aneurysm (TAA) 	<p>2.5mm or less slice thickness</p> <p>Post op or Pre op TAA will be added on only if specifically requested.</p> <p>Will be changed to TAA if requested and is an option for the facility.</p>
Chest Aorta	<ul style="list-style-type: none"> Chest Pain Chest Trauma Gunshot Wound (GSW) Lead Extraction Lead Failure Motor Vehicle Accident (MVA) Seatbelt Sign Stabbing Vascular Ring 	<p>2.5mm or less slice thickness</p> <p>CT images</p> <p>If the facility allows a chest aorta is changed to chest w/measurements if it measures 40mm or greater from SOV to diaphragm.</p>
Chest Aorta MR	<ul style="list-style-type: none"> Chest Pain Chest Trauma Motor Vehicle Accident (MVA) Seatbelt Sign Stabbing Vascular Ring 	<p>5.0mm or less slice thickness</p>
Colon	<ul style="list-style-type: none"> Colon Cancer Colon Flythrough Diverticulitis Failed Colonoscopy Sessile Polyps Virtual Colonoscopy 	<p>CT Images- Diaphragm to rectum, air contrast colon.</p> <p>1.0mm or less Prone and Supine</p>

Protocol

Reason for Exam

Scanning Parameters

COW (Head)

Altered Mental Status (AMS)
 Anisocoria
 Aneurysm/Infundibulum
 Aneurysm Clip/Coil
 Arterial Venous Malformation (AVM)
 Cerebral Vascular Accident (CVA)
 Circle of Willis
 Craniotomy
 Follow-up Bleed
 Headache
 Moya-Moya
 Stroke Like Symptoms
 Subarachnoid Hemorrhage (SAH)
 Transient Ischemic Attack (TIA)
 Trauma
 Vasculitis

1.5mm or less slice thickness

CT images.

Exams with contrast not meeting HU thresholds will be changed to a limited protocol.

Code Stroke COW (Head)

Acute Stroke
 Altered Mental State (AMS)
 Aneurysm/Infundibulum
 Cerebral Vascular Accident (CVA)
 Headache
 Stroke Like Symptoms
 Subarachnoid Hemorrhage (SAH)
 Transient Ischemic Attack (TIA)
 Trauma

1.5mm or less slice thickness

Can only be ordered by facilities who already have this protocol set up.

CT images.

Exams with contrast not meeting HU thresholds will be changed to a limited protocol.

Code Stroke COW (Head) MRA

Acute Stroke
 Altered Mental Status (AMS)
 Aneurysm/Infundibulum
 Cerebral Vascular Accident (CVA)
 Headache
 Stroke Like Symptoms
 Subarachnoid Hemorrhage (SAH)
 Transient Ischemic Attack (TIA)
 Trauma

Can only be ordered by facilities who already have this protocol set up.

1.5mm or less slice thickness

Protocol	Reason for Exam	Scanning Parameters
COW (Head) MRA	<ul style="list-style-type: none"> Altered Mental Status (AMS) Anisocoria Aneurysm/Infundibulum Aneurysm Clip/Coil Anoxic Injury Arterial Venous Malformation (AVM) Cerebral Vascular Accident (CVA) Circle of Willis Craniotomy Follow-up Bleed Headache Moya-Moya Stroke Like Symptoms Subarachnoid Hemorrhage (SAH) Transient Ischemic Attack (TIA) Trauma Vasculitis 	<ul style="list-style-type: none"> 1.5mm or less slice thickness MR images
CTV Abdomen	<ul style="list-style-type: none"> Deep Vein Thrombosis (DVT) Leg Swelling May-Thurner Syndrome Pelvic Congestion Venous Abdomen Venous Thrombosis 	<ul style="list-style-type: none"> Venous/Delayed images 2.5mm or less slice thickness
CTV Chest	<ul style="list-style-type: none"> Azygos Vein Venous Chest Thoracic Outlet Syndrome 	<ul style="list-style-type: none"> 2.5mm or less slice thickness Venous/Delayed images needed
CTV Head (Sinus)	<ul style="list-style-type: none"> Cerebral Venous Sinus Thrombosis Headache Mental Status Change Venous Disease 	<ul style="list-style-type: none"> 1.5mm or less slice thickness
CTV Lower Extremity	<ul style="list-style-type: none"> Deep Vein Thrombosis (DVT) Venous Thrombosis 	<ul style="list-style-type: none"> Venous/delayed images 2.0mm or less slice thickness
CTV Neck (Jugular)	<ul style="list-style-type: none"> Jugular Compression/Eagle's Syndrome Jugular Vein Venous Thrombosis 	<ul style="list-style-type: none"> 1.5mm or less slice thickness
CTV Upper Extremity	<ul style="list-style-type: none"> Anastomosis/Fistula/Shunt (Arm) Deep Vein Thrombosis (DVT) Strictures of Venous Outflow Tract (Arm) Venous Thrombosis 	<ul style="list-style-type: none"> Venous/delayed images 2.0mm or less slice thickness

