School of Medicine and Public Health
UNIVERSITY OF WISCONSIN-MADISON

CT Protocols for Canon Aquilion One Insight Edition

REF **Rev: 1.0**

Manufacturer:
School of Medicine and Public Health
University of Wisconsin-Madison
610 Walnut Street
Madison, WI 53726

Manufactured in USA

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for Canon Aquilion One Insight Edition

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Adult Protocols

Abdominal Protocols:

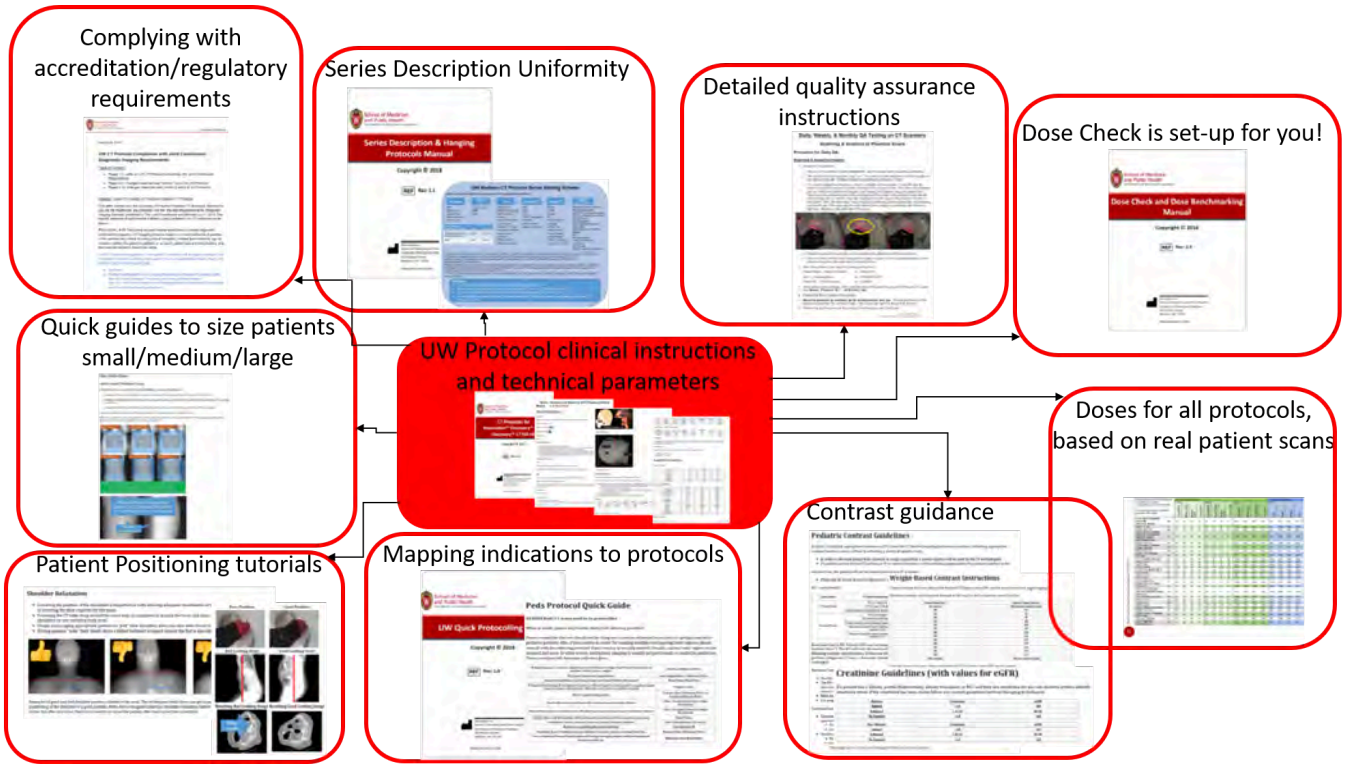
UW Protocol Resource Ecosystem

In addition to the protocols contained in this booklet, we've cultivated a website with additional resources. These resources augment the protocols contained here to assist your practice in all facets of CT scanning. As shown in the graphic below, we have included resources for the following:

https://uwgect.wiscweb.wisc.edu/general-resources/

- Protocol Quick Guides
  - We include a manual which is meant to be a quick reference guide for mapping diagnosis and indications to our protocols. We offer various protocols which are required to properly span patient size and the wide range of indications most radiology practices service.
- Protocol Compliance with Joint Commission
  - By using the UW protocols you are compliant with a number of Joint Commission Diagnostic Imaging Performance Criteria. Please see the letter on the website which itemizes this.
- Vendor Neutral Series Naming/Series Description Manual
  - We have a vendor neutral manual which details homogeneous name reconstructions and assist tech workflow with image hanging in PACS.
- Quality Assurance Scanner Resources
  - We include detailed instructions on Daily and Monthly QA testing and analyzing for CT Scanners. These include phantom scanning instructions, data collection worksheets, and step by step instructions on how to scan and gather measurement data for ACR and TJC compliance.
- Dose Check and Dose Benchmarking Manual
  - We provide dose check values tuned to patient size and indication with instructions on how to enter them on your scanner (all UW protocol discs will come with these already pre-loaded for you).
  - We also incorporate dose data from thousands of UW patients scanned using these protocols, providing appropriate standard references.
- Contrast guidance
  - We provide reference material for daily tech use on: needle gauges, creatinine/eGFR levels, weight based dosing, contrast media, and oral contrast mixtures.
- Positioning guidance
  - In proper patient positioning can lead to poor image quality. We have a tutorial document that goes over proper positioning to avoid degradation in spatial resolution and amplifications of image noise.
- Patient Size Selection
  - Many techs at first have trouble with our use of small/medium/large sized based scans. We created a manual and defined our default reconstruction FOV to mitigate any issues.

https://ctecc.radiology.wisc.edu/uw-canon-collaboration/



We hope the collection of scanner protocols contained in this booklet, and the plethora of resources on our website, can aide you in your effort to provide the best patient care possible!

Single Energy Metal Artifact Reduction (SEMAR) Guidance

SEMAR - **S** ingle **E** nergy **M** etal **A** rtifact **R** eduction

Here is an overview of our current guidance:

	Thin soft tissue recon	Thin bone recon	Thick bone recon	Additional Thin soft tissue with SEMAR recon	Bone reformats	Soft tissue reformats
Body	**SEMAR**	**n/a**	**n/a**	**n/a**	**n/a**	**SEMAR**

- **Make sure to label your reformats with the word "SEMAR" at the end of it. For example CO MAR (CO SEMAR), CO BODY MAR (CO BODY SEMAR), etc."**
- Common types of metal that require SEMAR include: Hip prosthesis for body exams should be applied to the Soft Tissue recon and reformats.

ABDOMINAL

When scanning a Abdominal exams and metal is present in any part of the scan range (i.e. spine hardware, pain pump or hip replacement) turn SEMAR on, on the Thin ST series when on a SEMAR capable scanner. Create the reformats off this series and label with SEMAR.

Reminders:

- Turn it on for the entire series/ scan range prescribed per protocol.
- Do not adjust any of the recon options/algorithms. (i.e., ASIR, IQ Enhance, DLIR, etc.), just merely turn SEMAR on.
- If a Thin ST non-SEMAR series has been sent to PACS and you are creating and sending a SEMAR series, make sure to delete the non-SEMAR series from PACS.

Patient Size Selection

Adult: Small/Medium/Large

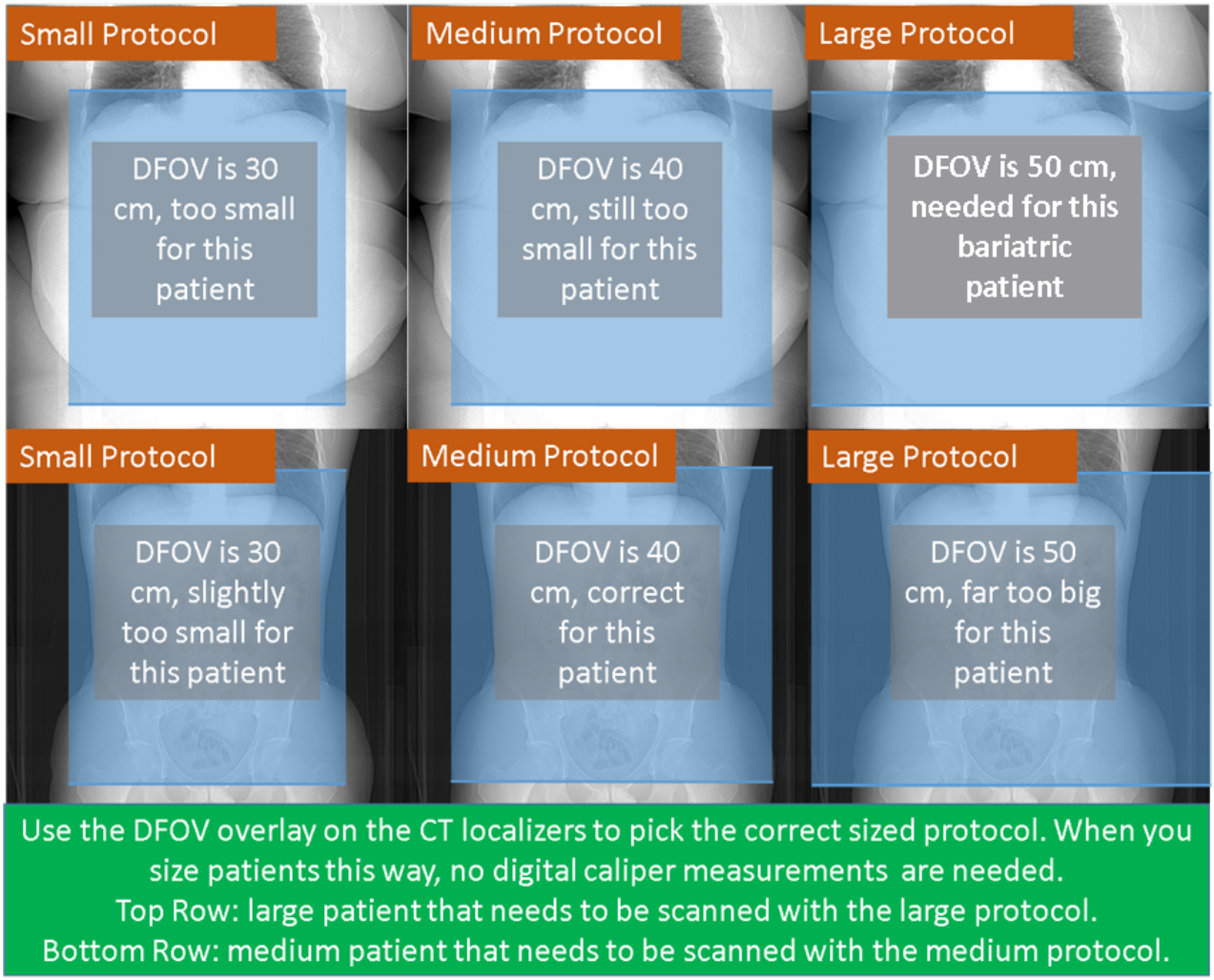
All Adult Body Protocols are divided into **Small/Medium** and **Large** Adult Protocols.

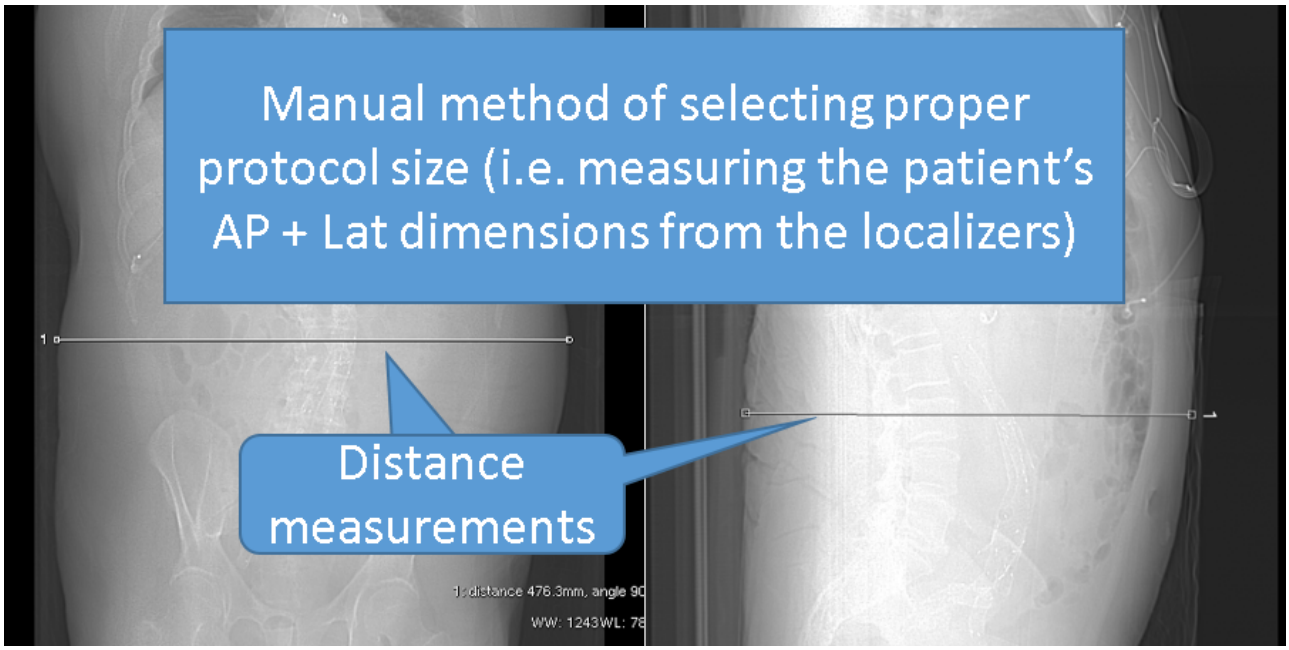
Small/Medium Adult Body Protocols shall be used for all patients with a combined AP plus Lateral size of 80 cm or less.

Large Adult Body Protocols shall be used for all patients with a combined AP plus Lateral size of 80 cm or greater.

These sizes shall be measured off of the Scout image over the largest anatomy of clinical interest.

With the use of these 2 protocols, matched to patient size, there should not be any need for the CT technologist to make further adjustments to the scan techniques when scanning any patient.




Manual method of selecting proper protocol size (i.e. measuring the patient's AP + Lat dimensions from the localizers)
Distance measurements

Body Protocol Quick Guide

When in doubt, please ask/double check/call referring provider!

Protocol Name	Protocol Number	Indication(s)	Phases	Oral Contrast	Design Philosophy
Abd/Pelvis	6.1/6.2/6.3	Evaluate for abdominal pathology other than hypervascular tumors. Increasing Erythema, Abscess, infection, sepsis, Leukocytosis, Abdominal pain, distention, obstruction, Acute sided abdominal TTP, Fournier's gangrene, Pancreatitis (chronic or Necrotizing), Abdominal wall drainage, fistula, Nausea, vomiting, Chron's with acute pain/complication	Portal Venous	Oral	This is standard abdomen pelvis protocol. It is the default protocol for the vast majority of studies. This one is useful when a general screening protocol is needed.

Abd/Pelvis-Bariatric protocol	**6.1/6.2/6.3**	**Post-Op Bariatric Surgery.**	**Without or Portal Venous**	**150 ml Oral**	**These patients are only able to tolerate 150 mL. No need for extended drink duration. Oral contrast ONLY given on the CT scan table just prior to scanning.**
Abd/Pelvis-With	**6.1/6.2/6.3**	**Used for Retroperitoneal Bleeds, or when IV contrast can not be given.**	**Without**	**Oral**	**For patients where it is contraindicated to get IV contrast.**
Trauma - Abd/Pelvis	**6.4/6.5/6.6**	**Emergency evaluation for aortic injury or organ disruption. Routine creatinine cut-off for IV contrast administration does not apply in a trauma.**	**Portal Venous & Optional 7 min Delay**	**None**	**Emergency evaluation for traumatic organ disruption. This is usually reserved for a direct blow to the abdomen or low velocity MVA. Note: Routine creatinine cut-off for IV contrast administration does not apply in a trauma.**

Penetrating Abdominal Trauma	**6.4/6.5/6.6**	**Emergency evaluation for penetrating injury to the abdomen (i.e. knife). Routine creatinine cut-off for IV contrast administration does not apply in a trauma.**	**Portal Venous**	**Rectal**	**If there is concern for bowel injury due to penetrating injury (like a knife wound), rectal contrast helps identify this. Otherwise the survey looks for any other traumatic injury that we would otherwise see on the standard trauma – abd/pelvis protocol.**
High Image Quality Cancer Follow-Up Abd/Pelvis	**6.7/6.8/6.9**	**Cancers with possible hepatic metastatic disease. Known TCC, follow up mets, colorectal, pancreas, cholangiocarcin esophageal, lung and breast cancer.(EXCEPTIONS: Not for lymphoma, testicular ca, RCC/NET, prostate ca, discuss in young pts)**	**Portal Venous**	**Oral**	**Uses a higher dose profile to assess for malignancy recurrence or distant metastatic disease.**

Abd/Pelvis - Flank Pain	**6.10/6.11/6.12**	**For patients with acute flank pain, have hydronephrosis, or who are being evaluated for renal stones but don't have a prior study. Evaluate for Polycystic Kidney Disease (PCKD) in cases in which contrast is contraindicated.**	**Non - Con**	**Water**	**This protocol is primarily targeted for the first-time evaluation of obstructing renal calculus. It is a non-contrast study; therefore, not optimal for imaging other causes of abdominal pain. However, it may suffice in situations where the disease processes are not subtle. We discourage it for appendicitis.**

Limited Follow-Up Kidneys Only	**6.13/6.14/6.15**	**For patients with known stones (based on prior flank pain CT) who are asymptomatic, assess stone burden. *carefully read history for other things that might warrant including pelvis. Ask the pt if they are having any symptoms, if the answer is yes, then use the Flank pain protocol.**	**Non - Con**	**Water**	**This protocol is intended for follow-up of patients with known kidney stones; those status post lithotripsy; or those presenting to the emergency department with typical flank pain and are known to have kidney stones. Image resolution is satisfactory for identifying calculi, but not optimal for other pathology.**

Abd/Pelvis Urography	**6.22/6.23/6.24**	**Urography protocol is used for general renal imaging. Urography protocol is indicated in patients with hematuria less than 45 years old with NO history of urothelial cancer. If patient has a history of urothelial cancer or TCC, please use the Urothelial Tumor follow up protocol no matter their age**	**Without (top of Kidney to pubic symphysis) 10 minute Parenchymal (Full A/P)**	**Water**	**This protocol is optimized for viewing the kidneys and the renal collecting system. The most common indication is hematuria.**
Abd-Liver Biphasic	**6.25/6.26/6.27**	**Evaluation of hypervascular metastatic disease to the liver such as neuroendocrine tumor, carcinoid tumor, RCC.**	**Late Arterial and Portal Venous A/P**	**Water**	**This protocol is optimized to evaluate cirrhotic patients and suspected liver tumors. It is also applied for the evaluation of hypervascular metastatic disease to the liver.**

Abd-Adrenal Gland - Adenoma	**6.31/6.32/6.33**	**Characterizatior for adrenal mass (For a pheochromocyt do routine abdomen)**	**Non - Con, Portal Venous, and 15-minute delay**	**None (If converted to with IVC give a 200mL dose of water on the CT scan table while the IV is being placed)**	**This protocol is optimized for the characterization of adrenal enlargement specifically for a suspect adenoma. It would not be protocol of choice to rule out pheochromocytoma.**

Abd - Pancreas Cancer (Neoplasm Screening)	**6.40/6.41/6.42**	**Assess for pancreatic cancer, assess resectability, assessing post treatment/therap response (but if known metastatic disease or unresectable pancreas cancer High Quality Cancer follow-up Abd/Pel)**	**40 second delay Abd, portal venous Abd/Pel**	**Water**	**This scan is used in patients where there is suspicion of pancreas mass. The first phase is scanned in the late arterial phase. Since pancreatic adenocarcinoma is hypovascular, it is best detected at 40 seconds post contrast when the normal glandular tissue enhances optimally and the hypovascular tumor does not (optimizes contrast between the lesion and the background pancreas). The second phase is portal venous, to evaluate the solid organs, particularly the liver, for metastatic disease and for routine evaluation of the abdomen and pelvis.**

Abd/Pelvis - Kidney Tumor	**6.49/6.50/6.51**	**Suspicion or evaluation of small renal neoplasm, Characterize renal mass. Ideal for PCKD (unless contrast is contraindicated, in which case use the Flank Pain protocol). If known RCC to assess for mets use Biphasic protocol, may not need to include pelvis if only renal mass.**	**Non- Con, Portal Venous, 2 - Minute Delay**	**Water**	**This protocol is optimized to evaluate patients with suspicion or evaluation of small renal neoplasm. This protocol is ideal for evaluating Polycystic Kidney Disease (PCKD) if contrast is not contraindicated.**
CTA Abd - Renal Donor	**6.52/6.53/6.54**	**Work-up of a potential renal donor. Assess for renal auto transplant.**	**Non- Con, CTA, Portal Venous, 5 - Minute Delay**	**Water**	**This protocol is optimized to evaluate the potential renal transplant donor.**
Abd-Small Bowel Enterography	**6.55/6.56/6.57**	**Chron's/IBD, Evaluate for small bowel disease. Consider MRE first, use CT Enterography as alternative.**	**55 second delay**	**Neutral**	**This protocol is optimized for the evaluation of the small bowel. It is specifically designed for inflammatory bowel disease.**

CTA Abd Mesenteric Ischemia	**6.61/6.62/6.63**	**Evaluate for mesenteric ischemia**	**CTA & Portal Venous**	**Water**	**This protocol is optimized to evaluate for mesenteric ischemia**

Urothelial Tumor Follow-Up	**6.70/6.71/6.72**	**Hematuria in patients 45 years or older, Known urothelial cancer in bladder or ureters with NO current evidence of or suspected metastatic disease in patients of all ages. Recurrence, high risk recurrence, evaluate urothelium or high risk TCC in history in patients of all ages. Please note: Some of these patients will not have a bladder (so no need to void prior to the scan as they will have a urostomy).** • **Hematuria in patients age 45 or less with no history of urothelial cancer, use Urography protocol.** • **For patients with known metastatic disease or screening for metastatic disease use High image quality cancer follow up protocol.**	**Non- Con, Portal Venous, 10 Minute Delay**	**Water**	**This protocol is optimized to assess for causes of hematuria in high-risk patients. It increases detection of upper tract cancers by using a dedicated portal venous and parenchymal phase at the expense of a bit more dose.**

Abd/Pelvis -Venogram (Pre-IVC Filter Removal)	**6.73/6.74/6.75**	**This is a standard CT of the abdomen and pelvis optimized for evaluation of residual clot in the IVC prior to IVC filter removal. Gonadal/Iliac vein/IVC thrombus, CT venogram**	**120 sec Delay**	**None**	**This protocol is used to assess for both the position and for the presence of clot in an IVC filter prior to removal. IV contrast is used and images are obtained 180 seconds after contrast injection to optimize opacification of the inferior vena cava and iliac veins.**

CTA Abd/Pelvis Active Bleeder	**6.79/6.80/6.81**	**Active Bleeding/Active GI Bleed, Drop in Hemoglobin, Bleed eval for active extravasation. Bleeding associated with Transplant, Pancreatitis, Hypervascular Mets or HCC *If looking for Retroperitoneal Hematoma start with a Non-Con Without Abd/Pelvis, Evaluate for cause of obscure gastrointestinal bleed**	**Non- Con, CTA, Portal Venous**	**None**	**This protocol is used for any suspected active bleeding in the abdomen and pelvis, particularly from the GI tract. The without phase lets one decipher between gastrointestinal intraluminal ingested contents and contrast extravasation.**
Abd-Liver Hepatocellular Carcinoma (HCC)	**6.82/6.83/6.84**	**Cirrhosis, hepatocellular carcinoma. This protocol fulfills the UNOS criteria.**	**Late Arterial, Portal Venous and 3- Minute Delay**	**Water**	**This protocol, which is used to rule out HCC, is similar to the biphasic liver protocol, except it includes an additional delayed phase as mandated by UNOS.**

Abdominal Wall Flap CTA	**6.88/6.89/6.90**	**Evaluate abdominal wall vasculature for surgical planning for free flap. Note DIEP(a.k.a. Abdominal Wall Flap) evaluation is a separate protocol that is protocoled by body imaging.**	**CTA**	**None**	**A specialized protocol only used to map out the abdominal wall vasculature for breast reconstruction surgery.**
Cystogram	**8.10/8.11/8.12**	**Bladder tumor, injury, rupture, fistula**	**Non- Con & contrast filled bladder**	**None**	**Specifically for the evaluation of bladder tumor**
Body Pelvis	**8.16/8.17/8.18**	**Evaluate for Pelvic pathology other than hypervascular tumors. Fournier's Gangrene -Body Pelvis- extend through mid-femur**	**Portal Venous**	**None**	**This is a standard or routine examination of the pelvis meant to assess for pelvic pathologies that are not hypervascular.**

Abd/Pelvis - R/O Hernia (Use routine Abd/Pelvis protocol)	**6.1/6.2/6.3**	**Standard CT of the abdomen and pelvis with the patient performing a Valsalva maneuver during the scan acquisition. This increases the likelihood of detecting hernia.**	**Portal Venous with valsalva**	**Oral**	**This protocol is intended for the evaluation of hernias. It asks the patient to perform a Valsalva maneuver during the scan to enhance the prominence of any hernia.**
Abd/Pelvis-Upper GI (UGI) (Use Routine Abd/Pelvis protocol)	**6.1/6.2/6.3**	**Rule out gastric or duodenal perforation. Two views/positions is optimal to evaluations for leak, and many of these patients are unable to lay prone, so please scan supine and right decub.**	**Supine and Right Decub**	**None**	**This protocol can be used in lieu of a fluoroscopic UGI study when assessing for gastric or duodenal perforation. Many times, these patients are status post ulcer repair, and surgeons want to assess for any persistent signs of perforation.**

Abd/Pelvis 6.1/6.2/6.3

Clinical Instructions

Indication

Evaluate for abdominal pathology other than hypervascular tumors.

Oral Contrast

Oral Contrast: Dilute (1) 20 ml cup of Iohexol 300 mgI/mL in 800 ml clear liquid, flavoring may be added but no ice or carbonation.

Administer to Outpatients: 200mL every 15 minutes over one hour.

Administer to Inpatients: 200mL every 30 mins over two hours.

Bariatric post-op patients:

- These patients are only able to tolerate 150 mL. No need for extended drink duration. Oral contrast ONLY given on the CT scan table just prior to scanning.
- Mix 2x concentrated dose: 8mL Iohexol(Omnipaque) in 200mL of clear liquid.
- Give 150mL of the 200mL on the CT table.
- There will be an order in EPIC to administer only 1 dose.
- If you have questions please ask the protocolling radiologist.

Pre-Scan Instructions

Clamp Foley catheter and Neph tubes prior to scanning. Make sure to place Foley below the level of the bladder.

IV Contrast: Select Option 1 or 2 - based on concentration available at your site

Option 1: IV Contrast Parameters 350 mgI/mL

Select the Ulrich Weight-Based Adult 3mL protocol which will load the following settings: Saline Test Bolus 3mL/sec Weight based volume 3mL/sec (see below) Saline Flush 50 mL 3mL/sec

Iohexol (Omnipaque) 350 mg/mL injection at a rate of 3 mL/sec

For sites without the Ulrich use Medrad p3T or refer to the weight based contrast tables included with the protocol booklet.

Option 2: IV Contrast Parameters 300 mgI/mL

Medrad™ P3T Abdomen protocol.

Iohexol (Omnipaque) 300 mg/mL injection at a rate of 3 mL/sec

For sites without the Medrad™ P3T or P3T PA option, refer to the weight based contrast tables we provide in the protocol booklet.

Field of View

Same as previous study or as small as appropriate

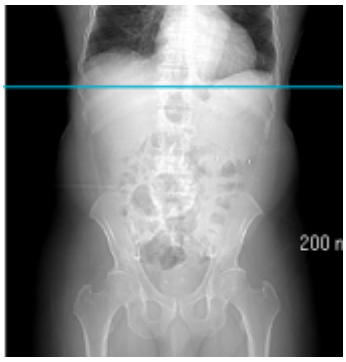
Scan Description

Badge 1 - 3D Landmark

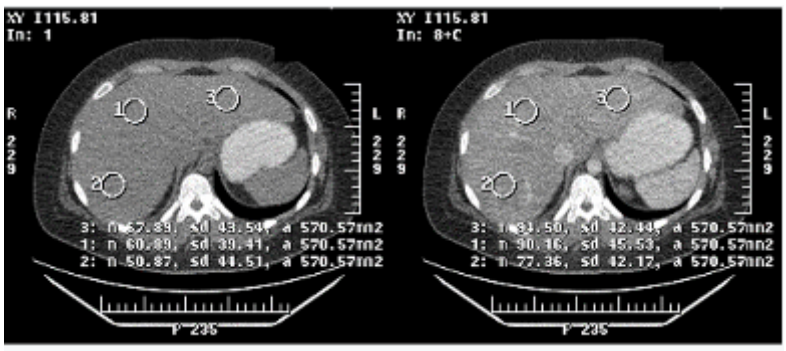
- Breathing instructions: Breath in and hold
- Coverage: Diaphragm through pelvis

Badge 2 -SureStart

- Place 1 ROI in the middle of the liver. Wait no longer than 80 seconds before starting the scan if the threshold is not reached.



Scout



ROI Location

Badge 3 - ST

- Breathing instructions: Breath in and hold
- Coverage:
  - Abdomen Only - Start scan at the top of the diaphragm, end at the iliac crests
  - Abdomen/Pelvis - Start scan at the top of the diaphragm, end at the pubic symphysis

Reformat Instructions

None

Reformats

Name	Source Series Name	3D/MPR or Manual	Rendering (MIP, Average, etc.)	WW/WL	Slice Thickness (mm)	Interval (mm)	Orientation
SA BODY	THIN ST	3D/MPR	Average	350/50	3	2	sagittal
CO BODY	THIN ST	3D/MPR	Average	350/50	3	2	coronal

Networking

All images (including 3DLandmark, SureStart and dose report) are AUTO networked to PACS (ALI_Store).

Miscellaneous

None

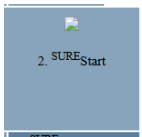
Acquisition Parameters

Badge 1: 3D Landmark

	Start Mode	Start Time (s)	Wait Time (s)	Total Scan Time (s)	Start Position (mm)	End Position (mm)	Range (mm)	No. of Scans	Scan Slice	Pitch	kV	mA
1. 3D Landmark	P	***	0	6.10	396.00	996.00	600.00	1	0.5 x 80	Fast	120	80
	Rotation Time(s)	**Scan Direction**	**C-FOV**	**CTDIvol (mGy)**	**DLP (mGy.cm)**	**Pre Voice**	**Post Voice**	**Contrast Protocol Name**	**Focus**	**Badge Name**		
	0.5	OUT	L	0.3	22.5	Breathe In & Hold	Breathe Normally ***		Small	***		

Recon Cards	Card No.	Start Position (mm)	End Position (mm)	Range (mm)	Thickness (mm)	Interval (mm)	DFOV	App Type	Kernel	Noise Reduction
	1	0	600	600	1	1	500	Localizer	Body	OFF
	BHC	**W / L**	**SEMAR**	**Transfer (Volume)**						
	OFF	300 / 50	OFF	ON (PACS)						

Badge 2: Sure Start



	Start Mode	Start Time (s)	Wait Time (s)	Total Scan Time (s)	Start Position (mm)	End Position (mm)	Range (mm)	No. of Scans	Scan Slice	Pitch	kV	mA
2. SURE Start	P	***	45	40.80	631.50	631.50	***	1	0.5 x 8	***	135	40

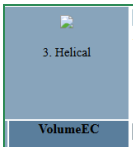
Rotation Time(s)	Scan Direction	C-FOV	CTDIvol (mGy)	DLP (mGy.cm)	Pre Voice	Post Voice	Contrast Protocol Name	Focus	Badge Name
0.6	OUT	L	335.0	134.0	***	***	***	Small	***

SURE Start Setup	ROI Mode	Intermittent	Interval (s)	Threshold ROI1 (Intermittent)	Start Mode	ROI Condition	Threshold ROI1	Threshold ROI2	Voice Timing	Lock Position
	1 ROI	ON	3	200	Manual	***	200	***	***	***

Recon Cards	Card No.	Start Position (mm)	End Position (mm)	Range (mm)	Thickness (mm)	Interval (mm)	DFOV	App Type	Kernel	Noise Reduction
	1	***	***	***	4	***	500	Dynamic	Body Sharp	AIDR 3D L3

BHC	W / L	SEMAR	Transfer (Volume)	Time Interval (s)
***	300 / 50	***	ON (PACS)	***

Badge 3: ST W/C

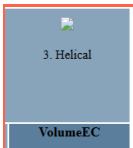


	Start Mode	Start Time (s)	Wait Time (s)	Total Scan Time (s)	Start Position (mm)	End Position (mm)	Range (mm)	No. of Scans	Scan Slice	Pitch	kV	mA
3. Helical	A	***	0	9.30	465.50	916.00	450.50	1	0.5 x 80	Standard	135	abdomen B4 MEDIUM

Rotation Time(s)	Scan Direction	C-FOV	CTDIvol (mGy)	DLP (mGy.cm)	Pre Voice	Post Voice	Contrast Protocol Name	Focus	Badge Name
0.6	OUT	L	***	***	Breathe In & Hold	Breathe Normally	***	Small	ST

VolumeEC	SD	Noise Reduction	XY-Modulation	Adaptive SD	OEM	Slice Thickness (mm)	Max mA	Min mA
	7.5	AiCE L2	ON	ON	OFF	4	780	80

Small Medium



	Start Mode	Start Time (s)	Wait Time (s)	Total Scan Time (s)	Start Position (mm)	End Position (mm)	Range (mm)	No. of Scans	Scan Slice	Pitch	kV	mA
3. Helical	A	***	0	15.50	465.50	916.00	450.50	1	0.5 x 80	Standard	120	abdomen B4 LARGE

Rotation Time(s)	Scan Direction	C-FOV	CTDIvol (mGy)	DLP (mGy.cm)	Pre Voice	Post Voice	Contrast Protocol Name	Focus	Badge Name
1.0	OUT	L	***	***	Breathe In & Hold	Breathe Normally	***	Small	ST

VolumeEC	SD	Noise Reduction	XY-Modulation	Adaptive SD	OEM	Slice Thickness (mm)	Max mA	Min mA
	8.5	AiCE L2	ON	ON	OFF	4	800	60

Large

Badge 3: Recons

Recon Cards	Card No.	Start Position (mm)	End Position (mm)	Range (mm)	Thickness (mm)	Interval (mm)	DFOV	App Type	Kernel	Noise Reduction
	1	0	450.5	450.5	1	0.5	382.8	Volume	Body Sharp	AiCE L1
	2	0	450	450	4	2	382.8	Volume	Body Sharp	AiCE L1

BHC	W / L	SEMAR	Transfer (Volume)
ON	350 / 50	OFF	ON (PACS)
ON	350 / 50	OFF	ON (PACS)

Axial			Coronal			Sagittal			Rendering	Transfer (MultiView)
Thickness (mm)	Interval (mm)	Direction	Thickness (mm)	Interval (mm)	Direction	Thickness (mm)	Interval (mm)	Direction		
***	***	***	3	2	A - P	3	2	R - L	Average	***
***	***	***	***	***	***	***	***	***	***	***

Trauma Abd/Pelvis 6.4/6.5/6.6

Clinical Instructions

Indication

Emergency evaluation for aortic injury or organ disruption. Routine creatinine cut-off for IV contrast administration does not apply in a trauma.

