Water retention can be treated by reducing the amount of salt and water taken in your diet each day. Some cases also require drugs to make the kidneys produce more urine.

High blood pressure can be treated by reducing salt in your diet, and often with drugs to take each day. A high cholesterol level may be treated with dietary control (eating less fat) and, in some cases, with cholesterol lowering drugs.
What is proteinuria?

Proteinuria is leakage of protein from the blood into the urine. This page explains what protein is, how it gets into the urine and what doctors can do to deal with any problems caused by proteinuria.

What is protein, and how does it get into the urine?

Protein is one of the three main types of chemical that make up our body (the others are fats and sugars). Protein is an important part of diet, and is contained in most types of food. Proteins have many functions, for example antibodies which are formed to protect against infection are proteins as are factors which help to manage clotting in our blood stream. Protein is an important part of the plasma (watery part of the blood), and the body does not want to lose protein. With a healthy kidney, when the body eliminates waste, protein is kept in the blood stream.

This is because protein in the blood is too large to pass through the tiny holes in the kidney filters. However, the filter can be damaged in kidney disease, so that protein can pass into the urine. The filter in the kidney is called a glomerulus, and many of the kidney diseases that cause nephrotic syndrome are called glomerulonephritis.

What are the symptoms of proteinuria?

Normally there are no symptoms, but protein is detected by a routine urine test. The simple test with a dipstick (small plastic strip with an indicator paper attached) can detect very small amounts of protein, so that a positive test may not mean there is a serious problem with the kidneys.

If the amount of protein in the urine is very high, a condition called nephrotic syndrome may develop. Nephrotic syndrome Causes water to build up in the body. The extra water can cause ankle swelling, or swelling in the hand (rings go tight on fingers) or around the eyes. Severe swelling can develop all the way up the legs and around the back. There may be swelling of the tummy or breathlessness due to water around the lungs.

What are the causes of proteinuria?

Protein in the urine can be a marker of almost any type of kidney disease, so tests are always needed if the cause of proteinuria is to be confirmed. These are the most common:

- High blood pressure
- Infection
- Reflux nephropathy
- Diabetes
- Glomerulonephritis
- Minimal change nephritis

How is the cause of proteinuria diagnosed?

Further tests may be necessary after protein has been detected by a simple ‘dipstick’ test on a small urine sample. This dipstick test is very sensitive but cannot measure exactly how much protein is in the urine. To get an exact measurement some urine needs to go to the laboratory. This can be done with a single, small urine specimen in which the laboratory measures the amount of protein in the urine by testing for albumin and the result is an albumin-creatinine ratio (ACR). Albumin is a large part of the protein in the body and anyone with a raised PCR will have a raised ACR, though the level will be slightly lower.

An ACR of less than 3mg/mmol does not require further action

An ACR of 3-30 does not usually require action, though would be checked annually.

An ACR of greater than 30 suggests significant leakage of protein through the kidneys and the higher the level, the more concern, especially if it is over 100.

What is the treatment of proteinuria?

The underlying kidney disease may be treatable with drugs. The type of treatment depends on the cause. Information is contained in the sections on each individual disease (see above for the types of kidney diseases).