Protocol	Reason for Exam	Scanning Parameters
EP Planning (Pulmonary Vein Mapping)	Atrial Fibrillation (AFib) Pre-ablation Pulmonary Vein Isolation (PVI) Pulmonary Vein Mapping Pulmonary Vein Isolation Measurements for Heart Morphology Wolff-Parkinson-White Syndrome	1.5mm or less slice thickness CT images
EP Planning (Pulmonary Vein Mapping) MRA	Atrial Fibrillation (AFib) Pre-ablation Pulmonary Vein Isolation (PVI) Pulmonary Vein Mapping Pulmonary Vein Isolation Measurements for Heart Morphology Wolff-Parkinson-White Syndrome	2.0mm or less slice thickness MR images
Left Atrial Appendage Post-Op	Post op Percutaneous Left Atrial Appendage Closure (LAAC) Device	1.5mm or less slice thickness
Left Atrial Appendage Pre-Op	Pre op Left Atrial Appendage (LAA) Percutaneous Left Atrial Appendage Closure (LAAC)	1.5mm or less slice thickness
Left Atrial Appendage Occlusion	Pre-op Left Atrial Appendage (LAA) Percutaneous Left Atrial Appendage Closure (LAAC)	1.5mm or less slice thickness



Protocol	Reason for Exam	Scanning Parameters
Liver & Spleen Volumes	Hepatomegaly/Splenomegaly Hunter's Disease Hurler's Syndrome San Felipe Disease Tay-Sachs Disease Turner's Disease	<p>This is only when the facility specifically wants 1 whole volume of the liver (no segments/no lt/rt liver) and 1 volume of the spleen. Note: Includes lesion/tumor volume series as well.</p> <p>If they want the liver split into LT/RT segments or all 8 segments - see LT/RT Liver Volume or Liver Segmental Volume.</p> <p>CT=5.0mm or less slice thickness MR=7.0mm or less slice thickness</p> <p>Prefer Post Contrast portal venous phase. Will accept Non contrast, Arterial, Venous, and/or Delayed Images</p>
Liver Donor	Liver Donor	<p>CT Images Quad phase liver preferred, tri-phase acceptable.</p> <ul style="list-style-type: none"> -Non-Contrast -Early Arterial/Arterial -Late Arterial/Early Venous/Portal Venous -Venous/Delayed Venous <p>CT - 5mm or less slice thickness MR - 7mm or less slice thickness</p>
Liver RT/LT Volume	Chemo-Embolization Hepatocellular Carcinoma Liver Volume (RT/LT only) Y-90	<p>Order this when facility wants the liver split into RT and LT lobes only. (no other segments). Note: <i>Includes lesion/tumor volume as well.</i></p> <p>-Triphase liver (Arterial, Portal Venous, Delayed) Portal venous acceptable.</p> <p>CT= 5.0mm or less slice thickness</p>
Liver RT/LT Volume MR	Chemo-Embolization Hepatocellular Carcinoma Liver Volume (RT/LT only) Y-90	<p>Order this when facility wants the liver split into RT and LT lobes only. (no other segments). Note: <i>Includes lesion/tumor volume as well.</i></p> <p>-Triphase liver (Arterial, Portal Venous, Delayed) Portal venous acceptable.</p> <p>MR= 7.0mm or less slice thickness</p>