Oral Contrast

None

Pre-Scan Instructions

Clamp Foley catheter and Neph tubes prior to scanning. Make sure to place Foley below the level of the bladder.

IV Contrast: Select Option 1 or 2- based on concentration available at your site

Option 1: IV Contrast Parameters 350 mgI/mL

Select the Ulrich Weight-Based Adult 3mL protocol which will load the following settings: Saline Test Bolus 3mL/sec Weight based volume 3mL/sec (see below) Saline Flush 50 mL 3mL/sec

Iohexol (Omnipaque) 350 mg/mL injection at a rate of 3 mL/sec

For sites without the Ulrich use Medrad p3T or refer to the weight based contrast tables included with the protocol booklet.

Option 2: IV Contrast Parameters 300 mgI/mL

Medrad™ P3T Abdomen protocol.

Iohexol (Omnipaque) 300 mg/mL injection at a rate of 3 mL/sec

For sites without the Medrad™ P3T or P3T PA option, refer to the weight based contrast tables we provide in the protocol booklet.

Field of View

Same as previous study or as small as appropriate

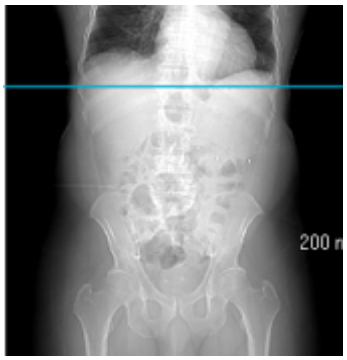
Scan Description

Badge 1 - 3D Landmark

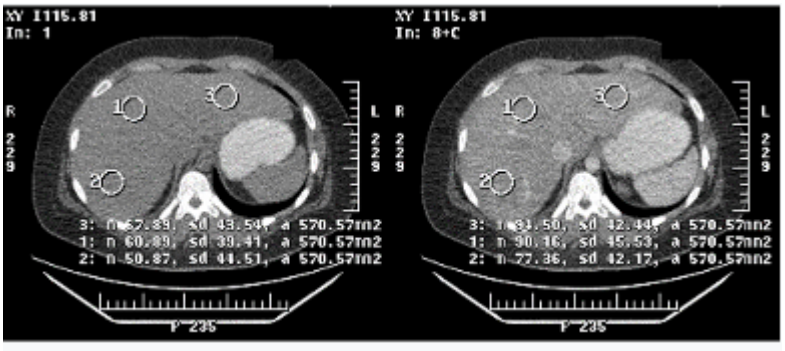
- Breathing instructions: Breath in and hold
- Coverage: from diaphragm through iliac crests or pubic symphysis.

Badge 2 -SureStart

- Place 1 ROI in the middle of the liver. Wait no longer than 80 seconds before starting the scan if the threshold is not reached.



Scout



ROI Location

Badge 3 - ST

- Breathing instructions: Breath in and hold
- Coverage: Top of the diaphragm and end just below the pubic symphysis.

Badge 4 - ST DELAY 7 MIN W/C (Optional per MD)

- Breathing instructions: Breath in and hold
- Coverage: Through area of concern determined by Radiologist.

Reformat Instructions

The L-spines (if ordered) need to be manually reconstructed either during or after the scan. The rest of the reformats for the chest and abdomen/pelvis use 3D/MPR.

Extra Recons on Trauma Protocols:

In Trauma patients, we Retro Recon our L-spines from the Trauma Abd/Pel protocol. We no longer retro T spines off the Trauma Chest as mentioned in the revisions. If a T■Spine is ordered, you will need to perform a dedicated T■Spine scan.

- Trauma Abd/Pelvis or Trauma Chest/Abd/Pelvis recons occupy the first few recons. The last 3 recons are pre-set for L spine scan reconstructions. You can turn these on if you have an order to recon the spine for the patient.
- Remember once you turn these recons on you must adjust the FOV, start and end location, R/L centering, and A/P centering.
- Remember to turn off these additional recons if you have to add continue your scan or add another scan to the end of your scan (get through the pelvis), or it will add that small group to the end of your L-spine.

Reformats

For both the PV and Delay phases

Name	Source Series Name	3D/MPR or Manual	Rendering (MIP, Average, etc.)	WW/WL	Slice Thickness (mm)	Interval (mm)	Orientation
SA BODY	Body THIN ST	3D/MPR	Average	350/50	3	2	sagittal
CO BODY	Body THIN ST	3D/MPR	Average	350/50	3	2	coronal

Reformats for the L-spine (remember, if a T-Spine is ordered you must scan a separate T-Spine since the Trauma Chest series of the Trauma CAP is not meant for spine reformats):

Name	Source Series Name	3D/MPR or Manual	Rendering (MIP, Average, etc.)	WW/WL	Slice Thickness (mm)	Interval (mm)	Orientation
CO ST	THIN ST	Manual	Average	450/50	2	1	Coronal
CO BONE	THIN BONE	Manual	Average	2500/350	2	1	Coronal
SA ST	THIN ST	Manual	Average	450/50	2	1	Sagittal
SA BONE	THIN BONE	Manual	Average	2500/350	2	1	Sagittal

Networking

All images (including 3DLandmark, SureStart and dose report) are AUTO networked to PACS (ALI_Store).

Miscellaneous

None

Acquisition Parameters

Badge 1: 3D Landmark

1. 3D Landmark

Start Mode	Start Time (s)	Wait Time (s)	Total Scan Time (s)	Start Position (mm)	End Position (mm)	Range (mm)	No. of Scans	Scan Slice	Pit
P	***	0	6.10	396.00	996.00	600.00	1	0.5 x 80	Fast

Rotation Time(s)	Scan Direction	C-FOV	CTDIvol (mGy)	DLP (mGy.cm)	Pre Voice	Post Voice	Contrast Protocol Name	Focus	Badge
0.5	OUT	L	0.3	22.5	Breathe In & Hold	Breathe Normally	***	Small	***

Recon Cards

Card No.	Start Position (mm)	End Position (mm)	Range (mm)	Thickness (mm)	Interval (mm)	DFOV	App Type	Kernel
1	0	600	600	1	1	500	Localizer	Body

BHC	W / L	SEMAR	Transfer (Volume)
OFF	300 / 50	OFF	ON (PACS)

Badge 2: Sure Start

	Start Mode	Start Time (s)	Wait Time (s)	Total Scan Time (s)	Start Position (mm)	End Position (mm)	Range (mm)	No. of Scans	Scan Slice	Pitc
2. SURE Start	P	***	45	40.80	631.50	631.50	***	1	0.5 x 8	***

Rotation Time(s)	Scan Direction	C-FOV	CTDIvol (mGy)	DLP (mGy.cm)	Pre Voice	Post Voice	Contrast Protocol Name	Focus	Badge
0.6	OUT	L	335.0	134.0	***	***	***	Small	***

SURE Start Setup

ROI Mode	Intermittent	Interval (s)	Threshold ROI1 (Intermittent)	Start Mode	ROI Condition	Threshold ROI1	Threshold ROI2	Voice Tin
1 ROI	ON	3	200	Manual	***	200	***	***

Recon Cards

Card No.	Start Position (mm)	End Position (mm)	Range (mm)	Thickness (mm)	Interval (mm)	DFOV	App Type	Kernel
1	***	***	***	4	***	500	Dynamic	Body Sharp

BHC	W / L	SEMAR	Transfer (Volume)	Time Interval (s)
***	300 / 50	***	ON (PACS)	***

Badge 3: ST W/C

	Start Mode	Start Time (s)	Wait Time (s)	Total Scan Time (s)	Start Position (mm)	End Position (mm)	Range (mm)	No. of Scans	Scan Slice	Pitch	kV
3. Helical	A	***	0	19.80	465.50	916.00	450.50	1	0.5 x 80	Detail	120

Rotation Time(s)	Scan Direction	C-FOV	CTDIvol (mGy)	DLP (mGy.cm)	Pre Voice	Post Voice	Contrast Protocol Name	Focus	Badge Name
1.0	OUT	L	***	***	Breathe In & Hold	Breathe Normally ***		Small	ST

VolumeEC

SD	Noise Reduction	XY-Modulation	Adaptive SD	OEM	Slice Thickness (mm)	Max mA
4.9	AiCE L2	ON	ON	OFF	4	780

Large

	Start Mode	Start Time (s)	Wait Time (s)	Total Scan Time (s)	Start Position (mm)	End Position (mm)	Range (mm)	No. of Scans	Scan Slice	Pitch	kV
3. Helical	A	***	0	19.80	465.50	916.00	450.50	1	0.5 x 80	Detail	120

Rotation Time(s)	Scan Direction	C-FOV	CTDIvol (mGy)	DLP (mGy.cm)	Pre Voice	Post Voice	Contrast Protocol Name	Focus	Badge Name
1.0	OUT	L	***	***	Breathe In & Hold	Breathe Normally ***		Small	ST

VolumeEC

SD	Noise Reduction	XY-Modulation	Adaptive SD	OEM	Slice Thickness (mm)	Max mA
5.6	AiCE L2	ON	ON	OFF	4	800

Large

Badge 3: Recons

Recon Cards

Card No.	Start Position (mm)	End Position (mm)	Range (mm)	Thickness (mm)	Interval (mm)	DFOV	App Type	Kernel
1	0	450.5	450.5	1	0.5	382.8	Volume	Body Sharp
2	0	450	450	4	2	382.8	Volume	Body Sharp

BHC	W / L	SEMAR	Transfer (Volume)
ON	350 / 50	OFF	ON (PACS)
ON	350 / 50	OFF	ON (PACS)

Axial			Coronal			Sagittal			Rendering	
Thickness (mm)	Interval (mm)	Direction	Thickness (mm)	Interval (mm)	Direction	Thickness (mm)	Interval (mm)	Direction		
***	***	***	3	2	A - P	3	2	R - L	Average	***
***	***	***	***	***	***	***	***	***	***	***

Badge 4: ST DELAY 7 MIN W/C

	Start Mode	Start Time (s)	Wait Time (s)	Total Scan Time (s)	Start Position (mm)	End Position (mm)	Range (mm)	No. of Scans	Scan Slice	Pitch	kV
3. Helical	A	***	0	9.30	465.50	916.00	450.50	1	0.5 x 80	Standard	135

Rotation Time(s)	Scan Direction	C-FOV	CTDIvol (mGy)	DLP (mGy.cm)	Pre Voice	Post Voice	Contrast Protocol Name	Focus	Badge Name
0.6	OUT	L	***	***	Breathe In & Hold	Breathe Normally ***		Small	ST

VolumeEC	SD	Noise Reduction	XY-Modulation	Adaptive SD	OEM	Slice Thickness (mm)	Max mA
	7.5	AiCE L2	ON	ON	OFF	4	780

Small Medium

	Start Mode	Start Time (s)	Wait Time (s)	Total Scan Time (s)	Start Position (mm)	End Position (mm)	Range (mm)	No. of Scans	Scan Slice	Pitch	kV
3. Helical	A	***	0	15.50	465.50	916.00	450.50	1	0.5 x 80	Standard	120

Rotation Time(s)	Scan Direction	C-FOV	CTDIvol (mGy)	DLP (mGy.cm)	Pre Voice	Post Voice	Contrast Protocol Name	Focus	Badge Name
1.0	OUT	L	***	***	Breathe In & Hold	Breathe Normally ***		Small	ST

VolumeEC	SD	Noise Reduction	XY-Modulation	Adaptive SD	OEM	Slice Thickness (mm)	Max mA
	8.5	AiCE L2	ON	ON	OFF	4	800

Large

Badge 3: Recons

Recon Cards	Card No.	Start Position (mm)	End Position (mm)	Range (mm)	Thickness (mm)	Interval (mm)	DFOV	App Type	Kernel
	1	0	450.5	450.5	1	0.5	382.8	Volume	Body Sharp
	2	0	450	450	4	2	382.8	Volume	Body Sharp

BHC	W / L	SEMAR	Transfer (Volume)
ON	350 / 50	OFF	ON (PACS)
ON	350 / 50	OFF	ON (PACS)

Axial			Coronal			Sagittal			Rendering	
Thickness (mm)	Interval (mm)	Direction	Thickness (mm)	Interval (mm)	Direction	Thickness (mm)	Interval (mm)	Direction		
***	***	***	3	2	A - P	3	2	R - L	Average	***
***	***	***	***	***	***	***	***	***	***	***

High Image Quality Cancer Follow-Up Abd/Pelvis 6.7/6.8/6.9

Clinical Instructions

Indication

Higher image quality version of the routine abdomen pelvis protocol. This protocol is to be used for cancer follow-up on patients with pathology known to be of a subtle nature. The order should specifically ask for this version of the abdomen pelvis routine protocol at the time of placing the order. Typically, a determination would be made based on age and disease process (usually dependent on whether they could have metastatic disease to the liver).

- Use HIQ on Colorectal, Pancreas, Esophageal, Lung, Breast cancer and Cholangiocarcinoma.
- Do not use HIQ on Lymphoma or Testicular cancer
- Use Biphasic protocol on hypervascular metastatic disease (Renal cell and Neuroendocrine tumors)

Oral Contrast

Oral Contrast: Dilute (1) 20 ml cup of Iohexol 300 mgI/mL in 800 ml clear liquid, flavoring may be added but no ice or carbonation.

Administer to Outpatients: 200mL every 15 minutes over one hour.

Administer to Inpatients: 200mL every 30 mins over two hours.

Bariatric post-op patients:

- These patients are only able to tolerate 150 mL. No need for extended drink duration. Oral contrast ONLY given on the CT scan table just prior to scanning.
- Mix 2x concentrated dose: 8mL Iohexol(Omnipaque) in 200mL of clear liquid.
- Give 150mL of the 200mL on the CT table.
- There will be an order in EPIC to administer only 1 dose.
- If you have questions please ask the protocolling radiologist.

Pre-Scan Instructions

Clamp Foley catheter and Neph tubes prior to scanning. Make sure to place Foley below the level of the bladder.

IV Contrast: Select Option 1 or 2 - based on concentration available at your site

Option 1: IV Contrast Parameters 350 mgl/mL

Select the Ulrich Weight-Based Adult 3mL protocol which will load the following settings: Saline Test Bolus 3mL/sec Weight based volume 3mL/sec (see below) Saline Flush 50 mL 3mL/sec

Iohexol (Omnipaque) 350 mg/mL injection at a rate of 3 mL/sec

For sites without the Ulrich use Medrad p3T or refer to the weight based contrast tables included with the protocol booklet.

Option 2: IV Contrast Parameters 300 mgl/mL

Medrad™ P3T Abdomen protocol.

Iohexol (Omnipaque) 300 mg/mL injection at a rate of 3 mL/sec

For sites without the Medrad™ P3T or P3T PA option, refer to the weight based contrast tables we provide in the protocol booklet.

Field of View

Same as previous study or as small as appropriate

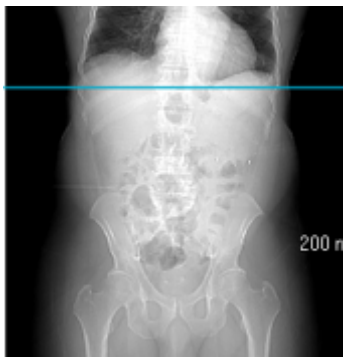
Scan Description

Badge 1 - 3D Landmark

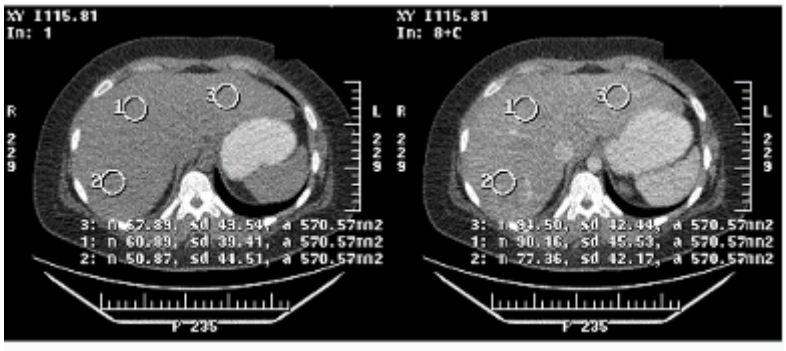
- Breathing instructions: Breath in and hold
- Coverage: Diaphragm through pelvis

Badge 2 -SureStart

- Place 1 ROI in the middle of the liver. Wait no longer than 80 seconds before starting the scan if the threshold is not reached.



Scout



ROI Location

Badge 3 - ST

- Breathing instructions: Breath in and hold
- Coverage:
  - Abdomen Only - Start scan at the top of the diaphragm, end at the iliac crests
  - Abdomen/Pelvis - Start scan at the top of the diaphragm, end at the pubic symphysis

Reformat Instructions

None

Reformats

Name	Source Series Name	3D/MPR or Manual	Rendering (MIP, Average, etc.)	WW/WL	Slice Thickness (mm)	Interval (mm)	Orientation
SA BODY	**THIN ST**	**3D/MPR**	**Average**	**350/50**	**3**	**2**	**sagittal**
CO BODY	**THIN ST**	**3D/MPR**	**Average**	**350/50**	**3**	**2**	**coronal**

Networking

All images (including 3DLandmark, SureStart and dose report) are AUTO networked to PACS (ALI_Store).

Miscellaneous

None

Acquisition Parameters

Badge 1: 3D Landmark

1. 3D Landmark

Start Mode	Start Time (s)	Wait Time (s)	Total Scan Time (s)	Start Position (mm)	End Position (mm)	Range (mm)	No. of Scans	Scan Slice	Pitch	kV	mA
P	***	0	6.10	396.00	996.00	600.00	1	0.5 x 80	Fast	120	80

Rotation Time(s)	Scan Direction	C-FOV	CTDIvol (mGy)	DLP (mGy.cm)	Pre Voice	Post Voice	Contrast Protocol Name	Focus	Badge Name
0.5	OUT	L	0.3	22.5	Breathe In & Hold	Breathe Normally ***		Small	***

Recon Cards

Card No.	Start Position (mm)	End Position (mm)	Range (mm)	Thickness (mm)	Interval (mm)	DFOV	App Type	Kernel	Noise Reduction
1	0	600	600	1	1	500	Localizer	Body	OFF

BHC	W / L	SEMAR	Transfer (Volume)
OFF	300 / 50	OFF	ON (PACS)

Badge 2: Sure Start

2. SURE Start

Start Mode	Start Time (s)	Wait Time (s)	Total Scan Time (s)	Start Position (mm)	End Position (mm)	Range (mm)	No. of Scans	Scan Slice	Pitch	kV	mA
P	***	45	40.80	631.50	631.50	***	1	0.5 x 8	***	135	40

Rotation Time(s)	Scan Direction	C-FOV	CTDIvol (mGy)	DLP (mGy.cm)	Pre Voice	Post Voice	Contrast Protocol Name	Focus	Badge Name
0.6	OUT	L	335.0	134.0	***	***	***	Small	***

SURE Start Setup

ROI Mode	Intermittent	Interval (s)	Threshold ROI1 (Intermittent)	Start Mode	ROI Condition	Threshold ROI1	Threshold ROI2	Voice Timing	Lock Position
1 ROI	ON	3	200	Manual	***	200	***	***	***

Recon Cards

Card No.	Start Position (mm)	End Position (mm)	Range (mm)	Thickness (mm)	Interval (mm)	DFOV	App Type	Kernel	Noise Reduction
1	***	***	***	4	***	500	Dynamic	Body Sharp	AIDR 3D L3

BHC	W / L	SEMAR	Transfer (Volume)	Time Interval (s)
***	300 / 50	***	ON (PACS)	***

Badge 3: ST W/C

3. Helical

Start Mode	Start Time (s)	Wait Time (s)	Total Scan Time (s)	Start Position (mm)	End Position (mm)	Range (mm)	No. of Scans	Scan Slice	Pitch	kV	mA
A	***	0	15.50	465.50	916.00	450.50	1	0.5 x 80	Standard	120	abdomen B2 MEDIUM

Rotation Time(s)	Scan Direction	C-FOV	CTDIvol (mGy)	DLP (mGy.cm)	Pre Voice	Post Voice	Contrast Protocol Name	Focus	Badge Name
1.0	OUT	L	***	***	Breathe In & Hold	Breathe Normally ***		Small	ST

VolumeEC

SD	Noise Reduction	XY-Modulation	Adaptive SD	OEM	Slice Thickness (mm)	Max mA	Min mA
5.7	AiCE L2	ON	ON	OFF	4	780	80

Large

3. Helical

Start Mode	Start Time (s)	Wait Time (s)	Total Scan Time (s)	Start Position (mm)	End Position (mm)	Range (mm)	No. of Scans	Scan Slice	Pitch	kV	mA
A	***	0	16.70	470.50	957.00	486.50	1	0.5 x 80	Standard	120	abdomen B2 LARGE

Rotation Time(s)	Scan Direction	C-FOV	CTDIvol (mGy)	DLP (mGy.cm)	Pre Voice	Post Voice	Contrast Protocol Name	Focus	Badge Name
1.0	OUT	L	***	***	Breathe In & Hold	Breathe Normally ***		Small	ST

VolumeEC

SD	Noise Reduction	XY-Modulation	Adaptive SD	OEM	Slice Thickness (mm)	Max mA	Min mA
6.6	AiCE L2	ON	ON	OFF	4	780	70

Large

Badge 3: Recons

Recon Cards

Card No.	Start Position (mm)	End Position (mm)	Range (mm)	Thickness (mm)	Interval (mm)	DFOV	App Type	Kernel	Noise Reduction
1	0	450.5	450.5	1	0.5	382.8	Volume	Body Sharp	AiCE L1
2	0	450	450	4	2	382.8	Volume	Body Sharp	AiCE L1

BHC	W / L	SEMAR	Transfer (Volume)
ON	350 / 50	OFF	ON (PACS)
ON	350 / 50	OFF	ON (PACS)

Axial			Coronal			Sagittal			Rendering	Transfer (MultiView)
Thickness (mm)	Interval (mm)	Direction	Thickness (mm)	Interval (mm)	Direction	Thickness (mm)	Interval (mm)	Direction		
***	***	***	3	2	A - P	3	2	R - L	Average	***
***	***	***	***	***	***	***	***	***	***	***

Abd/Pelvis - Flank Pain 6.10/6.11/6.12

Clinical Instructions

Indication

For patients with acute flank pain, have hydronephrosis, or who are being evaluated for renal stones but don't have a prior study, we are performing a full flank pain CT (non contrast abd/pelvis)

Oral Contrast

Scan with a full bladder. Hydrate ER patients if time allows.

Pre-Scan Instructions

Clamp Foley catheter and Neph tubes prior to scanning. Make sure to place Foley below the level of the bladder.

IV Contrast Parameters

None

Field of View

Same as previous study or as small as appropriate

Scan Description

Badge 1 - 3D Landmark

- Breathing instructions: Breath in and hold
- Coverage: Diaphragm through pelvis

Badge 2 - ST

- Breathing instructions: Breath in and hold
- Coverage: Top of the kidneys and end at the base of the bladder.

- If Radiologist wants to convert to with IVC use the routine Abd/Pel protocol.

Reformat Instructions

None

Reformats

Name	Source Series Name	3D/MPR or Manual	Rendering (MIP, Average, etc.)	WW/WL	Slice Thickness (mm)	Interval (mm)	Orientation
SA BODY	THIN ST	3D/MPR	Average	350/50	3	2	sagittal
CO BODY	THIN ST	3D/MPR	Average	350/50	3	2	coronal

Networking

All images (including 3DLandmark and dose report) are AUTO networked to PACS (ALI_Store).

Miscellaneous

- If diagnosis is uncertain and contrast is needed convert to a routine abd/pel, creatinine level is not necessary.

Acquisition Parameters

Badge 1: 3D Landmark

	Start Mode	Start Time (s)	Wait Time (s)	Total Scan Time (s)	Start Position (mm)	End Position (mm)	Range (mm)	No. of Scans	Scan Slice	Pitch	kV	mA
1. 3D Landmark	P	***	0	6.10	396.00	996.00	600.00	1	0.5 x 80	Fast	120	80

	Rotation Time(s)	Scan Direction	C-FOV	CTDIvol (mGy)	DLP (mGy.cm)	Pre Voice	Post Voice	Contrast Protocol Name	Focus	Badge Name
	0.5	OUT	L	0.3	22.5	Breathe In & Hold	Breathe Normally ***		Small	***

	Card No.	Start Position (mm)	End Position (mm)	Range (mm)	Thickness (mm)	Interval (mm)	DFOV	App Type	Kernel	Noise Reduction
Recon Cards	1	0	600	600	1	1	500	Localizer	Body	OFF

BHC	W / L	SEMAR	Transfer (Volume)
OFF	300 / 50	OFF	ON (PACS)

Badge 2: ST

	Start Mode	Start Time (s)	Wait Time (s)	Total Scan Time (s)	Start Position (mm)	End Position (mm)	Range (mm)	No. of Scans	Scan Slice	Pitch	kV	mA
3. Helical	A	***	0	9.30	465.50	916.00	450.50	1	0.5 x 80	Standard	135	abdomen B4 MEDIUM

	Rotation Time(s)	Scan Direction	C-FOV	CTDIvol (mGy)	DLP (mGy.cm)	Pre Voice	Post Voice	Contrast Protocol Name	Focus	Badge Name
	0.6	OUT	L	***	***	Breathe In & Hold	Breathe Normally ***		Small	ST

	SD	Noise Reduction	XY-Modulation	Adaptive SD	OEM	Slice Thickness (mm)	Max mA	Min mA
VolumeEC	7.5	AiCE L2	ON	ON	OFF	4	780	80

Small Medium

	Start Mode	Start Time (s)	Wait Time (s)	Total Scan Time (s)	Start Position (mm)	End Position (mm)	Range (mm)	No. of Scans	Scan Slice	Pitch	kV	mA
3. Helical	A	***	0	15.50	465.50	916.00	450.50	1	0.5 x 80	Standard	120	abdomen B4 LARGE

	Rotation Time(s)	Scan Direction	C-FOV	CTDIvol (mGy)	DLP (mGy.cm)	Pre Voice	Post Voice	Contrast Protocol Name	Focus	Badge Name
	1.0	OUT	L	***	***	Breathe In & Hold	Breathe Normally	***	Small	ST

VolumeEC	SD	Noise Reduction	XY-Modulation	Adaptive SD	OEM	Slice Thickness (mm)	Max mA	Min mA
	8.5	AiCE L2	ON	ON	OFF	4	800	60

Large

Badge 2: Recons

Recon Cards	Card No.	Start Position (mm)	End Position (mm)	Range (mm)	Thickness (mm)	Interval (mm)	DFOV	App Type	Kernel	Noise Reduction
	1	0	450.5	450.5	1	0.5	382.8	Volume	Body Sharp	AiCE L1
	2	0	450	450	4	2	382.8	Volume	Body Sharp	AiCE L1

BHC	W / L	SEMAR	Transfer (Volume)
ON	350 / 50	OFF	ON (PACS)
ON	350 / 50	OFF	ON (PACS)

Axial			Coronal			Sagittal			Rendering	Transfer (MultiView)
Thickness (mm)	Interval (mm)	Direction	Thickness (mm)	Interval (mm)	Direction	Thickness (mm)	Interval (mm)	Direction		
***	***	***	3	2	A - P	3	2	R - L	Average	***
***	***	***	***	***	***	***	***	***	***	***

Limited Follow-Up Kidneys Only 6.13/6.14/6.15

Clinical Instructions

Indication

For patients with known stones (based on prior flank pain CT) who are asymptomatic and being evaluated for stone burden, we are doing the limited renal stone follow up (limited z axis coverage of the kidneys just to look at stone burden).

Optional limited variant: follow-up for renal calculi (kidneys only).

Oral Contrast

Give a total 800 mL of water prior to scan (A 200mL dose every 20 minutes over an hour) if time allows. Scan the patient with a full bladder.

Pre-Scan Instructions

Clamp Foley catheter and Neph tubes prior to scanning. Make sure to place Foley below the level of the bladder.

IV Contrast Parameters

None

Field of View

Same as previous study or as small as appropriate

Scan Description

LIMITED exam for renal stone follow-up: (If the patient is extremely large use routine flank pain)

Badge 1 - 3D Landmark

- Breathing instructions: Breath in and hold
- Coverage: Diaphragm through pelvis

Badge 2 - ST

- Breathing instructions: Breath in and hold
- Coverage: Top of the kidneys and end at bottom of the kidneys

Reformat Instructions

None

Reformats

Name	Source Series Name	3D/MPR or Manual	Rendering (MIP, Average, etc.)	WW/WL	Slice Thickness (mm)	Interval (mm)	Orientation
SA BODY	THIN ST	3D/MPR	Average	350/50	3	2	sagittal
CO BODY	THIN ST	3D/MPR	Average	350/50	3	2	coronal

Networking

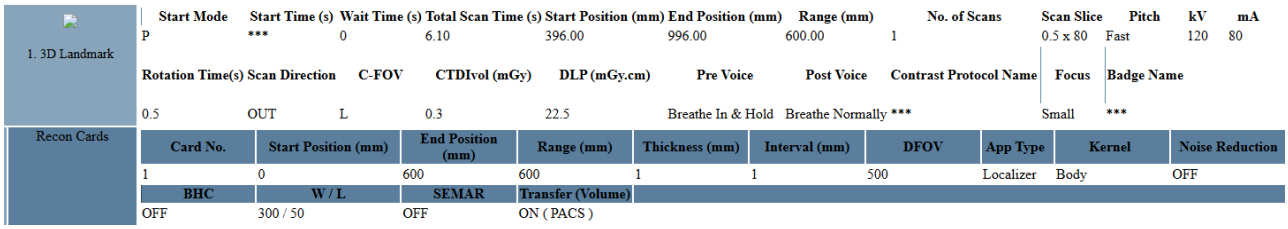
All images (including 3DLandmark and dose report) are AUTO networked to PACS (ALI_Store).

