

# MODULE 11 L01

## Urinary System: Kidney Structures

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# Urinary System Introduction

- Digestive system
- Cardiovascular system
- Respiratory system
- Urinary system

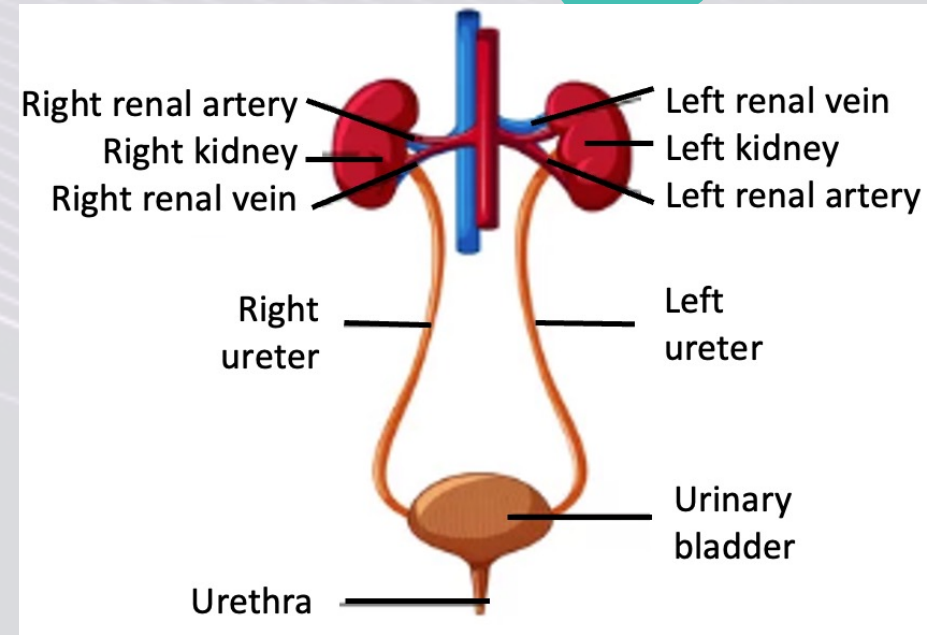
**Prevent development of “pollution” problems inside the body**

# Urinary System Functions

1. Vital excretory function - eliminates organic waste products generated throughout body
2. Regulates plasma concentrations of  $\text{Na}^+$ ,  $\text{K}^+$ ,  $\text{Cl}^-$ ,  $\text{Ca}^{2+}$
3. Regulates blood volume and blood pressure by:
  - ❖ Adjusting volume of water lost in urine
  - ❖ Releasing erythropoietin
  - ❖ Releasing renin
4. Contributes to stabilization of blood pH
5. Conserves valuable nutrients by preventing their excretion in urine
6. Eliminates organic waste products
7. Synthesizes calcitriol
8. Assists liver in:
  - ❖ Detoxifying poisons
  - ❖ During starvation
    - Deaminating amino acids – other tissues can break them down

# Urinary System Components

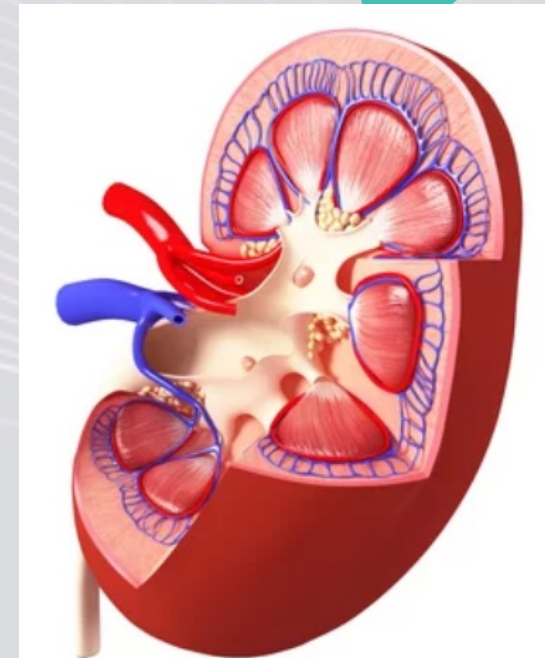
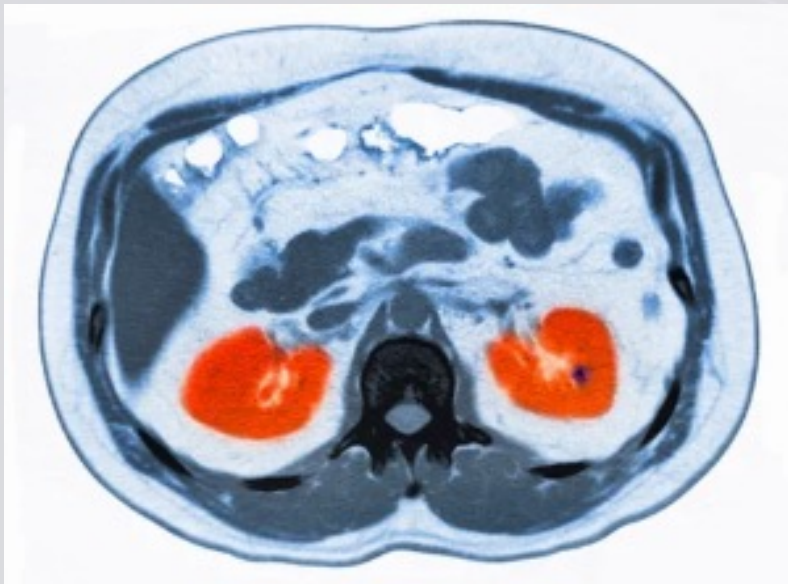
- Kidneys
  - ❖ Produce urine
- Ureters
  - ❖ Transports urine towards the urinary bladder
- Urinary bladder
  - ❖ Temporarily stores urine prior to elimination
- Urethra
  - ❖ Conducts urine to exterior
    - Males - transports semen





# Kidney Anatomy

- Location
  - ❖ Lateral to vertebral column
- Three concentric layers of connective tissue
  - A. Fibrous capsule
    - Adipose tissue
  - B. Perinephric fat or perirenal fat
    - Adipose tissue
  - C. Renal fascia
    - Collagen fibers



# Nephroptosis

- Also known as renal ptosis
- Kidney drops into pelvis when person stands up
- Symptoms:
  - ❖ Anxiety
  - ❖ Hysteria
  - ❖ Weight loss
  - ❖ Urinary tract infections
  - ❖ Kidney pain
  - ❖ Palpitations



# Kidney Structures