Protocol	Reason for Exam	Scanning Parameters
Liver Segmental Volume	Hepatocellular Carcinoma Liver Segmental Volume (All Segments) Y-90	5.0mm or less slice thickness Liver-Arterial, Portal Venous, Delayed
Liver Segmental Volume MR	Hepatocellular Carcinoma Liver Segmental Volume (All Segments) Y-90	Preferred 2.5mm-5.0mm 7.0mm Acceptable Liver-Arterial, Portal Venous, Delayed
Lumbar Spine	Spine Work Trauma Evaluate Lumbar Anatomy Evaluate Post-Op Fusion	Need soft tissue images 1.5mm or less slice thickness
Lung Volume	Lung Volumes Lung Volumes in Utero Transplant Evaluation	MR Images (in utero) 5mm or less slice thickness -Axial and/or coronal images CT Images (adult) 5.0mm or less
MR 4D Flow	Flow Regurgitation QPOS	4D flow images (Anatomy, AP, LR, SI) same image count for each. We will provide AO and MPA if not specified.
MR 4D Left Ventricular Flow Analysis	Advanced Hemodynamic Mapping Congenital Heart Disease Follow up Valvular Heart Disease Evaluation	4D flow images (Anatomy, AP, LR, SI), same image count for each
MR Atrial Function	Function of right atrium	2 Chamber cine- multiple slices preferred 4 Chamber cine - multiple slices preferred
MR Breast	Abnormal Breast Scan/Mammo Breast Cancer Breast Lesion Implant Volumes	Perfusion images (non contrast and more than 2 post contrast phases) -Need fat suppressed images -2.0mm or greater slice thickness
MR Cardiac Analysis T2*	Cardiomyopathy Hemochromatosis (Cardiac) Iron Overload Iron Quantification Thalassemia	T2* Short Axis mid ventricle 8-10 echoes is best, must include 4 echoes to process
MR Cardiac Function	Cardiomyopathy Ejection Fraction Myocarditis	Must include patient's height and weight on the order. Need short axis-base to (apical) apex w full cardiac cycle at each slice location (PLUS+) 4 Chamber & 3 Chamber full cardiac cycle mid ventricle only.

Protocol	Reason for Exam	Scanning Parameters
MR Cardiac Perfusion	Epicardial Coronary Artery Disease (CAD)	MR Images Base, Mid (apical) apex perfusion images. MOCO (motion correction) is required
MR CSF Flow	Cerebral Aqueduct Stenosis Chiari I Malformation Flow at the Cervicomedullary Junction (Foramen Magnum) Normal Pressure Hydrocephalus (NPH) Patency of Third Ventriculostomy Spinal Cord Achondroplasia	Phase contrast and modulus images. For the Cerebral Aqueduct we need: -Axial or Coronal flow images through the cerebral aqueduct. (We CANNOT process on a sagittal image) For the Spinal cord we need: Axial images through the cord at the foramen magnum.
MR LGE (DSI)	Scar Quantification	Short axis-delayed enhancement base to (apical) apex and 4 chamber
MR Liver Analysis T2*	Hemochromatosis (Liver) Iron Overload Iron Quantification Thalassemia	Axial T2* with 8-10 echoes above the level of the portal vein is best, must include 4 echoes to process.
MR Prostate	Enlarged Prostate/BPH Infection Prostate Cancer	MRI perfusion through prostate (3 non contrast data sets and multiple post contrast data sets, same image count) If set up, to receive the ADC color map, send 3DR the Diffusion Weighted Images (DWI) If set up, to receive the Overlay Image, send 3DR a T1, T2, or Flair
MR T1 Mapping	Extracellular Volume Fraction (ECV) Map Hematocrit Value Myocardial Disease	Required series: -T1 native (pre) and enhanced (post) - (one or multiple slices is fine) -Pre and post contrast series- need to have the same field of view and same resolution- (one or multiple slices is fine) -MOCO images preferred If ECV map is needed, then we need the patients' hematocrit value drawn from 24 hours or less.
MR T2 Mapping	Myocardial Edema	Short axis T2 motion correction (if available) 3 slices base, mid, & apex multiple echo times This protocol is different from T2*. T2 Mapping is for edema while T2* is for iron quantification (see T2* protocol for that info). MR Images Base, mid and apical slice preferred, one mid ventricle slice acceptable. At least 3 echo times (TE).