Miscellaneous

None

Acquisition Parameters

Badge 1: 3D Landmark



1. 3D Landmark

Start Mode	Start Time (s)	Wait Time (s)	Total Scan Time (s)	Start Position (mm)	End Position (mm)	Range (mm)	No. of Scans	Scan Slice	Pitch	kV	mA
P	***	0	6.10	396.00	996.00	600.00	1	0.5 x 80	Fast	120	80

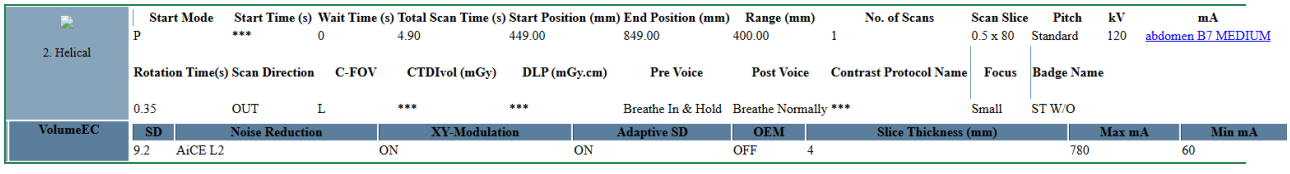
Rotation Time(s)	Scan Direction	C-FOV	CTDIvol (mGy)	DLP (mGy.cm)	Pre Voice	Post Voice	Contrast Protocol Name	Focus	Badge Name
0.5	OUT	L	0.3	22.5	Breathe In & Hold	Breathe Normally ***		Small	***

Recon Cards

Card No.	Start Position (mm)	End Position (mm)	Range (mm)	Thickness (mm)	Interval (mm)	DFOV	App Type	Kernel	Noise Reduction
1	0	600	600	1	1	500	Localizer	Body	OFF

BHC	W / L	SEMAR	Transfer (Volume)
OFF	300 / 50	OFF	ON (PACS)

Badge 2: ST



2. Helical

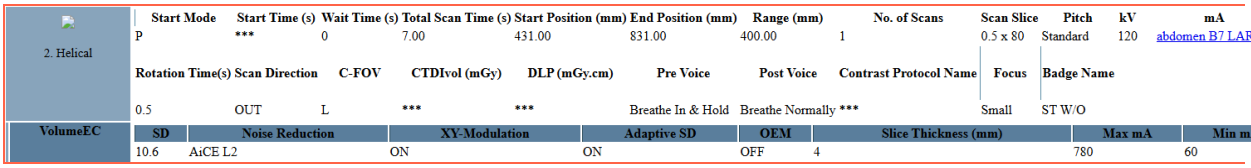
Start Mode	Start Time (s)	Wait Time (s)	Total Scan Time (s)	Start Position (mm)	End Position (mm)	Range (mm)	No. of Scans	Scan Slice	Pitch	kV	mA
P	***	0	4.90	449.00	849.00	400.00	1	0.5 x 80	Standard	120	abdomen B7 MEDIUM

Rotation Time(s)	Scan Direction	C-FOV	CTDIvol (mGy)	DLP (mGy.cm)	Pre Voice	Post Voice	Contrast Protocol Name	Focus	Badge Name
0.35	OUT	L	***	***	Breathe In & Hold	Breathe Normally ***		Small	ST W/O

VolumeEC

SD	Noise Reduction	XY-Modulation	Adaptive SD	OEM	Slice Thickness (mm)	Max mA	Min mA
9.2	AiCE L2	ON	ON	OFF	4	780	60

Small Medium



2. Helical	Start Mode	Start Time (s)	Wait Time (s)	Total Scan Time (s)	Start Position (mm)	End Position (mm)	Range (mm)	No. of Scans	Scan Slice	Pitch	kV	mA
	P	***	0	7.00	431.00	831.00	400.00	1	0.5 x 80	Standard	120	abdomen B7 LARGE

Rotation Time(s)	Scan Direction	C-FOV	CTDIvol (mGy)	DLP (mGy.cm)	Pre Voice	Post Voice	Contrast Protocol Name	Focus	Badge Name
0.5	OUT	L	***	***	Breathe In & Hold	Breathe Normally ***		Small	ST W/O

VolumeEC	SD	Noise Reduction	XY-Modulation	Adaptive SD	OEM	Slice Thickness (mm)	Max mA	Min mA
	10.6	AiCE L2	ON	ON	OFF	4	780	60

Large

Badge 2: Recons

Recon Cards	Card No.	Start Position (mm)	End Position (mm)	Range (mm)	Thickness (mm)	Interval (mm)	DFOV	App Type	Kernel	Noise Reduction
	1	0	450.5	450.5	1	0.5	382.8	Volume	Body Sharp	AiCE L1
	2	0	450	450	4	2	382.8	Volume	Body Sharp	AiCE L1

BHC	W / L	SEMAR	Transfer (Volume)
ON	350 / 50	OFF	ON (PACS)
ON	350 / 50	OFF	ON (PACS)

Axial			Coronal			Sagittal			Rendering	Transfer (MultiView)
Thickness (mm)	Interval (mm)	Direction	Thickness (mm)	Interval (mm)	Direction	Thickness (mm)	Interval (mm)	Direction		
***	***	***	3	2	A - P	3	2	R - L	Average	***
***	***	***	***	***	***	***	***	***	***	***

Abd/Pelvis -Urography 6.22/6.23/6.24

Clinical Instructions

Indication

Urography protocol is used for general renal imaging. **Urography protocol is indicated in patients with hematuria Less than 45 years of age** with **NO** history of Urothelial cancer. If patient has a history of Urothelial cancer also known as Transitional Cell Cancer (TCC), please use the Urothelial Tumor follow up protocol no matter their age.

Please also use Urothelial Tumor Follow-Up protocol for any of the below indications:

Hematuria in patients over 45 years of age.

Known urothelial cancer in bladder or ureters with "NO" current evidence of or suspected metastatic disease in patients of all ages. Recurrence, high risk recurrence, evaluate urothelium or high risk TCC in history in patients of all ages. For patients with known metastatic disease or screening for metastatic disease use High image quality cancer follow up protocol.

Oral Contrast

None

Pre-Scan Instructions

Clamp Foley catheter and Neph tubes prior to scanning. Make sure to place Foley below the level of the bladder.

There is no before CT prep for patients but once patient is ready to get on the scanner have the patient use the restroom/empty their bladder.

If there is metal present in the area of interest (i.e. hip prosthesis, lumbar hardware) please remember to turn on MAR for all recons.

IV Contrast: Select Option 1 or 2 - based on concentration available at your site

Option 1: IV Contrast Parameters 350 mgI/mL

Ulrich Protocol 34

Injections	Contrast Dosage	Injection Rate
Injection 1	**43 ml Iohexol 350 mgI/mL**	**1.5 mL/sec**

Wait 10 minutes		
Injection 2	**86 ml Iohexol 350 mgI/mL + 50 mL NaCl flush**	**3 mL/sec**

Option 2: IV Contrast Parameters 300 mgI/mL

Medrad™ Urography protocol

Injections	**Contrast Dosage**	**Injection Rate**
Injection 1	**50 ml Iohexol 300 mgI/mL + 50 mL NaCl flush**	**1.5 mL/sec**
Wait 10 minutes		
Injection 2	**100 ml Iohexol 300 mgI/mL + 50 mL NaCl flush**	**3 mL/sec**

Field of View

Same as previous study or as small as appropriate

Scan Description

Badge 1 - 3D Landmark

- Breathing instructions: Breath in and hold
- Coverage: Diaphragm through pelvis

Badge 2 - ST W/O

- Breathing instructions: Breath in and hold
- Coverage: Top of kidneys through bladder base.

- Inject Injection 1 per contrast table option 1 or 2 based off concentration. **Wait 10 min.**

Badge 3 - ST W/C

- Breathing instructions: Breath in and hold
- Coverage: Diaphragm through pelvis.

Inject the remaining contrast at 3ml/sec. Start the injection and the scanner at the same time, there is a 115 sec delay built in prior to Badge 3.

Reformat Instructions

Reformats

Non-Contrast:

Name	Source Series Name	3D/MPR or Manual	Rendering (MIP, Average, etc.)	WW/WL	Slice Thickness (mm)	Interval (mm)	Orientation
CO BODY	THIN ST	3D/MPR	Average	350/50	3	2	coronal

10 min Delay:

Name	Source Series Name	3D/MPR or Manual	Rendering (MIP, Average, etc.)	WW/WL	Slice Thickness (mm)	Interval (mm)	Orientation
SA BODY	THIN ST	3D/MPR	Average	350/50	3	2	sagittal
CO BODY	THIN ST	3D/MPR	Average	350/50	3	2	coronal

Networking

All images (including 3DLandmark and dose report) are AUTO networked to PACS (ALI_Store).

Miscellaneous

None

Acquisition Parameters

Badge 1: 3D Landmark

1. 3D Landmark

Start Mode	Start Time (s)	Wait Time (s)	Total Scan Time (s)	Start Position (mm)	End Position (mm)	Range (mm)	No. of Scans	Scan Slice	Pitch	kV	mA
P	***	0	6.10	396.00	996.00	600.00	1	0.5 x 80	Fast	120	80

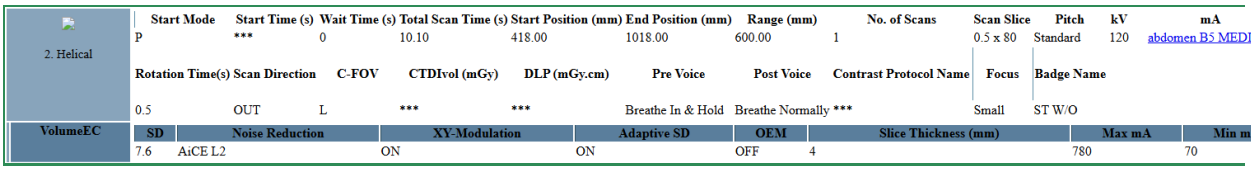
Rotation Time(s)	Scan Direction	C-FOV	CTDIvol (mGy)	DLP (mGy.cm)	Pre Voice	Post Voice	Contrast Protocol Name	Focus	Badge Name
0.5	OUT	L	0.3	22.5	Breathe In & Hold	Breathe Normally	***	Small	***

Recon Cards

Card No.	Start Position (mm)	End Position (mm)	Range (mm)	Thickness (mm)	Interval (mm)	DFOV	App Type	Kernel	Noise Reduction
1	0	600	600	1	1	500	Localizer	Body	OFF

BHC	W / L	SEMAR	Transfer (Volume)
OFF	300 / 50	OFF	ON (PACS)

Badge 2: ST W/O

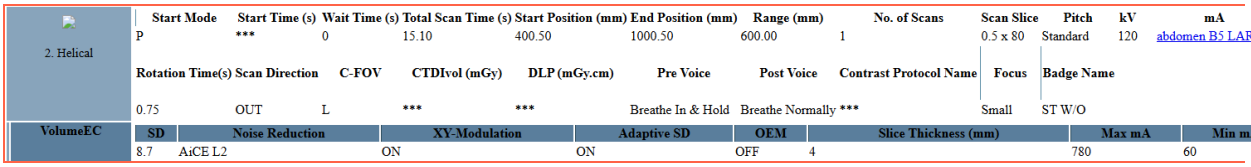


	Start Mode	Start Time (s)	Wait Time (s)	Total Scan Time (s)	Start Position (mm)	End Position (mm)	Range (mm)	No. of Scans	Scan Slice	Pitch	kV	mA
2. Helical	P	***	0	10.10	418.00	1018.00	600.00	1	0.5 x 80	Standard	120	abdomen B5 MEDIUM

Rotation Time(s)	Scan Direction	C-FOV	CTDIvol (mGy)	DLP (mGy.cm)	Pre Voice	Post Voice	Contrast Protocol Name	Focus	Badge Name
0.5	OUT	L	***	***	Breathe In & Hold	Breathe Normally ***		Small	ST W/O

VolumeEC	SD	Noise Reduction	XY-Modulation	Adaptive SD	OEM	Slice Thickness (mm)	Max mA	Min mA
	7.6	AiCE L2	ON	ON	OFF	4	780	70

Small Medium



	Start Mode	Start Time (s)	Wait Time (s)	Total Scan Time (s)	Start Position (mm)	End Position (mm)	Range (mm)	No. of Scans	Scan Slice	Pitch	kV	mA
2. Helical	P	***	0	15.10	400.50	1000.50	600.00	1	0.5 x 80	Standard	120	abdomen B5 LARGE

Rotation Time(s)	Scan Direction	C-FOV	CTDIvol (mGy)	DLP (mGy.cm)	Pre Voice	Post Voice	Contrast Protocol Name	Focus	Badge Name
0.75	OUT	L	***	***	Breathe In & Hold	Breathe Normally ***		Small	ST W/O

VolumeEC	SD	Noise Reduction	XY-Modulation	Adaptive SD	OEM	Slice Thickness (mm)	Max mA	Min mA
	8.7	AiCE L2	ON	ON	OFF	4	780	60

Large

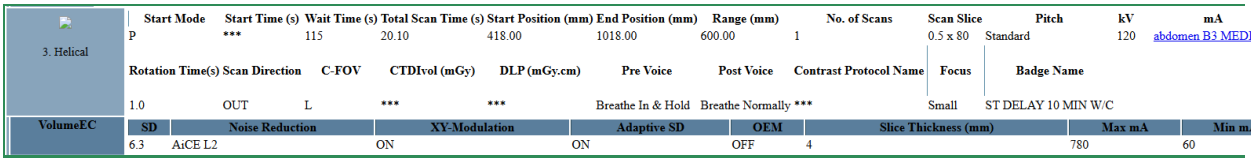
Badge 2: Recons

Recon Cards	Card No.	Start Position (mm)	End Position (mm)	Range (mm)	Thickness (mm)	Interval (mm)	DFOV	App Type	Kernel	Noise Reduction
	1	0	230	230	1	0.5	382.8	Volume	Body Sharp	AiCE L1
	2	0	230	230	4	2	382.8	Volume	Body Sharp	AiCE L1

BHC	W / L	SEMAR	Transfer (Volume)
ON	350 / 50	OFF	ON (PACS ,)
ON	350 / 50	OFF	ON (PACS)

Axial			Coronal			Sagittal			Rendering	Transfer (MultiView)
Thickness (mm)	Interval (mm)	Direction	Thickness (mm)	Interval (mm)	Direction	Thickness (mm)	Interval (mm)	Direction		
***	***	***	3	2	A - P	***	***	***	Average	***
***	***	***	***	***	***	***	***	***	***	***

Badge 3: ST W/C

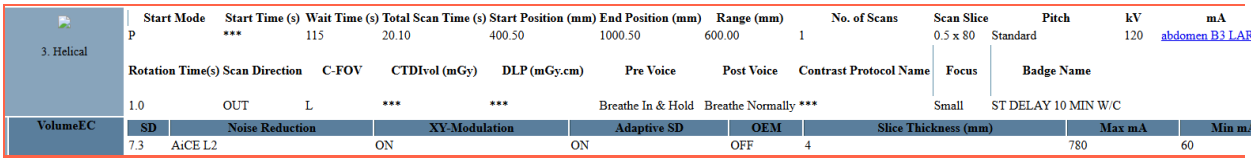


	Start Mode	Start Time (s)	Wait Time (s)	Total Scan Time (s)	Start Position (mm)	End Position (mm)	Range (mm)	No. of Scans	Scan Slice	Pitch	kV	mA
3. Helical	P	***	115	20.10	418.00	1018.00	600.00	1	0.5 x 80	Standard	120	abdomen B3 MEDIUM

Rotation Time(s)	Scan Direction	C-FOV	CTDIvol (mGy)	DLP (mGy.cm)	Pre Voice	Post Voice	Contrast Protocol Name	Focus	Badge Name
1.0	OUT	L	***	***	Breathe In & Hold	Breathe Normally ***		Small	ST DELAY 10 MIN W/C

VolumeEC	SD	Noise Reduction	XY-Modulation	Adaptive SD	OEM	Slice Thickness (mm)	Max mA	Min mA
	6.3	AiCE L2	ON	ON	OFF	4	780	60

Small Medium



	Start Mode	Start Time (s)	Wait Time (s)	Total Scan Time (s)	Start Position (mm)	End Position (mm)	Range (mm)	No. of Scans	Scan Slice	Pitch	kV	mA
3. Helical	P	***	115	20.10	400.50	1000.50	600.00	1	0.5 x 80	Standard	120	abdomen B3 LARGE

Rotation Time(s)	Scan Direction	C-FOV	CTDIvol (mGy)	DLP (mGy.cm)	Pre Voice	Post Voice	Contrast Protocol Name	Focus	Badge Name
1.0	OUT	L	***	***	Breathe In & Hold	Breathe Normally ***		Small	ST DELAY 10 MIN W/C

VolumeEC	SD	Noise Reduction	XY-Modulation	Adaptive SD	OEM	Slice Thickness (mm)	Max mA	Min mA
	7.3	AiCE L2	ON	ON	OFF	4	780	60

Large

Badge 3: Recons

Recon Cards	Card No.	Start Position (mm)	End Position (mm)	Range (mm)	Thickness (mm)	Interval (mm)	DFOV	App Type	Kernel	Noise Reduction
	1	0	450.5	450.5	1	0.5	382.8	Volume	Body Sharp	AiCE L1
	2	0	450	450	4	2	382.8	Volume	Body Sharp	AiCE L1

BHC	W / L	SEMAR	Transfer (Volume)
ON	350 / 50	OFF	ON (PACS)
ON	350 / 50	OFF	ON (PACS)

Axial			Coronal			Sagittal			Rendering	Transfer (MultiView)
Thickness (mm)	Interval (mm)	Direction	Thickness (mm)	Interval (mm)	Direction	Thickness (mm)	Interval (mm)	Direction		
***	***	***	3	2	A - P	3	2	R - L	Average	***
***	***	***	***	***	***	***	***	***	***	***

Abd-Liver - Biphasic 6.25/6.26/6.27

Clinical Instructions

Indication

Arterial and Venous phase scanning for the evaluation of hypervascular metastatic disease to the liver such as neuroendocrine tumor, RCC.

Oral Contrast

Give a total 800 mL of water over the course of one hour prior to scan. Ask patient to drink slowly and steadily.

Give an additional 200mL dose of water on the CT scan table.

Pre-Scan Instructions

None

IV Contrast: Select Option 1 or 2 - based on concentration available at your site

Option 1: IV Contrast Parameters 350 mgI/mL

Select the Ulrich Weight-Based Adult 5mL protocol which will load the following settings: Saline Test Bolus 5mL/sec Weight based volume 5mL/sec (see below) Saline Flush 50 mL at a rate of 5mL/sec

Iohexol (Omnipaque) 350 mg/mL injection at a rate of 5 mL/sec

For sites without the Ulrich use Medrad p3T or refer to the weight based contrast tables included with the protocol booklet.

Option 2: IV Contrast Parameters 300 mgI/mL

Medrad™ P3T Abdomen protocol;

Iohexol (Omnipaque) 300 mg/mL injection at a rate of 5 mL/sec

For sites without the Medrad™ P3T or P3T PA option, refer to the weight based contrast tables we provide in the protocol booklet.

Field of View

Same as previous study or as small as appropriate

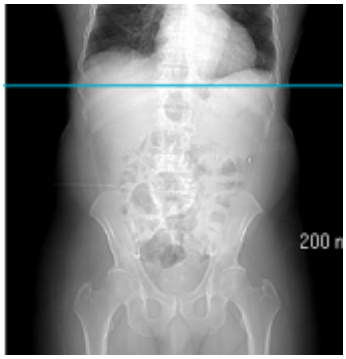
Scan Description

Badge 1 - 3D Landmark

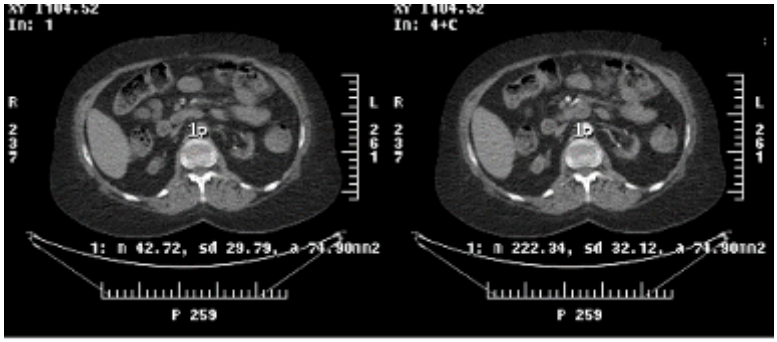
- Breathing instructions: Breath in and hold
- Coverage: Diaphragm through pelvis

Badge 2 - SureStart

- Place ROI on Aorta, at the level of mid liver. **AUTO is turned on so the scan will progress without the need for you to hit Skip** There will be a 13 second diagnostic delay built in.



Scout



ROI Location

Badge 3 - ST LATE ARTERIAL

- Breathing instructions: Breath in and hold
- Coverage: Diaphragm through pelvis.

Badge 4 - ST W/C

- Breathing instructions: Breath in and hold
- Coverage: Diaphragm through pelvis.

- This group is scanned at 70 seconds from the start of the injection. The scanner will automatically adjust this delay.

- If doing a Chest with a biphasic, include the chest with the 2nd group.

Reformat Instructions

If doing a chest turn off 3D/MPR and do reformats manually for both the Chest and Abdomen/Pelvis separately.

Reformats

PV phase only

Name	Source Series Name	3D/MPR or Manual	Rendering (MIP, Average, etc.)	WW/WL	Slice Thickness (mm)	Interval (mm)	Orientation
SA BODY	THIN ST	3D/MPR	Average	350/50	3	2	sagittal
CO BODY	THIN ST	3D/MPR	Average	350/50	3	2	coronal

Networking

All images (including 3DLandmark, SureStart and dose report) are AUTO networked to PACS (ALI_Store).

Miscellaneous

None

Acquisition Parameters

Badge 1: 3D Landmark

1. 3D Landmark

Start Mode	Start Time (s)	Wait Time (s)	Total Scan Time (s)	Start Position (mm)	End Position (mm)	Range (mm)	No. of Scans	Scan Slice	Pitch	kV	mA
P	***	0	6.10	396.00	996.00	600.00	1	0.5 x 80	Fast	120	80

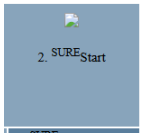
Rotation Time(s)	Scan Direction	C-FOV	CTDIvol (mGy)	DLP (mGy.cm)	Pre Voice	Post Voice	Contrast Protocol Name	Focus	Badge Name
0.5	OUT	L	0.3	22.5	Breathe In & Hold	Breathe Normally	***	Small	***

Recon Cards

Card No.	Start Position (mm)	End Position (mm)	Range (mm)	Thickness (mm)	Interval (mm)	DFOV	App Type	Kernel	Noise Reduction
1	0	600	600	1	1	500	Localizer	Body	OFF

BHC	W / L	SEMAR	Transfer (Volume)
OFF	300 / 50	OFF	ON (PACS)

Badge 2: Sure Start



Start Mode	Start Time (s)	Wait Time (s)	Total Scan Time (s)	Start Position (mm)	End Position (mm)	Range (mm)	No. of Scans	Scan Slice	Pitch	kV	mA
P	***	15	30.00	631.50	631.50	***	1	0.5 x 8	***	120	80

Rotation Time(s)	Scan Direction	C-FOV	CTDIvol (mGy)	DLP (mGy.cm)	Pre Voice	Post Voice	Contrast Protocol Name	Focus	Badge Name
0.5	OUT	L	102.2	40.9	***	***	***	Small	***

SURE Start Setup

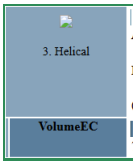
ROI Mode	Intermittent	Interval (s)	Threshold ROI1 (Intermittent)	Start Mode	ROI Condition	Threshold ROI1	Threshold ROI2	Voice Timing	Lock Position
1 ROI	ON	3	150	Auto	***	150	***	***	***

Recon Cards

Card No.	Start Position (mm)	End Position (mm)	Range (mm)	Thickness (mm)	Interval (mm)	DFOV	App Type	Kernel	Noise Reduction
1	***	***	***	4	***	500	Dynamic	Body	AIDR 3D L3

BHC	W / L	SEMAR	Transfer (Volume)	Time Interval (s)
***	350 / 50	***	ON (PACS)	***

Badge 3: ST ARTERIAL



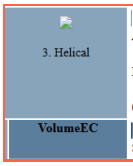
Start Mode	Start Time (s)	Wait Time (s)	Total Scan Time (s)	Start Position (mm)	End Position (mm)	Range (mm)	No. of Scans	Scan Slice	Pitch	kV	mA
A	***	13	7.70	465.50	916.00	450.50	1	0.5 x 80	Standard	120	head B10 MEDIUM

Rotation Time(s)	Scan Direction	C-FOV	CTDIvol (mGy)	DLP (mGy.cm)	Pre Voice	Post Voice	Contrast Protocol Name	Focus	Badge Name
0.5	OUT	L	***	***	Breathe In & Hold	Breathe Normally	***	Small	ST LATE ARTERIAL

VolumeEC

SD	Noise Reduction	XY-Modulation	Adaptive SD	OEM	Slice Thickness (mm)	Max mA	Min mA
7.8	AiCE L2	ON	ON	OFF	4	780	70

Small Medium



Start Mode	Start Time (s)	Wait Time (s)	Total Scan Time (s)	Start Position (mm)	End Position (mm)	Range (mm)	No. of Scans	Scan Slice	Pitch	kV	mA
A	***	13	9.30	465.50	916.00	450.50	1	0.5 x 80	Standard	120	head B10 LARGE

Rotation Time(s)	Scan Direction	C-FOV	CTDIvol (mGy)	DLP (mGy.cm)	Pre Voice	Post Voice	Contrast Protocol Name	Focus	Badge Name
0.6	OUT	L	***	***	Breathe In & Hold	Breathe Normally	***	Small	ST LATE ARTERIAL

VolumeEC

SD	Noise Reduction	XY-Modulation	Adaptive SD	OEM	Slice Thickness (mm)	Max mA	Min mA
8.7	AiCE L2	ON	ON	OFF	4	780	60

Large

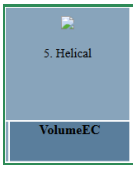
Badge 3: Recons

Recon Cards

Card No.	Start Position (mm)	End Position (mm)	Range (mm)	Thickness (mm)	Interval (mm)	DFOV	App Type	Kernel	Noise Reduction
1	0.8	220.300003	219.500003	1	0.5	382.8	Volume	Body Sharp	AiCE L1
2	0	220	220	4	2	382.8	Volume	Body Sharp	AiCE L1

BHC	W / L	SEMAR	Transfer (Volume)
ON	350 / 50	OFF	ON (PACS)
ON	350 / 50	OFF	ON (PACS)

Badge 4: ST W/C



Start Mode	Start Time (s)	Wait Time (s)	Total Scan Time (s)	Start Position (mm)	End Position (mm)	Range (mm)	No. of Scans	Scan Slice	Pitch	kV	mA
A	70	40.200001	9.30	465.50	916.00	450.50	1	0.5 x 80	Standard	120	abdomen B4 MEDIUM

Rotation Time(s)	Scan Direction	C-FOV	CTDIvol (mGy)	DLP (mGy.cm)	Pre Voice	Post Voice	Contrast Protocol Name	Focus	Badge Name
0.6	OUT	L	***	***	Breathe In & Hold	Breathe Normally	***	Small	ST W/C

VolumeEC

SD	Noise Reduction	XY-Modulation	Adaptive SD	OEM	Slice Thickness (mm)	Max mA	Min mA
7.5	AiCE L2	ON	ON	OFF	4	800	80

Small Medium

	Start Mode	Start Time (s)	Wait Time (s)	Total Scan Time (s)	Start Position (mm)	End Position (mm)	Range (mm)	No. of Scans	Scan Slice	Pitch	kV	mA
5. Helical	A	70	38.700001	15.50	465.50	916.00	450.50	1	0.5 x 80	Standard	120	abdomen B4 LARGE

Rotation Time(s)	Scan Direction	C-FOV	CTDIvol (mGy)	DLP (mGy.cm)	Pre Voice	Post Voice	Contrast Protocol Name	Focus	Badge Name
1.0	OUT	L	***	***	Breathe In & Hold	Breathe Normally ***		Small	ST W/C

VolumeEC	SD	Noise Reduction	XY-Modulation	Adaptive SD	OEM	Slice Thickness (mm)	Max mA	Min mA
	8.5	AiCE L2	ON	ON	OFF	4	800	60

Large

Badge 4: Recons

Recon Cards	Card No.	Start Position (mm)	End Position (mm)	Range (mm)	Thickness (mm)	Interval (mm)	DFOV	App Type	Kernel	Noise Reduction
	1	0	450.5	450.5	1	0.5	382.8	Volume	Body Sharp	AiCE L1
	2	0	450	450	4	2	382.8	Volume	Body Sharp	AiCE L1

BHC	W / L	SEMAR	Transfer (Volume)
ON	350 / 50	OFF	ON (PACS)
ON	350 / 50	OFF	ON (PACS)

Axial			Coronal			Sagittal			Rendering	Transfer (MultiView)
Thickness (mm)	Interval (mm)	Direction	Thickness (mm)	Interval (mm)	Direction	Thickness (mm)	Interval (mm)	Direction		
***	***	***	3	2	A - P	3	2	R - L	Average	***
***	***	***	***	***	***	***	***	***	***	***

Abd-Adrenal Gland -Adenoma 6.31/6.32/6.33

Clinical Instructions

Indication

Characterization for adrenal mass (For a pheochromocytoma do routine abdomen)

Oral Contrast

NONE. If converted to with IVC give a 200mL dose of water on the CT scan table while the IV is being placed.

Pre-Scan Instructions

None

IV Contrast: Select Option 1 or 2 - based on concentration available at your site

Option 1: IV Contrast Parameters 350 mgI/mL

Select the Ulrich Weight-Based Adult 3mL protocol which will load the following settings: Saline Test Bolus 3mL/sec Weight based volume 3mL/sec (see below) Saline Flush 50 mL 3mL/sec

Iohexol (Omnipaque) 350 mg/mL injection at a rate of 3 mL/sec

For sites without the Ulrich use Medrad p3T or refer to the weight based contrast tables included with the protocol booklet.

Option 2: IV Contrast Parameters 300 mgI/mL

Medrad™ P3T Abdomen protocol.

Iohexol (Omnipaque) 300 mg/mL injection at a rate of 3 mL/sec

For sites without the Medrad™ P3T or P3T PA option, refer to the weight based contrast tables we provide in the protocol booklet.

Field of View

Same as previous study or as small as appropriate

Scan Description

Badge 1 - 3D Landmark

- Breathing instructions: Breath in and hold

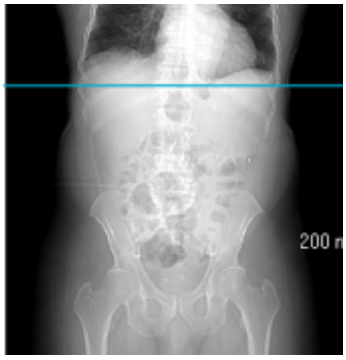
- Coverage: Diaphragm through pelvis

Badge 2 - ST W/O

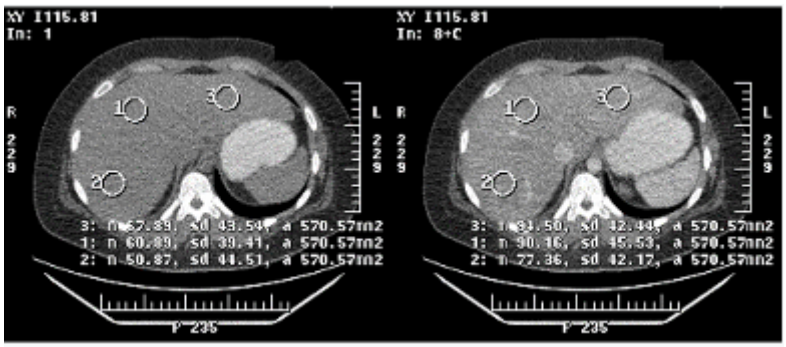
- Breathing instructions: Breath in and hold
- Coverage: Top of adrenal glands and end at bottom of the adrenal glands. **Check this series with physician to see if you need to continue with Badges 3,4,5**

Badge 3 -SureStart

- Place ROI on liver. Threshold of 50 Hounsfield units. No more than 80 seconds delay



Scout



ROI Location

Badge 4 - ST W/C

- Breathing instructions: Breath in and hold
- Coverage: Diaphragm to iliac crest. If pelvis is ordered, scan through pelvis.

Badge 5 - ST DELAY 15 MIN W/C

- Breathing instructions: Breath in and hold
- Coverage: Top of adrenal glands and end at bottom of adrenal glands (same as without)

Reformat Instructions

Reformats

Non-Con and PV

Name	Source Series Name	3D/MPR or Manual	Rendering (MIP, Average, etc.)	WW/WL	Slice Thickness (mm)	Interval (mm)	Orientation
SA BODY	THIN ST	3D/MPR	Average	350/50	3	2	sagittal
CO BODY	THIN ST	3D/MPR	Average	350/50	3	2	coronal

Networking

All images (including 3DLandmark, SureStart and dose report) are AUTO networked to PACS (ALI_Store).

