

Patient Information Leaflet

Contrast Agents in Diagnostic Imaging

Contrast agents or contrast media, are used to improve pictures of the inside of the body produced by x-rays, computed tomography, and magnetic resonance imaging. Contrast materials allow the radiologist to differentiate between anatomical structures.

Contrast materials enter the body in one of three ways. They can be:

- swallowed (taken by mouth or orally)
- administered by enema (given rectally)
- injected into a blood vessel (vein or artery; also called given intravenously or intra-arterially)

Following an imaging exam with contrast material, the material is absorbed by the body or eliminated through urine or bowel movements.

Types of contrast material include:

- Iodine-based compounds are used in x-ray and computed tomography imaging exams.
- Gadolinium is the key component of the contrast material most often used in magnetic resonance exams.

How safe are contrast materials?

Contrast materials are generally safe drugs. Adverse reactions ranging from mild to severe do occur but severe reactions are very uncommon. While serious allergic or other reactions to contrast materials are rare, radiology departments are well-equipped to deal with them.

How should I prepare for my imaging procedure with contrast material?

Because contrast materials carry a slight risk of causing an allergic reaction or adverse reaction, you should tell us about:

- previous reaction to contrast media
- allergies to food, drugs, dyes, preservatives, or animals
- medications you are taking, including herbal supplements
- recent illnesses, surgeries, or other medical conditions
- history of asthma and hay fever

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- history of heart disease, diabetes, kidney disease, thyroid problems or sickle cell anemia

Side effects and adverse and allergic reactions

Iodine-based contrast materials

Mild reactions include:

- nausea and vomiting
- headache
- itching
- flushing
- mild skin rash or hives

Moderate reactions include:

- severe skin rash or hives
- wheezing
- abnormal heart rhythms
- high or low blood pressure
- shortness of breath or difficulty breathing

Severe reactions include:

- difficulty breathing
- swelling of the throat or other parts of the body
- anaphylaxis
- cardiac arrest
- convulsions
- profound low blood pressure

A very small percentage of patients may develop a delayed reaction with a rash which can occur hours to days after an imaging exam with an iodine-based contrast material. Most are mild, but severe rashes may require medication after discussion with your physician.

Contrast-induced nephropathy

Patients with impaired kidney (renal) function should be given special consideration before receiving iodine-based contrast materials by vein or artery. Such patients are at risk for developing contrast-induced nephropathy, in which the pre-existing kidney damage is worsened.

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Magnetic resonance-gadolinium

The contrast material used in Magnetic Resonance Imaging called gadolinium is less likely to produce an allergic reaction than the iodine-based materials used for x-rays and computed tomography scanning. Very rarely, patients are allergic to gadolinium-based contrast materials and experience hives and itchy eyes. Reactions usually are mild and easily controlled by medication. Severe reactions are rare.

Nephrogenic systemic fibrosis, a thickening of the skin, organs and other tissues, is a rare complication in patients with kidney disease that undergo Magnetic Resonance Imaging with contrast material. Gadolinium-based contrast material may be withheld in some patients with severe kidney disease.

What will I experience before and after receiving contrast material?

Iodine-based contrast agent

When an iodine-based contrast material is injected into your bloodstream, you may have a warm, flushed sensation and a metallic taste in your mouth that lasts for a few minutes.

It is a good idea to increase your fluid intake after an imaging exam involving an iodine-based contrast material to help remove the contrast material from your body.

Gadolinium-based contrast agent

When the gadolinium is injected, it is normal to feel coolness at the site of injection, usually the arm for a minute or two.

Please contact the Diagnostic Imaging Centre if you have any queries regarding administration of contrast media.

Tel: [01-885 8382](tel:01-8858382) or Out Of Hours: [01-885 8888](tel:01-8858888)

Email: radiology@materprivate.ie

Please talk to a staff member if you have any questions regarding contrast agents