

Intravenous (IV) Contrast Information Sheet

Intravenous (IV) Contrast, or x-ray dye, is an important part of certain CT scans as it increases our ability to make an accurate diagnosis. The contrast is administered into a vein through a plastic tube known as a *cannula*, which is commonly placed in the arm by our trained radiographer or radiologist. The contrast follows the blood flow through the body, and “highlights” certain parts of the body on our images that would normally not be seen. It is NOT radioactive.

Minor side effects are commonly seen as the contrast is being injected, such as a warm feeling throughout the entire body, a metallic taste in the mouth, and a warm feeling in the bladder as if urine is being passed (don't worry, this doesn't actually happen!). These symptoms are harmless and quickly resolve without any specific treatment.

The contrast is filtered naturally through the kidneys and excreted in the urine over 24 hours (there should be no deviation from normal). It is important to keep well hydrated before and after the examination to help ‘flush’ the contrast out of the body.

PREPARATION

Patients having a CT scan that requires IV contrast administration must:

1. Notify staff of any known allergies
2. Notify staff of any of the following conditions:
 - a. Asthma
 - b. Kidney Problems
 - c. Diabetes
 - d. Thyroid Problems
 - e. Myeloma
3. Have the results of a recent (within the last 3 months) **renal function blood test (eGFR)** if they fall under one or more of the following categories:
 - a. Diabetic
 - b. Renal/Kidney problems
 - c. 70 years old and over
4. Keep well hydrated 24 hours before and after the examination
5. Complete an Oral & IV Contrast Consent form on arrival

ALLERGIES

The IV contrast we use contains **iodine**, which some people can be allergic to. Although we use a non-ionic contrast media (which minimises the likelihood of side effects and adverse reaction), it is important for us to obtain a brief medical history to further reduce a patient's chances of having a reaction. This will be done before the scan. Allergy to seafood is related to a protein rather than iodine content and does not indicate a potential allergy to contrast.

Allergic reactions are usually mild and may be seen in up to 3% of patients, such as nausea, vomiting, localised urticaria (hives) and pruritus (itching).



There is a very small risk (0.04% to 0.004%, or 1 in 2,500 to 1 in 25,000) of a serious, life threatening allergic reaction (anaphylactoid). Because of this, we ensure that there is a trained radiologist on site to deal with such situations. Our radiographers are also trained in CPR and first aid, and we keep all the necessary emergency equipment on site. The risk of death is extremely rare (0.0005%, or 1 in 170,000).

CONTRAST INDUCED NEPHROPATHY (CIN)

CIN is defined as the impairment of kidney function occurring within 3 days following IV contrast administration. This is very rare, and is more prevalent in “at-risk” patients (diabetics, history of kidney problems, and/or over the age of 70). To reduce the risk of CIN, we ask “at-risk” patients to have a renal function blood test before the examination. We use the following criteria to determine if a patient should be given IV contrast:

- **Normal Kidney Function (eGFR > 60mL/min)** – safe to give IV contrast
- **Moderate Kidney Failure (eGFR 30-60mL/min)** – alternatives to IV contrast should be considered. If it is decided that the benefits of giving IV contrast outweigh the risks that coincide with CIN, we may decide to go ahead with the examination, with the patient’s and their doctor’s consent. Another renal function blood test is required 48 hours after having the examination, to monitor any changes.
- **Severe Kidney Failure (eGFR < 30mL/min)** – IV contrast cannot be given

MEDICATIONS

Diabetic medications that contain **Metformin** (e.g. Diabex, Diaformin, Novomet, Glucohexal, Glucomet, Glucophage, Avandamet) can be affected by IV contrast if the patient has moderate to severe kidney failure (eGFR < 60mL/min). Because of this, we ask patients with impaired renal function to cease their Metformin medication on the morning of the examination. It cannot be recommenced until another renal function test has been obtained 48 hours after the examination, and the results have been reviewed and approved by the patient’s doctor.

PREGNANCY AND BREASTFEEDING

There is no substantial evidence that IV contrast has any foetal growth or developmental effects. However, there is also very limited evidence to conclude that it is entirely safe. Because of this, we aim to avoid administering IV contrast in women who are pregnant. If it must be given then it is advised that the baby have thyroid function tests once born as it can affect the thyroid, but this can be treated.

Breastfeeding has been deemed safe following administration of IV contrast.

RISKS VS BENEFITS

For the majority of cases, the benefits (such as an accurate diagnosis), greatly outweigh the small risks associated with IV Contrast. We will not give a patient IV contrast without their consent; however some CT scans cannot be performed without it, so this may result in the patient not being scanned.

Our staff will be more than happy to answer any questions you have on the day of your scan.

Reference – RANZCR Guidelines for Iodinated Contrast Administration, 2009

