

Glomerulonephritis

Glomerulonephritis is a disease caused by inflammation in the kidneys. There are many possible causes. The first symptom is usually blood in the urine. Sometimes, glomerulonephritis is a short-term problem with no permanent kidney damage. At other times, it is an early sign of chronic (long-lasting) kidney disease. If your child has glomerulonephritis, we will probably recommend a visit to a specialist (a pediatric nephrologist) for further tests and treatment.

What is glomerulonephritis?

Glomerulonephritis is a condition caused by inflammation of the glomeruli, tiny structures that do the filtering work of the kidneys. It has many possible causes, ranging from an immune reaction, infections elsewhere in the body, autoimmune diseases (in which the immune system attacks the body's own tissues), and genetic disorders.

Tests may be needed to determine the cause of your child's glomerulonephritis. Your doctor will probably recommend visits to a kidney specialist (pediatric nephrologist) for further testing and treatment. In many children, glomerulonephritis clears up without treatment. Others are at risk of kidney complications later in life, and some may develop progressive kidney disease.

What does it look like?

Your child may have some or all of the following symptoms:

- Blood in the urine. This is the main symptom of glomerulonephritis, no matter what the cause. The medical term for blood in the urine is *hematuria*.
 - The urine usually appears brown, like cola, and sometimes is rust-colored. (Bright red blood in urine is rare.)
 - Sometimes the urine looks normal, but blood or red blood cells are found on testing or seen under the microscope.
 - Blood may be present for a few days or several weeks.
- Protein in the urine may be detected on a urine test (urinalysis).
- There may be a decreased amount of urine, even if your child is drinking enough liquids. (Kidney function may be reduced.)
- High blood pressure; this may cause headache or seizures if very elevated.
- Pain in the abdomen or side, usually not severe.

- Swelling (edema) of tissues beneath the skin, most often in the feet and lower legs.
- Glomerulonephritis sometimes occurs as a complication of other chronic diseases, such as lupus erythematosus or sickle cell disease.

What causes glomerulonephritis?

Many different diseases may lead to glomerulonephritis. A number of these involve some type of immune reaction:

- Immune reaction to infections—often with group A streptococci (the bacteria that cause strep throat)—is one of the most common causes.
- Other immune system abnormalities.
- Certain genetic diseases.
- Rheumatic diseases and vasculitis (blood vessel inflammation) can lead to an immune reaction, causing inflammation in various organs, including the kidneys.

What are some possible complications of glomerulonephritis?

- Glomerulonephritis may be a temporary problem that goes away with or without treatment. (For example, nearly all children with glomerulonephritis after strep throat recover within a few weeks.)
- For glomerulonephritis from some other causes, most children recover completely but may be at increased risk of kidney disease as adults.
- Glomerulonephritis sometimes leads to progressive kidney disease (continuing damage to kidneys).

Can glomerulonephritis be prevented?

Regardless of the cause of glomerulonephritis, evaluation and appropriate treatment are needed to reduce the risk of kidney damage.

How is glomerulonephritis treated?

Treatment depends on the cause. A kidney specialist (pediatric nephrologist) can perform tests to find out what is causing your child's glomerulonephritis and recommend appropriate treatments.

If symptoms are severe, your child may need hospital treatment: for example, if kidney function is very reduced, if not enough urine is being produced, or if blood pressure is greatly increased.

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Treatments may include:

- Giving the right amount and type of fluids until kidney function improves.
- Medications to reduce high blood pressure, if present.
- Steroids or other drugs for some types of glomerulonephritis.

Call our office or go the emergency room if your child develops:

- Blood in the urine.
- Decreased urination.
- Headaches.
- Edema.

When should I call your office?

Your doctor (or the kidney specialist) will give you a list of specific things to watch out for, depending on the cause of your child's glomerulonephritis.