Kidney Health & Hydration During Cancer Treatment

Which cancer treatments can injure the kidneys, how eGFR and urine albumin testing track that damage, why cisplatin requires hydration before and after the infusion, and which urinary symptoms need a call the same day.

Your kidneys filter waste out of your blood. Several cancer treatments pass through them. Some can injure the filtering tissue. This page explains which treatments carry that risk. It covers how your team watches for it, why hydration is part of the treatment itself, and which symptoms need a phone call.

Which treatments can affect the kidneys

The National Cancer Institute notes that "some types of chemotherapy and immunotherapy can also affect or damage cells in the bladder and kidneys." Pelvic radiation therapy can change how urine is made and stored. So can certain surgeries.

Cisplatin is the clearest example. Its FDA-approved prescribing information carries a boxed warning. It states that cisplatin injection "can cause severe renal toxicity, including acute renal failure." It adds that "severe renal toxicities are dose-related and cumulative." Dose-related and cumulative means the risk builds across cycles. It does not appear all at once. The consumer drug summary on MedlinePlus puts it more simply: "Cisplatin may cause serious kidney problems. Kidney problems may occur more often in older people."

Immunotherapy can also inflame organs. NCI lists organ inflammation among possible immunotherapy side effects. It advises that you "talk with your doctors and nurses about what signs to look for and what to do if you start to have problems."

How kidney function is monitored

Kidney injury is usually found on blood work before you feel anything. The National Institute of Diabetes and Digestive and Kidney Diseases is direct about this: "Early kidney disease usually doesn't have any symptoms."

Two tests do most of the work. The first is the eGFR (estimated glomerular filtration rate). It is calculated from creatinine, a waste product from the normal breakdown of muscle in your body. It shows how well your kidneys are filtering your blood. An eGFR of 60 or higher is in the normal

range. Under 60 may indicate kidney disease. And 15 or less indicates kidney failure, where most people need dialysis or a transplant.

The second test is the urine albumin-to-creatinine ratio (uACR). It compares albumin with creatinine in a urine sample. A uACR of 30 mg/g or less is normal. Above 30 mg/g may signal kidney disease.

For cisplatin, the label gives clinicians specific instructions. They should "measure serum creatinine, blood urea nitrogen, creatinine clearance, and serum electrolytes including magnesium prior to initiating therapy, and as clinically indicated."

Why hydration is part of the treatment

Fluids are not an optional comfort measure with cisplatin. The label states that patients "must receive appropriate pre-treatment hydration." It tells clinicians to "maintain adequate hydration and urinary output for 24 hours after cisplatin injection administration." That is why an infusion day can run long. It is also why the drug is given over a 6- to 8-hour period.

NCI has advice on everyday fluid intake during treatment. "Most people need to drink at least 8 cups of fluid each day, so that urine is light yellow or clear." If you have heart or kidney conditions, ask your team what your own target should be. Some people are told to limit fluids instead.

Symptoms to report

MedlinePlus lists these as reasons to call your doctor immediately during cisplatin treatment: decreased urination; swelling of the face, arms, hands, feet, ankles, or lower legs; or unusual tiredness or weakness.

NCI also asks you to report four things. Pain or a burning feeling when you urinate. Blood in your urine. Trouble emptying your bladder completely. And a fever of 100.5°F or higher. CDC uses a slightly lower threshold, 100.4°F (38°C), and says to call your doctor immediately during chemotherapy. Use the lower number unless your team gave you a different one. If you cannot reach your team, or you have trouble breathing, call 911 or go to the ER.

If your kidney numbers worsen, treatment may change. The cisplatin label tells clinicians to "consider alternative treatments or reduce the dose of cisplatin injection for patients with baseline renal impairment or who develop significant reductions in creatinine clearance." A held or reduced dose in that situation is a protective decision, not a setback.

When to get help sooner

- **Call your care team right away, day or night, if** you are passing much less urine than usual, or almost none, in the day or two after an infusion. MedlinePlus names decreased urination as a reason to call your doctor immediately during cisplatin treatment.

- **Call your care team right away, day or night, if** your face, hands, feet, ankles, or lower legs puff up, or if weakness and tiredness arrive suddenly and are out of proportion to your treatment day. The same MedlinePlus list covers both.
- **Call your care team right away if** you cannot keep fluids down because of vomiting or diarrhea. Falling behind on fluids is one of the quickest ways to strain kidneys that are already handling a drug like cisplatin.
- **Call your care team right away, day or night, if** your temperature is at or above the number your team gave you (CDC says 100.4°F, 38°C). Never wait on a fever.
- **Call your care team the same day if** there is blood in your urine.
- **Call your care team right away, day or night, if** urinating starts to burn or hurt, or you suddenly need to go much more often, while you are in treatment. You do not need a fever to call: treatment can lower your defenses, and a urinary infection can move to the kidneys quickly. If your team has already told you that a specific irritation is expected and safe to watch, follow their plan.
- **Call your care team the same day if** your bladder never feels fully empty. If it comes with a fever, chills or back pain, call right away instead.

Questions worth asking

- Does my regimen carry a known risk to the kidneys, and how is it monitored?
- What were my creatinine and eGFR before treatment, and what are they now?
- How much fluid should I drink on treatment days and in the days after?
- Which over-the-counter medicines should I avoid because of my kidneys?

Sources

- **National Cancer Institute**, Urinary and Bladder Problems and Cancer Treatment: https://www.cancer.gov/about-cancer/treatment/side-effects/urination-changes (cancer.gov/about-cancer/treatment/side-effects/urination-changes)
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- **DailyMed (U.S. National Library of Medicine)**, Cisplatin Injection prescribing information: https://dailymed.nlm.nih.gov/dailymed/drugInfo.cfm?setid=b2b029f5-0d7e-4e7f-accc-b722aec34c68 (dailymed.nlm.nih.gov/dailymed/drugInfo.cfm?setid=b2b029f5-0d7e-4e7f-accc-b722aec34c68)
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Source: National Cancer Institute (cancer.gov/about-cancer/treatment/side-effects/urination-changes)

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