TYPES OF GN

Glomerulonephritis

There are many different types of GN. Some are more common in adults, and some are more common in children. You will work with your healthcare provider to know the type of GN you or your child has and to make a treatment plan.

The following information tells you more about:

- **Different types of GN**
- **The symptoms and treatments for each type**
- **What you or your child might expect**

Nephrotic syndrome in children
Minimal change disease
Focal and segmental glomerulosclerosis
Membranous glomerulonephritis
ANCA-associated vasculitis
Anti-GBM disease
IgA nephropathy
Henoch-Schönlein purpura in children
Lupus nephritis
Membranoproliferative glomerulonephritis

Nephrotic syndrome in children

Nephrotic syndrome is a group of symptoms that can happen when kidney filters leak lots of protein into urine.

Most children with nephrotic syndrome have a type called minimal change disease (MCD).

Most of these cases are related to problems with the immune system damaging the kidneys.

Although the only way to know for sure if your child has MCD is by doing a kidney biopsy, most children don't need a biopsy unless treatment isn't working or they relapse (the disease comes back) too many times.

Ask your doctor about local research studies.

For more information on glomerulonephritis: myhealth.alberta.ca/GN

Treatment

How is it treated?

- **Prednisone:** This is the main medicine for children with nephrotic syndrome
- **Other medicines that weaken the immune system:** Your child may need these if prednisone isn't working or is causing problems. Examples are cyclosporine, tacrolimus, cyclophosphamide, mycophenolate, or rituximab
- **ACE (angiotensin-converting enzyme) inhibitor or ARB (angiotensin receptor blocker):** These medicines block hormones to control blood pressure and lower urine protein. Examples are enalapril, ramipril, and losartan
- **Healthy diet:** Feed your child with fruits, vegetables, whole grains, protein and less salty foods. They may also be told to drink less fluid
- **Regularly activity:** Your child can still go to school and do activities they enjoy

What can I expect?

Most children will start feeling better in about 2 to 4 weeks after they start taking prednisone. It's common to relapse at least once and need prednisone again. Your child may need other medicines that weaken their immune system if prednisone isn't working or is causing problems. Your child may need to take these other medicines for many years to manage nephrotic syndrome.

Nephrotic syndrome goes away for most children, usually by their late teens or early adulthood. A few children will relapse when they're adults.

It's rare for them to have more serious kidney problems such as kidney failure (when the kidneys stop working). This occurs more often in children who do not respond to prednisone.

How to keep your child healthy

If your child has nephrotic syndrome, it's a good idea to keep them away from people who are sick (cold, flu, fever, cough, runny nose). You, your child, and everyone in your household should wash their hands often.

Some live vaccines (such as measles, mumps, rubella [MMR] vaccine or chickenpox vaccine) aren't safe while your child is taking medicine to weaken their immune system or prednisone. It's still important for your child to have their regular vaccines, but you may need to wait until after they're done taking their medicine. **Talk to your child's healthcare provider before they get any vaccines.**

MCD accounts for about 80% of cases of nephrotic syndrome in children and 10% of cases of nephrotic syndrome in adults.

Minimal change disease

Minimal change disease (MCD) is a rare kidney disease where the tiny filters that clean your blood (glomeruli) become damaged and leak protein into your urine. The disease gets its name because you can't see the damage on a kidney biopsy under a regular microscope (meaning there is 'minimal change'). You can only see the damage under a very powerful microscope.

What causes it?

- **Primary:** It happens on its own without a known reason. In this case, it's often related to problems in the immune system
- **Secondary:** It's likely related to one of your medicines or another health condition, such as cancer, infection, or allergies

What are the symptoms?

- A lot of protein in the urine (proteinuria). This can make the urine look frothy
- Low levels of blood protein (hypoalbuminemia)
- Swelling (edema). This happens when your body holds on to extra salt and water. You may notice swelling in the face, eyes, belly, hands, and feet, and it can cause weight gain
- High cholesterol

Children and adults may have other symptoms. Talk to your healthcare provider about how you or your child is feeling to help you find out if other symptoms are related to GN.