Protocol	Reason for Exam	Scanning Parameters
MR Venc Flow (2D)	Pulmonary-to-Systemic Flow Ratio (QpQs) Regurgitation	Please name the series with which part of the root you are scanning, i.e., aortic valve, stj, mpa, etc. Phase contrast & Modulus/Modulus series needed. <u>Cvi42-Circle users only:</u> Aortic and Pulmonary flows needed for QPQS calculation.
Magnetic Resonance Cholangiopancreatography (MRCP)	Biliary or Pancreatic Ductal Systems Chronic pancreatitis Post-Op Evaluation	Images need to be perpendicular to the flow. 5.0mm or less slice thickness
MRV Abdomen	Deep Vein Thrombosis (DVT) Leg Swelling May-Thurner Syndrome Pelvic Congestion Venous Abdomen Venous Anatomy Thrombosis	5.0mm or less slice thickness
MRV Chest	Azygos Vein SVC stenosis Thoracic Outlet Syndrome Venous Chest Anatomy	5.0mm or less slice thickness
MRV Head (Sinus)	Cerebral Venous Sinus Thrombosis	1.5mm or less slice thickness

Protocol	Reason for Exam	Scanning Parameters
MRV Lower Extremity	Deep Vein Thrombosis (DVT) Klippel-Trenaunay Syndrome Varicose Veins Venous Thrombosis	2.0mm or less slice thickness
MR Neck (Jugular)	Jugular Vein Venous Malformations	1.5mm or less slice thickness
MRV Upper Extremity	Anastomosis/Fistula/Shunt (Arm) Brachial Plexus Deep Vein Thrombosis (DVT) Strictures of Venous Outflow Tract (Arm) Venous Thrombosis	2.0mm or less slice thickness
Ortho-Ankle	Bony Workup Fractures	1.5mm or less slice thickness Need soft tissue images Specify which bone is needed
Ortho-Calcaneus	Bony Workup Fractures	1.5mm or less slice thickness Need soft tissue images Specify which bone is needed
Ortho-Clavicle	Bony Workup Fractures	1.5mm or less slice thickness Need soft tissue images Specify which bone is needed
Ortho-Congenital Hip Dysplasia	Congenital Hip Dysplasia Developmental Dysplasia of the Hip (DDH) Murphy's Hip	Need both soft tissue and bone images 1.5mm or less slice thickness
Ortho-Eagle's Syndrome	Elongated Styloid Process Globus Sensation Pain when Turning Neck	1.5mm or less slice thickness Need soft tissue images
Ortho-Elbow	Bony Workup Fractures	1.5mm or less slice thickness Need soft tissue images Specify which bone is needed
Ortho-Facial Bones	Bony Workup Fractures	1.5mm or less slice thickness Need soft tissue images Specify which bone is needed
Ortho-Femur	Bony Workup Fractures	1.5mm or less slice thickness Need soft tissue images Specify which bone is needed

Protocol	Reason for Exam	Scanning Parameters
Ortho-Foot	Bony Workup Charcot joint Fractures	1.5mm or less slice thickness Need soft tissue images. Specify which bone is needed
Ortho-Hand	Bony Workup Fractures	1.5mm or less slice thickness Need soft tissue images. Specify which bone is needed
Ortho-Hip	Bony Workup Fractures	1.5mm or less slice thickness Need soft tissue images. Specify which bone is needed.
Ortho-Hip Impingement-Adult	Femoracetabular Impingement (FAI)	1.5 mm or less slice thickness Need soft tissue images.
Ortho-Humerus	Bony Workup Fractures	1.5mm or less slice thickness Need soft tissue images. Specify which bone is needed.
Ortho-Knee	Bony Workup Fractures	1.5mm or less slice thickness Need soft tissue images. Specify which bone is needed.
Ortho-Mandible	Bony Workup Fractures	1.5mm or less slice thickness Need soft tissue images. Specify which bone is needed.
Ortho-Pelvis	Bony Workup Fractures	1.5mm or less slice thickness Need soft tissue images. Specify which bone is needed,
Ortho-Radius/Ulna	Bony Workup Fractures	1.5mm or less slice thickness Need soft tissue images. Specify which bone is needed.
Ortho-Ribs	Bony Workup Fractures Pectus Excavatum Trauma	1.5mm or less slice thickness Need soft tissue images Specify which bone is needed