Miscellaneous

None

Acquisition Parameters

Badge 1: 3D Landmark

1. 3D Landmark

Start Mode	Start Time (s)	Wait Time (s)	Total Scan Time (s)	Start Position (mm)	End Position (mm)	Range (mm)	No. of Scans	Scan Slice	Pitch	kV	mA
P	***	0	6.10	396.00	996.00	600.00	1	0.5 x 80	Fast	120	80

Rotation Time(s)	Scan Direction	C-FOV	CTDIvol (mGy)	DLP (mGy.cm)	Pre Voice	Post Voice	Contrast Protocol Name	Focus	Badge Name
0.5	OUT	L	0.3	22.5	Breathe In & Hold	Breathe Normally ***		Small	***

Recon Cards

Card No.	Start Position (mm)	End Position (mm)	Range (mm)	Thickness (mm)	Interval (mm)	DFOV	App Type	Kernel	Noise Reduction
1	0	600	600	1	1	500	Localizer	Body	OFF

BHC	W / L	SEMAR	Transfer (Volume)
OFF	300 / 50	OFF	ON (PACS)

Badge 2: ST W/O

2. Helical

Start Mode	Start Time (s)	Wait Time (s)	Total Scan Time (s)	Start Position (mm)	End Position (mm)	Range (mm)	No. of Scans	Scan Slice	Pitch	kV	mA
P	***	0	2.90	465.50	535.50	70.00	1	0.5 x 80	Standard	120	head B15 MEDIUM

Rotation Time(s)	Scan Direction	C-FOV	CTDIvol (mGy)	DLP (mGy.cm)	Pre Voice	Post Voice	Contrast Protocol Name	Focus	Badge Name
0.75	OUT	L	***	***	Breathe In & Hold	Breathe Normally ***		Small	ST W/O

VolumeEC

SD	Noise Reduction	XY-Modulation	Adaptive SD	OEM	Slice Thickness (mm)	Max mA	Min mA
5.4	AiCE L2	ON	ON	OFF	4	580	60

Small Medium

	Start Mode	Start Time (s)	Wait Time (s)	Total Scan Time (s)	Start Position (mm)	End Position (mm)	Range (mm)	No. of Scans	Scan Slice	Pitch	kV	mA
2. Helical	P	***	0	2.90	465.50	535.50	70.00	1	0.5 x 80	Standard	120	head B15 LARGE

Rotation Time(s)	Scan Direction	C-FOV	CTDIvol (mGy)	DLP (mGy.cm)	Pre Voice	Post Voice	Contrast Protocol Name	Focus	Badge Name
0.75	OUT	L	***	***	Breathe In & Hold	Breathe Normally ***		Small	ST W/O

VolumeEC	SD	Noise Reduction	XY-Modulation	Adaptive SD	OEM	Slice Thickness (mm)	Max mA	Min mA
	7.2	AiCE L2	ON	ON	OFF	4	660	70

Large

Badge 2: Recons

Recon Cards	Card No.	Start Position (mm)	End Position (mm)	Range (mm)	Thickness (mm)	Interval (mm)	DFOV	App Type	Kernel	Noise Reduction
	1	0	450.5	450.5	1	0.5	382.8	Volume	Body Sharp	AiCE L1
	2	0	450	450	4	2	382.8	Volume	Body Sharp	AiCE L1

BHC	W / L	SEMAR	Transfer (Volume)
ON	350 / 50	OFF	ON (PACS)
ON	350 / 50	OFF	ON (PACS)

Axial			Coronal			Sagittal			Rendering	Transfer (MultiView)
Thickness (mm)	Interval (mm)	Direction	Thickness (mm)	Interval (mm)	Direction	Thickness (mm)	Interval (mm)	Direction		
***	***	***	3	2	A - P	3	2	R - L	Average	***
***	***	***	***	***	***	***	***	***	***	***

Badge 3: SureStart

	Start Mode	Start Time (s)	Wait Time (s)	Total Scan Time (s)	Start Position (mm)	End Position (mm)	Range (mm)	No. of Scans	Scan Slice	Pitch	kV	mA
2. SURE Start	P	***	45	40.80	631.50	631.50	***	1	0.5 x 8	***	135	40

Rotation Time(s)	Scan Direction	C-FOV	CTDIvol (mGy)	DLP (mGy.cm)	Pre Voice	Post Voice	Contrast Protocol Name	Focus	Badge Name
0.6	OUT	L	335.0	134.0	***	***	***	Small	***

SURE Start Setup	ROI Mode	Intermittent	Interval (s)	Threshold ROI1 (Intermittent)	Start Mode	ROI Condition	Threshold ROI1	Threshold ROI2	Voice Timing	Lock Position
	1 ROI	ON	3	200	Manual	***	200	***	***	***

Recon Cards	Card No.	Start Position (mm)	End Position (mm)	Range (mm)	Thickness (mm)	Interval (mm)	DFOV	App Type	Kernel	Noise Reduction
	1	***	***	***	4	***	500	Dynamic	Body Sharp	AIDR 3D L3

BHC	W / L	SEMAR	Transfer (Volume)	Time Interval (s)
***	300 / 50	***	ON (PACS)	***

Badge 4: ST W/C

	Start Mode	Start Time (s)	Wait Time (s)	Total Scan Time (s)	Start Position (mm)	End Position (mm)	Range (mm)	No. of Scans	Scan Slice	Pitch	kV	mA
4. Helical	A	***	0	7.80	465.50	916.00	450.50	1	0.5 x 80	Standard	120	neck B16 MEDIUM

Rotation Time(s)	Scan Direction	C-FOV	CTDIvol (mGy)	DLP (mGy.cm)	Pre Voice	Post Voice	Contrast Protocol Name	Focus	Badge Name
0.5	OUT	L	***	***	Breathe In & Hold	Breathe Normally ***		Small	ST W/C

VolumeEC	SD	Noise Reduction	XY-Modulation	Adaptive SD	OEM	Slice Thickness (mm)	Max mA	Min mA
	6.5	AiCE L2	ON	ON	OFF	4	600	60

Small Medium

	Start Mode	Start Time (s)	Wait Time (s)	Total Scan Time (s)	Start Position (mm)	End Position (mm)	Range (mm)	No. of Scans	Scan Slice	Pitch	kV	mA
4. Helical	A	***	0	9.30	465.50	916.00	450.50	1	0.5 x 80	Standard	120	neck B16 LARGE

Rotation Time(s)	Scan Direction	C-FOV	CTDIvol (mGy)	DLP (mGy.cm)	Pre Voice	Post Voice	Contrast Protocol Name	Focus	Badge Name
0.6	OUT	L	***	***	Breathe In & Hold	Breathe Normally ***		Small	ST W/C

VolumeEC	SD	Noise Reduction	XY-Modulation	Adaptive SD	OEM	Slice Thickness (mm)	Max mA	Min mA
	8.7	AiCE L2	ON	ON	OFF	4	580	60

Large

Badge 4: Recons

Recon Cards	Card No.	Start Position (mm)	End Position (mm)	Range (mm)	Thickness (mm)	Interval (mm)	DFOV	App Type	Kernel	Noise Reduction
	1	0	450.5	450.5	1	0.5	382.8	Volume	Body Sharp	AiCE L1
	2	0	450	450	4	2	382.8	Volume	Body Sharp	AiCE L1

BHC	W / L	SEMAR	Transfer (Volume)
ON	350 / 50	OFF	ON (PACS)
ON	350 / 50	OFF	ON (PACS)

Axial			Coronal			Sagittal			Rendering	Transfer (MultiView)
Thickness (mm)	Interval (mm)	Direction	Thickness (mm)	Interval (mm)	Direction	Thickness (mm)	Interval (mm)	Direction		
***	***	***	3	2	A - P	3	2	R - L	Average	***
***	***	***	***	***	***	***	***	***	***	***

Badge 5: ST DELAY 15 MIN W/C

	Start Mode	Start Time (s)	Wait Time (s)	Total Scan Time (s)	Start Position (mm)	End Position (mm)	Range (mm)	No. of Scans	Scan Slice	Pitch	kV	mA
4. Helical	A	***	0	7.80	465.50	916.00	450.50	1	0.5 x 80	Standard	120	neck B16 MEDIUM

Rotation Time(s)	Scan Direction	C-FOV	CTDIvol (mGy)	DLP (mGy.cm)	Pre Voice	Post Voice	Contrast Protocol Name	Focus	Badge Name
0.5	OUT	L	***	***	Breathe In & Hold	Breathe Normally	***	Small	ST W/C

VolumeEC	SD	Noise Reduction	XY-Modulation	Adaptive SD	OEM	Slice Thickness (mm)	Max mA	Min mA
	6.5	AiCE L2	ON	ON	OFF	4	600	60

Small Medium

	Start Mode	Start Time (s)	Wait Time (s)	Total Scan Time (s)	Start Position (mm)	End Position (mm)	Range (mm)	No. of Scans	Scan Slice	Pitch	kV	mA
4. Helical	A	***	0	9.30	465.50	916.00	450.50	1	0.5 x 80	Standard	120	neck B16 LARGE

Rotation Time(s)	Scan Direction	C-FOV	CTDIvol (mGy)	DLP (mGy.cm)	Pre Voice	Post Voice	Contrast Protocol Name	Focus	Badge Name
0.6	OUT	L	***	***	Breathe In & Hold	Breathe Normally	***	Small	ST W/C

VolumeEC	SD	Noise Reduction	XY-Modulation	Adaptive SD	OEM	Slice Thickness (mm)	Max mA	Min mA
	8.7	AiCE L2	ON	ON	OFF	4	580	60

Large

Badge 5: Recons

Recon Cards	Card No.	Start Position (mm)	End Position (mm)	Range (mm)	Thickness (mm)	Interval (mm)	DFOV	App Type	Kernel	Noise Reduction
	1	0	70	70	4	2	382.8	Volume	Body Sharp	AiCE L1

BHC	W / L	SEMAR	Transfer (Volume)
ON	350 / 50	OFF	ON (PACS)

Abd - Pancreas Cancer (Neoplasm Screening) 6.40/6.41/6.42

Clinical Instructions

Indication

- Suspicion of pancreatic neoplasm.
- Preoperative evaluation of known pancreatic neoplasm. 1st time scan.
- Used to assess **resectability** of pancreas, or response to treatment/therapy.
- If looking for METS/metastatic disease after a known resected pancreas tumor ok to use HIQ protocol.

Oral Contrast

Give a total 800 mL of water over the course of one hour prior to scan. Ask patient to drink slowly and steadily.
Give an additional 200mL dose of water on the CT scan table.

Pre-Scan Instructions

None

IV Contrast: Select Option 1 or 2 - based on concentration available at your site

Option 1: IV Contrast Parameters 350 mgI/mL

Select the Ulrich Weight-Based Adult 3mL protocol which will load the following settings: Saline Test Bolus 3mL/sec Weight based volume 3mL/sec (see below) Saline Flush 50 mL 3mL/sec

Iohexol (Omnipaque) 350 mg/mL injection at a rate of 3 mL/sec

For sites without the Ulrich use Medrad p3T or refer to the weight based contrast tables included with the protocol booklet.

Option 2: IV Contrast Parameters 300 mgI/mL

Medrad™ P3T Abdomen protocol.

Iohexol (Omnipaque) 300 mg/mL injection at a rate of 3 mL/sec

For sites without the Medrad™ P3T or P3T PA option, refer to the weight based contrast tables we provide in the protocol booklet.

Field of View

Same as previous study or as small as appropriate

Scan Description

Badge 1 - 3D Landmark

- Breathing instructions: Breath in and hold
- Coverage: Diaphragm through pelvis

No SureStart. A 40 second diagnostic delay is built prior to Badge 2.

Badge 2 – ST LATE ARTERIAL

- Breathing instructions: Breath in and hold
- Coverage: Diaphragm to iliac crest

Badge 3 – ST W/C

- Breathing instructions: Breath in and hold
- Coverage: Diaphragm to iliac crest for the abdomen only or through the pelvis if a pelvis is ordered.
- This group is scanned at 70 seconds from the start of the injection. The scanner will automatically adjust this delay.

Reformat Instructions

None

Reformats

ALL PHASES

Name	Source Series Name	3D/MPR or Manual	Rendering (MIP, Average, etc.)	WW/WL	Slice Thickness (mm)	Interval (mm)	Orientation
SA BODY	THIN ST	3D/MPR	Average	350/50	3	2	sagittal
CO BODY	THIN ST	3D/MPR	Average	350/50	3	2	coronal

Networking

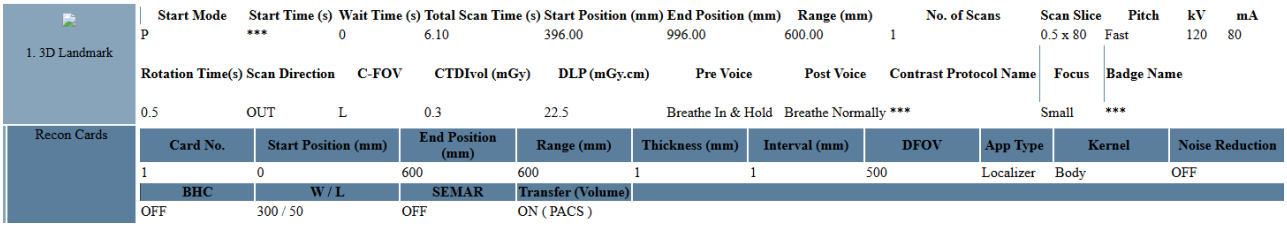
All images (including 3DLandmark and dose report) are AUTO networked to PACS (ALI_Store).

Miscellaneous

None

Acquisition Parameters

Badge 1: 3D Landmark



	Start Mode	Start Time (s)	Wait Time (s)	Total Scan Time (s)	Start Position (mm)	End Position (mm)	Range (mm)	No. of Scans	Scan Slice	Pitch	kV	mA
1. 3D Landmark	P	***	0	6.10	396.00	996.00	600.00	1	0.5 x 80	Fast	120	80

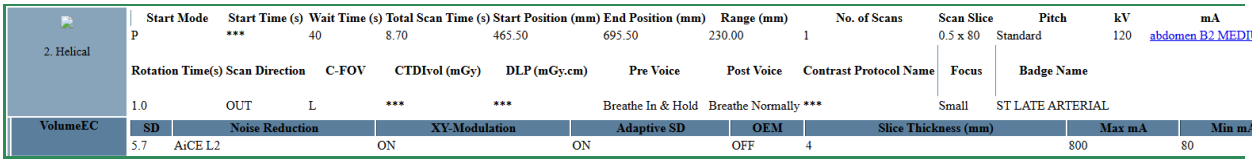
Rotation Time(s)	Scan Direction	C-FOV	CTDIvol (mGy)	DLP (mGy.cm)	Pre Voice	Post Voice	Contrast Protocol Name	Focus	Badge Name
0.5	OUT	L	0.3	22.5	Breathe In & Hold	Breathe Normally ***		Small	***

Recon Cards

Card No.	Start Position (mm)	End Position (mm)	Range (mm)	Thickness (mm)	Interval (mm)	DFOV	App Type	Kernel	Noise Reduction
1	0	600	600	1	1	500	Localizer	Body	OFF

BHC	W / L	SEMAR	Transfer (Volume)
OFF	300 / 50	OFF	ON (PACS)

Badge 2: ST LATE ARTERIAL



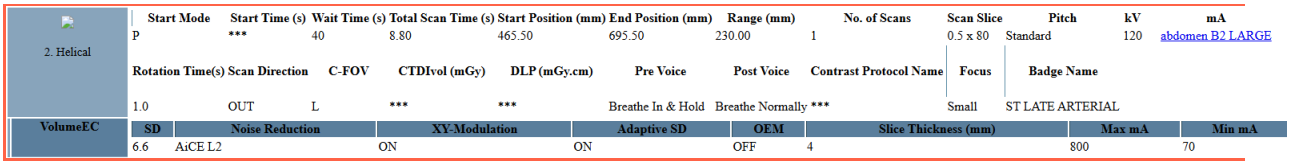
	Start Mode	Start Time (s)	Wait Time (s)	Total Scan Time (s)	Start Position (mm)	End Position (mm)	Range (mm)	No. of Scans	Scan Slice	Pitch	kV	mA
2. Helical	P	***	40	8.70	465.50	695.50	230.00	1	0.5 x 80	Standard	120	abdomen B2 MEDIUM

Rotation Time(s)	Scan Direction	C-FOV	CTDIvol (mGy)	DLP (mGy.cm)	Pre Voice	Post Voice	Contrast Protocol Name	Focus	Badge Name
1.0	OUT	L	***	***	Breathe In & Hold	Breathe Normally ***		Small	ST LATE ARTERIAL

VolumeEC

SD	Noise Reduction	XY-Modulation	Adaptive SD	OEM	Slice Thickness (mm)	Max mA	Min mA
5.7	AiCE L2	ON	ON	OFF	4	800	80

Large



	Start Mode	Start Time (s)	Wait Time (s)	Total Scan Time (s)	Start Position (mm)	End Position (mm)	Range (mm)	No. of Scans	Scan Slice	Pitch	kV	mA
2. Helical	P	***	40	8.80	465.50	695.50	230.00	1	0.5 x 80	Standard	120	abdomen B2 LARGE

Rotation Time(s)	Scan Direction	C-FOV	CTDIvol (mGy)	DLP (mGy.cm)	Pre Voice	Post Voice	Contrast Protocol Name	Focus	Badge Name
1.0	OUT	L	***	***	Breathe In & Hold	Breathe Normally ***		Small	ST LATE ARTERIAL

VolumeEC

SD	Noise Reduction	XY-Modulation	Adaptive SD	OEM	Slice Thickness (mm)	Max mA	Min mA
6.6	AiCE L2	ON	ON	OFF	4	800	70

Large

Badge 2: Recons

Recon Cards

Card No.	Start Position (mm)	End Position (mm)	Range (mm)	Thickness (mm)	Interval (mm)	DFOV	App Type	Kernel	Noise Reduction
1	0	450.5	450.5	1	0.5	382.8	Volume	Body Sharp	AiCE L1
2	0	450	450	4	2	382.8	Volume	Body Sharp	AiCE L1

BHC	W / L	SEMAR	Transfer (Volume)
ON	350 / 50	OFF	ON (PACS)
ON	350 / 50	OFF	ON (PACS)

Axial			Coronal			Sagittal			Rendering	Transfer (MultiView)
Thickness (mm)	Interval (mm)	Direction	Thickness (mm)	Interval (mm)	Direction	Thickness (mm)	Interval (mm)	Direction		
***	***	***	3	2	A - P	3	2	R - L	Average	***
***	***	***	***	***	***	***	***	***	***	***

Badge 3: ST W/C

	Start Mode	Start Time (s)	Wait Time (s)	Total Scan Time (s)	Start Position (mm)	End Position (mm)	Range (mm)	No. of Scans	Scan Slice	Pitch	kV	mA
3. Helical	A	70	21.299999	15.50	465.50	916.00	450.50	1	0.5 x 80	Standard	120	abdomen B3 MEDIUM

Rotation Time(s)	Scan Direction	C-FOV	CTDIvol (mGy)	DLP (mGy.cm)	Pre Voice	Post Voice	Contrast Protocol Name	Focus	Badge Name
1.0	OUT	L	***	***	Breathe In & Hold	Breathe Normally	***	Small	ST W/C

VolumeEC	SD	Noise Reduction	XY-Modulation	Adaptive SD	OEM	Slice Thickness (mm)	Max mA	Min mA
	6.3	AiCE L2	ON	ON	OFF	4	800	60

Small Medium

	Start Mode	Start Time (s)	Wait Time (s)	Total Scan Time (s)	Start Position (mm)	End Position (mm)	Range (mm)	No. of Scans	Scan Slice	Pitch	kV	mA
3. Helical	A	70	21.200001	15.50	465.50	916.00	450.50	1	0.5 x 80	Standard	120	abdomen B3 LARGE

Rotation Time(s)	Scan Direction	C-FOV	CTDIvol (mGy)	DLP (mGy.cm)	Pre Voice	Post Voice	Contrast Protocol Name	Focus	Badge Name
1.0	OUT	L	***	***	Breathe In & Hold	Breathe Normally	***	Small	ST W/C

VolumeEC	SD	Noise Reduction	XY-Modulation	Adaptive SD	OEM	Slice Thickness (mm)	Max mA	Min mA
	7.3	AiCE L2	ON	ON	OFF	4	800	60

Large

Badge3: Recons

Recon Cards

Card No.	Start Position (mm)	End Position (mm)	Range (mm)	Thickness (mm)	Interval (mm)	DFOV	App Type	Kernel	Noise Reduction
1	0	450.5	450.5	1	0.5	382.8	Volume	Body Sharp	AiCE L1
2	0	450	450	4	2	382.8	Volume	Body Sharp	AiCE L1

BHC	W / L	SEMAR	Transfer (Volume)
ON	350 / 50	OFF	ON (PACS)
ON	350 / 50	OFF	ON (PACS)

Axial			Coronal			Sagittal			Rendering	Transfer (MultiView)
Thickness (mm)	Interval (mm)	Direction	Thickness (mm)	Interval (mm)	Direction	Thickness (mm)	Interval (mm)	Direction		
***	***	***	3	2	A - P	3	2	R - L	Average	***
***	***	***	***	***	***	***	***	***	***	***

CTA Abd-Pancreas - Transplant 6.46/6.47/6.48

Clinical Instructions

Indication

Evaluation of Transplanted Pancreas.

Oral Contrast

Give a total 800 mL of water over the course of one hour prior to scan. Ask patient to drink slowly and steadily.

Give an additional 200mL dose of water on the CT scan table.

Pre-Scan Instructions

None

IV Contrast: Select Option 1 or 2 - based on concentration available at your site

Option 1: IV Contrast Parameters 350 mgI/mL

Select the Ulrich Weight-Based Adult 5mL protocol which will load the following settings: Saline Test Bolus 5mL/sec Weight based volume 5mL/sec (see below) Saline Flush 50 mL at a rate of 5mL/sec

Iohexol (Omnipaque) 350 mg/mL injection at a rate of 5 mL/sec

For sites without the Ulrich use Medrad p3T or refer to the weight based contrast tables included with the protocol booklet. Click here to access these tables

Option 2: IV Contrast Parameters 370 mgI/mL

Medrad™ P3T Abdomen

Iopamidol (Isovue 370) 370 mgI/mL injection at a rate 5 mL/sec

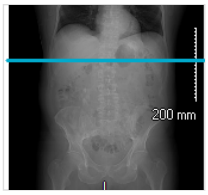
For sites without the Medrad™ P3T or P3T PA option, refer to the weight based contrast tables we provide in the protocol booklet. Click here to access these tables

Field of View

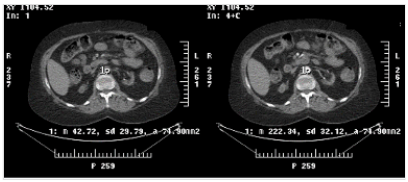
Same as previous study or as small as appropriate

Scan Description

- **Badge 1** - 3D Landmark
  - Breathing instructions: Breath in and hold
  - Coverage: Diaphragm through pelvis
- **Badge2**- ST W/O
  - Breathing instructions: Breath in and hold
  - Coverage: Top of transplant pancreas and end at the bottom of the pancreas (located around the iliac crest)
- **Badge 3**- SureStart
  - Place ROI on Aorta, at the level of mid liver. **AUTO is turned on so the scan will progress without the need for you to hit Skip** There will be a 10 second diagnostic delay built in.



Scout


ROI Location

- **Badge 4**- ST CTA
  - Breathing instructions: Breath in and hold
  - Coverage: Top of pancreas transplant and end at the bottom of the pancreas transplant
- **Badge 5**- ST W/C
  - Breathing instructions: Breath in and hold
  - Coverage: Diaphragm through pelvis
  - This group is scanned at 70 seconds from the start of the injection. The scanner will automatically adjust this delay.

Reformat Instructions

In the United States, CT Angiography CPT codes require the performance and documentation of 3D angiographic rendering, which may include maximum intensity projection (MIP), volumetric rendering, and/or surface rendering techniques.

Reformats

PV phase only

Name	Source Series Name	3D/MPR or Manual	Rendering (MIP, Average, etc.)	WW/WL	Slice Thickness (mm)	Interval (mm)	Orientation
SA BODY	THIN ST	3D/MPR	Average	350/50	3	2	sagittal
CO BODY	THIN ST	3D/MPR	Average	350/50	3	2	coronal

Networking

All images (including 3DLandmark, SureStart and dose report) are AUTO networked to PACS (ALI_Store).

Miscellaneous

None

Acquisition Parameters

Badge 1: 3D Landmark

1. 3D Landmark

Start Mode	Start Time (s)	Wait Time (s)	Total Scan Time (s)	Start Position (mm)	End Position (mm)	Range (mm)	No. of Scans	Scan Slice	Pit
P	***	0	6.10	396.00	996.00	600.00	1	0.5 x 80	Fast

Rotation Time(s)	Scan Direction	C-FOV	CTDIvol (mGy)	DLP (mGy.cm)	Pre Voice	Post Voice	Contrast Protocol Name	Focus	Badge
0.5	OUT	L	0.3	22.5	Breathe In & Hold	Breathe Normally ***		Small	***

Recon Cards

Card No.	Start Position (mm)	End Position (mm)	Range (mm)	Thickness (mm)	Interval (mm)	DFOV	App Type	Kernel
1	0	600	600	1	1	500	Localizer	Body

BHC	W / L	SEMAR	Transfer (Volume)
OFF	300 / 50	OFF	ON (PACS)

Badge 2: ST W/O

2. Helical

Start Mode	Start Time (s)	Wait Time (s)	Total Scan Time (s)	Start Position (mm)	End Position (mm)	Range (mm)	No. of Scans	Scan Slice	Pitch	kV
P	***	0	3.50	695.50	917.50	222.00	1	0.5 x 80	Standard	120

Rotation Time(s)	Scan Direction	C-FOV	CTDIvol (mGy)	DLP (mGy.cm)	Pre Voice	Post Voice	Contrast Protocol Name	Focus	Badge Name
0.4	OUT	L	***	***	Breathe In & Hold	Breathe Normally ***		Small	ST W/O

VolumeEC

SD	Noise Reduction	XY-Modulation	Adaptive SD	OEM	Slice Thickness (mm)	Max mA
8.7	AiCE L2	ON	ON	OFF	4	800

Small Medium

2. Helical

Start Mode	Start Time (s)	Wait Time (s)	Total Scan Time (s)	Start Position (mm)	End Position (mm)	Range (mm)	No. of Scans	Scan Slice	Pitch	kV
P	***	0	5.10	695.50	917.50	222.00	1	0.5 x 80	Standard	120

Rotation Time(s)	Scan Direction	C-FOV	CTDIvol (mGy)	DLP (mGy.cm)	Pre Voice	Post Voice	Contrast Protocol Name	Focus	Badge Name
0.6	OUT	L	***	***	Breathe In & Hold	Breathe Normally ***		Small	ST W/O

VolumeEC

SD	Noise Reduction	XY-Modulation	Adaptive SD	OEM	Slice Thickness (mm)	Max mA
10	AiCE L2	ON	ON	OFF	4	780

Large

Badge 2: Recon

Recon Cards

Card No.	Start Position (mm)	End Position (mm)	Range (mm)	Thickness (mm)	Interval (mm)	DFOV	App Type	Kernel
1	0	70	70	4	2	382.8	Volume	Body Sharp

BHC	W / L	SEMAR	Transfer (Volume)
ON	350 / 50	OFF	ON (PACS)

Badge 3: SureStart

3. SURE Start

Start Mode	Start Time (s)	Wait Time (s)	Total Scan Time (s)	Start Position (mm)	End Position (mm)	Range (mm)	No. of Scans	Scan Slice	Pit
P	***	10	41.00	465.50	465.50	***	1	0.5 x 8	***

Rotation Time(s)	Scan Direction	C-FOV	CTDIvol (mGy)	DLP (mGy.cm)	Pre Voice	Post Voice	Contrast Protocol Name	Focus	Badge
1.0	OUT	L	136.8	54.7	***	***	***	Small	***

SURE Start Setup

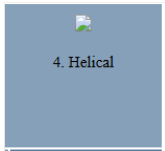
ROI Mode	Intermittent	Interval (s)	Threshold ROI1 (Intermittent)	Start Mode	ROI Condition	Threshold ROI1	Threshold ROI2	Voice Ti
1 ROI	ON	3	180	Auto	***	180	***	***

Recon Cards

Card No.	Start Position (mm)	End Position (mm)	Range (mm)	Thickness (mm)	Interval (mm)	DFOV	App Type	Kernel
1	***	***	***	4	***	500	Dynamic	Body

BHC	W / L	SEMAR	Transfer (Volume)	Time Interval (s)
***	300 / 50	***	ON (PACS)	***

Badge 4: ST CTA

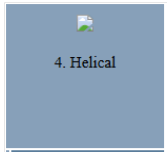


Start Mode	Start Time (s)	Wait Time (s)	Total Scan Time (s)	Start Position (mm)	End Position (mm)	Range (mm)	No. of Scans	Scan Slice	Pitch	kV
A	***	10	8.50	695.50	916.00	220.50	1	0.5 x 80	Standard	120

Rotation Time(s)	Scan Direction	C-FOV	CTDIvol (mGy)	DLP (mGy.cm)	Pre Voice	Post Voice	Contrast Protocol Name	Focus	Badge Name
1.0	OUT	L	***	***	Breathe In & Hold	Breathe Normally ***		Small	ST CTA

VolumeEC	SD	Noise Reduction	XY-Modulation	Adaptive SD	OEM	Slice Thickness (mm)	Max mA
	5.9	AiCE L2	ON	ON	OFF	4	800

Small Medium



Start Mode	Start Time (s)	Wait Time (s)	Total Scan Time (s)	Start Position (mm)	End Position (mm)	Range (mm)	No. of Scans	Scan Slice	Pitch	kV
A	***	10	8.90	682.50	916.00	233.50	1	0.5 x 80	Standard	120

Rotation Time(s)	Scan Direction	C-FOV	CTDIvol (mGy)	DLP (mGy.cm)	Pre Voice	Post Voice	Contrast Protocol Name	Focus	Badge Name
1.0	OUT	L	***	***	Breathe In & Hold	Breathe Normally ***		Small	ST CTA

VolumeEC	SD	Noise Reduction	XY-Modulation	Adaptive SD	OEM	Slice Thickness (mm)	Max mA
	6.5	AiCE L2	ON	ON	OFF	4	780

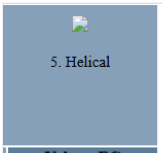
Large

Badge 4: Recon

Recon Cards	Card No.	Start Position (mm)	End Position (mm)	Range (mm)	Thickness (mm)	Interval (mm)	DFOV	App Type	Kernel
	1	0	450.5	450.5	1	0.5	382.8	Volume	Body Sharp
	2	0	450.5	450.5	0.5	0.5	382.8	Volume	Body Sharp

BHC	W / L	SEMAR	Transfer (Volume)
ON	350 / 50	OFF	ON (PACS)
ON	350 / 50	OFF	ON (PACS)

Badge 5: ST W/C

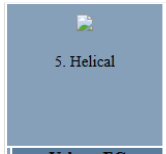


Start Mode	Start Time (s)	Wait Time (s)	Total Scan Time (s)	Start Position (mm)	End Position (mm)	Range (mm)	No. of Scans	Scan Slice	Pitch	kV
A	70	29.5	15.50	465.50	916.00	450.50	1	0.5 x 80	Standard	120

Rotation Time(s)	Scan Direction	C-FOV	CTDIvol (mGy)	DLP (mGy.cm)	Pre Voice	Post Voice	Contrast Protocol Name	Focus	Badge Name
1.0	OUT	L	***	***	Breathe In & Hold	Breathe Normally ***		Small	ST W/C

VolumeEC	SD	Noise Reduction	XY-Modulation	Adaptive SD	OEM	Slice Thickness (mm)	Max mA
	6.3	AiCE L2	ON	ON	OFF	4	800

Small Medium



Start Mode	Start Time (s)	Wait Time (s)	Total Scan Time (s)	Start Position (mm)	End Position (mm)	Range (mm)	No. of Scans	Scan Slice	Pitch	kV
A	70	29.1	15.50	465.50	916.00	450.50	1	0.5 x 80	Standard	120

Rotation Time(s)	Scan Direction	C-FOV	CTDIvol (mGy)	DLP (mGy.cm)	Pre Voice	Post Voice	Contrast Protocol Name	Focus	Badge Name
1.0	OUT	L	***	***	Breathe In & Hold	Breathe Normally ***		Small	ST W/C

VolumeEC	SD	Noise Reduction	XY-Modulation	Adaptive SD	OEM	Slice Thickness (mm)	Max mA
	7.3	AiCE L2	ON	ON	OFF	4	780

Large

Badge 5: Recons

Recon Cards	Card No.	Start Position (mm)	End Position (mm)	Range (mm)	Thickness (mm)	Interval (mm)	DFOV	App Type	Kernel
	1	0	450.5	450.5	1	0.5	382.8	Volume	Body Sharp
	2	0	450	450	4	2	382.8	Volume	Body Sharp

BHC	W / L	SEMAR	Transfer (Volume)
ON	350 / 50	OFF	ON (PACS)
ON	350 / 50	OFF	ON (PACS)

Axial			Coronal			Sagittal			Rendering	
Thickness (mm)	Interval (mm)	Direction	Thickness (mm)	Interval (mm)	Direction	Thickness (mm)	Interval (mm)	Direction		
***	***	***	3	2	A - P	3	2	R - L	Average	***
***	***	***	***	***	***	***	***	***	***	***

Abd/Pelvis - Kidney Tumor 6.49/6.50/6.51

Clinical Instructions

Indication

Suspicion or evaluation of small renal neoplasm. Ideal for PCKD (unless contrast is contraindicated, in which case use the Flank Pain protocol).

Oral Contrast

Give a total 800 mL of water over the course of one hour prior to scan. Ask patient to drink slowly and steadily.

Give an additional 200mL dose of water on the CT scan table.

