MAIN INDEX:

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

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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 2 2b	above liver to below iliac crests 5minute delay - diaphragm to below ischia/pubic bones. If no bladder contrast, repeat through bladder only.	5-7.5mm 5-7.5mm 5-7.5mm	120cc - 45 secs	32oz gastroview (wait 15-30mins)
2.5	**CT Abdomen/pelvis - Trauma** MVA,Fall,GSW		1 2	above liver to below iliac crests 5minute delay - diaphragm to below ischia/pubic bones.	5-7.5mm 5-7.5mm	120cc - 35 secs	optional, if requested
2.6	**CT Abdomen/pelvis - non acute** chronic pain,malignancy		1 2 3	above liver to below iliac crests above liver to below iliac crests 5minute delay - diaphragm to below ischia/pubic bones.	5-7.5mm 5-7.5mm 5-7.5mm	n 120cc - 45 secs	32oz gastroview (wait 15-30mins)
2.7	**CT Appendix protocol**		1 2	above liver to below iliac crests 5minute delay - diaphragm to below ischia/pubic bones.	5-7.5mm 5-7.5mm	120cc - 35 secs	32oz gastroview (wait 15-30mins)
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

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

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.

4.1	IV contrast	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
4.2	IV access	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.
4.3	Contrast extravasation	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/discolored. This requires referral to plastic/orthopedic/hand surgeon.
4.4	Renal Function/Creatinine levels	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
4.5	Contrast Allergy	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

5.1	CT history questionnaire	please have the technologist fill out the questionnaire, and submit with films, or fax with patient data as appropriate			
5.2	Filming issues (if still printing film)	Scout films	Print at least one scout image without scout lines		
			Include a lateral image with scout lines for all spine CT's		
		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		
		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		
		Windowing		Width	level
			Brain	120	50
			Bone	2000	400
			Chest/Abd/Pelvis	600	100
			Liver	150	90
			Lung	1500	-600
			CTA	700	100
			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.		