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SCROLL DOWN FOR PROTOCOLS.

	Protocol name/indications		#Scans	coverage	slice thickness	IV contrast/delay	Oral contrast
1.1	Head Trauma,CVA,H/A,Seizure,etc		1	foramen magnum to vertex	3.5mm posterior fossa 5 mm to vertex	n	n
1.2	Head with Mass, R/O mets		1	foramen magnum to vertex	3.5mm posterior fossa 5 mm to vertex	50cc	n
1.3	Temporal Bones/AIC's Hearing loss,vertigo, otitis.		1 2	axial posterior fossa coronal petrous bones	1.25mm 1.25	n n	n n
1.4	Paranasal Sinuses Sinusitis		1 1b	coronal axial if patient cannot tolerate cor reformat in coronal plane	5mm 2.5	n n	n n
1.5	Maxillofacial/Orbits Trauma/mass		1 2	mandible to top of frontal sinuses cononal if pt stable/can tolerate if not,recon cor - thin as possible	2.5-3mm 2.5-3mm	n n	n n
1.6	Neck Adenopathy,mass,vocal cord paralysis, sialolithiasis		1 1b 1c	zygomatic arches to aortic arch optional local angled for dental scatter-just repeat area for sialolithiasis, do pre-contrast hard palate to thyroid cartilage	2.5-3mm 2.5-3mm 2.5-3mm	yes 75cc/45sec	n
1.7	Cervical spine Trauma,radiculopathy,pain		1 1b	skull base to T1 or T2 sagital and coronal recons	2.5-3mm thin as possible	n n	n n
1.8	Thoracic spine Trauma,radiculopathy,pain		1 1b	C7 to L1 sagital and coronal recons	2.5-3mm thin as possible	n n	n n
1.9	Lumbar spine Trauma,radiculopat,y,pain	multi-detector	1 1b 1c	T12 to S1 axial(contiguous) sagital and coronal recons recon axial obliques to disc spaces	2.5-3mm thin as possible	n n	n n
1.10	Lumbar spine Radiculopathy, chronic pain	single detector	1 1b	axial obliques to disc spaces T12/L1 to L5/S1 print a scout image with lines for trauma do contiguous axials	2.5-3mm	n	n
2.1	Chest Mass,pneumonia,LN's,Trauma, pleural effusion		1	apices through adrenal glands	5-7.5mm	120 cc - 35 secs	n

	Protocol name/indications		#Scans	coverage	slice thickness	IV contrast/delay	Oral contrast
2.2	CT Angio chest P.E., Aortic dissection	multi-detector	1	apex to diaphragm(avoid abdomen) sag recon for aortic dissection	2.5mm	120-150 @ 4-5/sec 18g angiocath - timed	n
		single-detector	1	above arch until tube limits out sag recon for aortic dissection	3mm	120-150 @ 4-5/sec 18g angiocath - timed	n
2.3	CT Chest 'High resolution' lung parenchyma only (not for nodule,mets,etc)		1	representative images from apices, hilar regions and bases. (can do at 10 to 20 mm intervals) film lung windows only - Magnify	1-1.5mm	n	n
2.4	CT Abdomen/pelvis - acute Pain,fever,obstruction, pancreatitis,diverticulitis		1	above liver to below iliac crests	5-7.5mm	120cc - 45 secs	32oz gastroview (wait 15-30mins)
			2	5minute delay - diaphragm to below ischia/pubic bones.	5-7.5mm		
			2b	If no bladder contrast, repeat through bladder only.	5-7.5mm		
2.5	CT Abdomen/pelvis - Trauma MVA,Fall,GSW		1	above liver to below iliac crests	5-7.5mm	120cc - 35 secs	optional, if requested
			2	5minute delay - diaphragm to below ischia/pubic bones.	5-7.5mm		
2.6	CT Abdomen/pelvis - non acute chronic pain,malignancy		1	above liver to below iliac crests	5-7.5mm	n	32oz gastroview (wait 15-30mins)
			2	above liver to below iliac crests	5-7.5mm	120cc - 45 secs	
			3	5minute delay - diaphragm to below ischia/pubic bones.	5-7.5mm		
2.7	CT Appendix protocol		1	above liver to below iliac crests	5-7.5mm	120cc - 35 secs	32oz gastroview (wait 15-30mins)
			2	5minute delay - diaphragm to below ischia/pubic bones.	5-7.5mm		
2.8	CT Angio Abdomen/pelvis AAA or dissection	multi detector	1	from diaphragm to pubis	2.5mm	120-150 @ 4-5/sec 18g angiocath - timed	n (water optional)
2.9	CT Retroperitoneal bleeding post heart cath - drop in H&H Coumadin/heparin/lovenox		1	Diaphragm to lesser trochanters	10mm	n	n
2.10	CT Renal stone protocol Flank pain,hematuria NOT -vague pain, fever, etc		1	upper poles of kidneys to pubis (avoid lungs)	3-3.75mm	n	n