Pre-Scan Instructions

None

IV Contrast: Select Option 1 or 2 - based on concentration available at your site

Option 1: IV Contrast Parameters 350 mgI/mL

Select the Ulrich Weight-Based Adult 3mL protocol which will load the following settings: Saline Test Bolus 3mL/sec Weight based volume 3mL/sec (see below) Saline Flush 50 mL 3mL/sec

Iohexol (Omnipaque) 350 mg/mL injection at a rate of 3 mL/sec

For sites without the Ulrich use Medrad p3T or refer to the weight based contrast tables included with the protocol booklet.

Option 2: IV Contrast Parameters 300 mgI/mL

Medrad™ P3T Abdomen protocol.

Iohexol (Omnipaque) 300 mg/mL injection at a rate of 3 mL/sec

For sites without the Medrad™ P3T or P3T PA option, refer to the weight based contrast tables we provide in the protocol booklet.

Field of View

Same as previous study or as small as appropriate

Scan Description

Badge 1 - 3D Landmark

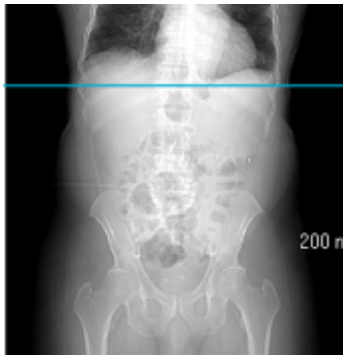
- Breathing instructions: Breath in and hold
- Coverage: Diaphragm through pelvis

Badge 2 - ST W/O

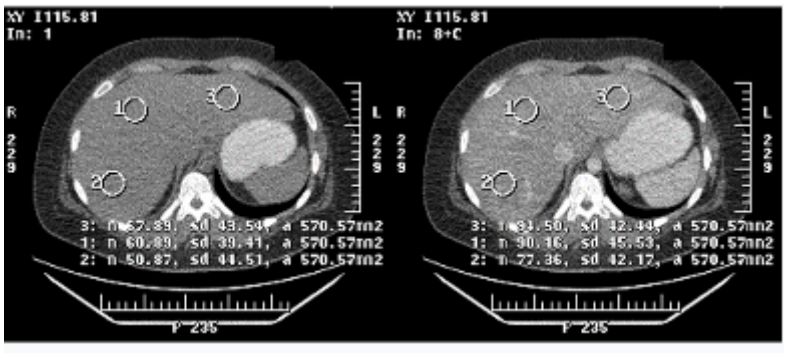
- Breathing instructions: Breath in and hold
- Coverage: Top of kidneys through bottom of kidneys.

Badge 3 - SureStart

- Place ROI on liver. Threshold of 70 Hounsfield units. No less than 60 and no more than 80 second delay.



Scout



ROI Location

Badge 4 - ST W/C

- Breathing instructions: Breath in and hold
- Coverage: Diaphragm to iliac crest. If pelvis is ordered, scan through pelvis.

Badge 5 - ST DELAY 2 MIN W/C

- Breathing instructions: Breath in and hold

- Coverage: Top of kidneys through bottom of kidneys.

Reformat Instructions

Reformats

PV phase only

Name	Source Series Name	3D/MPR or Manual	Rendering (MIP, Average, etc.)	WW/WL	Slice Thickness (mm)	Interval (mm)	Orientation
SA BODY	THIN ST	3D/MPR	Average	350/50	3	2	sagittal
CO BODY	THIN ST	3D/MPR	Average	350/50	3	2	coronal

Networking

All images (including 3DLandmark, SureStart and dose report) are AUTO networked to PACS (ALI_Store).

Miscellaneous

None

Acquisition Parameters

Badge 1: 3D Landmark

	Start Mode	Start Time (s)	Wait Time (s)	Total Scan Time (s)	Start Position (mm)	End Position (mm)	Range (mm)	No. of Scans	Scan Slice	Pitch	kV	mA
1. 3D Landmark	P	***	0	6.10	396.00	996.00	600.00	1	0.5 x 80	Fast	120	80

Rotation Time(s)	Scan Direction	C-FOV	CTDIvol (mGy)	DLP (mGy.cm)	Pre Voice	Post Voice	Contrast Protocol Name	Focus	Badge Name
0.5	OUT	L	0.3	22.5	Breathe In & Hold	Breathe Normally ***		Small	***

Recon Cards

Card No.	Start Position (mm)	End Position (mm)	Range (mm)	Thickness (mm)	Interval (mm)	DFOV	App Type	Kernel	Noise Reduction
1	0	600	600	1	1	500	Localizer	Body	OFF

BHC	W / L	SEMAR	Transfer (Volume)
OFF	300 / 50	OFF	ON (PACS)

Badge 2: ST W/O

	Start Mode	Start Time (s)	Wait Time (s)	Total Scan Time (s)	Start Position (mm)	End Position (mm)	Range (mm)	No. of Scans	Scan Slice	Pitch	kV	mA
2. Helical	P	***	0	3.50	695.50	917.50	222.00	1	0.5 x 80	Standard	120	abdomen B6 MEDIUM

Rotation Time(s)	Scan Direction	C-FOV	CTDIvol (mGy)	DLP (mGy.cm)	Pre Voice	Post Voice	Contrast Protocol Name	Focus	Badge Name
0.4	OUT	L	***	***	Breathe In & Hold	Breathe Normally ***		Small	ST W/O

VolumeEC

SD	Noise Reduction	XY-Modulation	Adaptive SD	OEM	Slice Thickness (mm)	Max mA	Min mA
8.7	AiCE L2	ON	ON	OFF	4	800	60

Small Medium

	Start Mode	Start Time (s)	Wait Time (s)	Total Scan Time (s)	Start Position (mm)	End Position (mm)	Range (mm)	No. of Scans	Scan Slice	Pitch	kV	mA
2. Helical	P	***	0	5.10	695.50	917.50	222.00	1	0.5 x 80	Standard	120	abdomen B6 LARGE

Rotation Time(s)	Scan Direction	C-FOV	CTDIvol (mGy)	DLP (mGy.cm)	Pre Voice	Post Voice	Contrast Protocol Name	Focus	Badge Name
0.6	OUT	L	***	***	Breathe In & Hold	Breathe Normally ***		Small	ST W/O

VolumeEC	SD	Noise Reduction	XY-Modulation	Adaptive SD	OEM	Slice Thickness (mm)	Max mA	Min mA
	10	AiCE L2	ON	ON	OFF	4	780	60

Large

Badge 2: Recons

Recon Cards	Card No.	Start Position (mm)	End Position (mm)	Range (mm)	Thickness (mm)	Interval (mm)	DFOV	App Type	Kernel	Noise Reduction
	1	0.8	220.300003	219.500003	1	0.5	382.8	Volume	Body Sharp	AiCE L1
	2	0	220	220	4	2	382.8	Volume	Body Sharp	AiCE L1

BHC	W / L	SEMAR	Transfer (Volume)
ON	350 / 50	OFF	ON (PACS)
ON	350 / 50	OFF	ON (PACS)

Badge 3: SureStart

	Start Mode	Start Time (s)	Wait Time (s)	Total Scan Time (s)	Start Position (mm)	End Position (mm)	Range (mm)	No. of Scans	Scan Slice	Pitch	kV	mA
2. SURE Start	P	***	45	40.80	631.50	631.50	***	1	0.5 x 8	***	135	40

Rotation Time(s)	Scan Direction	C-FOV	CTDIvol (mGy)	DLP (mGy.cm)	Pre Voice	Post Voice	Contrast Protocol Name	Focus	Badge Name
0.6	OUT	L	335.0	134.0	***	***	***	Small	***

SURE Start Setup	ROI Mode	Intermittent	Interval (s)	Threshold ROI1 (Intermittent)	Start Mode	ROI Condition	Threshold ROI1	Threshold ROI2	Voice Timing	Lock Position
	1 ROI	ON	3	200	Manual	***	200	***	***	***

Recon Cards	Card No.	Start Position (mm)	End Position (mm)	Range (mm)	Thickness (mm)	Interval (mm)	DFOV	App Type	Kernel	Noise Reduction
	1	***	***	***	4	***	500	Dynamic	Body Sharp	AIDR 3D L3

BHC	W / L	SEMAR	Transfer (Volume)	Time Interval (s)
***	300 / 50	***	ON (PACS)	***

Badge 4: ST W/C

	Start Mode	Start Time (s)	Wait Time (s)	Total Scan Time (s)	Start Position (mm)	End Position (mm)	Range (mm)	No. of Scans	Scan Slice	Pitch	kV	mA
3. Helical	A	***	0	9.30	465.50	916.00	450.50	1	0.5 x 80	Standard	135	abdomen B4 MEDIUM

Rotation Time(s)	Scan Direction	C-FOV	CTDIvol (mGy)	DLP (mGy.cm)	Pre Voice	Post Voice	Contrast Protocol Name	Focus	Badge Name
0.6	OUT	L	***	***	Breathe In & Hold	Breathe Normally ***		Small	ST

VolumeEC	SD	Noise Reduction	XY-Modulation	Adaptive SD	OEM	Slice Thickness (mm)	Max mA	Min mA
	7.5	AiCE L2	ON	ON	OFF	4	780	80

Small Medium

	Start Mode	Start Time (s)	Wait Time (s)	Total Scan Time (s)	Start Position (mm)	End Position (mm)	Range (mm)	No. of Scans	Scan Slice	Pitch	kV	mA
3. Helical	A	***	0	15.50	465.50	916.00	450.50	1	0.5 x 80	Standard	120	abdomen B4 LARGE

Rotation Time(s)	Scan Direction	C-FOV	CTDIvol (mGy)	DLP (mGy.cm)	Pre Voice	Post Voice	Contrast Protocol Name	Focus	Badge Name
1.0	OUT	L	***	***	Breathe In & Hold	Breathe Normally ***		Small	ST

VolumeEC	SD	Noise Reduction	XY-Modulation	Adaptive SD	OEM	Slice Thickness (mm)	Max mA	Min mA
	8.5	AiCE L2	ON	ON	OFF	4	800	60

Large

Badge 4: Recons

Recon Cards	Card No.	Start Position (mm)	End Position (mm)	Range (mm)	Thickness (mm)	Interval (mm)	DFOV	App Type	Kernel	Noise Reduction
	1	0	450.5	450.5	1	0.5	382.8	Volume	Body Sharp	AiCE L1
	2	0	450	450	4	2	382.8	Volume	Body Sharp	AiCE L1

BHC	W / L	SEMAR	Transfer (Volume)
ON	350 / 50	OFF	ON (PACS)
ON	350 / 50	OFF	ON (PACS)

Axial			Coronal			Sagittal			Rendering	Transfer (MultiView)
Thickness (mm)	Interval (mm)	Direction	Thickness (mm)	Interval (mm)	Direction	Thickness (mm)	Interval (mm)	Direction		
***	***	***	3	2	A - P	3	2	R - L	Average	***
***	***	***	***	***	***	***	***	***	***	***

Badge 5: ST DELAY 2 MIN W/C

	Start Mode	Start Time (s)	Wait Time (s)	Total Scan Time (s)	Start Position (mm)	End Position (mm)	Range (mm)	No. of Scans	Scan Slice	Pitch	kV	mA
5. Helical	P	***	0	7.40	465.50	651.50	186.00	1	0.5 x 80	Standard	120	abdomen B3 MEDIUM

Rotation Time(s)	Scan Direction	C-FOV	CTDIvol (mGy)	DLP (mGy.cm)	Pre Voice	Post Voice	Contrast Protocol Name	Focus	Badge Name
1.0	OUT	L	***	***	Breathe In & Hold	Breathe Normally	***	Small	ST DELAY 2 MIN W/C

VolumeEC	SD	Noise Reduction	XY-Modulation	Adaptive SD	OEM	Slice Thickness (mm)	Max mA	Min mA
	6.3	AiCE L2	ON	ON	OFF	4	800	60

Small Medium

	Start Mode	Start Time (s)	Wait Time (s)	Total Scan Time (s)	Start Position (mm)	End Position (mm)	Range (mm)	No. of Scans	Scan Slice	Pitch	kV	mA
5. Helical	P	***	0	7.40	465.50	651.50	186.00	1	0.5 x 80	Standard	120	abdomen B3 LARGE

Rotation Time(s)	Scan Direction	C-FOV	CTDIvol (mGy)	DLP (mGy.cm)	Pre Voice	Post Voice	Contrast Protocol Name	Focus	Badge Name
1.0	OUT	L	***	***	Breathe In & Hold	Breathe Normally	***	Small	ST DELAY 2 MIN W/C

VolumeEC	SD	Noise Reduction	XY-Modulation	Adaptive SD	OEM	Slice Thickness (mm)	Max mA	Min mA
	7.3	AiCE L2	ON	ON	OFF	4	800	60

Large

Badge 5: Recons

Recon Cards	Card No.	Start Position (mm)	End Position (mm)	Range (mm)	Thickness (mm)	Interval (mm)	DFOV	App Type	Kernel	Noise Reduction
	1	0.8	220.300003	219.500003	1	0.5	382.8	Volume	Body Sharp	AiCE L1
	2	0	220	220	4	2	382.8	Volume	Body Sharp	AiCE L1

BHC	W / L	SEMAR	Transfer (Volume)
ON	350 / 50	OFF	ON (PACS)
ON	350 / 50	OFF	ON (PACS)

CTA Abd - Renal Donor 6.52/6.53/6.54

Clinical Instructions

Indication

- Work-up of a potential renal donor.
- Assess for renal auto transplant.

Oral Contrast

Give a total 800 mL of water over the course of one hour prior to scan. Ask patient to drink slowly and steadily.

Have patient void before bringing patient into the scanner.

Give an additional 200mL dose of water on the CT scan table.

Pre-Scan Instructions

None

Select IV Contrast Option 1 or 2 - based on concentration available at your site

Option 1: IV Contrast Parameters 350 mgI/mL

Select Ulrich protocol 36

Patient Weight	Contrast Dosage	Injection Rate
Under 250 lbs (Under 113 kg)	**132 mL Iohexol 350 mgI/mL + 50 mL NaCl flush**	**5 mL/sec**
Over 250 lbs (Over 113 kg)	**159 mL Iohexol 350 mgI/mL + 50 mL NaCl flush**	**5 mL/sec**

Option 2: IV Contrast Parameters 370 mgI/mL

Patient Weight	Contrast Dosage	Injection Rate
Under 250 lbs (Under 113 kg)	**125 mL Iopamidol 370 mgI/mL + 20 mL NaCl flush**	**5 mL/sec**

Over 250 lbs (Over 113 kg)	**150 mL Iopamidol 370 mgI/mL + 30 mL NaCl flush**	**5 mL/sec**

Field of View

Same as previous study or as small as appropriate

Scan Description

Badge 1 - 3D Landmark

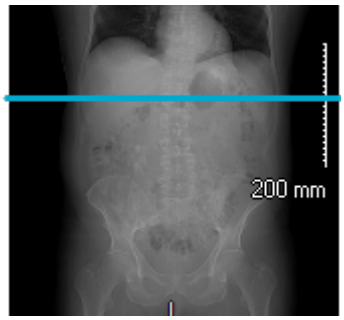
- Breathing instructions: Breath in and hold
- Coverage: Diaphragm through pelvis

Badge 2 - ST W/O

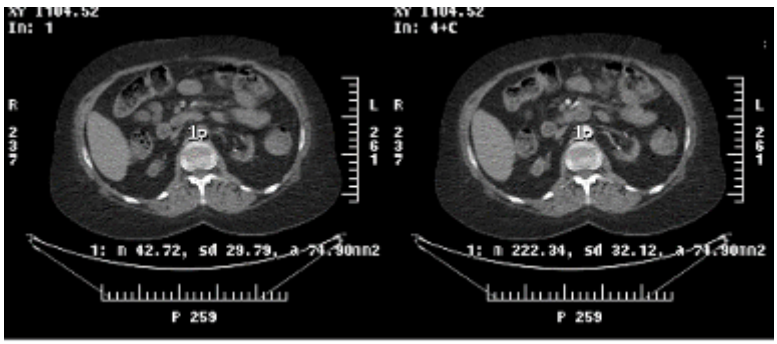
- Breathing instructions: Breath in and hold
- Coverage: Top of kidneys through bottom of kidneys.

Badge 3 - SureStart

- Place ROI on Aorta at level of mid liver. **AUTO is turned on so the scanner with progress without the need for you to hit Skip**



Scout



ROI Location

Badge 4 - Thin ST CTA

- Breathing instructions: Breath in and hold
- Coverage: Top of the kidneys and end just below the SI joints

Badge 5 - ST W/C

- Breathing instructions: Breath in and hold
- Coverage: Top of kidneys and end at the iliac crest

Badge 6 - ST DELAY 5 MIN W/C

- Breathing instructions: Breath in and hold
- Coverage: Top of kidneys through bottom kidneys

Reformat Instructions

In the United States, CT Angiography CPT codes require the performance and documentation of 3D angiographic rendering, which may include maximum intensity projection (MIP), volumetric rendering, and/or surface rendering techniques.

Reformats

Arterial and PV phase

Name	Source Series Name	3D/MPR or Manual	Rendering (MIP, Average, etc.)	WW/WL	Slice Thickness (mm)	Interval (mm)	Orientation
CO BODY	**THIN ST**	**3D/MPR**	**Average**	**350/50**	**3**	**2**	**coronal**

5-Min Delay

Name	Source Series Name	3D/MPR or Manual	Rendering (MIP, Average, etc.)	WW/WL	Slice Thickness (mm)	Interval (mm)	Orientation
SA BODY	**THIN ST**	**3D/MPR**	**Average**	**350/50**	**3**	**2**	**sagittal**
CO BODY	**THIN ST**	**3D/MPR**	**Average**	**350/50**	**3**	**2**	**coronal**

Networking

All images (including 3DLandmark, SureStart and dose report) are AUTO networked to PACS (ALI_Store).

Miscellaneous

None

Acquisition Parameters

Badge 1: 3D Landmark

	Start Mode	Start Time (s)	Wait Time (s)	Total Scan Time (s)	Start Position (mm)	End Position (mm)	Range (mm)	No. of Scans	Scan Slice	Pitch	kV	mA
1. 3D Landmark	P	***	0	6.10	396.00	996.00	600.00	1	0.5 x 80	Fast	120	80

Rotation Time(s)	Scan Direction	C-FOV	CTDIvol (mGy)	DLP (mGy.cm)	Pre Voice	Post Voice	Contrast Protocol Name	Focus	Badge Name
0.5	OUT	L	0.3	22.5	Breathe In & Hold	Breathe Normally ***		Small	***

Recon Cards

Card No.	Start Position (mm)	End Position (mm)	Range (mm)	Thickness (mm)	Interval (mm)	DFOV	App Type	Kernel	Noise Reduction
1	0	600	600	1	1	500	Localizer	Body	OFF

BHC	W / L	SEMAR	Transfer (Volume)
OFF	300 / 50	OFF	ON (PACS)

Badge 2: ST W/O

	Start Mode	Start Time (s)	Wait Time (s)	Total Scan Time (s)	Start Position (mm)	End Position (mm)	Range (mm)	No. of Scans	Scan Slice	Pitch	kV	mA
2. Helical	P	***	0	3.50	695.50	917.50	222.00	1	0.5 x 80	Standard	120	abdomen B6 MEDIUM

Rotation Time(s)	Scan Direction	C-FOV	CTDIvol (mGy)	DLP (mGy.cm)	Pre Voice	Post Voice	Contrast Protocol Name	Focus	Badge Name
0.4	OUT	L	***	***	Breathe In & Hold	Breathe Normally ***		Small	ST W/O

VolumeEC

SD	Noise Reduction	XY-Modulation	Adaptive SD	OEM	Slice Thickness (mm)	Max mA	Min mA
8.7	AiCE L2	ON	ON	OFF	4	800	60

Small Medium

	Start Mode	Start Time (s)	Wait Time (s)	Total Scan Time (s)	Start Position (mm)	End Position (mm)	Range (mm)	No. of Scans	Scan Slice	Pitch	kV	mA
2. Helical	P	***	0	5.10	695.50	917.50	222.00	1	0.5 x 80	Standard	120	abdomen B6 LARGE

Rotation Time(s)	Scan Direction	C-FOV	CTDIvol (mGy)	DLP (mGy.cm)	Pre Voice	Post Voice	Contrast Protocol Name	Focus	Badge Name
0.6	OUT	L	***	***	Breathe In & Hold	Breathe Normally ***		Small	ST W/O

VolumeEC

SD	Noise Reduction	XY-Modulation	Adaptive SD	OEM	Slice Thickness (mm)	Max mA	Min mA
10	AiCE L2	ON	ON	OFF	4	780	60

Large

Badge 2: Recons

Recon Cards

Card No.	Start Position (mm)	End Position (mm)	Range (mm)	Thickness (mm)	Interval (mm)	DFOV	App Type	Kernel	Noise Reduction
1	0.8	220.300003	219.500003	1	0.5	382.8	Volume	Body Sharp	AiCE L1
2	0	220	220	4	2	382.8	Volume	Body Sharp	AiCE L1

BHC	W / L	SEMAR	Transfer (Volume)
ON	350 / 50	OFF	ON (PACS)
ON	350 / 50	OFF	ON (PACS)

Badge 3: SureStart

	Start Mode	Start Time (s)	Wait Time (s)	Total Scan Time (s)	Start Position (mm)	End Position (mm)	Range (mm)	No. of Scans	Scan Slice	Pitch	kV	mA
3. SURE Start	P	***	10	41.00	465.50	465.50	***	1	0.5 x 8	***	120	50

	Rotation Time(s)	Scan Direction	C-FOV	CTDIvol (mGy)	DLP (mGy.cm)	Pre Voice	Post Voice	Contrast Protocol Name	Focus	Badge Name
	1.0	OUT	L	136.8	54.7	***	***	***	Small	***

SURE Start Setup	ROI Mode	Intermittent	Interval (s)	Threshold ROI1 (Intermittent)	Start Mode	ROI Condition	Threshold ROI1	Threshold ROI2	Voice Timing	Lock Position
	1 ROI	ON	3	180	Auto	***	180	***	***	***

Recon Cards	Card No.	Start Position (mm)	End Position (mm)	Range (mm)	Thickness (mm)	Interval (mm)	DFOV	App Type	Kernel	Noise Reduction
	1	***	***	***	4	***	500	Dynamic	Body	AIDR 3D L3

	BHC	W / L	SEMAR	Transfer (Volume)	Time Interval (s)
	***	300 / 50	***	ON (PACS)	***

Badge 4: Thin ST CTA

	Start Mode	Start Time (s)	Wait Time (s)	Total Scan Time (s)	Start Position (mm)	End Position (mm)	Range (mm)	No. of Scans	Scan Slice	Pitch	kV	mA
4. Helical	A	***	0	8.70	465.50	695.50	230.00	1	0.5 x 80	Standard	120	other B8 MEDIUM

	Rotation Time(s)	Scan Direction	C-FOV	CTDIvol (mGy)	DLP (mGy.cm)	Pre Voice	Post Voice	Contrast Protocol Name	Focus	Badge Name
	1.0	OUT	L	***	***	Breathe In & Hold	Breathe Normally	***	Small	THIN ST CTA

VolumeEC	SD	Noise Reduction	XY-Modulation	Adaptive SD	OEM	Slice Thickness (mm)	Max mA	Min mA
	5.9	AiCE L2	ON	ON	OFF	4	800	70

Small Medium

	Start Mode	Start Time (s)	Wait Time (s)	Total Scan Time (s)	Start Position (mm)	End Position (mm)	Range (mm)	No. of Scans	Scan Slice	Pitch	kV	mA
4. Helical	A	***	0	14.20	465.50	874.50	409.00	1	0.5 x 80	Standard	120	other B8 LARGE

	Rotation Time(s)	Scan Direction	C-FOV	CTDIvol (mGy)	DLP (mGy.cm)	Pre Voice	Post Voice	Contrast Protocol Name	Focus	Badge Name
	1.0	OUT	L	***	***	Breathe In & Hold	Breathe Normally	***	Small	THIN ST CTA

VolumeEC	SD	Noise Reduction	XY-Modulation	Adaptive SD	OEM	Slice Thickness (mm)	Max mA	Min mA
	6.5	AiCE L2	ON	ON	OFF	4	780	60

Large

Badge 4: Recons

Recon Cards	Card No.	Start Position (mm)	End Position (mm)	Range (mm)	Thickness (mm)	Interval (mm)	DFOV	App Type	Kernel	Noise Reduction
	1	0	230	230	1	0.5	382.8	Volume	Body Sharp	AiCE L1

	BHC	W / L	SEMAR	Transfer (Volume)
	ON	350 / 50	OFF	ON (PACS , CTAW1)

	Axial			Coronal			Sagittal				
	Thickness (mm)	Interval (mm)	Direction	Thickness (mm)	Interval (mm)	Direction	Thickness (mm)	Interval (mm)	Direction	Rendering	Transfer (MultiView)
	***	***	***	3	2	A - P	***	***	***	Average	***

Badge 5: ST W/C

	Start Mode	Start Time (s)	Wait Time (s)	Total Scan Time (s)	Start Position (mm)	End Position (mm)	Range (mm)	No. of Scans	Scan Slice	Pitch	kV	mA
5. Helical	A	55	24.299999	8.80	465.50	695.50	230.00	1	0.5 x 80	Standard	120	other B8 MEDIUM

	Rotation Time(s)	Scan Direction	C-FOV	CTDIvol (mGy)	DLP (mGy.cm)	Pre Voice	Post Voice	Contrast Protocol Name	Focus	Badge Name
	1.0	OUT	L	***	***	Breathe In & Hold	Breathe Normally	***	Small	THIN ST W/C

VolumeEC	SD	Noise Reduction	XY-Modulation	Adaptive SD	OEM	Slice Thickness (mm)	Max mA	Min mA
	5.9	AiCE L2	ON	ON	OFF	4	800	70

Small Medium

	Start Mode	Start Time (s)	Wait Time (s)	Total Scan Time (s)	Start Position (mm)	End Position (mm)	Range (mm)	No. of Scans	Scan Slice	Pitch	kV	mA
5. Helical	A	55	18.799999	8.80	465.50	695.50	230.00	1	0.5 x 80	Standard	120	other B8 LARGE

Rotation Time(s)	Scan Direction	C-FOV	CTDIvol (mGy)	DLP (mGy.cm)	Pre Voice	Post Voice	Contrast Protocol Name	Focus	Badge Name
1.0	OUT	L	***	***	Breathe In & Hold	Breathe Normally ***		Small	THIN ST W/C

VolumeEC	SD	Noise Reduction	XY-Modulation	Adaptive SD	OEM	Slice Thickness (mm)	Max mA	Min mA
	6.5	AiCE L2	ON	ON	OFF	4	780	60

Large

Badge 5: Recons

Recon Cards	Card No.	Start Position (mm)	End Position (mm)	Range (mm)	Thickness (mm)	Interval (mm)	DFOV	App Type	Kernel	Noise Reduction
	1	0	230	230	1	0.5	382.8	Volume	Body Sharp	AiCE L1
	2	0	230	230	4	2	382.8	Volume	Body Sharp	AiCE L1

BHC	W / L	SEMAR	Transfer (Volume)
ON	350 / 50	OFF	ON (PACS ,)
ON	350 / 50	OFF	ON (PACS)

Axial			Coronal			Sagittal			Rendering	Transfer (MultiView)
Thickness (mm)	Interval (mm)	Direction	Thickness (mm)	Interval (mm)	Direction	Thickness (mm)	Interval (mm)	Direction		
***	***	***	3	2	A - P	***	***	***	Average	***
***	***	***	***	***	***	***	***	***	***	***

Badge 6: ST DELAY 5 MIN W/C

	Start Mode	Start Time (s)	Wait Time (s)	Total Scan Time (s)	Start Position (mm)	End Position (mm)	Range (mm)	No. of Scans	Scan Slice	Pitch	kV	mA
2. Helical	P	***	0	10.10	418.00	1018.00	600.00	1	0.5 x 80	Standard	120	abdomen B5 MEDIUM

Rotation Time(s)	Scan Direction	C-FOV	CTDIvol (mGy)	DLP (mGy.cm)	Pre Voice	Post Voice	Contrast Protocol Name	Focus	Badge Name
0.5	OUT	L	***	***	Breathe In & Hold	Breathe Normally ***		Small	ST W/O

VolumeEC	SD	Noise Reduction	XY-Modulation	Adaptive SD	OEM	Slice Thickness (mm)	Max mA	Min mA
	7.6	AiCE L2	ON	ON	OFF	4	780	70

Small Medium

	Start Mode	Start Time (s)	Wait Time (s)	Total Scan Time (s)	Start Position (mm)	End Position (mm)	Range (mm)	No. of Scans	Scan Slice	Pitch	kV	mA
2. Helical	P	***	0	15.10	400.50	1000.50	600.00	1	0.5 x 80	Standard	120	abdomen B5 LARGE

Rotation Time(s)	Scan Direction	C-FOV	CTDIvol (mGy)	DLP (mGy.cm)	Pre Voice	Post Voice	Contrast Protocol Name	Focus	Badge Name
0.75	OUT	L	***	***	Breathe In & Hold	Breathe Normally ***		Small	ST W/O

VolumeEC	SD	Noise Reduction	XY-Modulation	Adaptive SD	OEM	Slice Thickness (mm)	Max mA	Min mA
	8.7	AiCE L2	ON	ON	OFF	4	780	60

Large

Badge 6: Recons

Recon Cards	Card No.	Start Position (mm)	End Position (mm)	Range (mm)	Thickness (mm)	Interval (mm)	DFOV	App Type	Kernel	Noise Reduction
	1	0	450.5	450.5	1	0.5	382.8	Volume	Body Sharp	AiCE L1
	2	0	450	450	4	2	382.8	Volume	Body Sharp	AiCE L1

BHC	W / L	SEMAR	Transfer (Volume)
ON	350 / 50	OFF	ON (PACS)
ON	350 / 50	OFF	ON (PACS)

Axial			Coronal			Sagittal			Rendering	Transfer (MultiView)
Thickness (mm)	Interval (mm)	Direction	Thickness (mm)	Interval (mm)	Direction	Thickness (mm)	Interval (mm)	Direction		
***	***	***	3	2	A - P	3	2	R - L	Average	***
***	***	***	***	***	***	***	***	***	***	***

Abd-Small Bowel Enterography 6.55/6.56/6.57

Clinical Instructions

Indication

Evaluate for small bowel disease.

Oral Contrast

Neutral Oral Contrast

- Breeza = Give a total dose of 1,500 mL (3 bottles total).
- Give the first bottle of Breeza (500 mL) over 15 minutes, the second bottle (500 mL) over the next 15 minutes and then the third bottle (500 mL) over *the last 30 minutes. The total drinking time equals 1 hour.
- Give an additional 200mL dose of water on the CT scan table. No Positive Oral Contrast.

Pre-Scan Instructions

None

IV Contrast: Select Option 1 or 2 - based on concentration available at your site

Option 1: IV Contrast Parameters 350 mgI/mL

Select Ulrich Weight-Based Angio Body protocols 38-44

Iohexol 350 mgI/ml (Isovue) injection

For sites without the Ulrich, use Medrad™ P3T Thorax PA option, or refer to the weight based contrast tables we provide in the protocol booklet.

Option 2: IV Contrast Parameters 370 mgI/mL

Medrad™ P3T Abdomen

Iopamidol (Isovue 370) 370 mgI/mL injection at a rate 5 mL/sec

For sites without the Medrad™ P3T or P3T PA option, refer to the weight based contrast tables we provide in the protocol booklet.

Field of View

Same as previous study or as small as appropriate

Scan Description

Badge 1 - 3D Landmark

- Breathing instructions: Breath in and hold
- Coverage: Diaphragm through pelvis

No SureStart. A 55 second diagnostic delay is built prior to Badge 2.

Badge 2 – ST W/C

- Breathing instructions: Breath in and hold
- Coverage: Diaphragm through pelvis

Reformat Instructions

Reformats

Name	Source Series Name	3D/MPR or Manual	Rendering (MIP, Average, etc.)	WW/WL	Slice Thickness (mm)	Interval (mm)	Orientation
SA BODY	THIN ST	3D/MPR	Average	350/50	3	2	sagittal
CO BODY	THIN ST	3D/MPR	Average	350/50	3	2	coronal

Networking

All images (including 3DLandmark and dose report) are AUTO networked to PACS (ALI_Store).

