



NATIONWIDE CHILDREN'S
When your child needs a hospital, everything matters.

Helping Hand™

Health Education for Patients and Families

Continuous Renal Replacement Therapy (CRRT)

Continuous renal replacement therapy, or CRRT, is a non-stop, 24-hour dialysis therapy. It is used to help patients with acute kidney injury (AKI) and fluid overload. Your child may need CRRT if they look swollen or puffy or if their blood test shows they have high levels of waste products.

How CRRT Works

CRRT does some of the work normally done by healthy kidneys. It gently filters and cleans your child's blood by removing waste products and extra fluid. This keeps chemicals and electrolytes, like potassium and phosphorus, in your child's blood balanced. CRRT does not actually improve your child's kidney function, but instead it keeps everything in line in your child's body until the kidneys recover function.

- A central venous catheter (CVC) is placed in one of your child's large veins. This is usually in the neck or groin.
- The CVC is connected to a machine that circulates some of your child's blood in a loop outside the body. After the blood has been filtered and cleaned, it is sent back into the body. Nationwide Children's Hospital uses 2 types of machines for CRRT: PrisMax™ and Aquadex®.

Before CRRT

Placement of the dialysis catheter (CVC) is a sterile procedure. It is done by an intensive care unit (ICU) doctor or a radiology doctor skilled in catheter placement. The doctor placing the catheter will decide if the parents may stay during the procedure.

During CRRT

Your child will be connected to the CRRT machine the whole time. The machine is run by specially trained nurses in the ICU.

- The machine works best if your child doesn't move a lot. They may be given medicines, called sedatives, to keep them still so the CRRT goes smoothly.
- There are situations when your child will be taken off (disconnected) from the CRRT machine. These include:
 - If they need to have a test or a procedure. The machine will be restarted afterward.
 - Routine change of the tubing and filter to keep the system operating well. This only requires a short time off the machine.
 - Sometimes small blood clots get in the filter and tubing and stop the machine from working well. A nurse will change the tubing and filter if this happens.
- The machine's alarm may go off during CRRT. Most of the alarms are not because of an emergency. They are usually meant to alert the nurse(s) to change solution bags. The machine may also alarm to let the nurse know to change your child's position or check the catheter to help the treatment run smoothly.

After CRRT

As your child gets better, the team may try some time off of CRRT. This is to see how well your child's kidneys work. If kidney support is still needed, CRRT may need to be restarted, or they may be changed to a less frequent type of dialysis called hemodialysis. This is done for shorter periods of time (3 to 5 days per week).

If you have questions about your child's kidney function or the CRRT treatment, please talk to your child's kidney doctor (nephrologist).