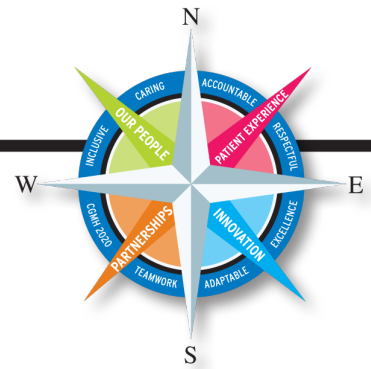


# Standard Operating Procedure (SOP)

## CT Contrast Administration & Risk Assessment for Contrast Induced Nephropathy

<b>Process:</b> CT Contrast Risk Assessment for Contrast Induced Nephropathy (CIN)	<b>Version #:</b> 1	<b>Page(s):</b> 1
<b>Authorized Signature:</b>	<b>Issuing Date:</b> May 1, 2021 <b>Revision Date:</b>	
<b>Process Owner:</b> Diagnostic Imaging	<b>Employees:</b> Medical Radiation Technologists (CT)	
<b>Principles of the Process:</b> A patient's risk for Contrast Induced Nephropathy (CIN) will be assessed by the following standard operating procedure prior to the Medical Radiation Technologist (MRT) administering intravenous contrast media for CT imaging.		
<b>Equipment:</b> CT Requisition or physician order, Meditech, CT Patient Handouts		
<b>Process Instructions</b>  <p>All CT referrals are protocolled by the radiologist based on clinical information provided by the referring physician. For those patients identified as requiring intravenous contrast media for their CT imaging the following will be assessed prior to the MRT administering intravenous contrast:</p> <ol style="list-style-type: none"> <li>1. Risk factors of CIN to be identified on referral <ul style="list-style-type: none"> <li>○ Age over 70</li> <li>○ Renal impairment/ Solitary kidney / Kidney Cancer</li> <li>○ Dialysis patient (Permanent anuria should be considered)</li> <li>○ Nephrotoxic Drugs (LOOP Diuretics)</li> <li>○ Vascular Disease (requires medical therapy)</li> <li>○ Diabetes (Metformin)</li> </ul> <p>If NO risk factors are identified an eGFR is not indicated and the CT scan can be performed with intravenous contrast as ordered.</p> <p>If any of the above risk factors are identified, a current eGFR is required within 6 months of CT imaging.</p> </li> <li>2. The eGFR results will be reviewed against the Risk Assessment for Contrast Induced Nephropathy Table below to determine level of risk for CIN and preventative measures to be adopted for patient care.</li> </ol>		



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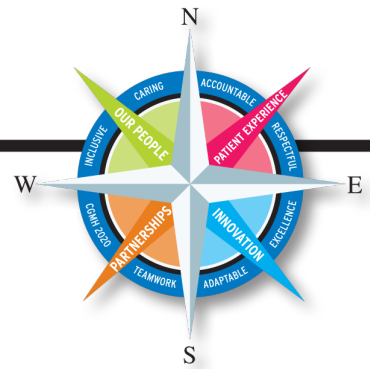
## CT Contrast Administration & Risk Assessment for Contrast Induced Nephropathy

**Risk Assessment for CIN and Prevention Table**

eGFR	Risk	Prevention
$\geq 60 \text{ mL/min/1.73m}^2$	Very low	No specific prophylaxis or follow up
$46 - 59 \text{ mL/min/1.73m}^2$	Low	Patients must be encouraged to orally hydrate before and after their CT scan.
$31 - 45 \text{ mL/min/1.73m}^2$	Moderate	IV hydration is required in all moderate risk patients receiving IV contrast.
$\leq 30 \text{ mL/min/1.73m}^2$	High	<p>The radiologist will first consider if IV contrast can be avoided and substituted by unenhanced CT and/or other modality.</p> <p>IV hydration is required in all high risk patients receiving IV contrast. <u>Exception:</u> There is no risk of CIN in permanently anuric dialysis patients. Coordination of contrast administration with the timing of hemodialysis is unnecessary.</p>

- Please refer to the CT Contrast Hydration Protocol and Order Set should the patient's eGFR fall below  $45 \text{ mL/min/1.73m}^2$  for preventative measures to be followed.
- A CT Injection & Consent Check List will be completed immediately prior to CT imaging by the performing MRT.
- Patients identified as being prescribed Metformin will follow the Metformin Protocol
 

Hold Metformin post contrast for 48 hours. Ordering physician to arrange follow-up renal function test. Restart Metformin if repeat renal function test demonstrates stability of renal function.
- Patients identified as having a previous allergy to contrast media will be assessed for severity and preventative measures should be followed per the CT Contrast Premedication Guidelines.
- The scan protocol will be reviewed with the radiologist prior to imaging for patients identified as being pregnant. The patient will be informed of the benefits and risks of radiation during pregnancy to provide an informed consent to the MRT. Breast feeding patients will be provided a patient handout with information and recommendations from Mother Risk.



# Standard Operating Procedure (SOP)

## CT Contrast Administration & Risk Assessment for Contrast Induced Nephropathy

**Reporting Instructions:** MRTs should alert the Radiologist of any concerns prior to imaging and any post imaging adverse events should be communicated and documented.

### Reference:

Canadian Association of Radiologists (CAR) <http://www.car.ca>

CT Contrast Hydration Protocol and Order Set

CT Injection & Consent Checklist

Metformin Protocol

CT Contrast Premedication Guidelines