Miscellaneous

None

Acquisition Parameters

Badge 1: 3D Landmark

1. 3D Landmark

Start Mode	Start Time (s)	Wait Time (s)	Total Scan Time (s)	Start Position (mm)	End Position (mm)	Range (mm)	No. of Scans	Scan Slice	Pitch	kV	mA
P	***	0	6.10	396.00	996.00	600.00	1	0.5 x 80	Fast	120	80

Rotation Time(s)	Scan Direction	C-FOV	CTDIvol (mGy)	DLP (mGy.cm)	Pre Voice	Post Voice	Contrast Protocol Name	Focus	Badge Name
0.5	OUT	L	0.3	22.5	Breathe In & Hold	Breathe Normally	***	Small	***

Recon Cards

Card No.	Start Position (mm)	End Position (mm)	Range (mm)	Thickness (mm)	Interval (mm)	DFOV	App Type	Kernel	Noise Reduction
1	0	600	600	1	1	500	Localizer	Body	OFF

BHC	W / L	SEMAR	Transfer (Volume)
OFF	300 / 50	OFF	ON (PACS)

Badge 2: ST W/C

	Start Mode	Start Time (s)	Wait Time (s)	Total Scan Time (s)	Start Position (mm)	End Position (mm)	Range (mm)	No. of Scans	Scan Slice	Pitch	kV	mA
2. Helical	P	***	55	15.50	465.50	916.00	450.50	1	0.5 x 80	Standard	120	abdomen B3 MEDIUM

	Rotation Time(s)	Scan Direction	C-FOV	CTDIvol (mGy)	DLP (mGy.cm)	Pre Voice	Post Voice	Contrast Protocol Name	Focus	Badge Name
	1.0	OUT	L	***	***	Breathe In & Hold	Breathe Normally ***		Small	ST W/C

VolumeEC	SD	Noise Reduction	XY-Modulation	Adaptive SD	OEM	Slice Thickness (mm)	Max mA	Min mA
	6.3	AiCE L2	ON	ON	OFF	4	800	60

Small Medium

	Start Mode	Start Time (s)	Wait Time (s)	Total Scan Time (s)	Start Position (mm)	End Position (mm)	Range (mm)	No. of Scans	Scan Slice	Pitch	kV	mA
2. Helical	P	***	55	16.70	470.50	957.00	486.50	1	0.5 x 80	Standard	120	abdomen B3 LARGE

	Rotation Time(s)	Scan Direction	C-FOV	CTDIvol (mGy)	DLP (mGy.cm)	Pre Voice	Post Voice	Contrast Protocol Name	Focus	Badge Name
	1.0	OUT	L	***	***	Breathe In & Hold	Breathe Normally ***		Small	ST

VolumeEC	SD	Noise Reduction	XY-Modulation	Adaptive SD	OEM	Slice Thickness (mm)	Max mA	Min mA
	7.3	AiCE L2	ON	ON	OFF	4	800	60

Large

Badge 2: Recons

Recon Cards	Card No.	Start Position (mm)	End Position (mm)	Range (mm)	Thickness (mm)	Interval (mm)	DFOV	App Type	Kernel	Noise Reduction
	1	0	450.5	450.5	1	0.5	382.8	Volume	Body Sharp	AiCE L1
	2	0	450	450	4	2	382.8	Volume	Body Sharp	AiCE L1

	BHC	W / L	SEMAR	Transfer (Volume)
	ON	350 / 50	OFF	ON (PACS)
	ON	350 / 50	OFF	ON (PACS)

	Axial			Coronal			Sagittal			Rendering	Transfer (MultiView)
	Thickness (mm)	Interval (mm)	Direction	Thickness (mm)	Interval (mm)	Direction	Thickness (mm)	Interval (mm)	Direction		
	***	***	***	3	2	A - P	3	2	R - L	Average	***
	***	***	***	***	***	***	***	***	***	***	***

CTA Abd - Mesenteric Ischemia 6.61/6.62/6.63

Clinical Instructions

Indication

Evaluate for mesenteric ischemia.

Oral Contrast

Give a total 400 mL of water prior to scan (A 200mL dose every 15 minutes over 30 minutes).

Give an additional 200mL dose of water on the CT scan table.

Pre-Scan Instructions

None

IV Contrast: Select Option 1 or 2 - based on concentration available at your site

Option 1: IV Contrast Parameters 350 mgI/mL

Select Ulrich Weight-Based Angio Body protocols 38-44

Iohexol 350 mgI/ml (Isovue) injection

For sites without the Ulrich, use Medrad™ P3T Thorax PA option, or refer to the weight based contrast tables we provide in the protocol booklet.

Option 2: IV Contrast Parameters 370 mgI/mL

Medrad™ P3T PA protocol

To set up P3T= choose P3T, Thorax, PA then click on ok. Confirm contrast and load fluids. Enter scan duration and click ok.

Iopamidol 370 mgI/ml (Isovue) injection

For sites without the Medrad™ P3T or P3T, Thorax, PA option, refer to the weight based contrast tables we provide in the protocol booklet.

Field of View

Same as previous study or as small as appropriate

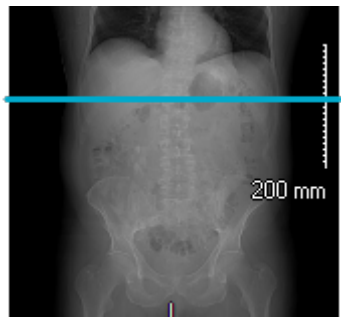
Scan Description

Badge 1 - 3D Landmark

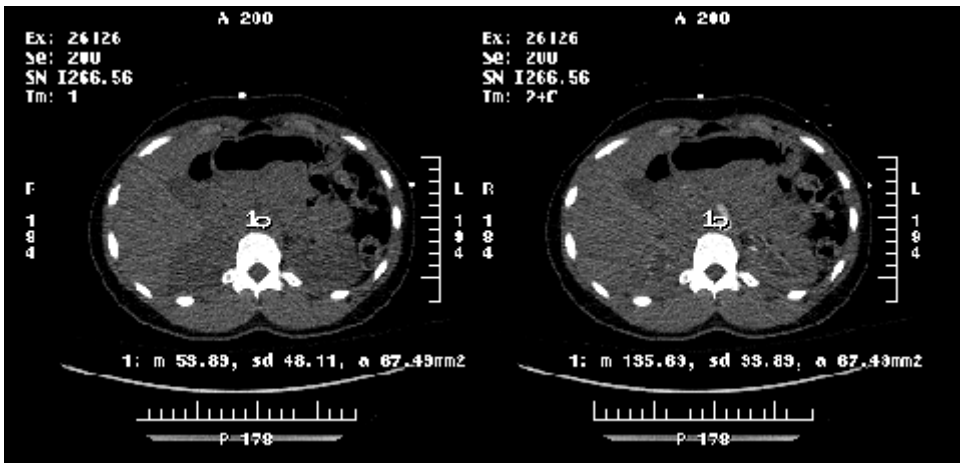
- Breathing instructions: Breath in and hold
- Coverage: Diaphragm through pelvis

Badge 2 - SureStart

- Place ROI on Aorta at level of celiac. **AUTO is turned on so the scan will progress without the need for you to hit Skip**



Scout



ROI Location

Badge 3 - Thin ST CTA

- Breathing instructions: Breath in and hold
- Coverage: Diaphragm to level of femoral heads

Badge 4 - ST W/C

- Breathing instructions: Breath in and hold
- Coverage: Diaphragm through pelvis

Reformat Instructions

In the United States, CT Angiography CPT codes require the performance and documentation of 3D angiographic rendering, which may include maximum intensity projection (MIP), volumetric rendering, and/or surface rendering techniques.

Reformats

Arterial Phase

Name	Source Series Name	3D/MPR or Manual	Rendering (MIP, Average, etc.)	WW/WL	Slice Thickness (mm)	Interval (mm)	Orientation
SA BODY	THIN ST	3D/MPR	Average	350/50	3	2	sagittal
CO BODY	THIN ST	3D/MPR	Average	350/50	3	2	coronal
CO MIP	THIN ST	Manual	MIP	800/150	10	2.5	coronal

PV Phase

Name	Source Series Name	3D/MPR or Manual	Rendering (MIP, Average, etc.)	WW/WL	Slice Thickness (mm)	Interval (mm)	Orientation
SA BODY	THIN ST	3D/MPR	Average	350/50	3	2	sagittal
CO BODY	THIN ST	3D/MPR	Average	350/50	3	2	coronal

Networking

All images (including 3DLandmark, SureStart and dose report) are AUTO networked to PACS (ALI_Store).

Miscellaneous

None

Acquisition Parameters

Badge 1: 3D Landmark

	Start Mode	Start Time (s)	Wait Time (s)	Total Scan Time (s)	Start Position (mm)	End Position (mm)	Range (mm)	No. of Scans	Scan Slice	Pitch	kV	mA
1. 3D Landmark	P	***	0	6.10	396.00	996.00	600.00	1	0.5 x 80	Fast	120	80

Rotation Time(s)	Scan Direction	C-FOV	CTDIvol (mGy)	DLP (mGy.cm)	Pre Voice	Post Voice	Contrast Protocol Name	Focus	Badge Name
0.5	OUT	L	0.3	22.5	Breathe In & Hold	Breathe Normally ***		Small	***

Recon Cards

Card No.	Start Position (mm)	End Position (mm)	Range (mm)	Thickness (mm)	Interval (mm)	DFOV	App Type	Kernel	Noise Reduction
1	0	600	600	1	1	500	Localizer	Body	OFF

BHC	W / L	SEMAR	Transfer (Volume)
OFF	300 / 50	OFF	ON (PACS)

Badge 2: Sure Start

	Start Mode	Start Time (s)	Wait Time (s)	Total Scan Time (s)	Start Position (mm)	End Position (mm)	Range (mm)	No. of Scans	Scan Slice	Pitch	kV	mA
3. SURE Start	P	***	10	41.00	465.50	465.50	***	1	0.5 x 8	***	120	50

Rotation Time(s)	Scan Direction	C-FOV	CTDIvol (mGy)	DLP (mGy.cm)	Pre Voice	Post Voice	Contrast Protocol Name	Focus	Badge Name
1.0	OUT	L	136.8	54.7	***	***	***	Small	***

SURE Start Setup

ROI Mode	Intermittent	Interval (s)	Threshold ROI1 (Intermittent)	Start Mode	ROI Condition	Threshold ROI1	Threshold ROI2	Voice Timing	Lock Position
1 ROI	ON	3	180	Auto	***	180	***	***	***

Recon Cards

Card No.	Start Position (mm)	End Position (mm)	Range (mm)	Thickness (mm)	Interval (mm)	DFOV	App Type	Kernel	Noise Reduction
1	***	***	***	4	***	500	Dynamic	Body	AIDR 3D L3

BHC	W / L	SEMAR	Transfer (Volume)	Time Interval (s)
***	300 / 50	***	ON (PACS)	***

Badge 3: Thin ST CTA

	Start Mode	Start Time (s)	Wait Time (s)	Total Scan Time (s)	Start Position (mm)	End Position (mm)	Range (mm)	No. of Scans	Scan Slice	Pitch	kV	mA
4. Helical	A	***	0	7.80	465.50	916.00	450.50	1	0.5 x 80	Standard	120	head B10 MEDIUM

Rotation Time(s)	Scan Direction	C-FOV	CTDIvol (mGy)	DLP (mGy.cm)	Pre Voice	Post Voice	Contrast Protocol Name	Focus	Badge Name
0.5	OUT	L	***	***	Breathe In & Hold	Breathe Normally ***		Small	THIN ST CTA

VolumeEC

SD	Noise Reduction	XY-Modulation	Adaptive SD	OEM	Slice Thickness (mm)	Max mA	Min mA
7.8	AiCE L2	ON	ON	OFF	4	800	70

Small Medium

	Start Mode	Start Time (s)	Wait Time (s)	Total Scan Time (s)	Start Position (mm)	End Position (mm)	Range (mm)	No. of Scans	Scan Slice	Pitch	kV	mA
4. Helical	A	***	0	9.30	465.50	916.00	450.50	1	0.5 x 80	Standard	120	head B10 LARGE

Rotation Time(s)	Scan Direction	C-FOV	CTDIvol (mGy)	DLP (mGy.cm)	Pre Voice	Post Voice	Contrast Protocol Name	Focus	Badge Name
0.6	OUT	L	***	***	Breathe In & Hold	Breathe Normally ***		Small	THIN ST CTA

VolumeEC

SD	Noise Reduction	XY-Modulation	Adaptive SD	OEM	Slice Thickness (mm)	Max mA	Min mA
8.7	AiCE L2	ON	ON	OFF	4	800	60

Large

Badge 3: Recons

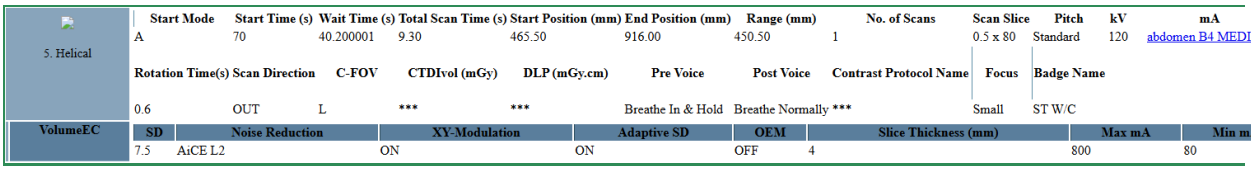
Recon Cards

Card No.	Start Position (mm)	End Position (mm)	Range (mm)	Thickness (mm)	Interval (mm)	DFOV	App Type	Kernel	Noise Reduction
1	0	450.5	450.5	1	0.5	382.8	Volume	Body Sharp	AiCE L1
2	0	450	450	4	2	382.8	Volume	Body Sharp	AiCE L1

BHC	W / L	SEMAR	Transfer (Volume)
ON	350 / 50	OFF	ON (PACS)
ON	350 / 50	OFF	ON (PACS)

Axial			Coronal			Sagittal			Rendering	Transfer (MultiView)
Thickness (mm)	Interval (mm)	Direction	Thickness (mm)	Interval (mm)	Direction	Thickness (mm)	Interval (mm)	Direction		
***	***	***	3	2	A - P	3	2	R - L	Average	***
***	***	***	***	***	***	***	***	***	***	***

Badge 4: ST W/C

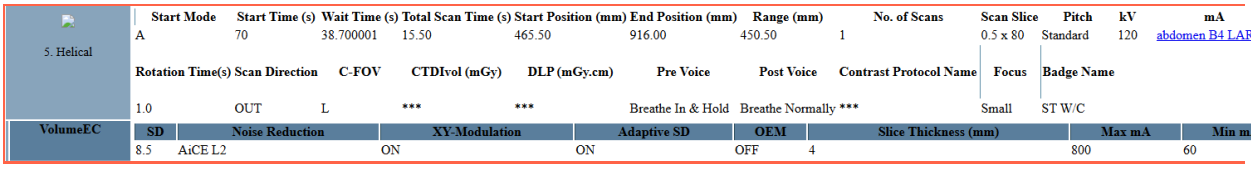


	Start Mode	Start Time (s)	Wait Time (s)	Total Scan Time (s)	Start Position (mm)	End Position (mm)	Range (mm)	No. of Scans	Scan Slice	Pitch	kV	mA
5. Helical	A	70	40.200001	9.30	465.50	916.00	450.50	1	0.5 x 80	Standard	120	abdomen B4 MEDIUM

Rotation Time(s)	Scan Direction	C-FOV	CTDIvol (mGy)	DLP (mGy.cm)	Pre Voice	Post Voice	Contrast Protocol Name	Focus	Badge Name
0.6	OUT	L	***	***	Breathe In & Hold	Breathe Normally ***		Small	ST W/C

VolumeEC	SD	Noise Reduction	XY-Modulation	Adaptive SD	OEM	Slice Thickness (mm)	Max mA	Min mA
	7.5	AiCE L2	ON	ON	OFF	4	800	80

Small Medium



	Start Mode	Start Time (s)	Wait Time (s)	Total Scan Time (s)	Start Position (mm)	End Position (mm)	Range (mm)	No. of Scans	Scan Slice	Pitch	kV	mA
5. Helical	A	70	38.700001	15.50	465.50	916.00	450.50	1	0.5 x 80	Standard	120	abdomen B4 LARGE

Rotation Time(s)	Scan Direction	C-FOV	CTDIvol (mGy)	DLP (mGy.cm)	Pre Voice	Post Voice	Contrast Protocol Name	Focus	Badge Name
1.0	OUT	L	***	***	Breathe In & Hold	Breathe Normally ***		Small	ST W/C

VolumeEC	SD	Noise Reduction	XY-Modulation	Adaptive SD	OEM	Slice Thickness (mm)	Max mA	Min mA
	8.5	AiCE L2	ON	ON	OFF	4	800	60

Large

Badge 4: Recons

Recon Cards

Card No.	Start Position (mm)	End Position (mm)	Range (mm)	Thickness (mm)	Interval (mm)	DFOV	App Type	Kernel	Noise Reduction
1	0	450.5	450.5	1	0.5	382.8	Volume	Body Sharp	AiCE L1
2	0	450	450	4	2	382.8	Volume	Body Sharp	AiCE L1

BHC	W / L	SEMAR	Transfer (Volume)
ON	350 / 50	OFF	ON (PACS)
ON	350 / 50	OFF	ON (PACS)

Axial			Coronal			Sagittal			Rendering	Transfer (MultiView)
Thickness (mm)	Interval (mm)	Direction	Thickness (mm)	Interval (mm)	Direction	Thickness (mm)	Interval (mm)	Direction		
***	***	***	3	2	A - P	3	2	R - L	Average	***
***	***	***	***	***	***	***	***	***	***	***

Urothelial Tumor Follow-up 6.70/6.71/6.72

Clinical Instructions

Indication

Indications for **Urothelial Tumor follow-up** protocol are listed below:

- Hematuria in patients 45 years or older
- **Known urothelial cancer** in bladder or ureters with **NO** current evidence of or suspected metastatic disease in patients of **all ages** .
- **Recurrence** , **high risk recurrence** , **evaluate urothelium** or **high risk TCC** in history in patients of **all ages** .

Please note:

- Some of these patients will not have a bladder (so no need to void prior to the scan as they will have a urostomy).
- Hematuria in patients age 45 or less with no history of urothelial cancer, use Urography protocol.
- For patients with known metastatic disease or screening for metastatic disease use High image quality cancer follow up protocol.

Oral Contrast

None

Pre-Scan Instructions

Clamp Foley catheter and Neph tubes prior to scanning. Make sure to place Foley below the level of the bladder.

There is no before CT prep for patients but once patient is ready to get on the scanner have the patient use the restroom/empty their bladder.

If there is metal present in the area of interest (i.e. hip prosthesis, lumbar hardware) please remember to turn on MAR for all recons.

IV Contrast: Select Option 1 or 2 - based on concentration available at your site

Option 1: IV Contrast Parameters 350 mgI/mL

Select the Ulrich Weight-Based Adult 3mL protocol which will load the following settings: Saline Test Bolus 3mL/sec Weight based volume 3mL/sec (see below) Saline Flush 50 mL 3mL/sec

Iohexol (Omnipaque) 350 mg/mL injection at a rate of 3 mL/sec

For sites without the Ulrich use Medrad p3T or refer to the weight based contrast tables included with the protocol booklet.

Option 2: IV Contrast Parameters 300 mgl/mL

Medrad™ P3T Abdomen protocol.

Iohexol (Omnipaque) 300 mg/mL injection at a rate of 3 mL/sec

For sites without the Medrad™ P3T or P3T PA option, refer to the weight based contrast tables we provide in the protocol booklet.

Field of View

Same as previous study or as small as appropriate

Scan Description

Badge 1 - 3D Landmark

- Breathing instructions: Breath in and hold
- Coverage: Diaphragm through pelvis.

Badge 2 - ST W/O

- Breathing instructions: Breath in and hold
- Coverage: Top of kidneys through base of bladder or prostate on men

No SureStart. A 60 second diagnostic delay is built prior to Badge 3.

Badge 3 – ST W/C

- Breathing instructions: Breath in and hold
- Coverage: Diaphragm through pelvis

Badge 4 – ST DELAY 10 MIN W/C

- Wait 10 minutes before scanning this phase
- Breathing instructions: Breath in and hold
- Coverage: Top of kidneys through base of bladder or prostate on men

Reformat Instructions

Reformats

Without, PV and 10 min

Name	Source Series Name	3D/MPR or Manual	Rendering (MIP, Average, etc.)	WW/WL	Slice Thickness (mm)	Interval (mm)	Orientation
SA BODY	THIN ST	3D/MPR	Average	350/50	3	2	sagittal
CO BODY	THIN ST	3D/MPR	Average	350/50	3	2	coronal

Networking

All images (including 3DLandmark and dose report) are AUTO networked to PACS (ALI_Store).

Miscellaneous

None

Acquisition Parameters

Badge 1: 3D Landmark

1. 3D Landmark

Start Mode	Start Time (s)	Wait Time (s)	Total Scan Time (s)	Start Position (mm)	End Position (mm)	Range (mm)	No. of Scans	Scan Slice	Pitch	kV	mA
P	***	0	6.10	396.00	996.00	600.00	1	0.5 x 80	Fast	120	80

Rotation Time(s)	Scan Direction	C-FOV	CTDIvol (mGy)	DLP (mGy.cm)	Pre Voice	Post Voice	Contrast Protocol Name	Focus	Badge Name
0.5	OUT	L	0.3	22.5	Breathe In & Hold	Breathe Normally ***		Small	***

Recon Cards

Card No.	Start Position (mm)	End Position (mm)	Range (mm)	Thickness (mm)	Interval (mm)	DFOV	App Type	Kernel	Noise Reduction
1	0	600	600	1	1	500	Localizer	Body	OFF

BHC	W / L	SEMAR	Transfer (Volume)
OFF	300 / 50	OFF	ON (PACS)

Badge 2: ST W/O

3. Helical

Start Mode	Start Time (s)	Wait Time (s)	Total Scan Time (s)	Start Position (mm)	End Position (mm)	Range (mm)	No. of Scans	Scan Slice	Pitch	kV	mA
A	***	0	9.30	465.50	916.00	450.50	1	0.5 x 80	Standard	135	abdomen B4 MEDIUM

Rotation Time(s)	Scan Direction	C-FOV	CTDIvol (mGy)	DLP (mGy.cm)	Pre Voice	Post Voice	Contrast Protocol Name	Focus	Badge Name
0.6	OUT	L	***	***	Breathe In & Hold	Breathe Normally ***		Small	ST

VolumeEC

SD	Noise Reduction	XY-Modulation	Adaptive SD	OEM	Slice Thickness (mm)	Max mA	Min mA
7.5	AiCE L2	ON	ON	OFF	4	780	80

Small Medium

	Start Mode	Start Time (s)	Wait Time (s)	Total Scan Time (s)	Start Position (mm)	End Position (mm)	Range (mm)	No. of Scans	Scan Slice	Pitch	kV	mA
3. Helical	A	***	0	15.50	465.50	916.00	450.50	1	0.5 x 80	Standard	120	abdomen B4 LARGE

Rotation Time(s)	Scan Direction	C-FOV	CTDIvol (mGy)	DLP (mGy.cm)	Pre Voice	Post Voice	Contrast Protocol Name	Focus	Badge Name
1.0	OUT	L	***	***	Breathe In & Hold	Breathe Normally ***		Small	ST

VolumeEC	SD	Noise Reduction	XY-Modulation	Adaptive SD	OEM	Slice Thickness (mm)	Max mA	Min mA
	8.5	AiCE L2	ON	ON	OFF	4	800	60

Large

Badge 2: Recons

Recon Cards	Card No.	Start Position (mm)	End Position (mm)	Range (mm)	Thickness (mm)	Interval (mm)	DFOV	App Type	Kernel	Noise Reduction
	1	0	450.5	450.5	1	0.5	382.8	Volume	Body Sharp	AiCE L1
	2	0	450	450	4	2	382.8	Volume	Body Sharp	AiCE L1

BHC	W / L	SEMAR	Transfer (Volume)
ON	350 / 50	OFF	ON (PACS)
ON	350 / 50	OFF	ON (PACS)

Axial			Coronal			Sagittal			Rendering	Transfer (MultiView)
Thickness (mm)	Interval (mm)	Direction	Thickness (mm)	Interval (mm)	Direction	Thickness (mm)	Interval (mm)	Direction		
***	***	***	3	2	A - P	3	2	R - L	Average	***
***	***	***	***	***	***	***	***	***	***	***

Badge 3: ST W/C

	Start Mode	Start Time (s)	Wait Time (s)	Total Scan Time (s)	Start Position (mm)	End Position (mm)	Range (mm)	No. of Scans	Scan Slice	Pitch	kV	mA
3. Helical	P	***	60	16.70	429.00	915.50	486.50	1	0.5 x 80	Standard	120	abdomen B3 MEDIUM

Rotation Time(s)	Scan Direction	C-FOV	CTDIvol (mGy)	DLP (mGy.cm)	Pre Voice	Post Voice	Contrast Protocol Name	Focus	Badge Name
1.0	OUT	L	***	***	Breathe In & Hold	Breathe Normally ***		Small	ST W/C

VolumeEC	SD	Noise Reduction	XY-Modulation	Adaptive SD	OEM	Slice Thickness (mm)	Max mA	Min mA
	6.3	AiCE L2	ON	ON	OFF	4	800	60

Small Medium

	Start Mode	Start Time (s)	Wait Time (s)	Total Scan Time (s)	Start Position (mm)	End Position (mm)	Range (mm)	No. of Scans	Scan Slice	Pitch	kV	mA
3. Helical	P	***	60	15.50	465.50	916.00	450.50	1	0.5 x 80	Standard	120	abdomen B3 LARGE

Rotation Time(s)	Scan Direction	C-FOV	CTDIvol (mGy)	DLP (mGy.cm)	Pre Voice	Post Voice	Contrast Protocol Name	Focus	Badge Name
1.0	OUT	L	***	***	Breathe In & Hold	Breathe Normally ***		Small	ST W/C

VolumeEC	SD	Noise Reduction	XY-Modulation	Adaptive SD	OEM	Slice Thickness (mm)	Max mA	Min mA
	7.3	AiCE L2	ON	ON	OFF	4	800	60

Large

Badge 3: Recons

Recon Cards	Card No.	Start Position (mm)	End Position (mm)	Range (mm)	Thickness (mm)	Interval (mm)	DFOV	App Type	Kernel	Noise Reduction
	1	0	450.5	450.5	1	0.5	382.8	Volume	Body Sharp	AiCE L1
	2	0	450	450	4	2	382.8	Volume	Body Sharp	AiCE L1

BHC	W / L	SEMAR	Transfer (Volume)
ON	350 / 50	OFF	ON (PACS)
ON	350 / 50	OFF	ON (PACS)

Axial			Coronal			Sagittal			Rendering	Transfer (MultiView)
Thickness (mm)	Interval (mm)	Direction	Thickness (mm)	Interval (mm)	Direction	Thickness (mm)	Interval (mm)	Direction		
***	***	***	3	2	A - P	3	2	R - L	Average	***
***	***	***	***	***	***	***	***	***	***	***

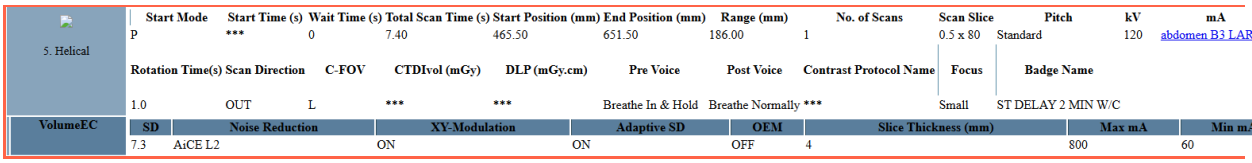
Badge 4: ST DELAY 10 MIN W/C

	Start Mode	Start Time (s)	Wait Time (s)	Total Scan Time (s)	Start Position (mm)	End Position (mm)	Range (mm)	No. of Scans	Scan Slice	Pitch	kV	mA
5. Helical	P	***	0	7.40	465.50	651.50	186.00	1	0.5 x 80	Standard	120	abdomen B3 MEDIUM

Rotation Time(s)	Scan Direction	C-FOV	CTDIvol (mGy)	DLP (mGy.cm)	Pre Voice	Post Voice	Contrast Protocol Name	Focus	Badge Name
1.0	OUT	L	***	***	Breathe In & Hold	Breathe Normally ***		Small	ST DELAY 2 MIN W/C

VolumeEC	SD	Noise Reduction	XY-Modulation	Adaptive SD	OEM	Slice Thickness (mm)	Max mA	Min mA
	6.3	AiCE L2	ON	ON	OFF	4	800	60

Small Medium



	Start Mode	Start Time (s)	Wait Time (s)	Total Scan Time (s)	Start Position (mm)	End Position (mm)	Range (mm)	No. of Scans	Scan Slice	Pitch	kV	mA
5. Helical	P	***	0	7.40	465.50	651.50	186.00	1	0.5 x 80	Standard	120	abdomen B3 LARGE

	Rotation Time(s)	Scan Direction	C-FOV	CTDIvol (mGy)	DLP (mGy.cm)	Pre Voice	Post Voice	Contrast Protocol Name	Focus	Badge Name
	1.0	OUT	L	***	***	Breathe In & Hold	Breathe Normally	***	Small	ST DELAY 2 MIN W/C

VolumeEC	SD	Noise Reduction	XY-Modulation	Adaptive SD	OEM	Slice Thickness (mm)	Max mA	Min mA
	7.3	AiCE L2	ON	ON	OFF	4	800	60

Large

Badge 4: Recons

Recon Cards	Card No.	Start Position (mm)	End Position (mm)	Range (mm)	Thickness (mm)	Interval (mm)	DFOV	App Type	Kernel	Noise Reduction
	1	0	450.5	450.5	1	0.5	382.8	Volume	Body Sharp	AiCE L1
	2	0	450	450	4	2	382.8	Volume	Body Sharp	AiCE L1

BHC	W / L	SEMAR	Transfer (Volume)
ON	350 / 50	OFF	ON (PACS)
ON	350 / 50	OFF	ON (PACS)

Axial			Coronal			Sagittal			Rendering	Transfer (MultiView)
Thickness (mm)	Interval (mm)	Direction	Thickness (mm)	Interval (mm)	Direction	Thickness (mm)	Interval (mm)	Direction		
***	***	***	3	2	A - P	3	2	R - L	Average	***
***	***	***	***	***	***	***	***	***	***	***

Abd/Pelvis -Venogram (Pre-IVC Filter Removal) 6.73/6.74/6.75

Clinical Instructions

Indication

This is a standard CT of the abdomen and pelvis optimized for evaluation of residual clot in the IVC prior to IVC filter removal

Oral Contrast

None

Pre-Scan Instructions

None

IV Contrast: Select Option 1 or 2 - based on concentration available at your site

Option 1: IV Contrast Parameters 350 mgI/mL

Use the Medrad™ P3T Abdomen protocol, or Ulrich Routine Body protocol with Iohexol (Omnipaque) 350 mg/mL injection at a rate of 2 mL per second.

For sites without the Medrad™ P3T or UW ConCal option, refer to the weight based contrast tables we provide in the protocol booklet.

Option 2: IV Contrast Parameters 300 mgI/mL

Use the Medrad™ P3T Abdomen protocol, Iohexol (Omnipaque) 300 mg/mL injection at a rate of 2 mL per second.

For sites without the Medrad™ P3T or P3T PA option, refer to the weight based contrast tables we provide in the protocol booklet.

Field of View

As small as possible

Scan Description

Badge 1 - 3D Landmark

- Breathing instructions: Breath in and hold
- Coverage: Diaphragm through pelvis

No SureStart. A 120 second diagnostic delay is built prior to Badge 2.

Badge 2 – ST W/C

- Breathing instructions: Breath in and hold
- Coverage: Diaphragm through pelvis

Reformat Instructions

Reformats

Name	Source Series Name	3D/MPR or Manual	Rendering (MIP, Average, etc.)	WW/WL	Slice Thickness (mm)	Interval (mm)	Orientation
SA BODY	THIN ST	3D/MPR	Average	350/50	3	2	sagittal
CO BODY	THIN ST	3D/MPR	Average	350/50	3	2	coronal

Networking

All images (including 3DLandmark and dose report) are AUTO networked to PACS (ALI_Store).

Miscellaneous

None

Acquisition Parameters

Badge 1: 3D Landmark

	Start Mode	Start Time (s)	Wait Time (s)	Total Scan Time (s)	Start Position (mm)	End Position (mm)	Range (mm)	No. of Scans	Scan Slice	Pitch	kV	mA
1. 3D Landmark	P	***	0	6.10	396.00	996.00	600.00	1	0.5 x 80	Fast	120	80
	Rotation Time(s)	Scan Direction	C-FOV	CTDIvol (mGy)	DLP (mGy.cm)	Pre Voice	Post Voice	Contrast Protocol Name	Focus	Badge Name		
	0.5	OUT	L	0.3	22.5	Breathe In & Hold	Breathe Normally ***		Small	***		

Recon Cards	Card No.	Start Position (mm)	End Position (mm)	Range (mm)	Thickness (mm)	Interval (mm)	DFOV	App Type	Kernel	Noise Reduction
	1	0	600	600	1	1	500	Localizer	Body	OFF
	BHC	W / L	SEMAR	Transfer (Volume)						
	OFF	300 / 50	OFF	ON (PACS)						

Badge 2: ST W/C

	Start Mode	Start Time (s)	Wait Time (s)	Total Scan Time (s)	Start Position (mm)	End Position (mm)	Range (mm)	No. of Scans	Scan Slice	Pitch	kV	mA
2. Helical	P	***	120	9.30	465.50	916.00	450.50	1	0.5 x 80	Standard	120	abdomen B4 MEDIUM
	Rotation Time(s)	Scan Direction	C-FOV	CTDIvol (mGy)	DLP (mGy.cm)	Pre Voice	Post Voice	Contrast Protocol Name	Focus	Badge Name		
	0.6	OUT	L	***	***	Breathe In & Hold	Breathe Normally ***		Small	ST DELAY 2 MIN W/C		

VolumeEC	SD	Noise Reduction	XY-Modulation	Adaptive SD	OEM	Slice Thickness (mm)	Max mA	Min mA
	7.5	AiCE L2	ON	ON	OFF	4	800	80

Small Medium

	Start Mode	Start Time (s)	Wait Time (s)	Total Scan Time (s)	Start Position (mm)	End Position (mm)	Range (mm)	No. of Scans	Scan Slice	Pitch	kV	mA
2. Helical	P	***	120	15.50	465.50	916.00	450.50	1	0.5 x 80	Standard	120	abdomen B4 LARGE

Rotation Time(s)	Scan Direction	C-FOV	CTDIvol (mGy)	DLP (mGy.cm)	Pre Voice	Post Voice	Contrast Protocol Name	Focus	Badge Name
1.0	OUT	L	***	***	Breathe In & Hold	Breathe Normally	***	Small	ST DELAY 2 MIN W/C

VolumeEC	SD	Noise Reduction	XY-Modulation	Adaptive SD	OEM	Slice Thickness (mm)	Max mA	Min mA
	8.5	AiCE L2	ON	ON	OFF	4	800	60

Large

Badge 2: Recons

Recon Cards

Card No.	Start Position (mm)	End Position (mm)	Range (mm)	Thickness (mm)	Interval (mm)	DFOV	App Type	Kernel	Noise Reduction
1	0	450.5	450.5	1	0.5	382.8	Volume	Body Sharp	AiCE L1
2	0	450	450	4	2	382.8	Volume	Body Sharp	AiCE L1

BHC	W / L	SEMAR	Transfer (Volume)
ON	350 / 50	OFF	ON (PACS)
ON	350 / 50	OFF	ON (PACS)

Axial			Coronal			Sagittal			Rendering	Transfer (MultiView)
Thickness (mm)	Interval (mm)	Direction	Thickness (mm)	Interval (mm)	Direction	Thickness (mm)	Interval (mm)	Direction		
***	***	***	3	2	A - P	3	2	R - L	Average	***
***	***	***	***	***	***	***	***	***	***	***

CTA Abd/Pelvis -Active Bleeder 6.79/6.80/6.81

Clinical Instructions

Indication

If concern for ACTIVE bleeding in the Abd/Pelvis, need to identify source, consider active bleeder protocol.

