CONTRAST ALLERGY & PREMEDICATION

PREMEDICATION REGIMENS

- Premedication regimens require the use of **both** a corticosteroid and an antihistamine.
- There is no evidence to support a premedication duration of <4-5 hours (either oral or IV premedication administration).

	Corticosteroid		Antihistamine
Routine 13 Hour Protocol	prednisone 50 mg PO **OR** dexamethasone 6 mg PO/IV (13, 7 & 1 hrs prior)	**AND**	diphenhydramine 50 mg PO/IM/IV (1 hr prior) consider 25 mg if ≥65 years old
Routine 12 Hour Protocol	methylprednisolone 32 mg PO/IV **OR** dexamethasone 6 mg PO/IV (12 & 2 hrs prior)	**AND**	diphenhydramine 50 mg PO/IM/IV (1 hr prior) consider 25 mg if ≥65 years old
Accelerated 4 Hour Protocol	methylprednisolone 32 mg PO/IV **OR** dexamethasone 6 mg PO/IV (4 hrs prior and immediately prior)	**AND**	diphenhydramine 50 mg PO/IM/IV (1 hr prior) consider 25 mg if ≥65 years old
Emergent 1 Hour Protocol	methylprednisolone 32 mg IV **OR** dexamethasone 6 mg IV (1 hr prior and immediately prior)	**AND**	diphenhydramine 50 mg PO/IM/IV (1 hr prior) consider 25 mg if ≥65 years old
Peds Protocol	prednisone 0.5 mg/kg PO **OR** dexamethasone 0.1 mg/kg PO/IV (13, 7 & 1 hrs prior)	**AND**	diphenhydramine 1.25 mg/kg PO/IM/IV (1 hr prior)

Diphenhydramine alternatives:

Cetirizine 10 mg po 1 hour prior

Loratadine 10 mg po 2 hours prior

Fexofenadine 180 mg po 2 hours prior

POLICIES & PREMEDICATION

- Routine **12/13-hour** protocol
  - Oral medication is preferred over IV medication.
  - **Does not require discussion** between the ordering provider and a radiologist.
  - The ordering provider, his/her designee or the code team **are not required to be present** in the immediate vicinity of the scanner room during contrast administration.
  - The patient must be closely monitored for 30 mins after contrast reaction to assess for any breakthrough reaction.
  - The order for contrast should be signed back to the supervising radiologist.
- Accelerated **4-hour** protocol
  - Only to be used in truly **urgent** cases as determined by the ordering provider.
  - **Requires discussion** between the ordering provider and a radiologist to determine if IV/oral contrast is needed.
  - The ordering provider, his/her designee or the code team **are not required to be present** in the immediate vicinity of the scanner room during contrast administration.
  - The patient must be closely monitored for 30 mins after contrast reaction to assess for any breakthrough reaction.
  - The order for contrast must be **signed back to the ordering provider**.
- Emergent **1-hour** protocol
  - Only to be used in truly **emergent** cases where there is an immediate threat to life or long-term disability as determined by an ordering provider.
  - **Requires discussion** between the ordering provider and a radiologist to determine if IV/oral contrast is needed and that the ordered exam is the best exam for the clinical indication.
  - The ordering provider (or his/her designee) who is trained in allergic reaction and airway management or the code team **must be present** in the immediate vicinity of the scan room during and following contrast administration.
  - The patient must be closely monitored for 30 mins after contrast reaction to assess for any breakthrough reaction.
  - The order for contrast must be **signed back to the ordering provider**.
- Prior **severe reaction** protocol
  - Applies to any patient with a prior history of severe allergic-like reaction to a similar contrast agent regardless of the length of premedication.
  - Severe reactions include anaphylaxis, wheezing, bronchospasm, stridor, laryngeal edema, facial edema with dyspnea and diffuse erythema/edema with hypotension.
  - **Requires discussion** between the ordering provider and a radiologist to determine if IV/oral contrast is needed and that there is not another exam that can answer the clinical indication.
  - If iodinated contrast is used, strong consideration should be given to using normal-dose Visipaque-320 rather than Omnipaque.

