

SECTION 2.3 – THE URINARY SYSTEM (textbook pages B52-B55)

The URINARY SYSTEM is also called the "RENAL SYSTEM."

LIFE PROCESSES PRODUCE WASTE

Renal

Several systems in your body remove waste material: (Together, these are called the "Excretory System," which we will discuss further when we study the Integumentary System.)

- Digestive System – removes solid waste materials from food
- Respiratory System – removes waste gases and water vapor from the blood
- Urinary System – removes liquid waste materials from the blood
- Integumentary System (Skin) – releases wastes through sweat glands

THE URINARY SYSTEM REMOVES WASTE FROM THE BLOOD

The urinary system filters waste out of the blood similar to the way a filter in a fish tank filters waste out of the tank's water.

Important vocabulary for the Urinary System:

- Renal, Kidneys, Ureters, Bladder, Urethra, Urea, Urine, Nephrons

KIDNEYS

- You have two kidneys, each located high up and toward the rear of the abdomen, one under each rib on each side of the spine. Kidneys are bean-shaped (like "kidney beans").
- Kidneys are about 10 centimeters long (3.9 inches), about the length of your index finger.
- All of the blood in your body travels through your kidneys many times per day.
- Kidneys are often called "the body's filters." They filter out chemical waste (urea and urine) from the blood.

URINE – The liquid waste that is released from the body through the bladder and urethra. ("Pee") Urine is made up mostly of water, urea, and minerals such as extra salts that your body does not need.

UREA – A toxin in your bloodstream that is removed by the kidney and is included in the urine that you release from your body.

URETERS

After chemical waste (urine) is removed from the blood by the kidneys, the urine travels down tubes called "ureters." The ureters carry the urine to the bladder. (You have two ureters, one attached to each kidney.)

BLADDER

The bladder is a sac that stores the liquid chemical waste (urine) until it is released from the body. The walls of the bladder have smooth muscle (involuntary). The lower neck of the bladder leads into the urethra, and has voluntary muscles that you can keep closed until you are ready to go to the bathroom and release the urine.

URETHRA

The urethra is a tube that carries liquid waste from the bladder to outside the body. (This is when you "urinate," or pee.)

HOW DOES THE KIDNEY WORK? Inside the kidney there are about one million looping tubes called "nephrons." The NEPHRONS regulate the makeup of the blood, filtering out liquid waste and allowing the rest of the blood to recirculate back through the body's bloodstream. The filtered liquid waste (urine) is collected and sent to the ureter for elimination through the bladder and urethra.

FYI - Sometimes a kidney does not work properly and the person has to have regular Kidney Dialysis. The patient gets hooked-up to a machine that filters toxins out of the blood and returns the clean blood back into the patient's bloodstream. (You might notice kidney dialysis centers around the community.)

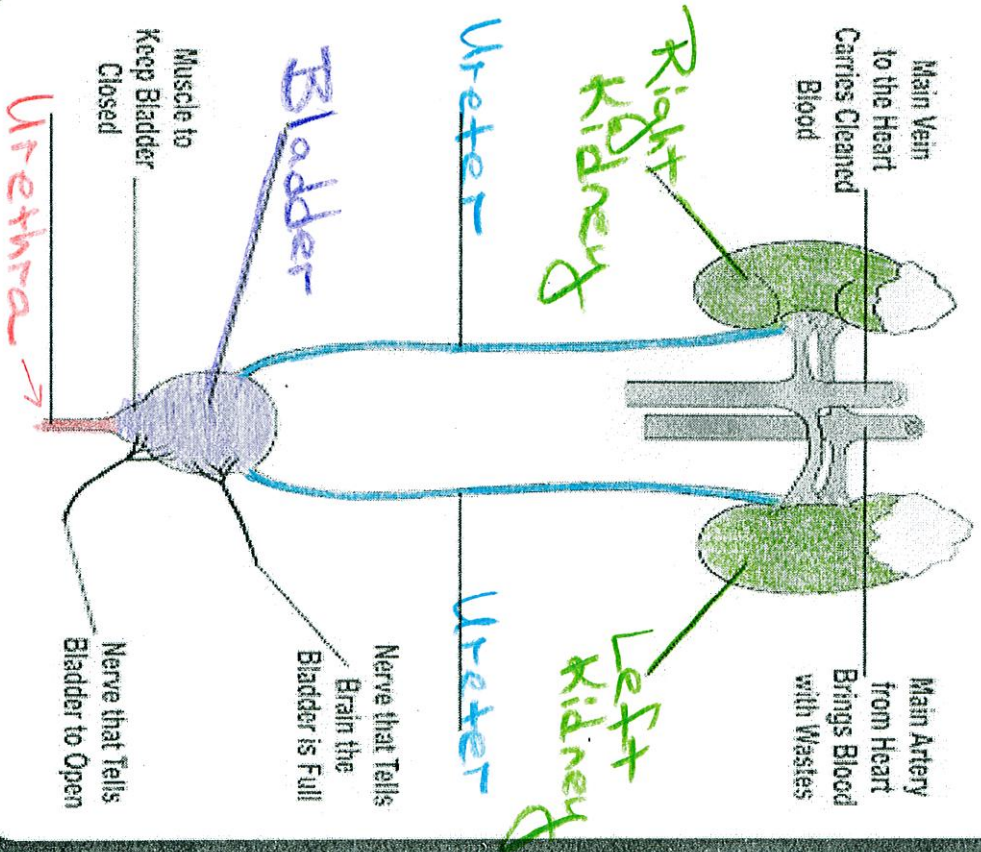
WHAT ELSE DO KIDNEYS DO? Kidneys also regulate the amount of

water in the body. Too much water can make your body swell and can increase your blood pressure. Too little water can cause dehydration and will interfere with cell processes.

About one liter of water leaves the body every day. The kidneys control how much water leaves the body in urine.

Patients
RIGHT
Patients
LEFT

URINARY SYSTEM



April 23, 2014