



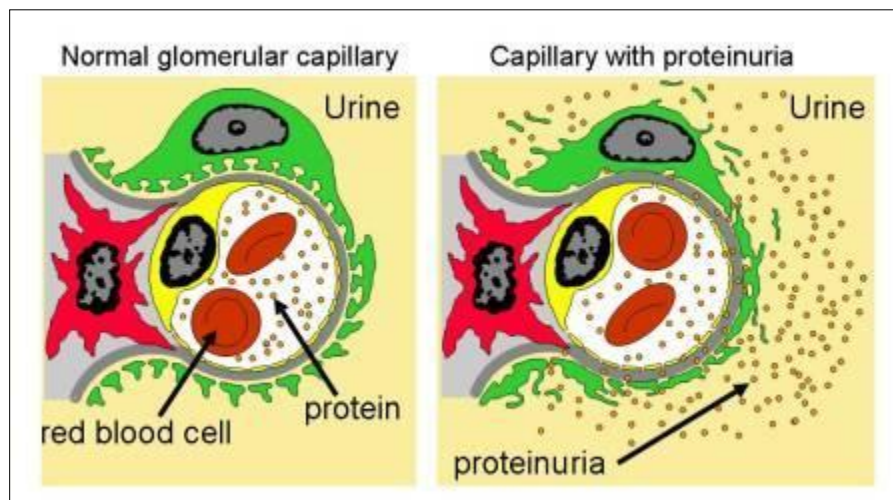
Nephrotic Syndrome

- What is Nephrotic Syndrome?
- What diseases cause Nephrotic Syndrome?
- Summary

What is Nephrotic Syndrome?

NEPHROTIC SYNDROME is a condition resulting from increased leakage of protein into the urine from the filters in the kidneys that produce urine from blood. With the loss of protein in the urine, changes occur in the blood that cause fluid to build up in the tissues of your body. This results in tissue swelling, or edema. The edema may develop in your hands and feet, making shoes or rings feel tight. It can occur in your ankles or in your face causing puffiness around the eyes. In some instances, the fluid builds up on your lungs making it more difficult to breathe. This syndrome is caused by diseases that change the function of the walls of the small vessels in the kidney filters that filter blood to make urine.

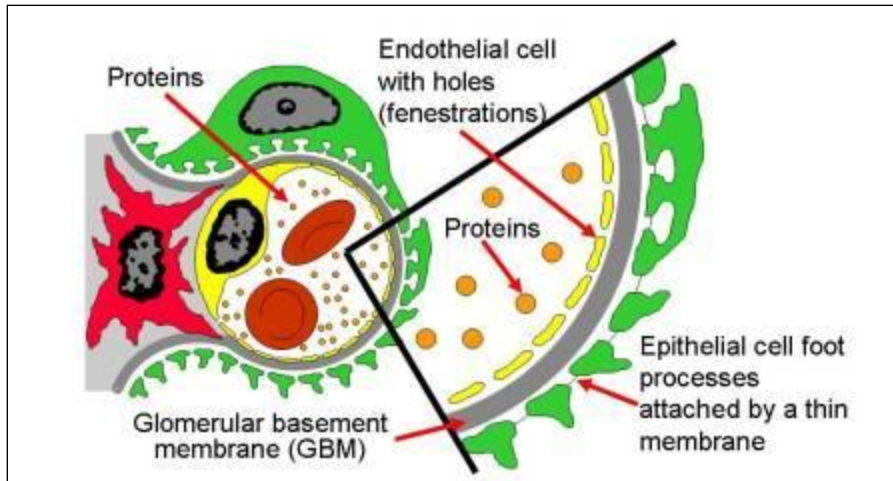
Proteinuria results when there is a weakness in the filter vessel wall that allows protein to leak into the urine.



What keeps proteins out of the urine?

The normal filter vessel wall keeps blood cells and most proteins in the blood. In patients with proteinuria, protein leaks across the wall into the urine.

Drawn below are the barriers that keep protein and blood cells out of the urine. These are the endothelial cell, basement membrane and epithelial cell (podocyte). The epithelial cell (podocyte) seems to be most important. Injury to these barriers causes protein and blood to leak into the urine.



What diseases cause Nephrotic Syndrome?

Many different diseases can harm the vessels in the kidney filter and cause protein to leak into the urine. Some are listed below:

- Minimal change disease (most common cause in children)
- Membranous glomerulopathy (most common cause in White adults)
- Focal segmental glomerulosclerosis (most common cause in African American adults)
- Diabetic glomerulosclerosis
- C1q nephropathy
- Membranoproliferative glomerulonephritis
- Amyloidosis
- Lupus nephritis

Summary

- Nephrotic syndrome is caused by different diseases of the kidney filters. These diseases cause injury to the vessel walls in the filter. This results in severe leakage of proteins into the urine.
- A major symptom of nephrotic syndrome is swelling, especially in the ankles and around the eyes.
- A kidney biopsy usually is required to make a diagnosis of the specific kind of kidney filter disease that is causing the nephrotic syndrome in an individual patient.