

ABDOMINAL CT PROTOCOLS

To use the injection rate of 3 cc/sec, must have a 20 gauge angiocath in place. If a 22 gauge angiocath is used, can use 1 cc/sec injection rate. Do not use an angiocath in the hand or foot for a power injection.

All scans done in full inspiration.

Unless otherwise specified in protocol, use the following I.V. contrast.

<u>Patient Weight</u>	<u>I.V. Contrast</u>
150 lbs (70kgs) or less	125 cc Omnipaque 300
150 lbs (70 kgs) or more	125 cc Omnipaque 350
Greater than 200 lbs (90 kgs)	150 cc Omnipaque 350

Delay is from beginning of contrast injection. If pelvis is being scanned and a Foley catheter is present, clamp Foley 30 minutes before beginning scan.

Oral Contrast in ED patients – 10 cc Omnipaque in 600 cc water, given over one hour.

Oral Contrast – Use water-soluble contrast if there is a question of a bowel leak and in trauma patients or if water soluble indicated on protocol per radiologist

Contrast for CT cystogram, nephrostogram, or CT abscessogram: Use 25 cc IV contrast (60% or 300 mg/ml) in 500 cc sterile water or 50 cc contrast in 1000 cc water. Ionic contrast usually fine if no allergy.

GE, 4-CHANNEL (Room 4) ----- ARTERIAL PHASE **25 SEC.**
PORTAL VENOUS PHASE **65 SEC.**

GE, 16-CHANNEL (Room 2) -----ARTERIAL PHASE **35 SEC.**
PORTAL VENOUS PHASE **75 SEC.**

TOSHIBA AQUILION, 64 CHANNEL (Rooms 1, 3, 5)

Single Phase: 1) **Portal Venous Phase:** Use Sure-Prep, Add 70 HU to unenhanced liver density and begin scanning when Sure-Prep reaches that number.

Dual Phase: 1) **Arterial Phase:** Use Sure-Prep, scan when aorta at diaphragm level is 200 HU.
2) **Portal Venous Phase:** Scan at 90 sec from beginning of contrast injection.

	Oral Contrast	IV Contrast	Slices
Single Phase Abdomen (Abd I)	450 cc 45 min 300 cc 20 min 300 cc on table 1 pkg E-Z gas	3 cc/sec helical	Portal Venous Phase: 5,5 diaphragm to iliac crests (or through liver if liver extends inferior to crests or through pancreas if it extends inferior to crests).
Dual Phase Abdomen (Abd II)	450 cc 45 min 300 cc 20 min 300 cc on table 1 pkg E-Z gas	3 cc/sec helical	Arterial Phase: 5,5 liver Portal Venous Phase: 5,5 diaphragm to iliac crests (or through liver, whichever is lower)
Triple Phase Abdomen (Abd III)	450 cc 45 min 300 cc 20 min 300 cc on table 1 pkg E-Z gas	3 cc/sec helical	Without I.V. Contrast: 5,5 liver Arterial Phase: 5,5 liver Portal Venous Phase: 5,5 diaphragm to iliac crests (or through liver, whichever is lower)

