



# The Urinary System

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Maintenance Systems

Unit 5

# Basic Functions of the Urinary System

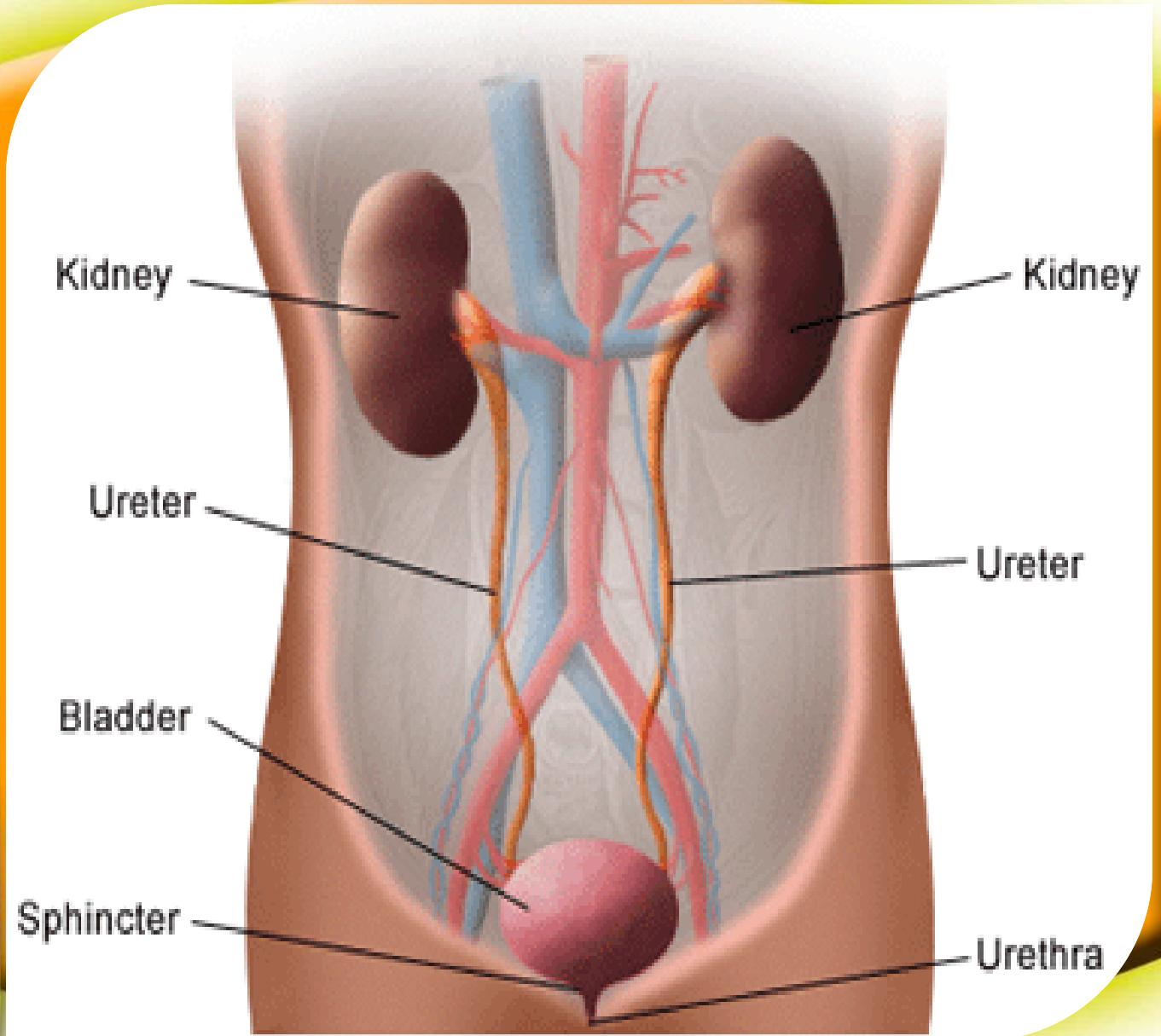
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- Regulates the composition and volume of the blood by removing and restoring selected amounts of water and solutes.
- Eliminates water, nitrogenous wastes from the breakdown of protein, inorganic salts, and assists in eliminating heat and carbon dioxide.



