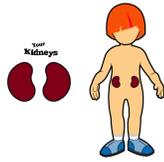


Excretory System



Maintaining
Homeostasis

Excretion

- Process where metabolic wastes & excess substances are removed (eliminated) from the organism.
- If wastes **BUILD UP**, organism dies.



Metabolic Wastes

Excess salts
(NaCl, KSO₄)
Carbon dioxide
Nitrogen compounds
(urea, ammonia)
Excess water

Organs Of Excretion

Liver



Kidneys



Lungs



Skin



Liver



Structure: Liver Cells

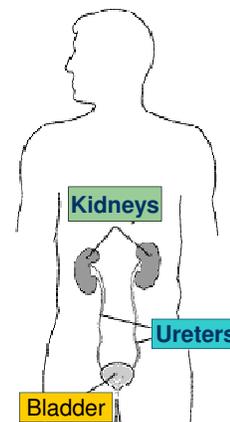
Function:

- **Detoxify** (makes less harmful) some substances.
- **Filters** toxins and dead RBCs from the blood.
- Breaks down **amino acids** into **ammonia** then into a less harmful substance called **urea**.

Kidneys

Structure:

- 2 fist-sized, bean shaped organs located in lower back.



Kidneys

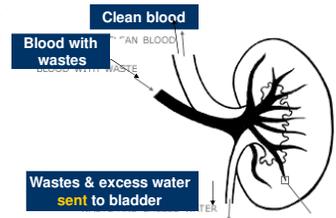
Function:

- Filters all the body's blood (every 45 minutes) & reabsorbs nutrients
- **Nephron**-basic structural unit

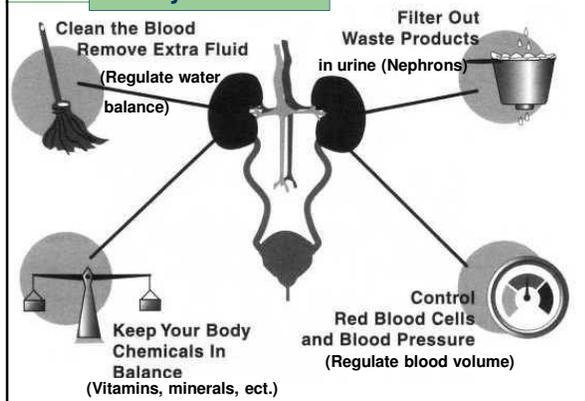


The Kidneys

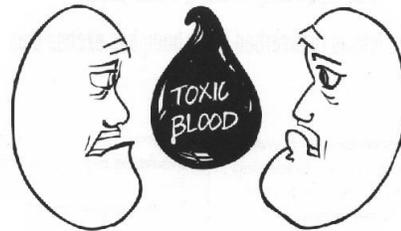
- Helps to regulate blood pressure by **removing water** from the blood when blood pressure is high.



Kidney's Function



Your Body Wants To Avoid



Lungs

Structure: Alveoli



Function:

- CO₂ & H₂O (water vapor) is excreted (removed).

End products of

CELLULAR RESPIRATION



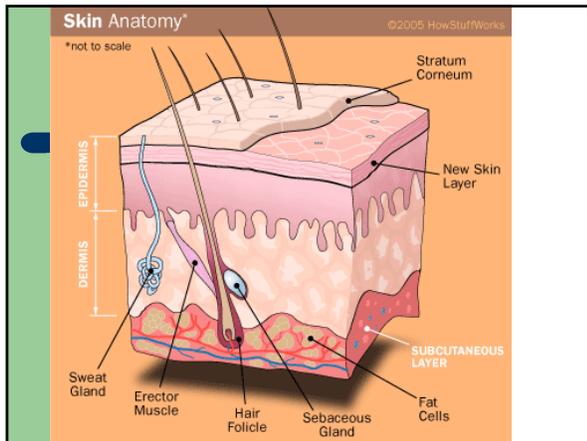
Skin

Structure: Sweat glands

Function:

- Excretes water, urea, & dissolved salts in **sweat**.
- Removal of excess **heat**

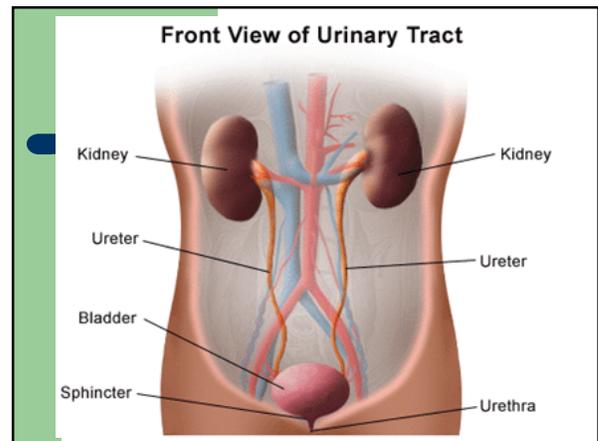




Urinary System

Structures

- ### Structures of the Urinary System
- **Kidneys**
- a bean-shaped organ that produces urine.
 - **Ureters**
- a tube leaving each kidney for urine to pass from the kidneys to the bladder.
 - **Bladder**
- where urine is stored.
 - **Urethra**
- a tube where urine travels from the bladder to the outside of the body.



