World Kidney Day 2023 – Kidney Health for All
Preparing for the unexpected, supporting the vulnerable!

Chronic kidney disease (CKD) has been estimated to affect 15% of the South African population according to the National Kidney Foundation of South Africa. From 1999 to 2006 South Africa saw a 67% rise in deaths owing to CKD.

1. What is Chronic Kidney Disease?

Chronic kidney disease (CKD) is defined as abnormalities of kidney structure or function that are present for more than **3 months**, irrespective of the cause. This leads to a gradual loss of kidney function.

Kidney failure, also known as **end-stage renal disease (ESRD),** is the last stage of chronic kidney disease which occurs when the kidney function has declined to a point that they can no longer function on their own.

2. Why are healthy kidneys important?

- They filter the blood by removing waste and excreting it via urine
- They help keep a stable balance of fluids in your body.
- They help maintain electrolyte concentrations by filtering electrolytes and water from blood, returning some to the blood and excreting any excess in the urine.
- They help maintain the acid-base balance in your body.
- Kidneys help keep your blood pressure at a normal level.
- Kidneys produce hormones that aid in the production of red blood cells.
- They produce active vitamin D.

3. What are the risk factors for CKD?

- Hypertension
- Diabetes Mellitus
- Cardiovascular disease
- HIV and other chronic viral infections, for example hepatitis C
- Autoimmune disease
- Glomerular Diseases (primary and secondary)
- Tubulointerstitial diseases
- Urinary tract obstruction, for example, kidney stones or prostatic hypertrophy.
- Recurrent urinary tract infections
- Congenital diseases
- Family history of kidney disease
- Chronic use of nephrotoxic drugs, for example, NSAIDs
- Obesity, which increases the risk of developing hypertension and diabetes. Obesity may cause secondary glomerular disease.
- History of kidney transplantation

4. What are the symptoms of chronic kidney disease?

Patients with mild to moderate chronic kidney disease (CKD) are generally asymptomatic, as symptoms tend to develop only during the later stages of CKD. Kidney disease is therefore sometimes referred to as a 'silent disease'. Patients with kidney failure may present with signs and symptoms of the following:

- Abnormalities in salt and water handling:
  - hypertension
  - swelling of the lower limbs, generalized body swelling and pulmonary oedema (accumulation of fluid in the lungs) with resultant shortness of breath.
  - Changes in the frequency and volume of urination
  - Dark or foamy/frothy urine

- Metabolic acidosis:
  - protein-energy malnutrition
  - loss of lean body mass and muscle weakness
  - shortness of breath
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- Anemia:
  - fatigue
  - impaired cognitive function
  - impaired immune function
  - reduced quality of life
  - development of cardiovascular disease

- End Stage Renal Disease – manifestations of uremia:
  - peripheral neuropathy (pins and needles, burning sensation or numbness in the fingers and toes)
  - restless leg syndrome
  - bad breath or metallic taste in the mouth
  - muscle cramps
  - dermatological symptoms (dry skin, itchiness, bruising),
  - increased somnolence
  - malnutrition
  - gastrointestinal symptoms (anorexia, nausea, vomiting, diarrhea)
  - erectile dysfunction, decreased libido, menstrual abnormalities.

5. When should one seek medical intervention relating to kidney disease?

Screening in patients at risk for developing CKD is important for early detection so that therapeutic interventions can be implemented early, to prevent or delay progression of disease. Screening should be done annually in very high-risk patients, for example, diabetics, and up to every three years in patients with a lower risk.

Early detection of kidney disease includes the following screening methods:

- Urinalysis (testing urine) – a urine dipstick is a readily accessible tool even at primary healthcare level and is important in the early diagnosis of abnormalities in kidney function.
- Measurement of albuminuria – the presence of the protein albumin in the urine.
- A serum creatinine blood test to estimate glomerular filtration rate (GFR), which determines your kidney function.
- Renal ultrasound in selected individuals, for example, those with a family history of polycystic kidney disease.

6. **Stages of Chronic Kidney Disease (CKD)**

Usually, kidney disease starts slowly and silently, and progresses over a number of years. Not everyone progresses from Stage 1 to Stage 5. Stage 5 is also known as End-Stage Renal Disease (ESRD).

STAGE	DESCRIPTION	GFR LEVEL
NORMAL	Kidney Function	90mL/min or more
STAGE 1	Kidney damage with normal or high GFR	90ml/min or more
STAGE 2	Kidney damage and mild decrease in GFR	60 to 89mL/min
STAGE 3	Moderate decrease in GFR	30 to 59mL/min
STAGE 4	Severe decrease in GFR	15 to 29 mL/min
STAGE 5 (ESRD)	Established kidney failure	Less than 15mL/min or on dialysis

GFR: Glomerular Filtration Rate

7. **How should one look after their kidneys?**

Early diagnosis and treatment of the underlying cause is critical in patients with CKD. Managing the disease involves the following:

- Delaying or halting progression of disease by:
  - managing your preexisting disease – e.g., strict glycemic control in diabetic patients
  - blood pressure control

    - avoiding nephrotic drugs e.g., anti-inflammatory pain medication in patients with risk factors for CKD.
- Lifestyle changes including smoking cessation, limited alcohol intake, regular exercise, maintaining a healthy body mass index (BMI), consuming a balanced healthy diet with a sodium dietary content of less than 100 mmol/day.

- Staying well hydrated – your urine should be straw colored. Increase fluid intake during hot weather or when exercising strenuously to avoid dehydration.

8. What should you ask your doctor?

- What is my GFR?
- What is my urine albumin result?
- What is my blood pressure?
- What is my blood glucose control? (for people with Diabetes)?
- Is there medication that I should avoid to prevent the development or progression of kidney disease?
- How often should I have me kidney function checked?