# The Organs of the Urinary System

- Kidneys (2)
- Ureters (2)
- Bladder
- Urethra



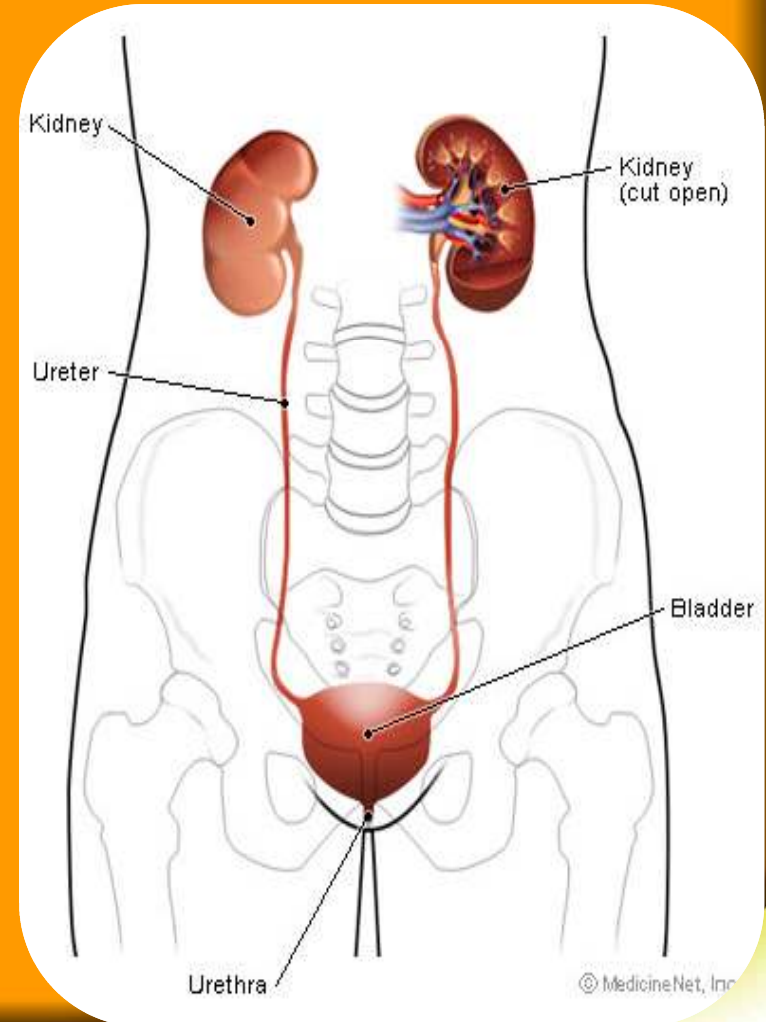
# Kidneys

- The kidneys are paired organs found laterally to the spinal canal in the upper left and right quadrants.
- Their main function is to produce urine.



# The Ureters

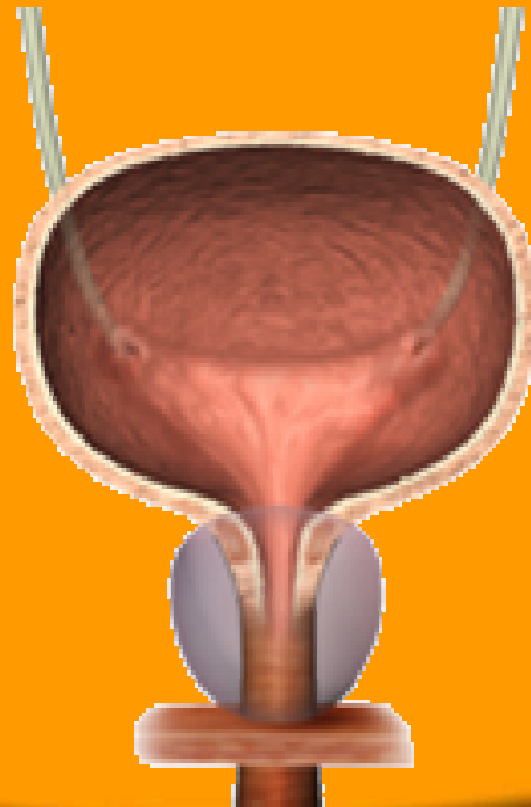
- The ureters are long, slender tubes which extend from the kidneys to the urinary bladder.
- Their main function is to transport urine from the kidneys to the bladder.