Protocol	Reason for Exam	Scanning Parameters
Ortho-Shoulder	Bony Workup Dislocation Fractures	1.5mm or less slice thickness Need soft tissue images. Specify which bone is needed.
Ortho-Skull	Bony Workup Craniosynostosis Fractures	1.5mm or less slice thickness Need soft tissue images. Specify which bone is needed.
Ortho-Sternum	Bony Workup Fractures Pectus Excavatum Post-Op Median Sternotomy Trauma	1.5mm or less slice thickness Need soft tissue images. Specify which bone is needed.
Ortho-Tibia/Fibula	Bony Workup Fractures	1.5 mm or less slice thickness Need soft tissue images.
Ortho-Wrist	Bony Workup Fractures	1.5mm or less slice thickness Need soft tissue images. Specify which bone is needed.
Pulmonary Artery (PA) 7 /Pulmonic Valve	Melody Valve Pulmonary Artery Aneurysm (PAA) Pulmonary Artery Dilation Pulmonary Artery Root Pulmonary Artery Stenosis Pulmonary Valve Replacement	2.5mm or less slice thickness Best systolic phase or full function data set
Pulmonary Artery (PA) 7 /Pulmonic Valve MR	Melody Valve Pulmonary Artery Aneurysm (PAA) Pulmonary Artery Dilation Pulmonary Artery Root Pulmonary Artery Stenosis Pulmonary Valve Replacement	5.0mm or less slice thickness Best systolic phase or full function data set
Pulmonic Valve Post-Op	Valve Leak Valve Movie Post-Op Valve Replacement Evaluate for Thrombus Mechanical Valve	Need full data set through heart 1.0mm or less slice thickness
Pacemaker	Evaluate Pacemaker Lead Wire Placement & Integrity	2.0mm or less slice thickness
Pancreas	Evaluate Pancreatic Duct Pancreatic Cancer Pancreatic Cysts Pancreatic Insufficiency Pancreatitis Pancreatic Resection	2.0mm or less slice thickness
PAN Scan	Trauma	2.0mm or less slice thickness
Parathyroid/Thyroid	Hyperparathyroidism Elevated Calcium Levels Parathyroid Glands Tumor	3.0mm or less slice thickness Arterial phase & venous phase if scanned

Protocol	Reason for Exam	Scanning Parameters
Postural Study	Postural Study Unequal Leg Lengths	X-ray images -AP & Lateral x-ray images to include the entire pelvis and femoral heads -Seated AP if taken
Prostate	Benign Prostatic Hyperplasia (BPH)	CT images 2.0mm or less slice thickness
Pulmonary Embolism (PE)	Chest Pain with Pulmonary Embolism Elevated D-Dimer Pulmonary Arteriovenous Malformations (AVM) Ross Procedure Short of Breath	2.0mm or less slice thickness
Renal Donor Transplant	Renal Donor	Arterial & Venous: 2.0mm or less slice thickness Delayed: 5.0mm thickness or less Need 3 data sets- Arterial, Venous, and Delayed.
Renal Mass	Renal Mass	2.0mm or less slice thickness
Renal Recipient Transplant	Pre Renal Transplant	2.0mm or less slice thickness
Renal Volumes	Chronic Kidney Disease Post Renal Transplant Autosomal Polycystic Kidney Disease (APKD) Cryoablation Polycystic Kidney Disease (PKD)	5.0mm or less slice thickness