Treatment

How is it treated?

The first step in managing MCD is to find out if there is a medicine or other health condition causing the MCD. If there is, the treatment would be to stop taking the medicine that's causing the problem or treat the other health condition.

For primary MCD, the first treatment is usually prednisone, a corticosteroid medicine.

There are other treatments if prednisone isn't working or you or your child have relapses (the MCD comes back). These medicines work on the immune system. Examples include cyclophosphamide, cyclosporine, tacrolimus, and rituximab. Talk to your healthcare provider about which medicine is right for you.

Your healthcare provider may also recommend:

- Diuretics (water pills) and a low-salt diet to help manage swelling
- ACE (angiotensin-converting enzyme) inhibitor or ARB (angiotensin receptor blocker) medicines to manage blood pressure and lower urine protein
- Cholesterol-lowering medicine (statins) to manage cholesterol
- Blood thinners to prevent blood clots (these are used rarely)
- Healthy diet, exercise, and not smoking

What can I expect?

For adults, prednisone usually starts working within a month, but it can take up to 4 months to take full effect.

For children, prednisone usually starts working more quickly, and usually takes full effect in about 4 weeks.

It's very common to relapse and need prednisone again, usually within the first few years. About 10% to 25% of adults and children will have many relapses. Your healthcare provider may suggest repeating prednisone treatment or trying other treatments if the prednisone isn't working or is causing problems. Some of the other medicines for MCD may need to be taken for several years.

In most people, MCD does not lead to kidney failure.

Ask your doctor about local research studies.

For more information on glomerulonephritis: myhealth.alberta.ca/GN

FSGS is one of the most common causes of nephrotic syndrome in adults in Canada. It is less common in children.

Focal and segmental glomerulosclerosis

Focal and segmental glomerulosclerosis (FSGS) is a rare kidney disease where the tiny filters that clean the blood (glomeruli) become damaged and leak protein into your urine. The disease gets its name because the damage (scarring or sclerosis) that you see on a kidney biopsy sample is on some but not all glomeruli (focal) and shows up in sections (segmental).

What causes it?

- **Primary:** It happens on its own without a known reason. It's often related to problems in the immune system
- **Secondary:** It's likely related to one of your medicines, a drug exposure, another health condition, such as obesity, or a viral infection, or in some cases may be genetic (you inherited it from your family)

What are the symptoms?

- A lot of protein in the urine (proteinuria). This can make the urine look frothy
- Low levels of blood protein (hypoalbuminemia)
- Swelling (edema). This happens when your body holds on to extra salt and water. You may notice swelling in the face, eyes, belly, hands, and feet, and it can cause weight gain
- High cholesterol

Children and adults may have other symptoms. Talk to your healthcare provider about how you or your child is feeling to help you find out if other symptoms are related to GN.

Treatment

How is it treated?

The first step in managing FSGS is to find out if there is a medicine or other health condition causing the FSGS. If there is, the treatment would be to stop the taking the medicine that's causing the problem or treat the other health condition.

For primary FSGS, the first treatment is usually prednisone, a corticosteroid medicine.

There are other treatments if prednisone isn't working or you have relapses (the FSGS comes back). These medicines work on the immune system. Examples include cyclosporine, tacrolimus, mycophenolate mofetil, cyclophosphamide, and rituximab. Talk to your healthcare provider about which medicine is right for you.

Your healthcare provider may also recommend:

- Diuretics (water pills) and a low-salt diet to help manage swelling.
- ACE (angiotensin-converting enzyme) inhibitor or ARB (angiotensin receptor blocker) medicines to manage blood pressure and lower urine protein
- Cholesterol-lowering medicine (statins) to manage cholesterol
- Blood thinners to prevent blood clots (these are used rarely)
- Healthy diet, exercise, and not smoking

What can I expect?