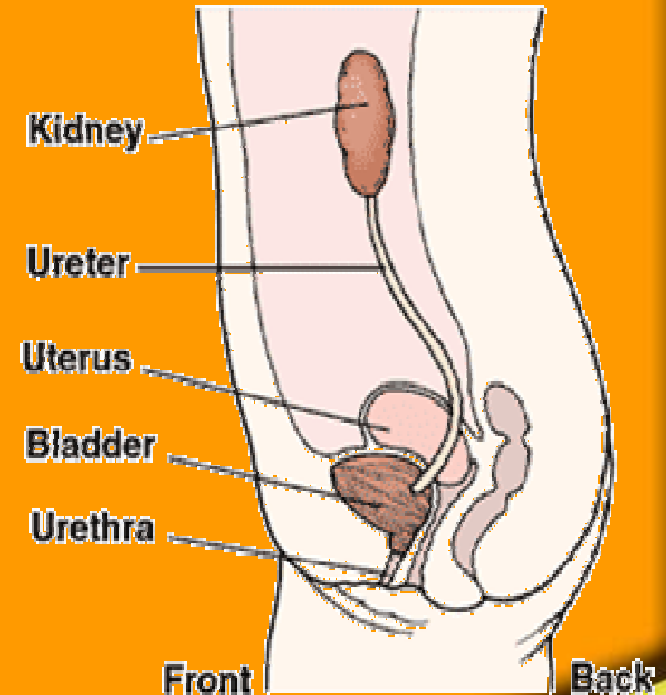
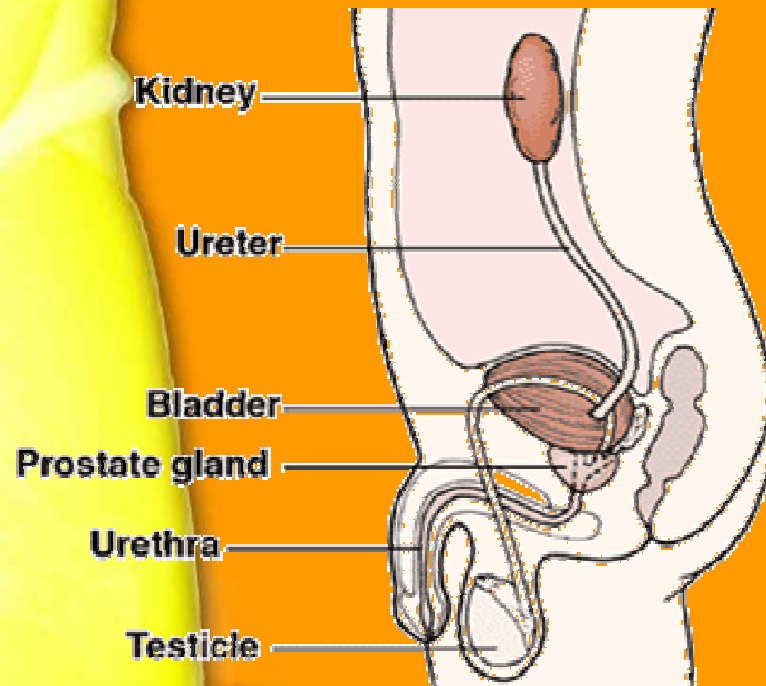
# The Urinary Bladder

- A sac-like structure found in the pelvic cavity.
- Its main function is to hold urine.



# The Urethra

- A small tube (about 2 inches in the female and 8 inches in males) which transports urine from the bladder to the outside of the body.





# Diseases and Disorders of the Urinary System



# Kidney Stones

- Kidney stones are hard masses developed from crystals that separate from the urine within the urinary tract.
- Usually, the first symptom of a kidney stone is extreme pain, which begins suddenly when a stone moves in the urinary tract and blocks the flow of urine.



# Kidney Stones continued

- Typically, a person feels a sharp, cramping pain in the back and side in the area of the kidney or in the lower abdomen. Sometimes nausea and vomiting occur.
- Later, pain may spread to the groin. Predisposing factors for kidney stones include dehydration, infection, obstruction, and genetics.
- Treatment includes medication to relieve the pain, forcing fluids, and sometimes surgical intervention such as lithotripsy.



# Kidney Failure

- Kidney failure is the loss of the kidney's ability to perform their main function — eliminate excess fluid and waste material from the blood.
- When the kidneys lose their filtering ability, dangerous levels of fluid and waste accumulate in the body.
- Signs and symptoms include decreased urine output, fluid retention, drowsiness, shortness of breath, fatigue, confusion, seizures or coma in severe cases.
- Treatment includes a modified diet, IV fluids, and dialysis until kidney function returns to normal.



# Cystitis

- Cystitis is the inflammation of the urinary bladder caused by bacteria.
- It is more common in women.
- Signs and symptoms of cystitis include urgency, frequency, burning upon urination, dysuria, and possible urethral discharge.
- It is treated with antibiotics.