	Protocol name/indications		#Scans	coverage	slice thickness	IV contrast/delay	Oral contrast
2.11	CT Pelvis - Genito-urinary Bladder mass,hematuria		1 1b	From iliac crests to below ischial tuberosities/pubis bones. rescan if bladder not contrasted	5mm	75 cc - 5min delay	optional
2.12	CT Pancreas suspected/known mass		1 2 3 4	pre contrast liver and pancreas same coverage same coverage same coverage Mag if printing	3-3.75mm	n 120 cc - 35sec 60 sec 90 sec	gastroview or water
2.13	CT Kidneys suspected/known mass		1 2 3 4	pre contrast liver and kidneys same coverage same coverage same coverage Mag if printing, measure ROI's	3-3.75mm	n 120 cc - 35sec 60 sec 3-5 min	n
2.14	CT Adrenal glands suspected/known mass (MRI is preferred if possible)		1 2 3	pre contrast liver and adrenals same coverage same coverage Mag if printing, measure ROI's	3-3.75mm	n 120 cc - 60sec 15min	n
2.15	CT Hemangioma (MRI is preferred if possible)		1 2 3/4/5/6	cover liver cover liver cover lesion	5-7.5mm 5-7.5mm	n 120cc - 35s 1/3/5/10 mins	n
3.1	CT Pelvis/hip Trauma, bone lesion, pain		1 1b	top of SI joint to lesser trochanters coronal reformats (send/print source axials of pelvis)	3-3.75 mm	n	n
3.2	CT any joint		1 1b	as needed sag and cor reformats	3-3.75mm	n	n

If you receive a request for a protocol that does not match the above indications (e.g. non-contrast exam for appendicitis, or head with contrast for headache) please contact the radiologist before doing the study to discuss the discrepancy.

If the patient has a contra-indication to contrast, or refused oral/I.V. contrast etc, please note this on the history sheet.

<p>4.1</p>	<p>IV contrast</p>	<p>For pediatric patients, use 1-2 cc per kilogram (0.5 to 1cc per pound), depending on the protocol. I.E. for head or neck use 0.5, for body or CTA use 1.0</p>
<p>4.2</p>	<p>IV access</p>	<p>For CTA's with high rates of injection, a large bore IV, 18g or larger is required Do not use hand/forearm veins for CTA. Antecubital only. During power injections, the site must be closely monitored during the first 15 to 20 seconds to prevent extravasation Some PICC catheters are designed for use with power injectors, Check the label of any catheter for maximum flow rate and pressure. Adjust the settings on the power injector accordingly.</p>
<p>4.3</p>	<p>Contrast extravasation</p>	<p>In general, most extravasations are small and self limited. Apply an Ice pack and elevate for 20 mins. If swelling/pain resolved patient can be discharged Advise patient to contact MD or go to E.R. if swelling/pin worsen Skin sloughing is rare, but can require a referral to plastic surgeon Compartment syndrome can develop with large volumes in the forearm/hand. Patient will have pain with extension of fingers. May lose pulses, become cold/dischored. This requires referral to plastic/orthopedic/hand surgeon.</p>
<p>4.4</p>	<p>Renal Function/Creatinine levels</p>	<p>Patients with pre-existing renal failure or Diabetes Mellitus should have creatinine levels checked when the exam is non-emergent In general, a creatinine of 1.8 or less is acceptable for non-ionic contrast use For Creatinine levels above 1.8 there are several options: 1. Withhold contrast if indication for contrast use is equivocal 2. Administer acetylcysteine (Mucomyst) 3. Use a reduced dosage. 4. If the patient is on dialysis with no renal function, they can be given contrast, preferably prior to dialysis. 5. If the patient is on dialysis with borderline function, the nephrologist should be consulted prior to contrast use. Mucomyst protocol: 600cc orally Q12H the day before and the day of the procedure: 4doses (procedure can be anytime on day 2, but all 4 doses should be given) keep hydrated ~ 100cc per hour oral or IV</p>
<p>4.5</p>	<p>Contrast Allergy</p>	<p>Patients with prior severe/life threatening reactions should avoid contrast if at all possible For other prior reactions, pre-medicate with oral prednisone 50mg 13 hrs, 7 hrs & 1 hr prior to injection and oral benadryl 50mg 1 hr prior</p>

<p>5.1</p>	<p>CT history questionnaire</p>	<p>please have the technologist fill out the questionnaire, and submit with films, or fax with patient data as appropriate</p>																					
<p>5.2</p>	<p>Filming issues (if still printing film)</p>	<p>Scout films Print at least one scout image without scout lines Include a lateral image with scout lines for all spine CT's</p> <p>Magnification Magnify the images as much as possible For lung windows, the chest wall/skin can be excluded For spine, use 15-20 cm DFOV depending on patient size</p> <p>ROI Renal lesions should have ROI measured pre and post contrast Adrenal lesions should have ROI measured pre and post contrast CTA should have ROI measured, particularly in main pulmonary artery for P.E. protocol</p> <p>Windowing</p> <table> <thead> <tr> <th></th> <th>Width</th> <th>level</th> </tr> </thead> <tbody> <tr> <td>Brain</td> <td>120</td> <td>50</td> </tr> <tr> <td>Bone</td> <td>2000</td> <td>400</td> </tr> <tr> <td>Chest/Abd/Pelvis</td> <td>600</td> <td>100</td> </tr> <tr> <td>Liver</td> <td>150</td> <td>90</td> </tr> <tr> <td>Lung</td> <td>1500</td> <td>-600</td> </tr> <tr> <td>CTA</td> <td>700</td> <td>100</td> </tr> </tbody> </table> <p>Note: The proper window width and level will vary from patient to patient, from machine to machine and will also vary with the printer. You may need to develop your own guidelines.</p>		Width	level	Brain	120	50	Bone	2000	400	Chest/Abd/Pelvis	600	100	Liver	150	90	Lung	1500	-600	CTA	700	100
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