For most adults with FSGS, treatment starts working in about 2 to 3 months. But it can take up to 4 months to work.

It is very common to relapse and need prednisone again, typically within the first few years. Some people will have many relapses. Your healthcare provider may suggest repeat courses of prednisone or other treatments for this if the prednisone isn't working or is causing problems. Some of the other medicines may need to be taken for several years.

About half of adults with FSGS already have problems with how their kidneys work (impaired kidney function) by the time they're diagnosed. **Even with treatment, FSGS can scar the kidneys for life and cause kidney failure.**

Because FSGS is much less common in children, talk to your healthcare provider about what to expect from your child's treatment.

Ask your doctor about local research studies.

For more information on glomerulonephritis: myhealth.alberta.ca/GN

MGN is one of the most common causes of nephrotic syndrome in adults in Canada. It is rare in children.

Membranous glomerulonephritis

Membranous glomerulonephritis (MGN) is a rare kidney disease. It happens when immune complexes build up in the kidney. Immune complexes are made when antibodies attack something they think is harmful, like an infection or virus. The body usually gets rid of immune complexes, but in MGN, they build up and cause the kidney to leak large amounts of protein into the urine.

What causes it?

- **Primary:** It happens on its own without a known reason. It's often related to problems in the immune system. This is the most common type in adults
- **Secondary:** It's likely related to one of your medicines or other health problems such as infection, autoimmune disease (a disease where your immune system attacks healthy parts of your body), or cancer

What are the symptoms?

- A lot of protein in the urine (proteinuria). This can make the urine look frothy
- Low levels of blood protein (hypoalbuminemia)
- Swelling (edema). This happens when your body holds on to extra salt and water. You may notice swelling in the face, eyes, belly, hands, and feet, and it can cause weight gain
- High cholesterol

Children and adults may have other symptoms. Talk to your healthcare provider about how you or your child is feeling to help you find out if other symptoms are related to GN.

Treatment

How is it treated?

The first step in management is to determine if there is a medicine or other health condition causing the MGN. If found, the treatment would be to stop the offending medicine or treat the underlying health condition.

For primary MGN, the majority of people will need other treatments if the disease does not go away, such as prednisone and cyclophosphamide, cyclosporine, tacrolimus, or rituximab. Talk to your healthcare provider about which medicine is right for you.

Your healthcare provider may also recommend:

- Diuretics (water pills) and a low-salt diet to help manage swelling
- Ace (angiotensin-converting enzyme) inhibitor or ARB (angiotensin receptor blocker) medicines to manage blood pressure and lower urine protein
- Cholesterol-lowering medicine (statins) to manage cholesterol
- Blood thinners to prevent blood clots (often used in severe cases)
- Healthy diet, exercise, and not smoking

What can I expect?

In some people, the disease will go away on its own before they need treatment.

For adults that do need treatment, most will respond and MGN will go away completely. Relapses are rare, but they can happen.

About 1 in 10 adults will develop kidney failure.

Because MGN is much less common in children, talk to your healthcare provider about what to expect from your child's treatment.

Ask your doctor about local research studies.

For more information on glomerulonephritis: myhealth.alberta.ca/GN

ANCA-associated vasculitis is most common in older adults, but can occur in children and adults at any age.

ANCA-associated vasculitis

ANCA-associated vasculitis is a group of rare and serious diseases that cause damage (inflammation) to small blood vessels in the kidneys and other parts of the body. There are 3 types your healthcare provider may tell you about: granulomatosis with polyangiitis (GPA), microscopic polyangiitis (MPA), and eosinophilic granulomatosis with polyangiitis (eGPA).

What causes it?

ANCA-associated vasculitis is an autoimmune disease and is named after the ANCA (antineutrophil cytoplasmic) antibody. Antibodies are proteins that your immune system makes to fight things like viruses and bacteria. In ANCA-associated vasculitis, antibodies attack healthy cells called neutrophils (a type of white blood cell), instead of harmful things. This causes inflammation and swelling of the blood vessels. Inflammation in the blood vessels can cause serious health problems for kidneys and other organs. Why this happens is unknown.

