

## CHRONIC KIDNEY DISEASE

***This information sheet is for your information and is not a substitute for medical advice. You should contact your doctor or other healthcare provider with any questions about your health, treatment or care.***

### **What is chronic kidney disease (CKD)?**

Chronic kidney disease (also called chronic renal failure or kidney failure) is defined as a functional kidney abnormality that lasts for at least three months or where there is a chronic or significant decline in kidney function. Therefore, the kidney is unable to perform its normal function of removing waste and excess water from the bloodstream. Many vital body functions are dependent on the kidneys functioning properly.

CKD is most often caused by other conditions, most commonly diabetes and high blood pressure, which place a strain on the kidneys.

The main goal of CKD treatment is to stop progression of the disease and thereby prevent complete failure of the kidneys.

### **Causes of CKD**

A number of conditions may cause CKD and determining the cause can help determine the optimal therapy required to slow the damage of CKD. A few examples of conditions that commonly cause CKD include:

- high blood pressure
- diabetes mellitus
- polycystic kidney disease (cysts in the kidneys)
- chronic glomerulonephritis (inflammation of the kidneys)
- a blockage caused by kidney stones that are formed as a result of the crystallisation of chemicals in the urine
- trauma to the kidneys (possibly an injury caused by medication or radiation).

### **Who has an increased risk of developing CKD?**

Adults who have one or more of the following risk factors:

- diabetes mellitus
- hypertension (high blood pressure) or cardiovascular disease
- persons over the age of 50 years
- family history of renal disease
- HIV/AIDS.

Children who have one or more of the following risk factors:

- glomerulonephritis
- urinary tract infections
- congenital abnormalities
- kidney stones.

### **Signs and symptoms of CKD**

The gradual decline in kidney function does not usually cause symptoms or show signs until the level of kidney function is severely impaired. A change in kidney function is usually discovered through a routine blood or urine test.

If CKD is confirmed, you may find that you experience:

- oedema (swelling of the feet, ankles or legs)
- high blood pressure
- blood chemistry (electrolyte) abnormalities
- anaemia (a decrease in red blood cells)

- bone disease
- uraemia (includes loss of appetite, nausea, vomiting, swelling around the heart, nerve problems and changes in mental status, including drowsiness, seizures or coma).

### Diagnosis of CKD

Early detection of kidney problems is done through:

- urine testing (urine dipstick test)
- blood pressure testing
- further investigative tests, e.g. a blood test that determines how well the kidneys are functioning and an ultrasound of the kidneys.

Progression of CKD may also be due to factors that are unrelated to the initial kidney condition. It is vitally important that you and your doctor work together to try and slow the progression of the condition and to effectively manage the complications of CKD as they develop.

### Treatment of CKD

There is no cure for CKD, but treatment can help relieve symptoms, slow down or prevent progression of the condition and reduce the risk of developing related problems. The first step in the treatment of CKD is to find the underlying cause, as some causes are reversible.

Treatment includes the following:

- Lifestyle modification helps to slow the progression of the condition. It is important to maintain good blood pressure control, quit smoking, avoid medication that may worsen your kidney function and follow a healthy diet low in protein and salt.
- Prompt and effective treatment of the complications of CKD is extremely important, as it helps reduce the chances of the function of your kidneys worsening. Examples of complications include high blood pressure, volume overload, anaemia, high potassium levels, acidosis, high phosphate levels, bone disease, hyperlipidaemia, malnutrition, bleeding, sexual dysfunction and pregnancy. All these conditions will be treated and monitored by your doctor.
- Preparation for renal replacement therapy (dialysis or transplantation) refers to treatment that replaces normal kidney function. There are three main types of renal replacement therapy: kidney transplant, haemodialysis and peritoneal dialysis.

Dialysis is a form of treatment that replicates many of the kidneys' functions by removing waste products from the body. Kidney function is only partly replaced by dialysis.

There are two types of dialysis:

1. In *haemodialysis*, the patient's blood is passed through a dialysis machine to remove waste and fluids. The patient's blood is connected to the dialysis machine using a surgically constructed path called a vascular access, usually referred to as an access.
2. In *peritoneal dialysis*, dialysing fluid (dialysate) is placed into the abdomen through a tube or catheter. It remains in the abdomen for a period of time, during which excess fluids and waste products are drawn from the bloodstream into the dialysate.

Kidney transplantation is the treatment of choice for many people with severe, chronic kidney disease. Patients may receive a kidney donated from a living relative, a non-related living person or someone who has died (often called a deceased donor or cadaveric donor). Usually, patients must wait for a kidney to become available and therefore require dialysis prior to transplantation.

### References

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