	Oral Contrast	IV Contrast	Slices
Single Phase Abd/Pelvis (AP I) (Ex: Abscess, Lymphoma staging) Clamp Foley	450 cc 1 hr 300 cc 30 min 300 cc on table 1 pkg E-Z gas	3 cc/sec helical	Portal Venous Phase: 5,5 diaphragm to iliac crests 3 min delay: 5,5 iliac crests to symphysis (Call MD to check for abscess w/u or abscess found)
Single Phase Abd/Pelvis with Pelvic Focus (AP I with 2-3 hr Oral) (Ex: Pelvic Infection-Appendicitis, Diverticulitis, PID)	450 cc 2-3 hrs or give rectal contrast. 300 cc 45 min 300 cc on table + 1 pkg E-Z gas	same as above	same as above If done from ER, scan after 1 hour of oral unless radiologist specifies otherwise.
Dual Phase Abd/Pelvis (AP II) (Example: primary liver tumor, Hx of hepatitis B/C/cirrhosis, hypervascular mets, unknown primary tumor) Clamp Foley	450 cc 1 hr 300 cc 30 min 300 cc on table 1 pkg E-Z gas	3 cc/sec helical	Arterial Phase: 5,5 liver Portal Venous Phase: 5,5 diaphragm to iliac crests 3 min delay: 5,5 iliac crests to symphysis
Triple Phase Abd/Pelvis (AP III) (Example: primary liver tumor, cirrhosis, fatty liver hypervascular metastases) Clamp Foley	450 cc 1 hr 300 cc 30 min 300 cc on table 1 pkg E-Z gas	3 cc/sec helical	Without I.V. contrast: 5,5 liver Arterial Phase: 5,5 liver Portal Venous Phase: 5,5 diaphragm to iliac crests 3 min delay: 5,5 iliac crests to symphysis
Adrenals I – Adrenal Mass Non-Pheo All scans, including outpatients, should be checked by radiologist	450 cc on table + 1 pkg E-Z gas	None initially. May add after MD review if requested by MD	5,5 diaphragm to mid-kidney to locate adrenal; then 3,3 mm helical of adrenals targeted to the adrenal region only. (Use small ROI to get adrenals targeted.) MD to check all scans. If MD requests contrast scan, give 150cc at 3cc/sec & scan adrenals during portal venous phase and again at 10 min from beginning of bolus. MD to recheck
Adrenals II – Pheochromocytoma Clamp Foley	450 cc 1 hr 300 cc 30 min 300 cc on table + 1 pkg E-Z gas	None	5,5 diaphragm to symphysis
Kidneys – Hematuria	None	3 cc/sec helical	Consider doing CT Urography (see separate protocol) Renal Colic CT Portal Venous Phase: 5,5 kidneys 3 min delay: 5,5 top of kidneys to symphysis
Kidneys – Kidney Tumor Staging or Indeterminate Kidney Mass	450 cc 45 min 300 cc 20 min 300 cc on table + 1 pkg E-Z gas	3 cc/sec helical	Without I.V. contrast: 5,5 kidneys Arterial Phase: 5,5 diaphragm through kidneys Portal Venous Phase: 5,5 diaphragm through kidneys 3 min delay: 5,5 kidneys
Ovarian Vein Thrombosis – Postpartum patient with fever. Clamp Foley	450 cc 1 hr 300 cc 30 min 300 cc on table + 1 pkg E-Z gas	3 cc/sec helical	Without I.V. contrast: 5,5 renal veins to iliac crests 3 min delay: 5,5 diaphragm to symphysis

	Oral Contrast	IV Contrast	Slices
Pancreas I –Panc CA (Staging Pancreatic Adenocarcinoma)	450 cc 30 min 300 cc 15 min 300 cc on table + 1 pkg E-Z gas or if plan to do reconstruction use 300 cc water 15 min 350 cc water + 1 pkg E-Z gas on table	3 cc/sec helical	See timing below for phases: (1) First Series: 5,5 pancreas (2) Second Series: 5,5 diaphragm to crests (or through pancreas) Timing: GE 4 channel: (1) 40 sec (2) 70 sec GE 16 channel: (1) 50 sec (2) 80 sec Toshiba 64 channel: (1) 55 sec (2) 90 sec
Pancreas II –Panc Neuroendocrine /Hypervasc Mass (Example: Neuroendocrine tumor – gastrinoma, insulinoma)	350 cc water 15 min 350 cc water + 1 pkg E-Z gas on table	3 cc/sec helical	Arterial Phase: 5,5 diaphragm through pancreas or crests (whichever lower) Portal Venous Phase: 5,5 diaphragm through pancreas or crests (whichever lower)
Pelvis I Clamp Foley	450 cc 2-3 hrs 300 cc 1 hr 300 cc 30 min	3 cc/sec helical	3 min delay: 5,5 iliac crests to symphysis
Pelvis II – Rectal contrast (Rectovesical Fistula) Clamp Foley.	None	None	5,5 pelvis helical Then give 750 cc water-soluble rectal contrast. Repeat 5,5 pelvis helical. MD to check.
Renal Colic/Acute Flank Pain	None	None	5,5 top of kidneys to symphysis
Trauma I – Blunt Trauma Clamp Foley	Water-soluble 450 cc 1 hr 300 cc 30 min 300 cc on table No oral if requested by trauma	3 cc/sec helical	Portal Venous Phase: 5,5 diaphragm to ischium 3 min delay: 5,5 kidneys Recons: Coronal 4mm – send 1 st Sagittal 4mm – send L to R Send recons to PACS in above order. DO NOT include Chest in recons.
CT Cystogram	None	None	At least 350cc, 5% dilution of hypaque 60, then 5mm pelvis (see separate CT cystogram protocol for specific instructions.) Gravity instillation only. Do not squeeze bag.
Trauma II – Stab Wound	Water-soluble 450 cc 1 hr 300 cc 30 min 300 cc on table	3 cc/sec helical	Portal Venous Phase: 5mm diaphragm to symphysis MD to check. When images checked, if stab wound is near colon, give water-soluble rectal contrast (amount depending on area of colon in question: 1000 cc if asc. colon or 750 cc if desc. colon) and repeat 5,5 through area in question.
Trauma III – SGW Pellet Localization (Indicated only if large number of pellets which cannot be localized on x-rays or fluoro.)	None	None	Look at scout film and post slices, 5mm through pellets.
CT Enterography	See separate sheet		