What are the symptoms?

When ANCA-associated vasculitis affects the kidneys, you or your child may have:

- Blood in the urine (hematuria)
- More protein in the urine than normal (proteinuria)
- Higher creatinine in the blood (this shows the kidneys aren't working well)
- High blood pressure (hypertension).
- Swelling (edema). This happens when your body holds on to extra salt and water
- ANCA antibodies in the blood

If ANCA-associated vasculitis affects other organs, you or your child may have sinus problems, nose bleeds, nose or mouth sores, shortness of breath, cough, coughing up blood, joint pains, or rash.

Children and adults may have other symptoms. Talk to your healthcare provider about how you or your child is feeling to help you find out if other symptoms are related to GN.

Treatment

How is it treated?

Initial treatment: These treatments aim to get control of the disease quickly and include:

- Prednisone (a corticosteroid) to control the inflammation
- Another medicine that works on the immune system (such as cyclophosphamide or rituximab)
- Your healthcare provider may also suggest plasma exchange in certain cases. This is a procedure that separates blood into its different parts and removes the antibodies from the blood, but it does not work in all cases

You or your child will be on these treatments for 3-6 months.

Maintenance treatment: These treatments aim to control the disease long term and include:

- Other medicines that work on the immune system (such as rituximab or azathioprine)

Most people need to be on these treatments for at least 2 years, and sometimes they take them for life.

Your healthcare provider may also recommend:

- Diuretics (water pills) and a low-salt diet to help manage swelling
- ACE (angiotensin-converting enzyme) inhibitor or ARB (angiotensin receptor blocker) to manage blood pressure and lower urine protein
- Cholesterol-lowering medicine (statins) to manage cholesterol
- Healthy diet, exercise, and not smoking

If the disease is severe, some people need dialysis. Dialysis is a treatment that filters and cleans the blood using a machine, but it does not treat the disease. With treatment, most people with ANCA-associated vasculitis can stop dialysis. But some people need it long term, or they need a kidney transplant.

What can I expect?

Kidney disease from ANCA-associated vasculitis can get worse quickly. It can lead to kidney failure or even death. **It's very important to diagnose and treat this disease as early as possible.**

Treatment works fairly quickly for most people. Relapses (when the disease comes back) are common with some forms of ANCA-associated vasculitis. The treatments can also cause serious infections or side effects. Your healthcare provider will talk to you about what you can expect from treatment.

Ask your doctor about local research studies.

For more information on glomerulonephritis: myhealth.alberta.ca/GN

This disease happens mostly in young and older adults. It is rare in children.

Anti-GBM disease

Anti-GBM disease (anti-glomerular basement membrane disease) is a serious disease that causes damage (inflammation) to small blood vessels in the kidneys and/or other parts of the body. It usually affects the kidneys but may also affect the lungs. When both the kidneys and lungs are affected, it's sometimes called Goodpasture's disease.

What causes it?

Anti-GBM disease is an autoimmune disease and is named after the anti-GBM antibody. Antibodies are proteins that your immune system makes to fight things like viruses and bacteria. In anti-GBM disease, antibodies attack part of the kidneys and sometimes lungs (the part affected is called the basement membrane) instead of harmful things. Why this happens is unknown.

What are the symptoms?

If anti-GBM disease affects your or your child's kidneys, the symptoms may be:

- Blood in the urine (hematuria)
- More protein in the urine than normal (proteinuria)
- Higher creatinine in the blood (this shows the kidneys aren't working well)
- High blood pressure (hypertension)
- Swelling (edema). This happens when your body holds on to extra salt and water. Anti-GBM antibodies in the blood

If anti-GBM disease affects the lungs, you or your child may have shortness of breath, cough, or coughing up blood.