Protocol Reason for Exam & Scanning Parameters

Protocol	Reason for Exam	Scanning Parameters
Renal Volumes MR	Chronic Kidney Disease Autosomal Polycystic Kidney Disease (APKD) Cryoablation Polycystic Kidney Disease (PKD)	7.0mm or less slice thickness/T1 or T2-can use axial or coronal-with or w/o contrast
Scoliosis Spine	Cobb Angle	Need soft tissue images 1.5mm or less slice thickness
Spleen Volume	Blood Disorder Spleen Only Volume	CT= 5.0mm or less slice thickness
Spleen Volume MR	Blood Disorder Spleen Only Volume	7.0 or less slice thickness
Subclavian	Thoracic Outlet Syndrome Subclavian Steal Syndrome	2.0mm or less slice thickness
TAVR (Aortic Valve)	Aortic Insufficiency Aortic Stenosis Pre op Transcatheter Aortic Valve Replacement (TAVR) Surgical Aortic Valve Replacement (SAVR)	TAVR - CAP 2.5mm or less slice thickness Nongated Ao Root - 1.0mm or less Systolic 20-45%
TAVR (Aortic Valve) Post-Op	Evaluate for Thrombus Hypo-attenuating Leaflet Thickening (HALT) Hypo-attenuation Affecting Motion (HAM) Post op Valve Replacement Valve Leak Valve Movie	Need full function data set through heart 1.0mm or less slice thickness
Temporal Bones	Hearing Loss Cholesteatoma Trauma Canal Dehiscence Plane of Poschl/Stenvers	1.5mm or less slice thickness Need BONE kernel images
Temporal Bones IAC's MR	Abnormal Cranial Nerve Caliber Internal Auditory Canal (IAC) Mass Bell's Palsy Cholesteatoma Trauma	MR images only. 2.0mm or less slice thickness
TEVAR	Pre-surgical Planning Post op Repair	CT Images 2.5mm or less slice thickness Non gated CAP

Protocol	Reason for Exam	Scanning Parameters
Thoracic Spine	Spine Work Trauma Evaluate Thoracic Anatomy Evaluate Post-Op Fusion	Need soft tissue images 1.5mm or less slice thickness
TMVR (Mitral Valve)	Apollo Mitral-Clip Mitral Regurgitation Mitral Valve Stenosis Neo Left Ventricular Outflow Tract (Neo-LVOT)	CT Images Need full function data set through heart. At the very least, we need Best Systolic and Best Diastolic - 1.0mm or less
TMVR (Mitral Valve) Post-Op	Valve Leak Valve Movie Post-op Valve Replacement Evaluate for Thrombus Mechanical Valve	Need full function data set through heart 1.0mm or less slice thickness
Trachea	Bronchial Compression Soft Tissue Neck Stenosis Tracheomalacia	2.0mm or less slice thickness
Triple Rule Out	Chest Pain Coronary Artery Disease Dissection Myocardial Infarction (MI) Pulmonary Embolism (PE) Acute Aortic Syndrome	2.0mm or less slice thickness
TTVR (Tricuspid Valve)	Pre op for Valve Tricuspid Regurgitation	CT Images Need full function data set 1.0mm or less through heart
TTVR (Tricuspid Valve) Post-Op	Valve Leak Valve Movie Post-Op Valve Replacement Evaluate for Thrombus Mechanical Valve	Need full function data set through heart 1.0mm or less slice thickness
Upper Extremity Runoff	Anastomosis/Fistula/Shunt (Arm) Brachial Plexus Buerger's Disease Cold Hands Raynaud's Disease Subclavian Steal Syndrome (If scanned past the elbow) Trauma	2.0mm or less slice thickness
Upper Extremity Runoff MRA	Anastomosis/Fistula/Shunt (Arm) Brachial Plexus Buerger's Disease Cold Hands Raynaud's Disease	2.0mm or less slice thickness



Protocol Reason for Exam & Scanning Parameters

Protocol	Reason for Exam	Scanning Parameters
Urogram	Bladder Hematuria Hydronephrosis Pyuria Renal Collecting System Ureters Urinary Tract Infection (UTI)	2.0mm or less slice thickness Delayed scan