- Bleeding associated with transplant, donor, Pancreatitis, Hypervascular Metastasis, or HCC
- Post-Surgery/Intervention.
- Dropping hemoglobin of unclear source.

If only looking for hematoma, consider Non-Con Abd/Pelvis.

- Consult with clinical team to clarify question/concern.

Oral Contrast

None

Pre-Scan Instructions

None

IV Contrast: Select Option 1 or 2 - based on concentration available at your site

Option 1: IV Contrast Parameters 350 mgI/mL

Select Ulrich Weight-Based Angio Body protocols 38-44

Iohexol 350 mgI/ml (Isovue) injection

For sites without the Ulrich, use Medrad™ P3T Thorax PA option, or refer to the weight based contrast tables we provide in the protocol booklet.

Option 2: IV Contrast Parameters 370 mgI/mL

Medrad™ P3T PA protocol

To set up P3T= choose P3T, Thorax, PA then click on ok. Confirm contrast and load fluids. Enter scan duration and click ok.

Iopamidol 370 mgI/ml (Isovue) injection

For sites without the Medrad™ P3T or P3T, Thorax, PA option, refer to the weight based contrast tables we provide in the protocol booklet.

Field of View

Same as previous study or as small as appropriate

Scan Description

Badge 1 - 3D Landmark

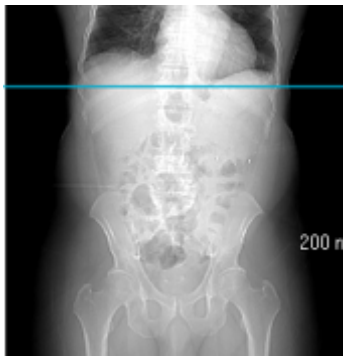
- Breathing instructions: Breath in and hold
- Coverage: Diaphragm through pelvis

Badge 2 - ST W/O

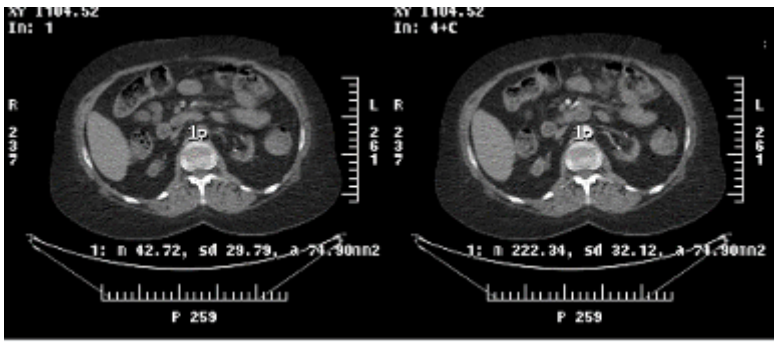
- Breathing instructions: Breath in and hold
- Coverage: Diaphragm through pelvis

Badge 3 - SureStart

- Place ROI on Aorta, at the level of mid liver. **AUTO is turned on so the scan will progress without the need for you to hit Skip**



Scout



ROI Location

Badge 4 - THIN ST CTA

- Breathing instructions: Breath in and hold
- Coverage: Diaphragm through pelvis

Badge 5 - ST W/C

- Breathing instructions: Breath in and hold
- Coverage: Diaphragm through pelvis.
- This group is scanned at 70 seconds from the start of the injection. The scanner will automatically adjust this delay.

IF scanning an Active Bleed A/P and a Chest With, Angio PE Chest or Angio Chest is requested, scout to include entire C/A/P, adjust smart prep location to descending aorta. Allow patient to slowly release their breath-hold if unable to hold their breath for the entire scan duration. If doing a chest turn off DMPR and do reformats manually for both the Chest and Abdomen/Pelvis separately.

- **If Routine Chest** - Include Chest in the 70 sec (PV phase) of the Active Bleed: Chest reads Chest and Body reads the CTA A/P
- **If Chest for PE** – Include the PE Chest on the arterial phase of the Active Bleeder (SP on Left Atrium): Chest reads Angio Chest- PE and Body reads the CTA A/P.
- **If Chest for Aorta** – Include the Chest on the Without and CTA series of the Active Bleeder (SP on descending aorta level of carina): CV reads CTA chest and Body reads CTA A/P.
- **If Chest for Active Bleed** - Include the Chest on ALL Series. Without, CTA, and “60 sec” Delays (that way the A/P delays is still at 70 sec) (SP on descending aorta at level of carina): CV reads CTA chest and Body reads CTA A/P.

Reformat Instructions

In the United States, CT Angiography CPT codes require the performance and documentation of 3D angiographic rendering, which may include maximum intensity projection (MIP), volumetric rendering, and/or surface rendering techniques.

Reformats

Arterial Phase

Name	Source Series Name	3D/MPR or Manual	Rendering (MIP, Average, etc.)	WW/WL	Slice Thickness (mm)	Interval (mm)	Orientation
SA BODY	THIN ST	3D/MPR	Average	350/50	3	2	sagittal
CO BODY	THIN ST	3D/MPR	Average	350/50	3	2	coronal
CO MIP	Thin ST	Manual	MIP	800/150	10	2.5	coronal

Without and PV Phase

Name	Source Series Name	3D/MPR or Manual	Rendering (MIP, Average, etc.)	WW/WL	Slice Thickness (mm)	Interval (mm)	Orientation
SA BODY	THIN ST	3D/MPR	Average	350/50	3	2	sagittal
CO BODY	THIN ST	3D/MPR	Average	350/50	3	2	coronal

Networking

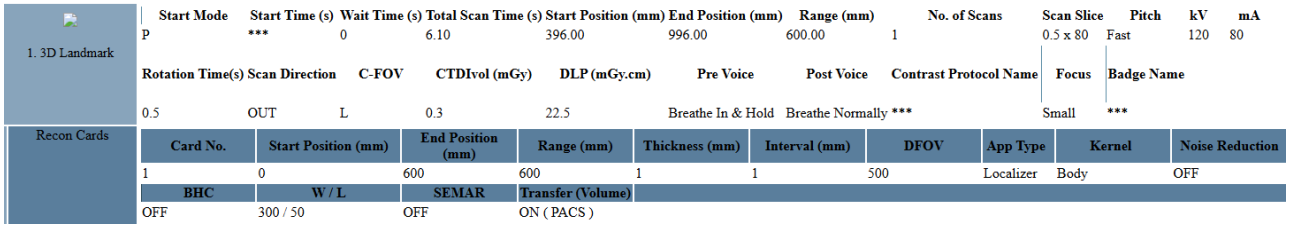
All images (including 3DLandmark, SureStart and dose report) are AUTO networked to PACS (ALI_Store).

Miscellaneous

None

Acquisition Parameters

Badge 1: 3D Landmark



1. 3D Landmark	Start Mode	Start Time (s)	Wait Time (s)	Total Scan Time (s)	Start Position (mm)	End Position (mm)	Range (mm)	No. of Scans	Scan Slice	Pitch	kV	mA
	P	***	0	6.10	396.00	996.00	600.00	1	0.5 x 80	Fast	120	80

Rotation Time(s)	Scan Direction	C-FOV	CTDIvol (mGy)	DLP (mGy.cm)	Pre Voice	Post Voice	Contrast Protocol Name	Focus	Badge Name
0.5	OUT	L	0.3	22.5	Breathe In & Hold	Breathe Normally ***		Small	***

Recon Cards

Card No.	Start Position (mm)	End Position (mm)	Range (mm)	Thickness (mm)	Interval (mm)	DFOV	App Type	Kernel	Noise Reduction
1	0	600	600	1	1	500	Localizer	Body	OFF

BHC	W / L	SEMAR	Transfer (Volume)
OFF	300 / 50	OFF	ON (PACS)

Badge 2: ST W/O

3. Helical	Start Mode	Start Time (s)	Wait Time (s)	Total Scan Time (s)	Start Position (mm)	End Position (mm)	Range (mm)	No. of Scans	Scan Slice	Pitch	kV	mA
	A	***	0	9.30	465.50	916.00	450.50	1	0.5 x 80	Standard	135	abdomen B4 MEDIUM

Rotation Time(s)	Scan Direction	C-FOV	CTDIvol (mGy)	DLP (mGy.cm)	Pre Voice	Post Voice	Contrast Protocol Name	Focus	Badge Name
0.6	OUT	L	***	***	Breathe In & Hold	Breathe Normally ***		Small	ST

VolumeEC

SD	Noise Reduction	XY-Modulation	Adaptive SD	OEM	Slice Thickness (mm)	Max mA	Min mA
7.5	AiCE L2	ON	ON	OFF	4	780	80

Small Medium

3. Helical	Start Mode	Start Time (s)	Wait Time (s)	Total Scan Time (s)	Start Position (mm)	End Position (mm)	Range (mm)	No. of Scans	Scan Slice	Pitch	kV	mA
	A	***	0	15.50	465.50	916.00	450.50	1	0.5 x 80	Standard	120	abdomen B4 LARGE

Rotation Time(s)	Scan Direction	C-FOV	CTDIvol (mGy)	DLP (mGy.cm)	Pre Voice	Post Voice	Contrast Protocol Name	Focus	Badge Name
1.0	OUT	L	***	***	Breathe In & Hold	Breathe Normally ***		Small	ST

VolumeEC

SD	Noise Reduction	XY-Modulation	Adaptive SD	OEM	Slice Thickness (mm)	Max mA	Min mA
8.5	AiCE L2	ON	ON	OFF	4	800	60

Large

Badge 2: Recons

Recon Cards

Card No.	Start Position (mm)	End Position (mm)	Range (mm)	Thickness (mm)	Interval (mm)	DFOV	App Type	Kernel	Noise Reduction
1	0	450.5	450.5	1	0.5	382.8	Volume	Body Sharp	AiCE L1
2	0	450	450	4	2	382.8	Volume	Body Sharp	AiCE L1

BHC	W / L	SEMAR	Transfer (Volume)
ON	350 / 50	OFF	ON (PACS)
ON	350 / 50	OFF	ON (PACS)

Axial			Coronal			Sagittal			Rendering	Transfer (MultiView)
Thickness (mm)	Interval (mm)	Direction	Thickness (mm)	Interval (mm)	Direction	Thickness (mm)	Interval (mm)	Direction		
***	***	***	3	2	A - P	3	2	R - L	Average	***
***	***	***	***	***	***	***	***	***	***	***

Badge 3: Sure Start

3. SURE Start	Start Mode	Start Time (s)	Wait Time (s)	Total Scan Time (s)	Start Position (mm)	End Position (mm)	Range (mm)	No. of Scans	Scan Slice	Pitch	kV	mA
	P	***	10	41.00	465.50	465.50	***	1	0.5 x 8	***	120	50

Rotation Time(s)	Scan Direction	C-FOV	CTDIvol (mGy)	DLP (mGy.cm)	Pre Voice	Post Voice	Contrast Protocol Name	Focus	Badge Name
1.0	OUT	L	136.8	54.7	***	***	***	Small	***

SURE Start Setup

ROI Mode	Intermittent	Interval (s)	Threshold ROI1 (Intermittent)	Start Mode	ROI Condition	Threshold ROI1	Threshold ROI2	Voice Timing	Lock Position
1 ROI	ON	3	180	Auto	***	180	***	***	***

Recon Cards

Card No.	Start Position (mm)	End Position (mm)	Range (mm)	Thickness (mm)	Interval (mm)	DFOV	App Type	Kernel	Noise Reduction
1	***	***	***	4	***	500	Dynamic	Body	AIDR 3D L3

BHC	W / L	SEMAR	Transfer (Volume)	Time Interval (s)
***	300 / 50	***	ON (PACS)	***

Badge 4: Thin ST CTA

	Start Mode	Start Time (s)	Wait Time (s)	Total Scan Time (s)	Start Position (mm)	End Position (mm)	Range (mm)	No. of Scans	Scan Slice	Pitch	kV	mA
4. Helical	A	***	0	7.80	465.50	916.00	450.50	1	0.5 x 80	Standard	120	head B10 MEDIUM

Rotation Time(s)	Scan Direction	C-FOV	CTDIvol (mGy)	DLP (mGy.cm)	Pre Voice	Post Voice	Contrast Protocol Name	Focus	Badge Name
0.5	OUT	L	***	***	Breathe In & Hold	Breathe Normally ***		Small	THIN ST CTA

VolumeEC	SD	Noise Reduction	XY-Modulation	Adaptive SD	OEM	Slice Thickness (mm)	Max mA	Min mA
	7.8	AiCE L2	ON	ON	OFF	4	800	70

Small Medium

	Start Mode	Start Time (s)	Wait Time (s)	Total Scan Time (s)	Start Position (mm)	End Position (mm)	Range (mm)	No. of Scans	Scan Slice	Pitch	kV	mA
4. Helical	A	***	0	9.30	465.50	916.00	450.50	1	0.5 x 80	Standard	120	head B10 LARGE

Rotation Time(s)	Scan Direction	C-FOV	CTDIvol (mGy)	DLP (mGy.cm)	Pre Voice	Post Voice	Contrast Protocol Name	Focus	Badge Name
0.6	OUT	L	***	***	Breathe In & Hold	Breathe Normally ***		Small	THIN ST CTA

VolumeEC	SD	Noise Reduction	XY-Modulation	Adaptive SD	OEM	Slice Thickness (mm)	Max mA	Min mA
	8.7	AiCE L2	ON	ON	OFF	4	800	60

Large

Badge 4: Recons

Recon Cards	Card No.	Start Position (mm)	End Position (mm)	Range (mm)	Thickness (mm)	Interval (mm)	DFOV	App Type	Kernel	Noise Reduction
	1	0	450.5	450.5	1	0.5	382.8	Volume	Body Sharp	AiCE L1
	2	0	450	450	4	2	382.8	Volume	Body Sharp	AiCE L1

BHC	W / L	SEMAR	Transfer (Volume)
ON	350 / 50	OFF	ON (PACS)
ON	350 / 50	OFF	ON (PACS)

Axial			Coronal			Sagittal			Rendering	Transfer (MultiView)
Thickness (mm)	Interval (mm)	Direction	Thickness (mm)	Interval (mm)	Direction	Thickness (mm)	Interval (mm)	Direction		
***	***	***	3	2	A - P	3	2	R - L	Average	***
***	***	***	***	***	***	***	***	***	***	***

Badge 5: ST W/C

	Start Mode	Start Time (s)	Wait Time (s)	Total Scan Time (s)	Start Position (mm)	End Position (mm)	Range (mm)	No. of Scans	Scan Slice	Pitch	kV	mA
5. Helical	A	70	40.200001	9.30	465.50	916.00	450.50	1	0.5 x 80	Standard	120	abdomen B4 MEDIUM

Rotation Time(s)	Scan Direction	C-FOV	CTDIvol (mGy)	DLP (mGy.cm)	Pre Voice	Post Voice	Contrast Protocol Name	Focus	Badge Name
0.6	OUT	L	***	***	Breathe In & Hold	Breathe Normally ***		Small	ST W/C

VolumeEC	SD	Noise Reduction	XY-Modulation	Adaptive SD	OEM	Slice Thickness (mm)	Max mA	Min mA
	7.5	AiCE L2	ON	ON	OFF	4	800	80

Small Medium

	Start Mode	Start Time (s)	Wait Time (s)	Total Scan Time (s)	Start Position (mm)	End Position (mm)	Range (mm)	No. of Scans	Scan Slice	Pitch	kV	mA
5. Helical	A	70	38.700001	15.50	465.50	916.00	450.50	1	0.5 x 80	Standard	120	abdomen B4 LARGE

Rotation Time(s)	Scan Direction	C-FOV	CTDIvol (mGy)	DLP (mGy.cm)	Pre Voice	Post Voice	Contrast Protocol Name	Focus	Badge Name
1.0	OUT	L	***	***	Breathe In & Hold	Breathe Normally ***		Small	ST W/C

VolumeEC	SD	Noise Reduction	XY-Modulation	Adaptive SD	OEM	Slice Thickness (mm)	Max mA	Min mA
	8.5	AiCE L2	ON	ON	OFF	4	800	60

Large

Badge 5: Recons

Recon Cards	Card No.	Start Position (mm)	End Position (mm)	Range (mm)	Thickness (mm)	Interval (mm)	DFOV	App Type	Kernel	Noise Reduction
	1	0	450.5	450.5	1	0.5	382.8	Volume	Body Sharp	AiCE L1
	2	0	450	450	4	2	382.8	Volume	Body Sharp	AiCE L1

BHC	W / L	SEMAR	Transfer (Volume)
ON	350 / 50	OFF	ON (PACS)
ON	350 / 50	OFF	ON (PACS)

Axial			Coronal			Sagittal			Rendering	Transfer (MultiView)
Thickness (mm)	Interval (mm)	Direction	Thickness (mm)	Interval (mm)	Direction	Thickness (mm)	Interval (mm)	Direction		
***	***	***	3	2	A - P	3	2	R - L	Average	***
***	***	***	***	***	***	***	***	***	***	***

Abd-Liver -Hepatocellular Carcinoma (HCC) 6.82/6.83/6.84

Clinical Instructions

Indication

Arterial, Venous, and Delayed phase scanning for the evaluation of possible hepatocellular carcinoma. This protocol fulfills the UNOS criteria.

Oral Contrast

Give a total 800 mL of water over the course of one hour prior to scan. Ask patient to drink slowly and steadily.

Give an additional 200mL dose of water on the CT scan table.

Pre-Scan Instructions

This scan is a Bi-phasic exam of the liver followed by a 3 minute delay to assess for Hepatocellular Carcinoma.

IV Contrast: Select Option 1 or 2 - based on concentration available at your site

Option 1: IV Contrast Parameters 350 mgI/mL

Select the Ulrich Weight-Based Adult 5mL protocol which will load the following settings: Saline Test Bolus 5mL/sec Weight based volume 5mL/sec (see below) Saline Flush 50 mL at a rate of 5mL/sec

Iohexol (Omnipaque) 350 mg/mL injection at a rate of 5 mL/sec

For sites without the Ulrich use Medrad p3T or refer to the weight based contrast tables included with the protocol booklet.

Option 2: IV Contrast Parameters 300 mgI/mL

Medrad™ P3T Abdomen protocol;

Iohexol (Omnipaque) 300 mg/mL injection at a rate of 5 mL/sec

For sites without the Medrad™ P3T or P3T PA option, refer to the weight based contrast tables we provide in the protocol booklet.

Field of View

Same as previous study or as small as appropriate

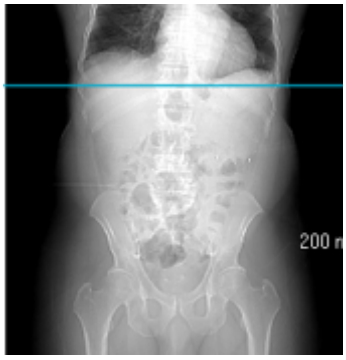
Scan Description

Badge 1 - 3D Landmark

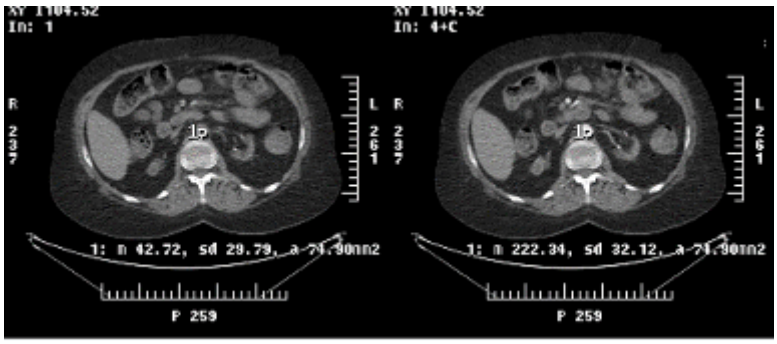
- Breathing instructions: Breath in and hold
- Coverage: Diaphragm through pelvis

Badge 2 - SureStart

- Place ROI on Aorta, at the level of mid liver. **AUTO is turned on so the scan will progress without the need for you to hit Skip** There will be a 13 second diagnostic delay built in.



Scout



ROI Location

Badge 3 - ST LATE ARTERIAL

- Breathing instructions: Breath in and hold
- Coverage: Top of liver through bottom of liver.

Badge 4 - ST W/C

- Breathing instructions: Breath in and hold
- Coverage: Diaphragm through pelvis.
- This group is scanned at 70 seconds from the start of the injection. The scanner will automatically adjust this delay.

Badge 5 - ST DELAY 3 MIN W/C

- Breathing instructions: Breath in and hold
- Coverage: Top of liver through bottom of liver.

- If doing a Chest with a HCC, include the chest with the 2nd group. Be sure to subtract the amount of time it takes to scan through the chest from the 70 seconds from the start of injection. CT2 has a Quick Guide for Biphasic/Chest Combo .

Reformat Instructions

Reformats

PV phase only

Name	Source Series Name	3D/MPR or Manual	Rendering (MIP, Average, etc.)	WW/WL	Slice Thickness (mm)	Interval (mm)	Orientation
SA BODY	**THIN ST**	**3D/MPR**	**Average**	**350/50**	**3**	**2**	**sagittal**
CO BODY	**THIN ST**	**3D/MPR**	**Average**	**350/50**	**3**	**2**	**coronal**

Networking

All images (including 3DLandmark, SureStart and dose report) are AUTO networked to PACS (ALI_Store).

Miscellaneous

None

Acquisition Parameters

Badge 1: 3D Landmark

	Start Mode	Start Time (s)	Wait Time (s)	Total Scan Time (s)	Start Position (mm)	End Position (mm)	Range (mm)	No. of Scans	Scan Slice	Pitch	kV	mA
1. 3D Landmark	P	***	0	6.10	396.00	996.00	600.00	1	0.5 x 80	Fast	120	80

Rotation Time(s)	Scan Direction	C-FOV	CTDIvol (mGy)	DLP (mGy.cm)	Pre Voice	Post Voice	Contrast Protocol Name	Focus	Badge Name
0.5	OUT	L	0.3	22.5	Breathe In & Hold	Breathe Normally ***		Small	***

Recon Cards

Card No.	Start Position (mm)	End Position (mm)	Range (mm)	Thickness (mm)	Interval (mm)	DFOV	App Type	Kernel	Noise Reduction
1	0	600	600	1	1	500	Localizer	Body	OFF

BHC	W / L	SEMAR	Transfer (Volume)
OFF	300 / 50	OFF	ON (PACS)

Badge 2: Sure Start

	Start Mode	Start Time (s)	Wait Time (s)	Total Scan Time (s)	Start Position (mm)	End Position (mm)	Range (mm)	No. of Scans	Scan Slice	Pitch	kV	mA
2. SURE Start	P	***	15	30.00	631.50	631.50	***	1	0.5 x 8	***	120	80

Rotation Time(s)	Scan Direction	C-FOV	CTDIvol (mGy)	DLP (mGy.cm)	Pre Voice	Post Voice	Contrast Protocol Name	Focus	Badge Name
0.5	OUT	L	102.2	40.9	***	***	***	Small	***

SURE Start Setup

ROI Mode	Intermittent	Interval (s)	Threshold ROI1 (Intermittent)	Start Mode	ROI Condition	Threshold ROI1	Threshold ROI2	Voice Timing	Lock Position
1 ROI	ON	3	150	Auto	***	150	***	***	***

Recon Cards

Card No.	Start Position (mm)	End Position (mm)	Range (mm)	Thickness (mm)	Interval (mm)	DFOV	App Type	Kernel	Noise Reduction
1	***	***	***	4	***	500	Dynamic	Body	AIDR 3D L3

BHC	W / L	SEMAR	Transfer (Volume)	Time Interval (s)
***	350 / 50	***	ON (PACS)	***

Badge 3: ST ARTERIAL

	Start Mode	Start Time (s)	Wait Time (s)	Total Scan Time (s)	Start Position (mm)	End Position (mm)	Range (mm)	No. of Scans	Scan Slice	Pitch	kV	mA
3. Helical	A	***	13	7.70	465.50	916.00	450.50	1	0.5 x 80	Standard	120	head B10 MEDIUM

Rotation Time(s)	Scan Direction	C-FOV	CTDIvol (mGy)	DLP (mGy.cm)	Pre Voice	Post Voice	Contrast Protocol Name	Focus	Badge Name
0.5	OUT	L	***	***	Breathe In & Hold	Breathe Normally ***		Small	ST LATE ARTERIAL

VolumeEC

SD	Noise Reduction	XY-Modulation	Adaptive SD	OEM	Slice Thickness (mm)	Max mA	Min mA
7.8	AiCE L2	ON	ON	OFF	4	780	70

Small Medium

	Start Mode	Start Time (s)	Wait Time (s)	Total Scan Time (s)	Start Position (mm)	End Position (mm)	Range (mm)	No. of Scans	Scan Slice	Pitch	kV	mA
3. Helical	A	***	13	9.30	465.50	916.00	450.50	1	0.5 x 80	Standard	120	head B10 LARGE

Rotation Time(s)	Scan Direction	C-FOV	CTDIvol (mGy)	DLP (mGy.cm)	Pre Voice	Post Voice	Contrast Protocol Name	Focus	Badge Name
0.6	OUT	L	***	***	Breathe In & Hold	Breathe Normally ***		Small	ST LATE ARTERIAL

VolumeEC

SD	Noise Reduction	XY-Modulation	Adaptive SD	OEM	Slice Thickness (mm)	Max mA	Min mA
8.7	AiCE L2	ON	ON	OFF	4	780	60

Large

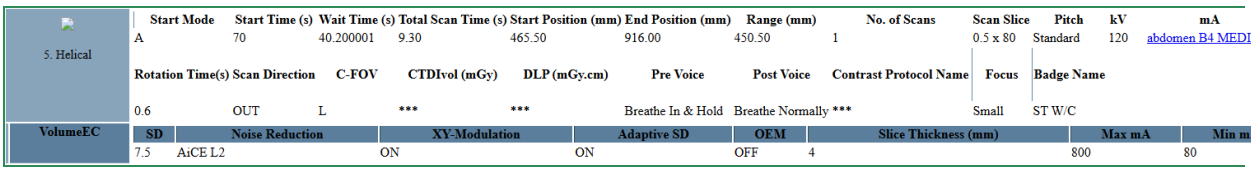
Badge 3: Recons

Recon Cards

Card No.	Start Position (mm)	End Position (mm)	Range (mm)	Thickness (mm)	Interval (mm)	DFOV	App Type	Kernel	Noise Reduction
1	0.8	220.300003	219.500003	1	0.5	382.8	Volume	Body Sharp	AiCE L1
2	0	220	220	4	2	382.8	Volume	Body Sharp	AiCE L1

BHC	W / L	SEMAR	Transfer (Volume)
ON	350 / 50	OFF	ON (PACS)
ON	350 / 50	OFF	ON (PACS)

Badge 4: ST W/C

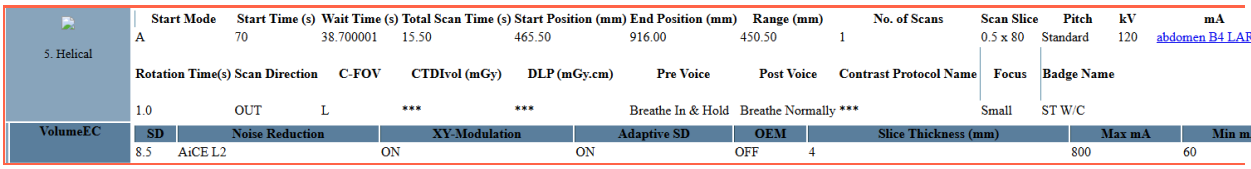


	Start Mode	Start Time (s)	Wait Time (s)	Total Scan Time (s)	Start Position (mm)	End Position (mm)	Range (mm)	No. of Scans	Scan Slice	Pitch	kV	mA
5. Helical	A	70	40.200001	9.30	465.50	916.00	450.50	1	0.5 x 80	Standard	120	abdomen B4 MEDIUM

Rotation Time(s)	Scan Direction	C-FOV	CTDIvol (mGy)	DLP (mGy.cm)	Pre Voice	Post Voice	Contrast Protocol Name	Focus	Badge Name
0.6	OUT	L	***	***	Breathe In & Hold	Breathe Normally ***		Small	ST W/C

VolumeEC	SD	Noise Reduction	XY-Modulation	Adaptive SD	OEM	Slice Thickness (mm)	Max mA	Min mA
	7.5	AiCE L2	ON	ON	OFF	4	800	80

Small Medium



	Start Mode	Start Time (s)	Wait Time (s)	Total Scan Time (s)	Start Position (mm)	End Position (mm)	Range (mm)	No. of Scans	Scan Slice	Pitch	kV	mA
5. Helical	A	70	38.700001	15.50	465.50	916.00	450.50	1	0.5 x 80	Standard	120	abdomen B4 LARGE

Rotation Time(s)	Scan Direction	C-FOV	CTDIvol (mGy)	DLP (mGy.cm)	Pre Voice	Post Voice	Contrast Protocol Name	Focus	Badge Name
1.0	OUT	L	***	***	Breathe In & Hold	Breathe Normally ***		Small	ST W/C

VolumeEC	SD	Noise Reduction	XY-Modulation	Adaptive SD	OEM	Slice Thickness (mm)	Max mA	Min mA
	8.5	AiCE L2	ON	ON	OFF	4	800	60

Large

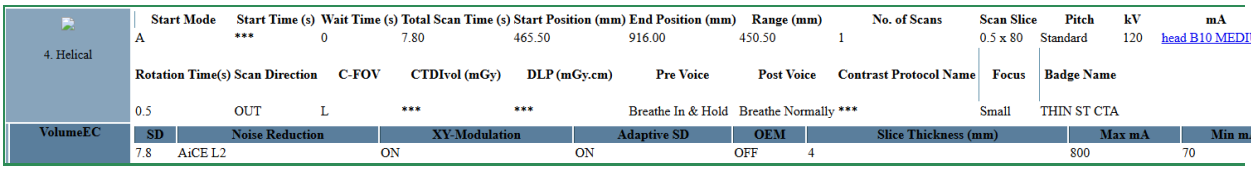
Badge 4: Recons

Recon Cards	Card No.	Start Position (mm)	End Position (mm)	Range (mm)	Thickness (mm)	Interval (mm)	DFOV	App Type	Kernel	Noise Reduction
	1	0	450.5	450.5	1	0.5	382.8	Volume	Body Sharp	AiCE L1
	2	0	450	450	4	2	382.8	Volume	Body Sharp	AiCE L1

BHC	W / L	SEMAR	Transfer (Volume)
ON	350 / 50	OFF	ON (PACS)
ON	350 / 50	OFF	ON (PACS)

Axial			Coronal			Sagittal			Rendering	Transfer (MultiView)
Thickness (mm)	Interval (mm)	Direction	Thickness (mm)	Interval (mm)	Direction	Thickness (mm)	Interval (mm)	Direction		
***	***	***	3	2	A - P	3	2	R - L	Average	***
***	***	***	***	***	***	***	***	***	***	***

Badge 5: ST DELAY 3 MIN W/C

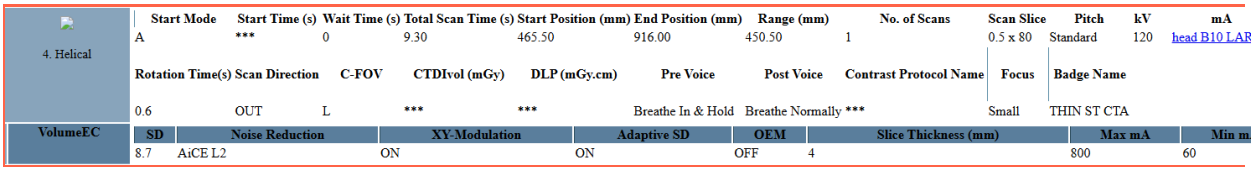


	Start Mode	Start Time (s)	Wait Time (s)	Total Scan Time (s)	Start Position (mm)	End Position (mm)	Range (mm)	No. of Scans	Scan Slice	Pitch	kV	mA
4. Helical	A	***	0	7.80	465.50	916.00	450.50	1	0.5 x 80	Standard	120	head B10 MEDIUM

Rotation Time(s)	Scan Direction	C-FOV	CTDIvol (mGy)	DLP (mGy.cm)	Pre Voice	Post Voice	Contrast Protocol Name	Focus	Badge Name
0.5	OUT	L	***	***	Breathe In & Hold	Breathe Normally ***		Small	THIN ST CTA

VolumeEC	SD	Noise Reduction	XY-Modulation	Adaptive SD	OEM	Slice Thickness (mm)	Max mA	Min mA
	7.8	AiCE L2	ON	ON	OFF	4	800	70

Small Medium



	Start Mode	Start Time (s)	Wait Time (s)	Total Scan Time (s)	Start Position (mm)	End Position (mm)	Range (mm)	No. of Scans	Scan Slice	Pitch	kV	mA
4. Helical	A	***	0	9.30	465.50	916.00	450.50	1	0.5 x 80	Standard	120	head B10 LARGE

Rotation Time(s)	Scan Direction	C-FOV	CTDIvol (mGy)	DLP (mGy.cm)	Pre Voice	Post Voice	Contrast Protocol Name	Focus	Badge Name
0.6	OUT	L	***	***	Breathe In & Hold	Breathe Normally ***		Small	THIN ST CTA

VolumeEC	SD	Noise Reduction	XY-Modulation	Adaptive SD	OEM	Slice Thickness (mm)	Max mA	Min mA
	8.7	AiCE L2	ON	ON	OFF	4	800	60

Large

Badge 5: Recon

Recon Cards	Card No.	Start Position (mm)	End Position (mm)	Range (mm)	Thickness (mm)	Interval (mm)	DFOV	App Type	Kernel	Noise Reduction
	1	0	70	70	4	2	382.8	Volume	Body Sharp	AiCE L1

BHC	W / L	SEMAR	Transfer (Volume)
ON	350 / 50	OFF	ON (PACS)

Abdominal Wall Flap CTA 6.88/6.89/6.90

Clinical Instructions

Indication

Evaluate abdominal wall vasculature for surgical planning for free flap.