Children and adults may have other symptoms. Talk to your healthcare provider about how you or your child is feeling to help you find out if other symptoms are related to GN.

Treatment

How is it treated?

Treatments work to get control of the disease quickly. They include a combination of:

- Prednisone (a corticosteroid) to control the inflammation
- Another medicine that works on the immune system (such as cyclophosphamide)
- Plasma exchange, a procedure that separates blood into its different parts and removes the anti-gbm antibodies from the blood. Several plasma exchange treatments are needed over 1 to 2 weeks

You or your child will be on these treatments for 3 to 6 months. Most people don't need any more treatment after that.

Your healthcare provider may also recommend:

- Diuretics (water pills) and a low-salt diet to help manage swelling
- ACE (angiotensin-converting enzyme) inhibitor or ARB (angiotensin receptor blocker) to manage blood pressure and lower urine protein
- Cholesterol-lowering medicine (statins) to manage cholesterol
- Healthy diet, exercise, and not smoking

If the disease is severe, some people need dialysis. Dialysis is a treatment that filters and cleans the blood using a machine, but it does not treat the disease. Most people who need dialysis for anti-GBM disease need it long term, or they need a kidney transplant.

What can I expect?

Kidney disease from anti-GBM disease can get worse quickly. It can lead to kidney failure or even death. **It's very important to diagnose and treat this disease as early as possible.**

Treatment works fairly quickly for most people, and relapses (when the disease comes back) are rare. But the treatments can cause serious infections or side effects. Your healthcare provider will talk to you about what you can expect from treatment.

Ask your doctor about local research studies.

For more information on glomerulonephritis: myhealth.alberta.ca/GN

IgA nephropathy is very common, especially in East Asians and Caucasians. It is typically found in adulthood, but can occur at any age.

IgA nephropathy

IgA nephropathy is a kidney disease that happens when an antibody called immunoglobulin A (IgA) builds up in the kidneys. An antibody is a protein your body makes to fight off harmful things like bacteria and viruses. Adults and children with IgA nephropathy have higher than normal levels of IgA, which has less of a special sugar (galactose) than normal. Other antibodies attach to this IgA and form a clump (also called an immune complex). Some of the clumps get stuck in the kidney and cause damage. This damage can stop the kidneys from working properly to remove waste from the blood.

What are the symptoms?

IgA nephropathy can present in many different ways:

- About **5 out of 10** people will have one or more episode of visible blood in the urine (gross hematuria). These episodes are often provoked by tonsillitis or a viral infection
- About **4 out of 10** people will have blood in the urine that is not visible (microscopic hematuria) and mild protein in the urine (proteinuria). Most people don't even know they have this, but it can lead to chronic kidney disease (where the kidneys aren't working well)
- About **1 out of 10** people will have more serious symptoms, including large amounts of protein in the urine (proteinuria), swelling (edema), rapid decline in kidney function, and high blood pressure (hypertension)

Children and adults may have other symptoms. Talk to your healthcare provider about how you or your child is feeling to help you find out if other symptoms are related to GN.

Treatment

How is it treated?

Your healthcare provider may recommend the following treatments for you or your child:

- Diuretics (water pills) and a low-salt diet to help manage swelling
- ACE (angiotensin-converting enzyme) inhibitor or ARB. (angiotensin receptor blocker) to manage blood pressure and lower urine protein
- Cholesterol-lowering medicine (statins) to manage cholesterol
- Healthy diet, exercise, and not smoking

Many people do not need any treatment. Some people may need more aggressive treatments, such as prednisone (a corticosteroid) or other medicines that work on the immune system. However, these don't work in all people.

What can I expect?

IgA nephropathy doesn't usually go away in adults or children. The effects on kidney function (how well the kidneys work) depend on how bad the disease is and how well medicines can control it.

About 3 out of 10 people will have long-term kidney problems.

Rarely, IgA nephropathy gets worse quickly. If this happens, your healthcare provider may suggest other medicines. If the disease is severe, some people need dialysis. Dialysis is a treatment that filters the blood using a machine, but does not treat the disease.

