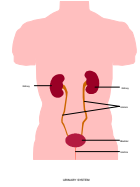


KIDNEY DISORDERS



DEFINITIONS:

Kidneys are essentially blood-cleansing organs. An artery from the heart brings blood into the kidneys to be cleaned by a network of millions of tiny units called nephrons. The nephrons filter out toxins, excess nutrients and body fluid and excrete them in the form of urine into the bladder. The remaining cleaned and filtered blood then passes through veins back into circulation.

THE ROLES OF KIDNEYS ARE TO:

- Remove waste from the body in the form of urine
- Filter toxins from the blood
- Helps to regulate blood pressure and to balance certain important nutrients, including potassium and calcium

WHAT HAPPENS WHEN THE KIDNEYS STOP FUNCTIONING?

If both kidneys stop functioning due to disease, patients experience end-stage renal disease (ESRD), or total kidney failure. Because the kidneys perform so many critical functions, people whose kidneys fail face an immediate life-threatening condition. Kidney failure means that the body can no longer rid itself of certain toxins and cannot properly regulate blood pressure and critical nutrients. Unless those experiencing kidney failure are treated, they can die within days due to the build-up of toxins and fluid in their blood. More than 300,000 individuals in the United States today have ESRD and are dependent on artificial dialysis to stay alive.

DIALYSIS:

Dialysis is a life-saving process that artificially replaces the functions of the kidney. There are two types of dialysis: hemodialysis and peritoneal dialysis.

Hemodialysis involves removing blood from the body and filtering it in a machine. The patient is connected by a tube to the dialysis machine, which continuously draws blood out, cleanses it and removes excess fluid and then returns the blood back to the patient.

- **Hemodialysis** must be performed for 3 to 4 hours at least three times a week. It is usually performed at a dialysis center, though home dialysis is also possible.

- **Peritoneal Dialysis** is internal or in-body dialysis. Peritoneal dialysis entails use of a blood-cleansing solution called “dialysate” that is injected into the peritoneal cavity, the region of the abdomen that is lined by the peritoneum. While in the peritoneal cavity, the dialysate works to extract toxins and excess fluid from the blood. After a period of time, the solution is then drained from the body cavity. Peritoneal dialysis (CAPD) is the name given to this procedure when it is performed at 5-hour intervals four times a day during waking hours.

CAUSE:

- Diabetes and high blood pressure are the two leading causes of ESRD, accounting for more than 60 percent of new cases.
- Kidney disease can also develop from infection, inflammation of blood vessels in the kidneys, kidney stones and cysts.
- Other possible causes include prolonged use of pain relievers and use of alcohol or other drugs (including prescription medications).

SIGNS OF KIDNEY DISEASE:

- High blood pressure
- Swelling of the face and ankles
- Puffiness around the eyes
- Frequent urination (especially at night)
- Rusty or brown colored urine
- Back pain just below the rib cage

THE WAYS OF FIGHTING KIDNEY DISEASE:

- Drink plenty of fluids
- Exercise regularly
- Do not smoke
- Maintain your proper weight
- Have annual physical to check for diabetes and high blood pressure

TEACHING TIPS:

- Avoid physical fitness activities when infection is present.
- Monitor blood pressure.
- Plan for rest periods.
- Use caution/avoid cardiovascular and activities according to medical feedback.

Information on this sheet contains only suggested guidelines. Each student must be considered individually, and in many cases, a physician's written consent should be obtained.