CT

Monday, December 2, 2024 7:00 PM

	Body: CT Protocols		
	Reviewed:	Date: 12/3/24	J.Finizio
	Revised:	Date: 5/26/25	Dr.Cai/ Dr.Craig

C 1: Chest CT with contrast
C 2: Chest CT without contrast
C 3: Chest CT angiogram (pulmonary embolism protocol)
C 4: Chest CT without contrast (lung nodule follow-up, lung CA screening)
C 5: High-resolution chest CT
C 6: Chest CT angiogram (pulmonary vein mapping protocol)
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C 8: Veran Chest Without (inspiration, expiration)
C 9: High Impact trauma CT CAP

A 1: Abdomen and pelvis CT with contrast
A 1A: Abdomen CT with contrast
A 1P: Pelvis CT with contrast
A 2: Abdomen and pelvis CT with contrast (trauma protocol)
A 3: Abdomen and pelvis CT without intravenous contrast
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A 4: Abdomen and pelvis CT without contrast (hematoma protocol)
A 5: Pre- and post-contrast abdomen CT (liver protocol)
A 6: Pre- and post-contrast abdomen CT (pancreas protocol)
A 7: Abdomen and pelvis CT with contrast (enterography protocol)
A 8: Abdomen and pelvis CT angiogram(gi bleed/ mesenteric Ischemia)

GU 1: Abdomen and pelvis CT without contrast (CT-KUB)

GU 2: Pre- and post-contrast abdomen and pelvis CT (CT-IVP)
GU 3: Pre- and post-contrast abdomen CT (adrenal protocol)
GU 4: Pelvis CT with contrast (CT cystogram)
GU 5: Pre- and post-contrast abdomen CT (renal protocol)

Combo 1: Chest, abdomen, and pelvis CT with contrast
Combo 2: Chest and abdomen CT with contrast

General notes

iMARs:
If metal artifact is present, send iMAR-processed images through the entire scan
If processing time is excessive, ok to use iMAR only on axial slices
(this also applies to MSK and neuro protocols)

Slice thicknesses
Unless otherwise specified - slice thicknesses for body/chest CTs are:

- 1mm for lung with 8x2MIPS
- 2mm for angio series
- 3mm everything else

C 1: Chest CT with contrast

Indications: mediastinal and pleural pathology.

Contrast parameters	IV: 100ml @ 2.5ml/sec *Venogram option*: 140 ml at 4ml/sec, 10% contrast solution (100ml total) at 3ml/sec.
Region of scan	Lung apex to posterior costophrenic angles
Scan delay	50 seconds *Venogram option*: 90 seconds
Detector collimation	16 x 0.75 mm, 64 x 0.6 mm, 128 x 0.6 mm
Slice thickness	Axial 1mm lung kernel Axial 3mm soft tissue kernel Axial 8 x 2 mm MIPS Coronal and sagittal 3 mm reformats with soft tissue kernel
Filming	B30f kernel (axials) B70f kernel (axials, axial MIP)

Comments:

- Optional CT venogram protocol for SVC syndrome or thrombus; best used with double-barreled power injector.
- Optional CT navigational bronchoscopy images: 1 mm x 0.8 mm axial slices, B31F kernel, mediastinal window.

C 2: Chest CT without contrast

Indications: pulmonary nodules, airspace disease.

Contrast parameters	NA
Region of scan	Lung apex to posterior costophrenic angles
Scan delay	NA
Detector collimation	16 x 0.75 mm, 64 x 0.6 mm, 128 x 0.6 mm
Slice thickness	Axial 1mm lung kernel Axial 3mm soft tissue kernel Axial 8 x 2 mm MIPS Coronal and sagittal 3 mm reformats with soft tissue kernel
Filming	B30f kernel (axials) B70f kernel (axials, axial MIP)

Comments:

- Optional CT navigational bronchoscopy images: 1 mm x 0.8 mm axial slices, B31F kernel, mediastinal window.

C 3: Chest CT angiogram (pulmonary embolism protocol)
Indications: suspected pulmonary embolism.