Oral Contrast

None

Pre-Scan Instructions

- Have patient lower their pants and underwear to the level of the thighs. Place BB 5 cm above umbilicus.
- Practice breathing instructions. Ask patient to cough just prior to the scan.

IV Contrast: Select Option 1 or 2 - based on concentration available at your site

Option 1: IV Contrast Parameters 350 mgI/mL

Select the Ulrich Abdominal Wall Flap CTA protocol 46 which will load the following settings: Saline Test Bolus 5mL/sec 127 mL of Iohexol 350 at a rate of 5mL/sec Saline Flush 50 mL at a rate of 5mL/sec

Option 2: IV Contrast Parameters 370 mgI/mL

5mL Medrad™ protocol:

120 mL Iopamidol 370 mgI/mL (Isovue) at a rate of 5 mL/sec

50 mL Sodium Chloride 0.9% at a rate of 5 mL/sec

Field of View

Include entire abdominal wall – do NOT clip subcutaneous fat anteriorly. You can clip the buttocks and laterally.

Scan Description

Badge 1 - 3D Landmark

- Breathing instructions: Breath in and hold

- Coverage: Diaphragm through the middle of the pubic symphysis
- Place BB 5 cm above umbilicus

Badge 2 - SureStart

- Place ROI on Femoral artery at level of femoral heads. Trigger scan at the first blush of contrast in femoral arteries.

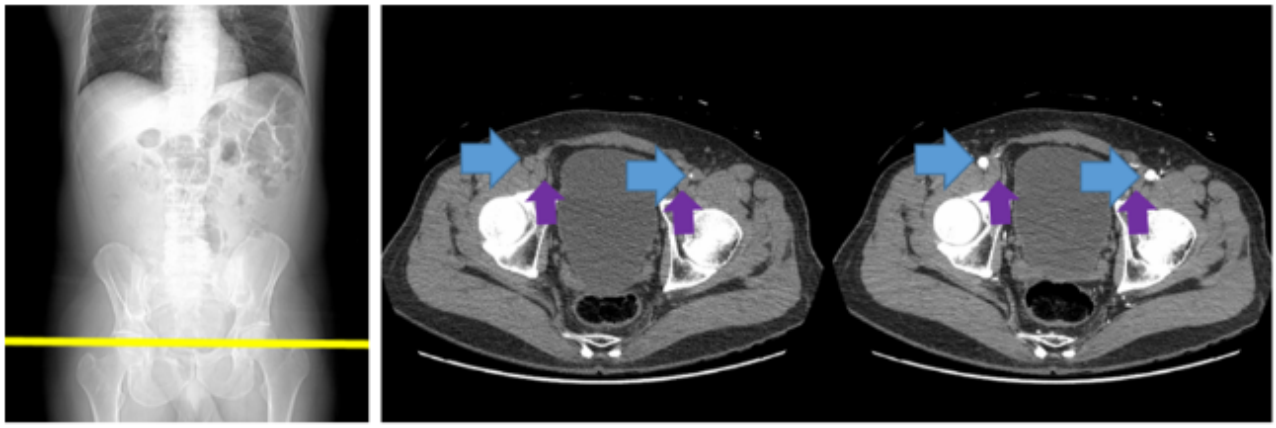


Image showing where the smart prep location is located on a scout. The image also shows the location of the femoral arteries and their appearance on a non contrast and with contrast (CTA) scan. **Blue arrows are arteries where you need to put the ROI. Purple arrows (medial/posterior to the artery) denote the veins, do not put the ROI over the veins.**

Badge 3 - ST CTA

- Breathing instructions: Breath in and hold
- Coverage: Middle of pubic symphysis and end at BB (5 cm or 500mm above umbilicus).THIS IS EXTREMELY IMPORTANT.

Reformat Instructions

Must be done manually off Recon 1. See Table below.

In the United States, CT Angiography CPT codes require the performance and documentation of 3D angiographic rendering, which may include maximum intensity projection (MIP), volumetric rendering, and/or surface rendering techniques.

Reformats

Name	Source Series Name	3D/MPR or Manual	Rendering (MIP, Average, etc.)	WW/WL	Slice Thickness (mm)	Interval (mm)	Orientation
SA	Thin ST	Manual	MIP	800/150	10	5	sagittal
CO	Thin ST	Manual	MIP	800/150	10	5	coronal

Networking

All images (including 3DLandmark, SureStart and dose report) are AUTO networked to PACS (ALI_Store).

- Assign these exams to Tim Ziemlewicz

Miscellaneous

None

Acquisition Parameters

Badge 1: 3D Landmark

1. 3D Landmark

Start Mode	Start Time (s)	Wait Time (s)	Total Scan Time (s)	Start Position (mm)	End Position (mm)	Range (mm)	No. of Scans	Scan Slice	Pitch	kV	mA
P	***	0	6.10	396.00	996.00	600.00	1	0.5 x 80	Fast	120	80

Rotation Time(s)	Scan Direction	C-FOV	CTDIvol (mGy)	DLP (mGy.cm)	Pre Voice	Post Voice	Contrast Protocol Name	Focus	Badge Name
0.5	OUT	L	0.3	22.5	Breathe In & Hold	Breathe Normally	***	Small	***

Recon Cards

Card No.	Start Position (mm)	End Position (mm)	Range (mm)	Thickness (mm)	Interval (mm)	DFOV	App Type	Kernel	Noise Reduction
1	0	600	600	1	1	500	Localizer	Body	OFF

BHC	W / L	SEMAR	Transfer (Volume)
OFF	300 / 50	OFF	ON (PACS)

Badge 2: SureStart

2. SURE Start

Start Mode	Start Time (s)	Wait Time (s)	Total Scan Time (s)	Start Position (mm)	End Position (mm)	Range (mm)	No. of Scans	Scan Slice	Pitch	kV	mA
P	***	12	40.00	631.50	631.50	***	1	0.5 x 8	***	120	80

Rotation Time(s)	Scan Direction	C-FOV	CTDIvol (mGy)	DLP (mGy.cm)	Pre Voice	Post Voice	Contrast Protocol Name	Focus	Badge Name
1.0	OUT	L	467.2	186.9	***	***	***	Small	***

SURE Start Setup

ROI Mode	Intermittent	Interval (s)	Threshold ROI1 (Intermittent)	Start Mode	ROI Condition	Threshold ROI1	Threshold ROI2	Voice Timing	Lock Position
1 ROI	ON	3	200	Manual	***	200	***	***	***

Recon Cards

Card No.	Start Position (mm)	End Position (mm)	Range (mm)	Thickness (mm)	Interval (mm)	DFOV	App Type	Kernel	Noise Reduction
1	***	***	***	4	***	500	Dynamic	Body Sharp	AIDR 3D L3

BHC	W / L	SEMAR	Transfer (Volume)	Time Interval (s)
***	300 / 50	***	ON (PACS)	***

Badge 3: Thin ST CTA

	Start Mode	Start Time (s)	Wait Time (s)	Total Scan Time (s)	Start Position (mm)	End Position (mm)	Range (mm)	No. of Scans	Scan Slice	Pitch	kV	mA
3. Helical	A	***	0	18.20	503.50	916.00	412.50	1	0.5 x 80	Detail	120	abdomen Manual

Rotation Time(s)	Scan Direction	C-FOV	CTDIvol (mGy)	DLP (mGy.cm)	Pre Voice	Post Voice	Contrast Protocol Name	Focus	Badge Name
1.0	OUT	L	***	***	Breathe In & Hold	Breathe Normally ***		Small	THIN ST CTA

VolumeEC	SD	Noise Reduction	XY-Modulation	Adaptive SD	OEM	Slice Thickness (mm)	Max mA	Min mA
	10.5	AiCE L1	ON	ON	OFF	0.5	600	80

Large

	Start Mode	Start Time (s)	Wait Time (s)	Total Scan Time (s)	Start Position (mm)	End Position (mm)	Range (mm)	No. of Scans	Scan Slice	Pitch	kV	mA
3. Helical	A	***	0	18.20	503.50	916.00	412.50	1	0.5 x 80	Detail	135	abdomen Manual

Rotation Time(s)	Scan Direction	C-FOV	CTDIvol (mGy)	DLP (mGy.cm)	Pre Voice	Post Voice	Contrast Protocol Name	Focus	Badge Name
1.0	OUT	L	***	***	Breathe In & Hold	Breathe Normally ***		Small	THIN ST CTA

VolumeEC	SD	Noise Reduction	XY-Modulation	Adaptive SD	OEM	Slice Thickness (mm)	Max mA	Min mA
	12	AiCE L1	ON	ON	OFF	0.5	530	80

Large

Badge 3: Recon

Recon Cards	Card No.	Start Position (mm)	End Position (mm)	Range (mm)	Thickness (mm)	Interval (mm)	DFOV	App Type	Kernel	Noise Reduction
	1	0	412.5	412.5	0.5	0.25	382.8	Volume	Body Sharp	AiCE L1
	2	0	412	412	2	1	382.8	Volume	Body Sharp	AiCE L1

BHC	W / L	SEMAR	Transfer (Volume)
ON	800 / 150	OFF	ON (PACS , CTAW1)
ON	800 / 150	OFF	***

Axial			Coronal			Sagittal			Rendering	Transfer (MultiView)
Thickness (mm)	Interval (mm)	Direction	Thickness (mm)	Interval (mm)	Direction	Thickness (mm)	Interval (mm)	Direction		
***	***	***	***	***	***	***	***	***	***	***
***	***	***	10	5	A - P	10	5	R - L	MIP	***

Cystogram 8.10/8.11/8.12

Clinical Instructions

Indication

Bladder tumor.

Oral Contrast

None

Pre-Scan Instructions

Bladder contrast – 20 ml of Iohexol 350 in a 500 ml bag of normal saline. The saline should be warmed to body temperature if time allows. Check with radiologist to see if without series needed first.

- Using sterile technique, connect the tubing from the bag of 2% contrast (see # 6) to the Foley catheter and allow the bladder to fill retrograde. Make sure to place Foley below the level of the bladder.
- If the patient is oriented, have the patient tell you when they are getting uncomfortably full. If they are unable to let you know, run about 300 ml in to start. Note on series description the amount of contrast instilled into the bladder.

IV Contrast Parameters

None

Field of View

Same as previous study or as small as appropriate

Scan Description

Badge 1 - 3D Landmark

- Breathing instructions: Breath in and hold
- Coverage: Top of iliac crests through pelvis.

Badge 2 - ST PRE CONTRAST

- Breathing instructions: Breath in and hold
- Coverage: Top of iliac crests through pelvis.

Badge 3 - ST WITH CONTRAST

- Breathing instructions: Breath in and hold
- Coverage: Top of iliac crests through pelvis. Make sure contrast fills the entire bladder

Note: Annotate the amount of contrast used for the cystogram on the series description

Billing

CT Cystogram and contrast used.

Reformat Instructions

Reformats

ALL PHASES

Name	Source Series Name	3D/MPR or Manual	Rendering (MIP, Average, etc.)	WW/WL	Slice Thickness (mm)	Interval (mm)	Orientation
SA BODY	THIN ST	3D/MPR	Average	350/50	3	2	sagittal
CO BODY	THIN ST	3D/MPR	Average	350/50	3	2	coronal

Networking

All images (including 3DLandmark and dose report) are AUTO networked to PACS (ALI_Store).

Miscellaneous

None

Acquisition Parameters

Badge 1: 3D Landmark

1. 3D Landmark

Start Mode	Start Time (s)	Wait Time (s)	Total Scan Time (s)	Start Position (mm)	End Position (mm)	Range (mm)	No. of Scans	Scan Slice	Pitch	kV	mA
P	***	0	6.10	396.00	996.00	600.00	1	0.5 x 80	Fast	120	80

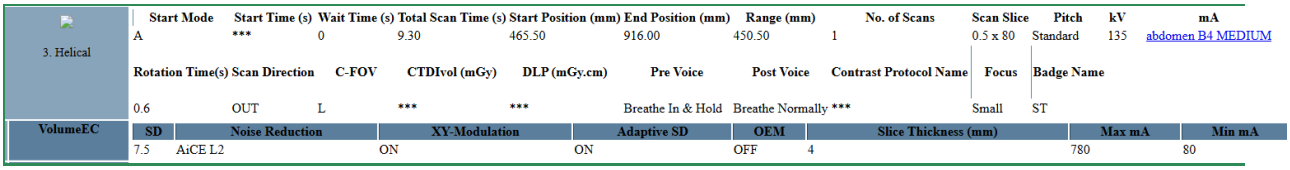
Rotation Time(s)	Scan Direction	C-FOV	CTDIvol (mGy)	DLP (mGy.cm)	Pre Voice	Post Voice	Contrast Protocol Name	Focus	Badge Name
0.5	OUT	L	0.3	22.5	Breathe In & Hold	Breathe Normally ***		Small	***

Recon Cards

Card No.	Start Position (mm)	End Position (mm)	Range (mm)	Thickness (mm)	Interval (mm)	DFOV	App Type	Kernel	Noise Reduction
1	0	600	600	1	1	500	Localizer	Body	OFF

BHC	W / L	SEMAR	Transfer (Volume)
OFF	300 / 50	OFF	ON (PACS)

Badge 2: ST PRE CONTRAST

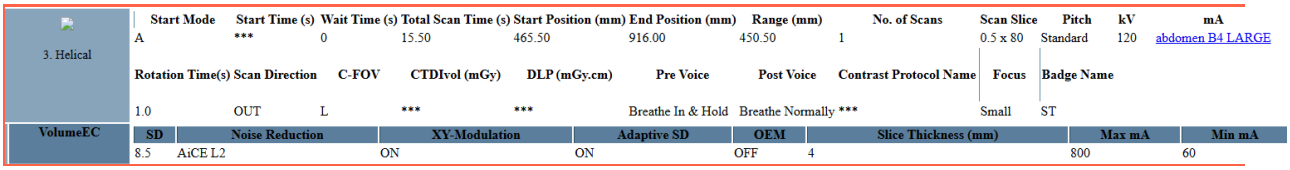


	Start Mode	Start Time (s)	Wait Time (s)	Total Scan Time (s)	Start Position (mm)	End Position (mm)	Range (mm)	No. of Scans	Scan Slice	Pitch	kV	mA
3. Helical	A	***	0	9.30	465.50	916.00	450.50	1	0.5 x 80	Standard	135	abdomen B4 MEDIUM

Rotation Time(s)	Scan Direction	C-FOV	CTDIvol (mGy)	DLP (mGy.cm)	Pre Voice	Post Voice	Contrast Protocol Name	Focus	Badge Name
0.6	OUT	L	***	***	Breathe In & Hold	Breathe Normally ***		Small	ST

VolumeEC	SD	Noise Reduction	XY-Modulation	Adaptive SD	OEM	Slice Thickness (mm)	Max mA	Min mA
	7.5	AiCE L2	ON	ON	OFF	4	780	80

Small Medium



	Start Mode	Start Time (s)	Wait Time (s)	Total Scan Time (s)	Start Position (mm)	End Position (mm)	Range (mm)	No. of Scans	Scan Slice	Pitch	kV	mA
3. Helical	A	***	0	15.50	465.50	916.00	450.50	1	0.5 x 80	Standard	120	abdomen B4 LARGE

Rotation Time(s)	Scan Direction	C-FOV	CTDIvol (mGy)	DLP (mGy.cm)	Pre Voice	Post Voice	Contrast Protocol Name	Focus	Badge Name
1.0	OUT	L	***	***	Breathe In & Hold	Breathe Normally ***		Small	ST

VolumeEC	SD	Noise Reduction	XY-Modulation	Adaptive SD	OEM	Slice Thickness (mm)	Max mA	Min mA
	8.5	AiCE L2	ON	ON	OFF	4	800	60

Large

Badge 2: Recons

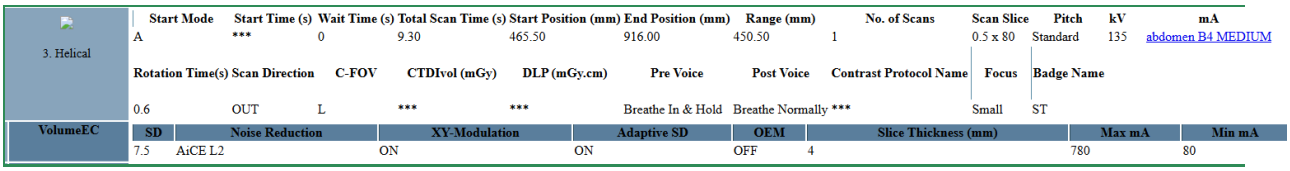
Recon Cards

Card No.	Start Position (mm)	End Position (mm)	Range (mm)	Thickness (mm)	Interval (mm)	DFOV	App Type	Kernel	Noise Reduction
1	0	450.5	450.5	1	0.5	382.8	Volume	Body Sharp	AiCE L1
2	0	450	450	4	2	382.8	Volume	Body Sharp	AiCE L1

BHC	W / L	SEMAR	Transfer (Volume)
ON	350 / 50	OFF	ON (PACS)
ON	350 / 50	OFF	ON (PACS)

Axial			Coronal			Sagittal			Rendering	Transfer (MultiView)
Thickness (mm)	Interval (mm)	Direction	Thickness (mm)	Interval (mm)	Direction	Thickness (mm)	Interval (mm)	Direction		
***	***	***	3	2	A - P	3	2	R - L	Average	***
***	***	***	***	***	***	***	***	***	***	***

Badge 3: ST WITH CONTRAST

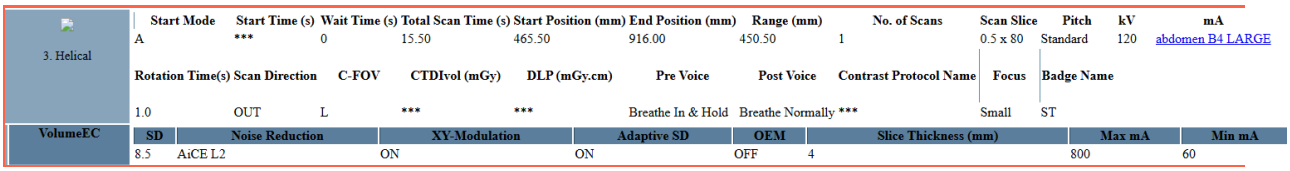


	Start Mode	Start Time (s)	Wait Time (s)	Total Scan Time (s)	Start Position (mm)	End Position (mm)	Range (mm)	No. of Scans	Scan Slice	Pitch	kV	mA
3. Helical	A	***	0	9.30	465.50	916.00	450.50	1	0.5 x 80	Standard	135	abdomen B4 MEDIUM

Rotation Time(s)	Scan Direction	C-FOV	CTDIvol (mGy)	DLP (mGy.cm)	Pre Voice	Post Voice	Contrast Protocol Name	Focus	Badge Name
0.6	OUT	L	***	***	Breathe In & Hold	Breathe Normally ***		Small	ST

VolumeEC	SD	Noise Reduction	XY-Modulation	Adaptive SD	OEM	Slice Thickness (mm)	Max mA	Min mA
	7.5	AiCE L2	ON	ON	OFF	4	780	80

Small Medium



	Start Mode	Start Time (s)	Wait Time (s)	Total Scan Time (s)	Start Position (mm)	End Position (mm)	Range (mm)	No. of Scans	Scan Slice	Pitch	kV	mA
3. Helical	A	***	0	15.50	465.50	916.00	450.50	1	0.5 x 80	Standard	120	abdomen B4 LARGE

Rotation Time(s)	Scan Direction	C-FOV	CTDIvol (mGy)	DLP (mGy.cm)	Pre Voice	Post Voice	Contrast Protocol Name	Focus	Badge Name
1.0	OUT	L	***	***	Breathe In & Hold	Breathe Normally ***		Small	ST

VolumeEC	SD	Noise Reduction	XY-Modulation	Adaptive SD	OEM	Slice Thickness (mm)	Max mA	Min mA
	8.5	AiCE L2	ON	ON	OFF	4	800	60

Large

Badge 3: Recons

Recon Cards

Card No.	Start Position (mm)	End Position (mm)	Range (mm)	Thickness (mm)	Interval (mm)	DFOV	App Type	Kernel	Noise Reduction
1	0	450.5	450.5	1	0.5	382.8	Volume	Body Sharp	AiCE L1
2	0	450	450	4	2	382.8	Volume	Body Sharp	AiCE L1

BHC	W / L	SEMAR	Transfer (Volume)
ON	350 / 50	OFF	ON (PACS)
ON	350 / 50	OFF	ON (PACS)

Axial			Coronal			Sagittal			Rendering	Transfer (MultiView)
Thickness (mm)	Interval (mm)	Direction	Thickness (mm)	Interval (mm)	Direction	Thickness (mm)	Interval (mm)	Direction		
***	***	***	3	2	A - P	3	2	R - L	Average	***
***	***	***	***	***	***	***	***	***	***	***

Body Pelvis 8.16/8.17/8.18

Clinical Instructions

Indication

Evaluate for pelvic pathology other than hypervascular tumors. If the indication is Fournier's Gangrene, please extend the scan through mid-femurs.

Oral Contrast

Oral Contrast: Dilute (1) 20 ml cup of Iohexol 300 mgI/mL in 800 ml clear liquid, flavoring may be added but no ice or carbonation.

Administer to Outpatients: 200mL every 15 minutes over one hour.

Administer to Inpatients: 200mL every 30 mins over two hours.

Bariatric Post- Op (Gastric By-Pass) patients:

- These patients are only able to tolerate 150 mL. No need for extended drink duration. Oral contrast ONLY given on the CT scan table just prior to scanning.
- Mix 2x concentrated dose: 8mL Iohexol(Omnipaque) in 200mL of clear liquid.
- Give 150mL of the 200mL on the CT table.

Pre-Scan Instructions

Clamp Foley catheter and Neph tubes prior to scanning. Make sure to place Foley below the level of the bladder.

IV Contrast: Select Option 1 or 2 - based on concentration available at your site

Option 1: IV Contrast Parameters 350 mgI/mL

Select the Ulrich Weight-Based Adult 3mL protocol which will load the following settings: Saline Test Bolus 3mL/sec Weight based volume 3mL/sec (see below) Saline Flush 50 mL 3mL/sec

Iohexol (Omnipaque) 350 mg/mL injection at a rate of 3 mL/sec

For sites without the Ulrich use Medrad p3T or refer to the weight based contrast tables included with the protocol booklet.

Option 2: IV Contrast Parameters 300 mgI/mL

Medrad™ P3T Abdomen protocol.

Iohexol (Omnipaque) 300 mg/mL injection at a rate of 3 mL/sec

For sites without the Medrad™ P3T or P3T PA option, refer to the weight based contrast tables we provide in the protocol booklet.

Field of View

Same as previous study or as small as appropriate

Scan Description

Badge 1 - 3D Landmark

- Breathing instructions: Breath in and hold
- Coverage: Iliac crest through pelvis

No SureStart a 70 sec diagnostic delay is built in before Badge 2.

Badge 2 – ST

- Breathing instructions: Breath in and hold
- Coverage: Top of the iliac crests and end at pubic symphysis. If the indication is Fournier's Gangrene, please extend scan through mid-femurs.

Reformat Instructions

Reformats

PV Phase

Name	Source Series Name	3D/MPR or Manual	Rendering (MIP, Average, etc.)	WW/WL	Slice Thickness (mm)	Interval (mm)	Orientation
SA BODY	**THIN ST**	**3D/MPR**	**Average**	**350/50**	**3**	**2**	**sagittal**
CO BODY	**THIN ST**	**3D/MPR**	**Average**	**350/50**	**3**	**2**	**coronal**

Networking

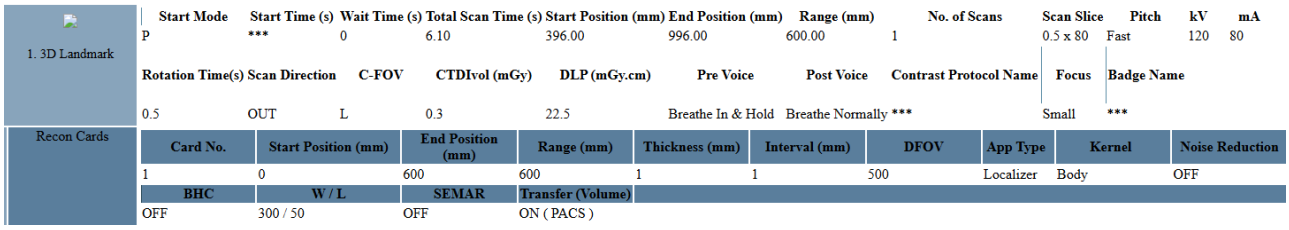
All images (including 3DLandmark and dose report) are AUTO networked to PACS (ALI_Store).

Miscellaneous

None

Acquisition Parameters

Badge 1: 3D Landmark



	Start Mode	Start Time (s)	Wait Time (s)	Total Scan Time (s)	Start Position (mm)	End Position (mm)	Range (mm)	No. of Scans	Scan Slice	Pitch	kV	mA
1. 3D Landmark	P	***	0	6.10	396.00	996.00	600.00	1	0.5 x 80	Fast	120	80

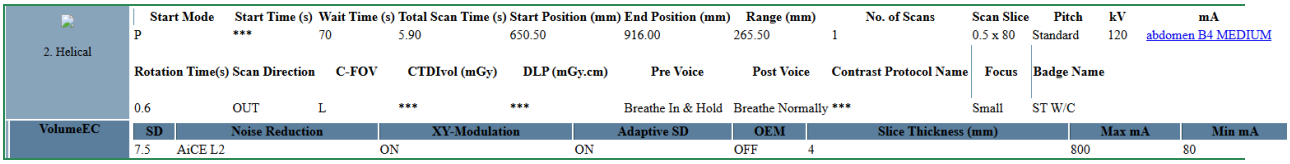
Rotation Time(s)	Scan Direction	C-FOV	CTDIvol (mGy)	DLP (mGy.cm)	Pre Voice	Post Voice	Contrast Protocol Name	Focus	Badge Name
0.5	OUT	L	0.3	22.5	Breathe In & Hold	Breathe Normally ***		Small	***

Recon Cards

Card No.	Start Position (mm)	End Position (mm)	Range (mm)	Thickness (mm)	Interval (mm)	DFOV	App Type	Kernel	Noise Reduction
1	0	600	600	1	1	500	Localizer	Body	OFF

BHC	W / L	SEMAR	Transfer (Volume)
OFF	300 / 50	OFF	ON (PACS)

Badge 2: ST W/C



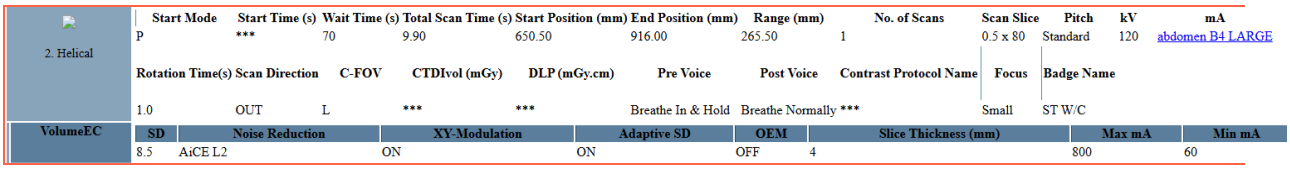
	Start Mode	Start Time (s)	Wait Time (s)	Total Scan Time (s)	Start Position (mm)	End Position (mm)	Range (mm)	No. of Scans	Scan Slice	Pitch	kV	mA
2. Helical	P	***	70	5.90	650.50	916.00	265.50	1	0.5 x 80	Standard	120	abdomen B4 MEDIUM

Rotation Time(s)	Scan Direction	C-FOV	CTDIvol (mGy)	DLP (mGy.cm)	Pre Voice	Post Voice	Contrast Protocol Name	Focus	Badge Name
0.6	OUT	L	***	***	Breathe In & Hold	Breathe Normally ***		Small	ST W/C

VolumeEC

SD	Noise Reduction	XY-Modulation	Adaptive SD	OEM	Slice Thickness (mm)	Max mA	Min mA
7.5	AiCE L2	ON	ON	OFF	4	800	80

Small Medium



	Start Mode	Start Time (s)	Wait Time (s)	Total Scan Time (s)	Start Position (mm)	End Position (mm)	Range (mm)	No. of Scans	Scan Slice	Pitch	kV	mA
2. Helical	P	***	70	9.90	650.50	916.00	265.50	1	0.5 x 80	Standard	120	abdomen B4 LARGE

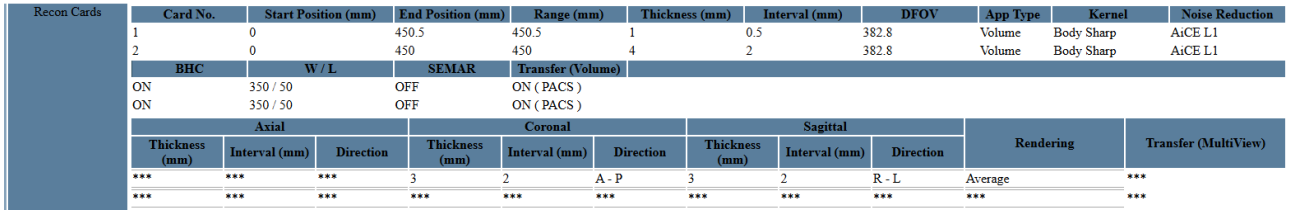
Rotation Time(s)	Scan Direction	C-FOV	CTDIvol (mGy)	DLP (mGy.cm)	Pre Voice	Post Voice	Contrast Protocol Name	Focus	Badge Name
1.0	OUT	L	***	***	Breathe In & Hold	Breathe Normally ***		Small	ST W/C

VolumeEC

SD	Noise Reduction	XY-Modulation	Adaptive SD	OEM	Slice Thickness (mm)	Max mA	Min mA
8.5	AiCE L2	ON	ON	OFF	4	800	60

Large

Badge 2: Recons



Recon Cards

Card No.	Start Position (mm)	End Position (mm)	Range (mm)	Thickness (mm)	Interval (mm)	DFOV	App Type	Kernel	Noise Reduction
1	0	450.5	450.5	1	0.5	382.8	Volume	Body Sharp	AiCE L1
2	0	450	450	4	2	382.8	Volume	Body Sharp	AiCE L1

BHC	W / L	SEMAR	Transfer (Volume)
ON	350 / 50	OFF	ON (PACS)
ON	350 / 50	OFF	ON (PACS)

Axial			Coronal			Sagittal			Rendering	Transfer (MultiView)
Thickness (mm)	Interval (mm)	Direction	Thickness (mm)	Interval (mm)	Direction	Thickness (mm)	Interval (mm)	Direction		
***	***	***	3	2	A - P	3	2	R - L	Average	***
***	***	***	***	***	***	***	***	***	***	***