TRA MEDICAL IMAGING

253-761-4200
PO Box 1535
Tacoma WA 98401
tranow.com

CT Cystogram
CT Pelvis WO

Reviewed By: Spencer Lake
Last Reviewed: December 2022

Contact: (866) 761-4200, Option 1

In accordance with the ALARA principle, TRA policies and protocols promote the utilization of radiation dose reduction techniques for all CT examinations. For scanner/protocol combinations that allow for the use of automated exposure control and/or iterative reconstruction algorithms while maintaining diagnostic image quality, those techniques can be employed when appropriate. For examinations that require manual or fixed mA/kV settings as a result of individual patient or scanner/protocol specific factors, technologists are empowered and encouraged to adjust mA, kV or other scan parameters based on patient size (including such variables as height, weight, body mass index and/or lateral width) with the goals of reducing radiation dose and maintaining diagnostic image quality.

If any patient at a TRA-MINW outpatient facility requires CT re-imaging, obtain radiologist advice prior to proceeding with the exam.

The following document is an updated CT protocol for all of the sites at which TRA-MINW is responsible for the administration, quality, and interpretation of CT examinations.

Include for ALL exams

- **Scout**: Send all scouts for all cases
- **Reformats**: Made from *thinnest* **source** acquisition
  - Scroll Display
    - Axial recons - Cranial to caudal
    - Coronal recons - Anterior to posterior
    - Sagittal recons - Right to left
  - Chest reformats should be in separate series from Abdomen/Pelvis reformats, where applicable
- **kVp**
  - 100 @ <=140lbs
  - 120 @ >140lbs
- **mAs**
  - Prefer: Quality reference mAs for specific exam, scanner and patient size
  - Auto mAs, as necessary

TRA MEDICAL IMAGING
253-761-4200
PO Box 1535
Tacoma WA 98401
tranow.com

CT Cystogram
CT Pelvis WO

Indication: Concern for/follow-up bladder injury or bladder fistula

Patient Position: Supine, feet down with arms above head

Scan Range (CC z-axis): Superior iliac crests to lesser trochanters

Prep: Patient should arrive with a Foley catheter in place, otherwise Foley will have to be placed by RN (or urology)
- Bladder should be ***fully drained*** of urine prior to imaging

Oral Contrast: None

IV contrast: Not applicable

Bladder Contrast:
- 1st acquisition (pre-bladder contrast)
  - Ensure Foley catheter placed prior to non-contrast imaging

- 2nd acquisition (post-bladder contrast)
  - Add 50 mL Isovue 370 to a bag of 500 mL normal saline
  - Connect (and clamp to prevent leakage) IV catheter tubing from bag above to Foley catheter and clamp Foley catheter
  - Hang bag of dilute Isovue 370 from an IV pole
  - Administer *via gravity* by unclamping IV catheter tubing
  - Inform patient that they will experience discomfort as the bladder distends with contrast
  - Goal: 300 mL Isovue 370
    - Stop earlier if patient in significant discomfort
    - NOTE: If long-term Foley catheter, there will be decreased bladder distention
      - Goal: 200-250 mL as tolerated

- THEN After 2nd acquisition
  - Drain contrast
    - Place bag of dilute contrast on floor and unclamp
    - Drain *via gravity*
    - If drainage inadequate, remove bag from Foley catheter (while both tubes clamped), place Foley on floor, and unclamp to continue draining

Acquisitions: 2 (1 pre-bladder contrast installation + 1 post-bladder contrast instillation) – *see notes below*
  - **Pre-bladder contrast (1st acquisition)**

253-761-4200
PO Box 1535
Tacoma WA 98401
tranow.com

- Perform with Foley catheter in place and bladder drained

- **Post-bladder contrast (2nd acquisition)**
  - After 2nd acquisition, check with radiologist to confirm that images and bladder filling are adequate and that additional images are not needed

TRA MEDICAL IMAGING
253-761-4200
PO Box 1535
Tacoma WA 98401
tranow.com

Series + Reformats:

1. **Pre-bladder contrast (1st acquisition)**
    a. Axial 2-2.5 mm ST kernel
    b. Coronal 2 mm ST kernel
    c. Sagittal 2 mm ST kernel
2. **Post-bladder contrast (2nd acquisition)**
    a. Axial 2-2.5 mm ST kernel
    b. Coronal 2 mm ST kernel
    c. Sagittal 2 mm ST kernel

*****Machine specific protocols are included below for reference**

Machine specific recons (axial ranges given above for machine variability):

***Soft tissue (ST) Kernel, machine-specific thickness (axial):**

- GE = 2.5 mm
- Siemens = 2 mm
- Toshiba = 2 mm

TRA MEDICAL IMAGING

253-761-4200
PO Box 1535
Tacoma WA 98401
tranow.com

General Comments

NOTE:
Use of IV contrast is preferred for most indications *aside from*: pulmonary nodule follow-up, HRCT, lung cancer screening, and in patients with a contraindication to iodinated contrast (see below).

Contrast *Relative* Contraindications

- **Severe contrast allergy**: anaphylaxis, laryngospasm, severe bronchospasm
  - If there is history of severe contrast allergy to IV contrast, avoid administration of oral contrast
- **Acute kidney injury (AKI)**: Creatinine increase of greater than 30% over baseline
  - Reference hospital protocol (creatinine cut-off may vary)
- **Chronic kidney disease (CKD) *stage 4 or 5*** (eGFR < 30 mL/min per 1.73 m^2) **NOT** on dialysis
  - Reference hospital protocol

Contrast Allergy Protocol

- Per hospital protocol
- Discuss with radiologist as necessary

Hydration Protocol

- For eGFR **30-45 mL/min** per 1.73 m^2: Follow approved hydration protocol

IV Contrast (where indicated)

- Isovue 370 is the default intravenous contrast agent
  - See specific protocols for contrast volume and injection rate
- If Isovue 370 is unavailable:
  - Osmolality 350-370 (i.e., Omnipaque 250): Use same volume as Isovue 370
  - Osmolality 380-320 (i.e., Isovue 300, Visipaque): Use indicated volume **+ 25 mL** (*not to exceed 125 mL total contrast*)

Oral Contrast

- Dilutions to be performed per site/hospital policy (unless otherwise listed)
- Volumes to be given per site/hospital policy (unless otherwise listed)
- TRA-MINW document is available for reference if necessary (see website)

Brief Summary

- Chest only
  - ✓ Chest W, Chest WO
  - ✓ CTPE
  - ✓ HRCT

253-761-4200
PO Box 1535
Tacoma WA 98401
tranow.com

- ✓ Low Dose Screening/Nodule
  - None

- Pelvis only
  - ✓ Pelvis W, Pelvis WO
    - Water, full instructions as indicated

- Routine, excluding chest only and pelvis only
  - ✓ Abd W, Abd WO
  - ✓ Abd/Pel W, Abd/Pel WO
  - ✓ Chest/Abd W, Chest/Abd WO
  - ✓ Chest/Abd/Pel W, Chest/Abd/Pel WO
  - ✓ Neck/Chest/Abd/Pel W, Neck/Chest Abd Pel WO
  - ✓ CTPE + Abd/Pel W
    - TRA-MINW offices: Dilute Isovue-370
    - Hospital sites:
      - ED: Water, if possible
      - Inpatient: prefer Dilute Isovue 370
        - Gastrografin OK if Isovue unavailable
        - Avoid Barium (Readi-Cat)
      - FHS/MHS Outpatient: Gastrografin and/or Barium (Readi-Cat)

- Multiphase abdomen/pelvis
  - ✓ Liver, pancreas
    - Water, full instructions as indicated
  - ✓ Renal, adrenal
    - None

- CTA abdomen/pelvis
  - ✓ Mesenteric ischemia, acute GI bleed, endograft
    - Water, full instructions as indicated

- Enterography
  - Breeza, full instructions as indicated

- Esophogram
  - Dilute Isovue 370, full instructions as indicated

TRA MEDICAL IMAGING
253-761-4200
PO Box 1535
Tacoma WA 98401
tranow.com

- Cystogram, Urogram
  - None

- Venogram
  - Water, full instructions as indicated