Contrast parameters	IV: 100 ml @ 4 mL/sec
Region of scan	1) Lung apex to adrenal glands a) Scan caudo-cranial (re-orient images to scroll from top to bottom)
Scan delay	1) CARE bolus: ROI on main pulmonary artery. Delay of peak + 4 sec. 2) 4 minutes (optional)
Detector collimation	1) 16 x 0.75 mm, 64 x 0.6 mm, 128 x 0.6 mm
Slice thickness	1) 2 mm axials with coronal & sagittal reformats through entire thorax. 2) 3 mm oblique coronal MIPS reformats through right and left pulmonary arteries. 3) Axial 1mm lung kernel, 8 x 2 mm axial MIPS
Filming	B31fkernel (2 mm axials and all coronal MIP's) B70f kernel (5 mm axials)

Comments:

- Siemens Embolism042s settings.

C 4: Chest CT without contrast (lung CA screening)
Indications: pulmonary nodule, minimizing radiation exposure.

Contrast parameters	NA
Region of scan	Lung apex to posterior costophrenic angles
Scan delay	NA
Detector collimation	16 x 0.75 mm, 64 x 0.6 mm, 128 x 0.6 mm
Slice thickness	Axial 1mm lung kernel Axial 3mm soft tissue kernel Axial 8 x 2 mm MIPS

	Coronal and sagittal 3 mm reformats with soft tissue kernel
Filming	B30f kernel (axials) B70f kernel (axials, coronal MIP)

Comments:

- Siemens Lung Low Dose settings.
- Optional CT navigational bronchoscopy images: 1 mm x 0.8 mm axial slices, B31F kernel, mediastinal window

C 5: High-resolution chest CT

Indications: diffuse lung pathology, inhalational exposure, asbestosis.

Contrast parameters	NA
Region of scan	1) Supine inspiration *contiguous* scan (apex to posterior costophrenic angles) 2) Supine expiration *contiguous* scan (apex to posterior costophrenic angles). MinIP 3) Prone inspiration *contiguous* scan (apex to posterior costophrenic angles)
Scan delay	NA
Detector collimation	16 x 0.75 mm, 64 x 0.6 mm, 128 x 0.6 mm
Slice thickness	SUPINE: Axial 1mm lung kernel Axial 3mm soft tissue kernel Axial 8 x 2 mm MIPS Coronal and sagittal 3 mm reformats with soft tissue kernel EXPIRATION SUPINE: Axial 1mm lung kernel

	8mm MinIP axial (if capable) *Other reformats not needed* PRONE: Axial 1mm lung kernel *Other reformats not needed*
Filming	B70f kernel (1.0 mm axials and 5 mm coronals) B30f kernel (5 mm axials).

Comments:

- Supine expiration images will detect air trapping.
- Prone inspiration series will differentiate early fibrosis from posterior dependent atelectasis.
- Optional CT navigational bronchoscopy images: 1 mm x 0.8 mm axial slices, B31F kernel, mediastinal window.

C 6: Chest CT angiogram (pulmonary vein ablation protocol)

Indications: pre-procedural mapping for pulmonary vein ablation treatment of atrial fibrillation.

Contrast parameters	IV: 100 ml @ 4 mL/sec
Region of scan	Lung apex to posterior costophrenic angles (scan from bottom to top)
Scan delay	30 sec
Detector collimation	16 x 0.75 mm, 64 x 0.6 mm, 128 x 0.6 mm
Slice thickness	1) 2 mm axials with coronal & sagittal reformats through entire thorax. 2) Axial 1mm lung kernel, 8 x 2 mm axial MIPS
Filming	B31f kernel (axials, oblique coronal reformats) B70f kernel (axials, 8 mm MIP reformats).

Comments:

- Siemens Embolism042s settings.
- Optional CT navigational bronchoscopy images: 1 mm x 0.8 mm axial slices,

B31F kernel, mediastinal window.

