

CT Contrast Agent

Depending on the diagnosis, an intravenous injection of an iodine-containing contrast agent may be needed during a CT scan. It helps doctors better assess the structures of the body. Allergic reactions to contrast agents are very rare.

Kidney function and risk groups

Iodinated contrast agents can, in rare cases, cause **acute kidney injury**. To assess this risk, **kidney function is measured** before the examination using plasma creatinine (P-Creatinine) and estimated glomerular filtration rate (eGFR).

Risk groups include:

- Chronic kidney disease (eGFR < 60 ml/min/1.73 m²)
- Diabetes
- Severe heart failure
- High blood pressure
- Proteinuria
- Gout or planned kidney surgery

Preparation for the examination

- For patients in the risk group, eGFR is measured 1 week to 3 months before the examination (depending on their condition).
- If kidney function is stable and eGFR > 30, the risk is low.
- In cases of acute kidney injury, contrast administration should be avoided.

Hydration

- If necessary, fluids may be administered intravenously before and after the examination.
- After the scan, it is recommended to drink more fluids than usual to help the body eliminate the contrast agent.

Metformin and other medications

- If you use metformin, there may be a risk if acute kidney injury occurs.
- eGFR > 30 → treatment can continue
- eGFR < 30 or acute injury → metformin should be temporarily stopped, and eGFR should be re-measured 24–48 hours after the scan

The doctor may also decide whether to pause other medications that affect kidney function (e.g., ACE inhibitors, NSAIDs, diuretics).

Contrast agent and dialysis

Patients on dialysis usually do not need an additional dialysis session after receiving a contrast agent.

Dose reduction

The lowest possible diagnostic dose is used for the examination, and the dose may be reduced when kidney impairment is present.

Extravasation (leakage of contrast agent from the vein)

Extravasation means that the contrast agent **leaks out of the vein into the surrounding tissues**. It is usually mild and temporary but may cause swelling, redness, or some pain around the injection site.

How to recognize it?

- Swelling or a raised area around the injection site
- Redness or warmth of the skin
- Mild pain or discomfort

What to do?

1. Keep the arm or limb still.
2. Elevate the limb above heart level.
3. Apply a cold pack to the injection site (5–10 minutes at a time).
4. In most cases, symptoms resolve on their own within a few days.
5. If swelling or pain does not improve, contact the imaging center staff for advice.

Pregnancy and breastfeeding

- **Pregnancy:** contrast agents are used only when the scan is absolutely necessary.
- **Breastfeeding:** safe, as the contrast agent passes into breast milk in very small amounts and is eliminated within 24 hours. If desired, the mother **may express and store breast milk before the examination** for later use.