Ask your doctor about local research studies.

For more information on glomerulonephritis: myhealth.alberta.ca/GN

HSP is much more common in children than adults, but can happen at any age. Most cases happen in children between the ages of 2 and 11 years old.

Henoch-Schönlein purpura in children

Henoch-Schönlein purpura (HSP), also known as IgA vasculitis, is a condition that causes small blood vessels to get swollen and irritated. It can affect the skin, intestines, and the kidneys. When HSP affects the kidneys, it's called HSP nephritis, and it causes blood and protein to leak into the urine. The exact cause of HSP is not known. About 2 out of 3 people who have HSP get it days after they have symptoms of an upper respiratory tract (breathing system) infection.

What are the symptoms?

HSP affects the skin, joints, bowels, and the kidneys. This can cause:

- Rash with raised red or purple spots (purpura)
- Pain or swelling in the joints
- Tummy pain
- Kidney problems

When your child's kidneys are affected your child may have:

- Blood in the urine (hematuria)
- More protein in the urine than normal (proteinuria)
- Higher creatinine in the blood (this shows the kidneys aren't working well)
- High blood pressure (hypertension)
- Swelling (edema). This happens when your body holds on to extra salt and water. You may notice swelling in your child's face, eyes, belly, hands, and feet, and it can cause weight gain

Children may have other symptoms. They may feel tired, irritable, less hungry, or pee less than usual. Talk to your healthcare provider about how your child is feeling to help you find out if other symptoms are related to GN.

Treatment

How is it treated?

Your child may need Tylenol to help manage any joint or tummy pain. Most of the children will not need any other medicines, but a few of them will need the same treatment as for IgA nephropathy if their HSP disease is more severe.

What can I expect?

Most children with HSP feel better in about 1 month. For some children, the symptoms will last longer. Your child's kidneys will usually get better as their symptoms go away.

Sometimes the disease comes back (relapses), usually within 1 year.

If your child's kidneys leak blood and protein for a long time, your child may have residual IgA nephropathy (see the type of GN called IgA nephropathy).

HSP is much more rare in adults and can be more severe. Adults should talk to their healthcare provider about what they can expect if they are diagnosed with HSP.

Ask your doctor about local research studies.

For more information on glomerulonephritis: myhealth.alberta.ca/GN

Most patients with lupus will have kidney involvement at some point in their life. Lupus nephritis typically develops early after lupus diagnosis.

Lupus nephritis

Lupus is a chronic (long-term) autoimmune disease. The body's immune system (the part that helps fight infections) works too hard and attacks normal, healthy tissue, including the kidneys. Lupus can affect people in many ways. Lupus nephritis happens when lupus damages the kidneys. This causes kidney inflammation and prevents the kidneys from doing their job of filtering out waste from the body (impaired kidney function). It may even cause kidney failure.

What are the symptoms?

Lupus can affect the kidneys in many different ways. Your or your child may need a kidney biopsy to know how it's affecting the kidneys.

If your kidneys are affected, medical tests may show:

- Blood in the urine (hematuria)
- More protein in the urine than normal (proteinuria)
- Higher creatinine in the blood (this shows the kidneys aren't working well)
- High blood pressure (hypertension)
- Swelling (edema) this happens when your body holds on to extra salt and water

If other organs are affected, you or your child may have symptoms such as feeling very tired, a rash, mouth ulcers, losing a lot of hair, joint pain, swollen lymph nodes and chest pain.

Children and adults may have other symptoms. Talk to your healthcare provider about how you or your child is feeling to help you find out if other symptoms are related to GN.

Treatment

How is it treated?

