

## Membranous Nephropathy

### What is it?

Membranous nephropathy (MN) is part of a family of rare kidney diseases that affect the glomeruli – or the filters – of the kidney. This family of rare kidney diseases is often referred to as glomerular diseases or glomerulopathy. MN specifically affects the membrane of the glomeruli.

- A deposit (often due to an antibody<sup>1</sup>) imbeds itself in the filter of the kidney.
- The deposit triggers an immune response<sup>2</sup>, which results in damage to the membrane of the kidney filter.
- The damage allows blood proteins to leak into the urine.
- There are two types of MN that have different treatment strategies: idiopathic and secondary.
  - Idiopathic MN is caused by an antibody created by your own body.
  - Secondary MN can be caused by infection, medication, cancer, or other disease processes related to the immune system.



Figure source: <https://unckidneycenter.org/kidneyhealthlibrary/glomerular-disease/membranous-nephropathy/>

### What are symptoms of MN?

- Patients with MN may go a long time without symptoms. However, even without symptoms, the disease continues to cause damage.
- Symptoms may include:
  - Swelling in feet, legs, hands and around the eyes
  - Weight gain
  - Foamy urine
  - Fatigue
  - High blood pressure.

### What are complications of MN?

- Elevated cholesterol
- Risk of blood clots
- Risk of declining kidney function, which may lead to kidney failure over time
- Risk of heart attacks and strokes.

<sup>1</sup> Antibodies are protective proteins produced by your immune system. They attach to antigens (foreign substances) — such as bacteria, fungi, viruses and toxins — and remove them from your body. Source: <https://my.clevelandclinic.org/health/body/22971-antibodies>.

<sup>2</sup> Immune response is how your body recognizes and defends itself against bacteria, viruses, and substances that appear foreign and harmful. Source: <https://medlineplus.gov/ency/article/000821.htm>.

## What happens after you have been diagnosed with MN?

- After your kidney biopsy is reported and a diagnosis of MN is made, your kidney doctor (nephrologist) and/or kidney care team will often need further tests to determine which type of MN you have.
- These tests could include urine tests, blood tests and diagnostic scans.

## How is MN treated?

The treatment of MN may include:

- **General measures:** Interventions to improve symptoms and prevent complications. These interventions include:
  - Dietary changes to reduce swelling and blood pressure, including a low salt diet.
  - Medications to reduce the risk of complications, slow the progression of kidney damage, and manage symptoms.
  - You may be prescribed medications that:
    - Reduce the amount of protein in your urine
    - Reduce swelling
    - Lower your blood pressure
    - Reduce the cholesterol (fats) in your blood
    - Prevent clotting.
- **Therapies:** Medications that treat the underlying cause of the disease. If your MN is related to your immune system, you may be prescribed medications that suppress the immune system (immunosuppressive treatment).
- A portion of patients will go into remission spontaneously, without immunosuppressive treatment. Your kidney doctor and/or kidney care team may monitor you for 6-9 months before deciding whether immunosuppression is needed. Immunosuppressive treatment options include:
  - Rituximab
  - Tacrolimus or cyclosporine
  - Cyclophosphamide and prednisone
  - Others.
- Your kidney doctor and/or kidney care team will support you to learn about the medication options that would be best for you.
- For patients registered with BC Renal and living with MN, BC Renal covers the cost of a wide range of medications used for MN treatment.
- It is important that patients check with their kidney doctor and/or kidney care team before taking any over-the-counter (OTC) medications and natural health products.
- Sometimes, people living with MN may be invited to participate in a clinical trial for new therapies and medications. If you choose to volunteer in a trial, your kidney doctor and/or kidney care team will help you navigate the process.

## Living with MN

- BC patients with MN have access to a comprehensive kidney care clinic team that includes nurses, dietitians, and social workers.
- It will be important for you to stay active and healthy. The Kidney Foundation's Kidney Wellness Hub (<https://kidneywellnesshub.ca/>) has a lot of useful information, including diet tips and information about peer support groups. It also provides activity suggestions for patients of all ability levels.

- Your kidney doctor and/or kidney care team will follow you closely with frequent urine and lab tests to monitor your response to treatment and help you manage any symptoms.
- Though most patients treated for MN with immunosuppression improve, the disease course is unpredictable. Relapses are common, even many years after MN is diagnosed. You will need ongoing follow-up with your kidney doctor and/or kidney care team.
- There is a portion of MN patients who will progress to kidney failure, despite treatment. If your kidneys fail, your treatment options may include transplant and dialysis. Your kidney doctor and/or kidney care team will be there to educate and support you throughout your journey.

### Further information

- There may be a lot of confusing information about MN and other kidney diseases on the Internet. The following websites are good sources of information for people living with MN:
  - The Kidney Foundation of Canada - <https://kidney.ca/>
  - Kidney Wellness Hub - <https://kidneywellnesshub.ca/>
  - BC Renal GN page - <http://www.bcrenal.ca/health-info/kidney-care/glomerulonephritis>
  - Medication information sheets on the BC Renal GN page - <http://www.bcrenal.ca/health-info/kidney-care/glomerulonephritis#Resources> (click on Medication information)
  - Membranous Nephropathy - webpage by the University of North Carolina - <https://rb.gy/lyui3d>
  - Membranous Nephropathy (MN) - webpage by NephCure Kidney International - <https://rb.gy/8k80za>
  - Membranous glomerulonephritis (membranous nephropathy) - video by Osmosis - <https://rb.gy/lst1xh>
- If you continue having questions about your condition or treatment, please keep track of these questions and ask your kidney doctor and/or your kidney care team.