AI Algorithm	Reason for Exam	CPT Code	Scanning Parameters
Avicenna ICH	Neuro (trauma) Intracranial hemorrhage		<5mm slice thickness, axial, non-contrast, >18 yrs old
Avicenna LVO	Large Vessel Occlusion		<1.25mm slice thickness, axial, arterial contrast, >18 yrs old
Avicenna PE	Pulmonary (trauma) Pulmonary Embolism		<2.5mm slice thickness, axial, contrasted pulmonary artery >180 HU, >18 yrs old
Avicenna Incidental (iPE)	Pulmonary (incidental) Pulmonary Embolism		<2.5mm slice thickness, axial, contrasted pulmonary artery >100 HU, >18 yrs old
Avicenna AD	Aortic Dissection Vascular		<3mm slice thickness, axial, contrast, >18 yrs old
BotImage	MR Prostate Detection of lesions	CPT 76377	MR AX T2, DWI and ADC. See scanner protocol instruction sheet.
Brainomix CTA	Large Vessel Occlusion (LVO) Acute Neurological Deficit Code Stroke ONLY	CPT III 0721T (tissue characterization)	<1mm slice thickness Contrast-enhanced CT scans Full brain acquisition (arch-to- vertex in a single sequence recommended) Soft tissue kernel (no excessive smoothing) Bolus timing (ideally peak arterial or equilibrium phase)
Brainomix CTP	Core and penumbra volumes Acute Neurological Deficit Code Stroke ONLY	CPT III 0721T (tissue characterization)	1 to 10mm slice thickness Matrix - 512x512 FOV 24cm Gantry rotation - One rotation per second or less 70 to 80 kV/170 to 400 mAs / no dose reduction
Brainomix NCCT	Acute Neurological Deficit Code Stroke ONLY	CPT III 0721T (tissue characterization)	<2.0mm thickness Single cerebrum sequence from Circle of Willis or below, up to the vertex Soft tissue kernel (no excessive smoothing) Brain window (not bone window)
Combinostics	Neurodegenerative diseases Multiple Sclerosis (MS)	CPT III 0865T 0866T	MR 3D T1 and 3D T2 Flair- see protocol sequence requirements

AI Algorithm	Reason for Exam	CPT Code	Scanning Parameters
Coreline Aview CAC	Calcium Score		3mm or less slice thickness ≥120 kVp
HeartLungAI Auto BMD™	Bone Mineral Density Osteoporosis	CPT 77078	<5mm slice thickness, axial chest, abdomen, or cardiac scan. Soft tissue/standard kernel
HeartLungAI Auto Chamber™	Enlarged chambers	HCPCS G0183	Add value to CCTA, CAC and Chest scans.
Icobrain Dementia (DM)	Alzheimer's Dementia	CPT III 0865T 0866T	Can only be ordered by facilities who already have this protocol set up. See protocol instructions for more information.
Icobrain Epilepsy (EP)	Epilepsy	CPT III 0865T 0866T	Can only be ordered by facilities who already have this protocol set up. See protocol instructions for more information.
Icobrain Multiple Sclerosis (MS)	Multiple Sclerosis	CPT III 0865T 0866T	Can only be ordered by facilities who already have this protocol set up. See protocol instructions for more information.
Icobrain Traumatic Brain Injury (TBI)	Traumatic Brain Injury	CPT III 0865T 0866T	Can only be ordered by facilities who already have this protocol set up. See protocol instructions for more information.
Nanox HealthCCSng	Incidental calcium score	0721T 0722T	Slice thickness 0.1mm-5.1mm, axial, non-contrast, non-gated scans including heart with >20 slices. >30 years old
Nanox HealthOST	Low bone density	CPT 0691T	Slice thickness 0.1mm-5.1mm, sagittal. Minimum 4 vertebra between T1-L4, >50 years old If no sagittal, OST will reconstruct a sagittal from axial with slice thickness 0.1mm-3.1mm
Nanox HealthFLD	Fatty liver		Slice thickness up to 5.1mm, axial, any CT that contains at least 4 cm of superior aspect of liver. Ages 18-75. KVP 100/110/120.
Resonance Health FerriSmart	Diamond-Blackfan Anemia (DBA) Liver Iron Quantification Hemochromatosis		1.5T T1 or T2 SSE with the ability of achieving TE 6.0 ms
Riverain ClearRead® CT	Lung analysis Lung cancer screening		3mm or less slice thickness CT chest with or without contrast Patients must be 18 years or older