C7: Chest CT esophagram

Indications: pneumomediastinum, esophageal injury

Contrast parameters	No IV contrast Oral contrast- 100cc: drink while laying on table using a cup with a straw immediately after non-contrast portion
Region of scan	Lung apex to adrenal glands
Scan delay	1) Non-contrast 2) Post oral contrast
Detector collimation	16 x 0.75 mm, 64 x 0.6 mm, 128 x 0.6 mm
Slice thickness	1) Non-contrast: axial 1mm lung kernel with 8 x 2 MIPS Axial 3mm soft tissue kernel Coronal and sagittal 3 mm reformats with soft tissue kernel 2) Axial 3mm soft tissue kernel Coronal and sagittal 3 mm reformats with soft tissue kernel
Filming	B30f kernel (axials) B70f kernel (axials, axial MIP)

Comments:

- We no longer offer fluoroscopic UGI/esophagram

C 8: Veran Chest Without (inspiration, expiration)

Indications: Navigational Bronchoscopy

Contrast parameters	none
Region of scan	Hyoid bone to costophrenic angles. FOV: Need lateral skin margins
Scan delay	none
Detector collimation	16 x 0.75 mm, 64 x 0.6 mm, 128 x 0.6 mm
Slice thickness	Raw data axials Axial 1mm lung kernel Axial 3mm soft tissue kernel Axial 8 x 2 mm MIPS Coronal and sagittal 3 mm reformats with soft tissue kernel
Filming	B35f kernel – Heart View Medium – mediastinum (0.75 x 0.5 & 5 mm axial – soft tissue) B70f kernel – very sharp (5mm axial & 8 x 2 mm coronal & sagittal MIP – lung)

Comments:

CTDI for Medium 7.6 mGy

CTDI for Large 11.4 mGy

C 9: CT Coronary Artery Calcium Scoring

Restricted to CTs capable of cardiac gating.

Use vendor provided protocol with post-processing.

C9. Chest abdomen and pelvis CT with contrast (High Impact trauma protocol)

SVH and IH ONLY

Indications: High impact or penetrating trauma

Contrast parameters	Oral: none IV: 100 ml @ 2.5 mL/sec
Region of scan	1. ***Clavicles to the end of the last rib*** in arteriogram phase (chest arteriogram portion) 2. Top of diaphragm to femoral necks in portal venous phase (abdomen/pelvis portion) 3. ***Optional*** delayed phase: Top of diaphragm to femoral necks. Perform automatically if fluid is seen in the abdomen and suspected renal injury.
Scan delay	Oral: none 1. IV: Arterial phase: 25 sec after IV contrast or care bolus at mid aorta; peak + 0 sec 2. Portal venous phase: 70 sec after IV contrast 3. Optional delayed phase: anytime up to 5mins after contrast at technologist discretion if previewed images seem abnormal (abdomen fluid, renal injury etc.)
Detector collimation	16 x 1.5 mm, 64 x 1.2 mm, 32 x 1.2 mm (128 slice)
Slice thickness	1. Chest arteriogram CT · Axial lung kernel 1mm · MIPS 8x2 mm
	· Axial/coronal/sagittal soft tissue 2mm · Sagittal lung/bone kernel 1 mm 2. Abdomen/pelvis PV phase CT · Axial coronal sagittal soft tissue kernel 3 mm

	· Sagittal lung/bone kernel 1 mm
Filming	B30f kernel B70f kernel for lungs and additional spine sagittal reformats.

Comments:

· Notes: usually done with non-con CT head and CT C-spine before giving contrast

A 1: Abdomen and pelvis CT with contrast

Indications: abdominal pain, tumor staging, acute abdomen, penetrating abdomen trauma.

Contrast parameters	Oral: 900 ml (approx. 100 ml just before scan) IV: 100 ml at 2.5 ml/sec
Region of scan	Diaphragm to symphysis
Scan delay	Oral: 45-90 minutes from initial ingestion; 120 min for patients 10 years and younger IV: 60 seconds
Detector collimation	16 x 1.5 mm, 64 x 1.2 mm, 32 x 1.2 mm (128 slice)
Slice thickness	3 mm axials; 3 mm coronal & sagittal reformats. 1mm axial lung kernel through lungs

Filming	B30f kernel B70f kernel for lung bases.

Comments:

- Siemens Abdomen Vol settings.
- Use 5% Gastrografin solution when there is possible bowel perforation, impending surgery, or suspected bowel obstruction.
- Oral contrast delay can be shortened to 45-60 minutes if using Omnipaque.
- Inguinal/ventral hernia evaluation: patients should perform Valsalva maneuver at end-inspiration to accentuate any hernias, please specify if Valsalva performed in tech notes.

