

**SUNY DOWNSTATE MEDICAL CENTER
UNIVERSITY HOSPITAL OF
BROOKLYN POLICY AND
PROCEDURE**

No: CT-13

Subject: Contrast Usage in CT/MRI

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Approved by:

**Pharmacy & therapeutics Committee
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SECTION 1:

Purpose: To ensure the safe use of IV contrast media/agents in Computed Tomography and MRI.

I. **Definition (s):** CT-Omnipaque (Iodine based) & MRI – Omniscan (Gadolinium Based)

II. **Policy:**

All agents will be administered following the procedures in sections IV & V. Guidelines are based on ACR manual on contrast media. (<http://www.acr.org/quality-safety/resources/contrast-manual>)

The procedure, its benefits, risks and alternatives will be described and safety screening performed by technologist and documented on the checklist which will be scanned into Radiology's RIS.

III. **Responsibilities:**

Include all departments/services involved in development/implementation and/or monitoring of patients receiving contrast material. CT/MRI Technologist, Attending and/or Resident Radiologist, Attending and/or Resident Referring Physician.

IV. **Procedures/Guidelines:**

1. A General Consent is sufficient for IV contrast in CT & MRI in accordance with UHB policy (<http://downstate.edu/pdf/policies/CONS-01.pdf>). All consents will be verified by the CT/MRI Technologist and scanned into Radiology's RIS.

- a. Inpatients will have a general consent signed at the time of admission.
- b. ED patients will have a general consent signed as part of the ED intake process.
- c. Outpatients will have a general consent signed as part of the registration process.

V. **Safety Screening:**

All patients will be screened for the risks of contrast administration including nausea/vomiting, extravasation, unknown effects on fetus/nursing infants, abnormal renal function, allergies, oral antidiabetic medicines, repeated administrations of contrast, multiple myeloma, sickle cell.

1. The use of contrast agents will be determined by request of the Referring Physician and review by the protocoling Radiologist.
2. **Patient should be NPO** – for 4 hours prior to exam to decrease the risk of aspiration from potential vomiting. However, final decision based on clinical information will be determined by consultation between the ordering physician and the Radiologist
3. **IV access** - must be adequate to minimize risk of extravasation. CTAs requires a 20 gauge or larger positioned above the level of the wrist. Ports must be marked for CT injection and show the allowable rate. PICC performed by Radiology Interventional can be used for injection.
4. **Nursing Infants** – Breast feeding patients will be asked to suspend for 2 days following contrast administration.
5. **Fetus/Pregnant** – patients will not be administered Gadolinium.
6. **Renal Function** – Stable patients must have a serum Cr within 4 weeks. Medically unstable or patients with recent kidney problems must have serum Cr performed within 24hrs. Technologist will calculate the GFR using the web site for all patients. GFR must be > or = 30. (<https://www.kidney.org/professional/KDOQI/gfrcalculator>). If GFR < 30 and not on dialysis must obtain Nephrology consult.
7. **End Stage Renal Disease on chronic dialysis** – must undergo dialysis within 4hrs of receiving contrast. The radiology resident will confer with the ordering physician and /or Renal Physician to confirm Hemodialysis will be scheduled following the procedure. The Technologist will then confirm with the patient’s nurse that a session has been scheduled. This information will be entered into RIS. These patients will not be administered Gadolinium. These patients will not be administered Gadolinium.
8. **Emergency Room Pediatric Patients (<18)** – NOT required to have serum Cr screening unless there is a history of renal disease, kidney transplant, single kidney, renal cancer, prior renal surgery, hypertension requiring medical therapy, diabetes, or on metformin or other antidiabetic drugs.
9. **Allergies** – Patients stating they have allergies so severe that they have difficulty breathing or asthma on continuous medication must be pre-medicated as ordered by the Radiologist and/or the Referring physician.
NOTE: mild allergies, including seasonal, shellfish and medication are not usually considered significant.
10. **Pre-medication:**
Routine: Prednisone 50mg PO 13hrs. 7hrs, 1hr prior to the exam **and** Diphenhydramine (Benadryl) 50mg PO 1hr prior to exam
Emergent: Methylprednisolone 40mg intravenously every 4hrs until time of exam plus Diphenhydramine 50mg IV intravenously 1 hr. prior to exam.
History of delayed contrast reaction – discharge with prescription for a solumedrol pack.

- 11. **Oral Anti-Diabetes Medications** - Patients taking Metformin (Glucophage) or metformin containing oral antidiabetic medications should not take the morning of the exam and for 48 hours after the exam. Patients must contact their primary care physician before stopping and resuming.
- 12. **Repeated administration of contrast** - Patients requiring multiple contrast enhanced exams must have a GFR calculated before additional contrast given.

13. **Exceptions/Escalation/Appeal:**

When there is concern about whether contrast should be administered, either an alternative study or study without contrast should be considered. The safest solution is to do an alternative study or do the exam without contrast and re-evaluate. If this is not acceptable then conduct a risk/benefit analysis including the Attending Referring Physician, Attending Radiologist, and if appropriate Nephrologist. The results of which must be documented in the patient’s medical record.

VI. **Attachments:**

CT/Safety Screening form

VII. **References:**

1- Journal of the American College of Radiology vol. 12, issue, February 2015, Pg 183 – 191.
RSNA Radiology April 2007 Vol. 243

2- ACR Committee on Drugs and Contrast Media/Manual on Contrast Media, Retrieved from <http://www.acr.org/>

VIII. **Reasons for Revision:**

Institutional/operational changes.

DATE Issued	Date revised	Date reviewed	Responsible
2/5/2003			Frank Somma
	3/10/2017	3/10/17	Vincent Monte, Associate Director , Radiology
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