- The ordering provider (or his/her designee) who is trained in allergic reaction and airway management or the code team **must be present** in the immediate vicinity of the scanner room during and following contrast administration.
- The patient must be closely monitored for 30 mins after contrast reaction to assess for any breakthrough reaction.
- The order for contrast must be **signed back to the ordering provider**.

GENERAL COMMENTS

- Premedication is not indicated or required in the following circumstances:
  - A prior allergic-like reaction to IV iodinated contrast is not a contraindication to oral iodinated contrast administration.
  - Iodinated contrast administration (via any route) is not contraindicated in a patient with a history of shellfish or topical iodine allergy.
  - A patient with a history of allergic-like reaction to iodinated CT contrast when the patient is to receive gadolinium MR contrast (or vice versa).
- Risks of premedication include transient leukocytosis, transient (24-48 hr) and usually asymptomatic increase in blood glucose, questionable increase risk of infection, drowsiness (with antihistamines), allergy risk to the premedication drugs themselves and most significantly a delay in diagnosis / increased length of stay.
- Using a different contrast agent within the same class (Omnipaque versus Visipaque) may reduce the incidence of a subsequent reaction in a patient with a prior reaction to the other contrast agent (assuming the patient still receives premedication).
- Barium, CitraSelect or Volumen can be used in non-premedicated patients who have had a prior reaction to iodinated oral contrast.

ALLERGIC-LIKE CONTRAST REACTIONS

- Allergic-like contrast reactions include urticaria, pruritus, cutaneous edema and erythema, itchy/scratchy throat, throat tightness, hoarseness, nasal congestion, sneezing, conjunctivitis, rhinorrhea, facial edema, dyspnea, wheezing/stridor, bronchospasm (without or without hypoxia) and anaphylactic shock (hypotension & tachycardia).
- Iodinated contrast risk – 0.6% (overall allergic-like), 0.04% (severe allergic-like) and 0.00059% (death).
- Gadolinium contrast risk – 0.01-0.22% (overall allergic-like), 0.008% (severe allergic-like) and 0.07-2.4% (any allergic-like or physiologic).
- The following circumstances generally increase the risk of an allergic-like reaction to contrast:
  - Patients with a prior reaction to contrast have a 5-fold increased risk of a subsequent reaction when re exposed to contrast from the same class via the same route.
  - Patients with allergies to other substances (particularly multiple allergies) have a 2 to 3-fold increased risk of having a reaction when exposed to contrast.

- Patients with asthma or anxiety and patients taking beta blockers may have an increased risk of allergic reaction to contrast.
- Women have a higher risk of an allergic reaction than men. Midde-aged adults have a higher risk of an allergic reaction than older adults and children/infants.

- Premedication is recommended in patients with a history of allergic-like reactions to a contrast agent who are to receive the same agent or a similar agent via the same route.
- Premedication does not prevent all allergic-like (break-through) reactions, particularly reactions in patients who have experienced a prior severe allergic-like reaction to a similar contrast agent. Premedicated patients have a 2.1% incidence of break-through reactions. Premedicated patients with a history of break-through reactions have a low risk of subsequent break-through reactions.
- Delayed reactions to contrast can occur anywhere from 30-60 mins up to 1 week following administration but are rare. Delayed reactions are primarily cutaneous (urticaria and/or rash).

PHYSIOLOGIC CONTRAST REACTIONS

- Physiologic reactions to contrast include transient warmth, flushing or chills, vasovagal reaction (hypotension and bradycardia), nausea, vomiting, chills, headache, dizziness, anxiety, altered taste, mild hypertension, hypertensive urgency/emergency, isolated chest pain, arrythmia, decreased myocardial contractility, pulmonary edema, convulsions and seizure.
- Premedication does not reduce the risk of physiologic reactions.