A 1A: Abdomen CT with contrast

Indications: upper abdominal pain, tumor staging.

Contrast parameters	Oral: 450ml (approx 100 ml just before scan) IV: 100 ml @ 2.5 mL/sec
Region of scan	Diaphragm to iliac crests
Scan delay	Oral: 45-60 minutes from initial ingestion IV: 60 seconds
Detector collimation	16 x 1.5 mm, 64 x 1.2 mm, 32 x 1.2 mm (128 slice)
Slice thickness	3 mm axials; 3 mm coronal & sagittal reformats. 1mm axial lung kernel through lungs
Filming	B30f kernel B70f kernel for lung bases.

Comments:

- Siemens Abdomen Vol settings.
- Use 5% Gastrografin solution when there is possible bowel perforation, impending surgery, or suspected bowel obstruction.

A 1P: Pelvis CT with contrast

Indications: lower abdominal pain, inguinal hernias.

Contrast parameters	Oral: 900 ml IV: 100 ml @ 2.5 ml/sec
Region of scan	Iliac crests to symphysis
Scan delay	Oral: 45-90 minutes from initial ingestion; 120 minutes for patients 10 years and younger IV: 60 seconds
Detector collimation	16 x 1.5 mm, 64 x 1.2 mm, 32 x 1.2 mm (128 slice)
Slice thickness	3 mm axials; 3 mm coronal & sagittal reformats
Filming	B30f kernel

Comments:

- Siemens Abdomen Vol settings.
- Use 5% Gastrografin solution when there is possible bowel perforation, impending surgery, or suspected bowel obstruction.
- Oral contrast delay can be shortened to 45-60 minutes if using Omnipaque.

A 2: Abdomen and pelvis CT with contrast (trauma protocol)
Indications: blunt abdomen injury.

Contrast parameters	Oral: none IV: 100 ml @ 2.5 mL/sec
Region of scan	1) Diaphragm to symphysis 2) Optional: kidneys to symphysis after 10-minute delay
Scan delay	Oral: NA IV: 60 seconds, optional 10-minute delay
Detector collimation	16 x 1.5 mm, 64 x 1.2 mm, 32 x 1.2 mm (128 slice)
Slice thickness	3 mm axials; 3 mm coronal & sagittal reformats. 1mm axial through the lungs
Filming	B30f kernel B70f kernel for lung bases and sagittal reformats.

Comments:

- Siemens Abdomen Vol settings.
- Perform optional 10-minute delayed imaging through the GU system if gross hematuria or if renal trauma is seen.

A 3: Abdomen and pelvis CT without intravenous contrast
Indications: abdominal pain; estimated GFR too low for IV contrast.

Contrast parameters	Oral: 900 ml (approx 100 ml just before scan) IV: none
Region of scan	Diaphragm to symphysis
Scan delay	Oral: 45-90 minutes; 120 minutes for patients 10 years old or younger
Detector collimation	16 x 1.5 mm, 64 x 1.2 mm, 32 x 1.2 mm (128 slice)
Slice thickness	3 mm axials; 3 mm coronal & sagittal reformats 1 mm axial through the lungs
Filming	B30f kernel B70f kernel for lung bases

Comments:

- Siemens Abdomen Vol settings.
- Oral contrast delay can be shortened to 45-60 minutes if using Omnipaque.

A 3A: Abdomen CT without intravenous contrast

Indications: upper abdomen pain; estimated GFR too low for IV contrast.

Contrast parameters	Oral: 450 ml (approx 100 ml just before scan) IV: none
Region of scan	Diaphragm to iliac crests
Scan delay	Oral: 45-60 minutes
Detector collimation	16 x 1.5 mm, 64 x 1.2 mm, 32 x 1.2 mm (128 slice)
Slice thickness	3 mm axials; 3 mm coronal & sagittal reformats 1 mm axial through the lungs
Filming	B30f kernel B70f kernel for lung bases

Comments:

- Siemens Abdomen Vol settings.

A 3P: Pelvis CT without intravenous contrast

Indications: lower abdomen pain; estimated GFR too low for IV contrast.