- **Initial treatment:** These treatments aim to get control of the disease quickly and include prednisone (a corticosteroid) to control the inflammation along with another medicine that works on the immune system (such as MMF or cyclophosphamide). You or your child will need these treatments for 3-6 months
- **Maintenance treatment:** These treatments aim to control the disease long term and include other medicines that work on the immune system (such as MMF or azathioprine). Most people need to be on these treatments for at least 2 years. Sometimes they need to be on them for life
- **Additional treatments:** Healthcare providers often prescribe the medicine hydroxychloroquine to treat joint and skin disease, and it may also stop lupus nephritis from coming back. People with lupus nephritis must see an eye doctor (ophthalmologist) every 2 years if they get this medicine

Your healthcare provider may also recommend:

- Diuretics (water pills) and a low-salt diet to help manage swelling
- ACE (angiotensin-converting enzyme) inhibitor or ARB (angiotensin receptor blocker), medicines to manage blood pressure and lower urine protein
- Cholesterol-lowering medicine (statins) to manage cholesterol
- Healthy diet, exercise, and not smoking

What can I expect?

Kidney disease from lupus nephritis can get worse quickly. It can lead to kidney failure or even death. **It's very important to diagnose and treat this disease as early as possible.**

Treatment works fairly quickly for most people. But, lupus is a chronic (long-term with no cure) illness that may come back at different times in a person's life.

The treatments for lupus nephritis can cause serious infections and side effects. Your healthcare provider will talk to you about what you can expect from treatment.

Ask your doctor about local research studies.

For more information on glomerulonephritis: myhealth.alberta.ca/GN

Membranoproliferative glomerulonephritis

Membranoproliferative glomerulonephritis (MPGN) is a group of rare autoimmune diseases (when the immune system attacks healthy cells and tissues). It can happen to adults and children. The disease name describes how the kidney tissue looks under a microscope.

What causes it?

- **Immune-complex mediated MPGN** is where both antibodies (immunoglobulins) and a protein called complement get trapped in the kidneys. This type is often caused by some infections, autoimmune disease, or cancers
- **Complement mediated MPGN** is where only the complement protein C3 gets trapped in the kidneys. This type is often genetic (inherited from family). It needs special testing to diagnose

What are the symptoms?

- Blood in the urine (hematuria)
- More protein in the urine than normal (proteinuria)
- Higher creatinine in the blood (this shows the kidneys aren't working well)
- High blood pressure (hypertension)
- Swelling (edema) this happens when your body holds on to extra salt and water

Children and adults may have other symptoms. Talk to your healthcare provider about how you or your child is feeling to help you find out if other symptoms are related to GN.

Treatment

How is it treated?

The first step in management is to determine if there is another health condition causing the MPGN. If found, the treatment would be to treat the underlying health condition.

If there is no cause found, your healthcare provider may suggest other treatments, but these only work in some people. These treatments may include prednisone (a corticosteroid) to control inflammation along with another medicine that works on the immune system (such as MMF, cyclosporine, tacrolimus, cyclophosphamide, or rituximab).

These treatments aim to get the disease under control quickly and maintain control long-term. You or your child may need to be on these treatments for 6-months to 2 years. Some people need to be on them for life.

Your healthcare provider may also recommend:

- Diuretics (water pills) and a low-salt diet to help manage swelling
- ACE (angiotensin-converting enzyme) inhibitor or ARB (angiotensin receptor blocker), medicines to manage blood pressure and lower urine protein
- Cholesterol-lowering medicine (statins) to manage cholesterol

If the disease is severe, some people need dialysis. Dialysis is a treatment that filters and cleans the blood, but it does not treat the disease. Most people who need dialysis for MPGN need dialysis long-term or a kidney transplant.

What can I expect?

What to expect from treatment depends on the type of MPGN you or your child has. Both types can be very serious. Immune complex MPGN often gets better after finding the cause and getting treatment. With complement mediated MPGN, the disease may come back many times and could lead to kidney failure.

MPGN is a chronic condition, which means that it doesn't go away. Most, but not all, adults and children with MPGN will have long-term kidney problems.

Ask your doctor about local research studies.

For more information on glomerulonephritis: myhealth.alberta.ca/GN