- ### Urine
- Made of
 - urea
 - excess salts
 - water
 - other substances

- ### 2 Processes in Urine Formation
1. **Filtration** (removal of wastes)
 2. **Reabsorption** (good substances re-enter)
- ** Water, amino acids, glucose, salts

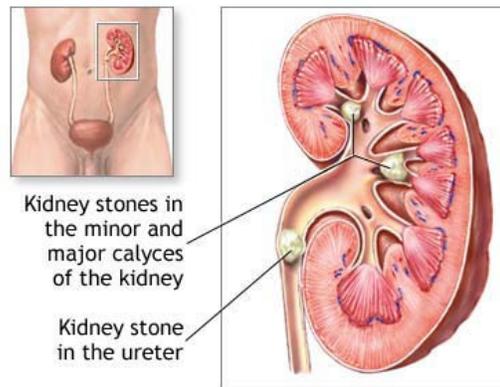
Disorders

Nephritis

- **Inflammation** (swelling) of kidneys.
- Symptoms: swelling (eyes, ankles), bloody urine, increased blood pressure
- Causes: infection
- Treatment: antibiotics

Kidney stones

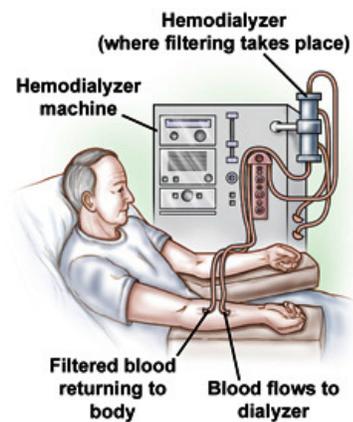
- A hard mass of crystals (urine lacks the chemicals that prevent the crystals from forming).
- Calcium or uric acid stones
- Symptoms: **EXTREME PAIN**, nausea, vomiting
- Causes: unknown
- Treatments: passed by person, lithotripsy (shock waves), surgery



Kidney Failure



- Kidneys **stop** working.
- If both kidneys fail, you need to rid body of cell wastes.
- Symptoms: weakness, swelling, decreased urine, high blood pressure
- Causes: many factors (high blood pressure, infection)
- Treatment: **Dialysis** (machine) or Kidney Transplant



The End



Wrap up questions



What do we call the removal of waste products from an organism?

excretion

What are the different systems used to bring necessities to the cell and carry away wastes?

Respiratory

Digestive

Circulatory

Excretory

What are all the chemical processes going on in the body called?

metabolism

- The chemical processes of the body creates waste, what if these wastes build up?

Death

Some chemical wastes include?

- CO₂
- H₂O
- Urea
- Ammonia
- Salts

What are some of the organs of the excretory system?

Lungs
Kidneys
Liver
Skin

Lungs

What 2 systems are the lungs part of?

Respiratory & Excretory systems

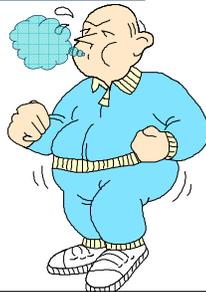
Lungs

- To what system are the lungs connected?

Circulatory system

As part of the excretory system, what waste are the lungs responsible for eliminating?

CO₂



What are some of the parts of the urinary system?

Kidneys
Ureters
Bladder
Urethra

Kidneys

- The kidneys are responsible for filtering the **blood.**



The wastewater from the kidney drains into a tube called the

Ureter

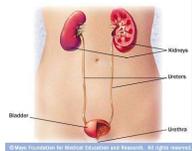
- These tubes connect the kidney and the

Bladder

allowing the urine to drain from the kidneys to the bladder.

The bladder is an elastic, muscular organ, that holds urine. When the bladder is full the urine leaves the body through a tube called the

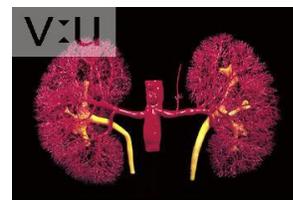
Urethra



When a person's kidneys are not functioning, they must undergo a process called

Dialysis

in which a machine filters the waste out of the blood.



Review Questions
For Quiz



Excretory System

1. Which of the following is not part of the excretory system?

- A. lungs
- B. skin
- C. ureter
- D. appendix

2. What waste product is produced by the lungs?

- A. Urea
- B. Perspiration
- C. Urine
- D. Carbon Dioxide

3. What is responsible for filtering the blood?

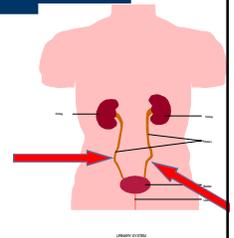
- A. Lungs
- B. Kidneys
- C. Bladder
- D. Urethra

4. Where does urine leave the body from?

- A. Bladder
- B. Urethra
- C. Ureter
- D. Dialysis

5. Which part of the urinary system are the arrows pointing?

- A. Urethras
- B. Dialysis
- C. Ureters
- D. Bladder



6. Which organ is responsible for filtering out harmful chemicals and breaking them down?

- A. Bladder
- B. Lungs
- C. Liver
- D. Skin

7. What is the process by which a machine does the work of the kidneys?

- A. metabolism
- B. respiration
- C. perspiration
- D. dialysis

8. What is the removal of waste products from an organism?

- A. excretion
- B. secretion
- C. dialysis
- D. metabolism

9. What are all the chemical processes going on in the body called?

- A. dialysis
- B. metabolism
- C. respiration
- D. perspiration

Answers:

- 1. D 6. C
- 2. D 7. D
- 3. B 8. A
- 4. B 9. B
- 5. C