Contrast parameters	Oral: 900 ml (approx 100 ml just before scan) IV: none
Region of scan	Iliac crests to symphysis
Scan delay	Oral: 45-90 minutes; 120 minutes for patients 10 years old or younger
Detector collimation	16 x 1.5 mm, 64 x 1.2 mm, 32 x 1.2 mm (128 slice)

Slice thickness	3 mm axials; 3 mm coronal & sagittal reformats
Filming	B30f kernel

Comments:

- Siemens Abdomen Vol settings.
- Oral contrast delay can be shortened to 45-60 minutes if using Omnipaque.

A 4: Abdomen and pelvis CT without contrast (hematoma protocol)
Indications: ruptured AAA, post-catheterization groin hematomas.

Contrast parameters	Oral: none IV: none
Region of scan	Diaphragm to symphysis
Scan delay	NA
Detector collimation	16 x 1.5 mm, 64 x 1.2 mm, 32 x 1.2 mm (128 slice)
Slice thickness	3 mm axials; 3 mm coronal & sagittal reformats 1mm axials through the lungs
Filming	B30f kernel B70f kernel for lung bases

Comments:

- Siemens Abdomen Vol settings.

A 5: Pre- and post-contrast abdomen CT (liver protocol)
Indications: liver lesion characterization; HCC screening in cirrhosis.

Contrast parameters	Oral: none IV: 100 mL @ 4 mL/sec
Region of scan	Diaphragm to iliac crests
Scan delay	1) Non-contrast 2) Arterial phase: 25 sec after IV contrast 3) Portal venous phase: 70 sec after IV contrast 4) Delayed phase: 5 min after IV contrast
Detector collimation	1) 16 x 1.5 mm, 64 x 1.2 mm, 32 x 1.2 mm (128 slice) 2) 16 x 0.75 mm, 64 x 0.6 mm, 128 x 0.6 mm 3) 16 x 1.5 mm, 64 x 1.2 mm, 32 x 1.2 mm (128 slice) 4) 16 x 1.5 mm, 64 x 1.2 mm, 32 x 1.2 mm (128 slice)
Slice thickness	3 mm axials 3 mm coronal & sagittal reformats (portal venous phase only) 1mm axial through the lungs
Filming	B30f kernel B70f kernel for lung bases

Comments:

- Siemens Abd Multi Phase settings.

A 6: Pre- and post-contrast abdomen CT (pancreas protocol)

Indications: pancreatic mass, followup pancreatitis

Contrast parameters	Oral: Neutral contrast (Volumen or Breeza preferred, 1 bottle ok ~500cc) IV: 100 mL @ 4 mL/sec
Region of scan	Diaphragm to iliac crests
Scan delay	1) Non-contrast 2) Pancreatic Parenchymal phase at 40-50 sec 3) Portal Venous phase at 65-70 sec

Detector collimation	1) 16 x 1.5 mm, 64 x 1.2 mm, 32 x 1.2 mm (128 slice) 2) 16 x 0.75 mm, 64 x 0.6 mm, 128 x 0.6 mm 3) 16 x 1.5 mm, 64 x 1.2 mm, 32 x 1.2 mm (128 slice)
Slice thickness	3 mm axials 3 mm coronal & sagittal reformats (portal venous phase only) 1mm axial through the lungs
Filming	B30f kernel B70f kernel for lung bases

Comments:

- Siemens Abd Multi Phase settings.

A 7: Abdomen and pelvis CT with contrast (enterography protocol)
Indications: Crohn's disease, ischemic bowel, small bowel tumors.

Contrast parameters	Oral: 1350 mL Volumen or Breeza (see comments) IV: 100 ml @ 2.5 mL/sec
Region of scan	Diaphragm to symphysis
Scan delay	Oral: 60 minutes from contrast ingestion IV: 45 seconds
Detector collimation	16 x 1.5 mm, 64 x 1.2 mm, 32 x 1.2 mm (128 slice)
Slice thickness	3 mm axials 3 mm coronal & sagittal reformats 1mm axial lung
Filming	B30f kernel B70f kernel for lung bases

Comments:

- Siemens Abdomen Vol settings.
- Volumen/Breeza timing: drink 450 mL 60 minutes before scan, another 450 mL 40 minutes before scan, 225 mL at 20 minutes before scan, and last 225 mL at 10 minutes before scan.
- Warn patients about watery bowel movements (but not diarrhea) afterwards; Volumen is not absorbed by the intestinal lining.

A 8: Abdomen and pelvis CT angiogram (GI bleed/ mesenteric ischemia)

Indications: Gastrointestinal bleeding, intestinal ischemia

Contrast parameters	Oral: None. IV: 100 ml @ 4 mL/sec
Region of scan	Diaphragm to symphysis
Scan delay	1) Non-Contrast 2) IV: Arterial phase: 25 sec after IV contrast or care bolus at mid aorta; peak + 0 sec 3) Portal venous phase: 70 sec after IV contrast (look for delayed pooling of blood)
Detector collimation	16 x 1.5 mm, 64 x 1.2 mm, 32 x 1.2 mm (128 slice)
Slice thickness	2 mm axials 2 mm coronal & sagittal reformats (arterial and portal venous phase) 1 mm axial through lungs 1 mm 3-D coronal and sagittal MIP
Filming	B30f kernel B70f kernel for lung bases

Comments:

- Siemens BodyAngio Routine package

GU 1: Abdomen and pelvis CT without contrast (CT-KUB)

Indications: flank pain and hematuria; suspected renal colic.

Contrast parameters	Oral: none IV: none
Region of scan	Diaphragm to symphysis
Scan delay	NA
Detector collimation	16 x 1.5 mm, 64 x 1.2 mm, 32 x 1.2 mm (128 slice)
Slice thickness	3 mm axials; 3 mm coronal & sagittal reformats 1mm axial through the lungs
Filming	B30f kernel B70f kernel for lung bases

Comments:

- Siemens Abdomen Vol settings
- Ultra-Low-dose CT-KUB option - *do not use*

GU 2: Pre- and post-contrast abdomen and pelvis CT (CT-IVP)
Indications: hematuria

Contrast parameters	Oral: 1000 mL water for hydration 15-20 min before. IV: 80 ml at 2.5 ml/sec, wait 8 minutes. 60 ml at 2.5 ml/sec, wait 90 seconds
Region of scan	1) Diaphragm to symphysis pubis (optional) 2) Diaphragm to symphysis pubis
Scan delay	1) Non-contrast (CT-KUB) 2) Split Bolus 10 min Delay; second bolus should be given 90s prior to scan
Detector collimation	1) 16 x 1.5 mm, 64 x 1.2 mm, 32 x 1.2 mm (128 slice) 2) 16 x 0.75 mm, 64 x 0.6 mm, 128 x 0.6 mm
Slice thickness	Non-contrast: 3 mm axials, Coronal non-contrast reformat (bone kernel) Split Bolus: 3 mm axials, 3 mm thick coronal MPR, 3 mm thick sagittal reformats. 1mm axial through the lungs
Filming	B30f kernel B70f kernel for lung bases

Comments:

- Siemens Abd Multi Phase settings
- Do not acquire separate delayed bladder scan regardless of bladder distention.

GU 3: Pre- and post-contrast abdomen CT (adrenal protocol)

Indications: distinguish between adenoma and metastasis.

Contrast parameters	Oral: none IV: 100 ml @ 2.5 mL/sec
Region of scan	1) Diaphragm to iliac crests 2) Diaphragm to iliac crests 3) Adrenals and kidneys

Scan delay	1) Non-contrast: 2) Venous phase: 75 sec after IV contrast 3) Delayed phase: 15 min after IV contrast
Detector collimation	1) 16 x 1.5 mm, 64 x 1.2 mm, 32 x 1.2 mm (128 slice) 2) 16 x 1.5 mm, 64 x 1.2 mm, 32 x 1.2 mm (128 slice) 3) 16 x 1.5 mm, 64 x 1.2 mm, 32 x 1.2 mm (128 slice)
Slice thickness	Non-contrast: 3 mm axials Venous: 3 mm axials; 3 mm coronals and sagittal reformats. Delay: 3 mm axials 1mm axial through the lungs
Filming	B30f kernel B70f kernel for lung bases

Comments:

- Siemens Abd Multi Phase settings.

GU 4: Pelvis CT with contrast (CT cystogram)

Indications: assess for intra- or extraperitoneal bladder rupture.

Contrast parameters	300 ml diluted contrast instilled by gravity through existing Foley catheter (or as much as patient can tolerate) Dilute 50 ml contrast in 500 mL normal saline before instilling. No IV contrast
Region of scan	1) Iliac crests or bladder dome to symphysis 2) Iliac crests or bladder dome to symphysis
Scan delay	1) Non-contrast 2) Distended bladder after contrast instillation 3) Post-drainage
Detector collimation	1) 16 x 1.5 mm, 64 x 1.2 mm, 32 x 1.2 mm (128 slice) 2) 16 x 1.5 mm, 64 x 1.2 mm, 32 x 1.2 mm (128 slice)
Slice thickness	3 mm axials 3 mm coronal & sagittal reformats (reformats distended bladder only)
Filming	B30f kernel

Comments:

- Siemens Abd Vol settings.
- Foley catheter should be inserted by Emergency Dept or Urology prior to arriving in CT.

GU 5: Pre- and post-contrast abdomen CT (renal protocol)
Indications: renal mass evaluation or follow up.

Contrast parameters	Oral: 1000 ml water for hydration 15-20 min before. IV: 100mL @ 2.5mL/sec.
Region of scan	1) Diaphragm to iliac crests (optional) 2) Diaphragm to iliac crests 3) Diaphragm to iliac crests
Scan delay	1) Non-contrast (may omit for follow-up scans) 2) Arterial phase: 30 seconds 3) Nephrographic phase: 90 seconds (NO 8min delay)
Detector collimation	1) 16 x 0.75 mm, 64 x 0.6 mm, 128 x 0.6 mm 2) 16 x 0.75 mm, 64 x 0.6 mm, 128 x 0.6 mm 3) 16 x 0.75 mm, 64 x 0.6 mm, 128 x 0.6 mm
Slice thickness	1) Non Contrast: 3 mm axials 2) Arterial: 3 mm axials; 3 mm coronal and sagittal 3) Nephrographic: 3mm axials, 3mm coronal and sagittal 1mm axial through the lungs
Filming	B30f kernel B70f kernel for lung bases

Comments:

- Siemens Abd Multi Phase settings.
- Do not acquire 8min delay

Combo 1: Chest, abdomen, and pelvis CT with contrast
Indications: tumor staging.

Contrast parameters	Oral: 900 ml (approx 100 ml just before scan) IV: 100 ml @ 2.5 ml/sec

Region of scan	Lung apices to symphysis
Scan delay	Oral: 45-90 minutes from initial ingestion; 120 min for patients 10 years and younger IV: 60 seconds
Detector collimation	16 x 1.5 mm, 64 x 1.2 mm, 32 x 1.2 mm (128 slice)
Slice thickness	3 mm axials; 3 mm coronal & sagittal reformats 1mm axial through the lungs 8 x 2 mm coronal MIP through the lungs.
Filming	B30f kernel B70f kernel for lungs (including MIP reformats).

Comments:

- Siemens Abdomen Vol settings.
- For "low impact" trauma scans: omit oral contrast. Perform sagittal reformats in B70f (bone) kernel, to include the anterior chest wall.
- Oral contrast delay can be shortened to 45-60 minutes if using Omnipaque.
- Optional CT navigational bronchoscopy images: 1 mm x 0.8 mm axial slices, B31F kernel, mediastinal window.

Combo 2: Chest and abdomen CT with contrast

Indications: tumor staging.

Contrast parameters	Oral: 900 ml (approx 100 ml just before scan) IV: OR 100 ml @ 2.5 ml/sec
Region of scan	Lung apices to iliac crests
Scan delay	Oral: 45-60 minutes from initial ingestion IV: 60 seconds
Detector collimation	16 x 1.5 mm, 64 x 1.2 mm, 32 x 1.2 mm (128 slice)
Slice thickness	Axial 1mm lung kernel, 8 x 2 mm MIPS Axial 3mm soft tissue kernel Coronal and sagittal 3 mm reformats with soft tissue kernel

Filming	B30f kernel B70f kernel for lungs (including MIP reformats).

Comments:

- Siemens AbdomenVol settings.
- Optional CT navigational bronchoscopy images: 1 mm x 0.8 mm axial slices, B31F kernel, mediastinal window.