

Aim: why is the excretory system so important to all organisms

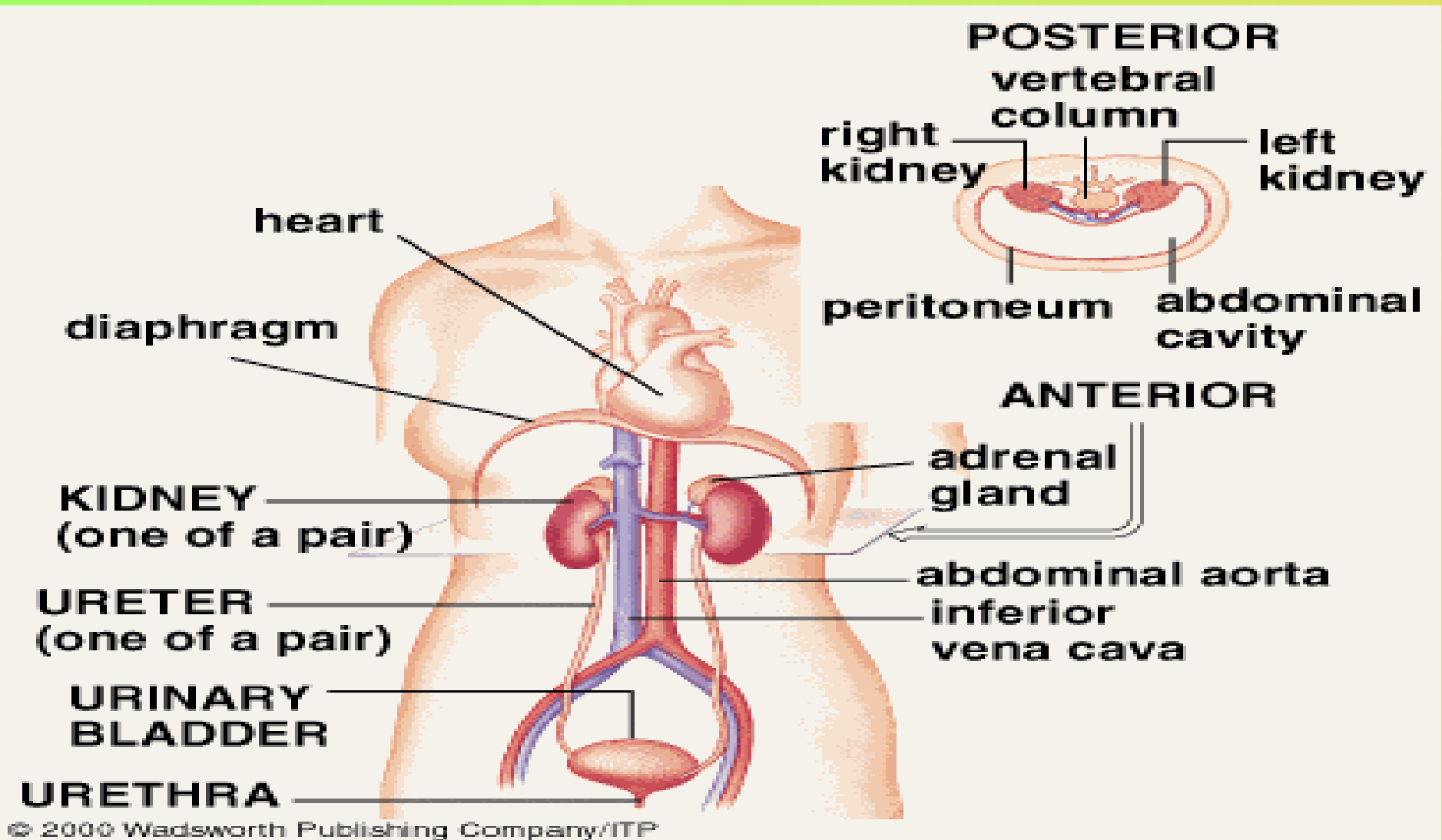
Do Now: state the difference between egestion and excretion.

Excretory System

Goals:

- All students will understand how the body removes waste.
- Students will understand the different organs of the excretory system.

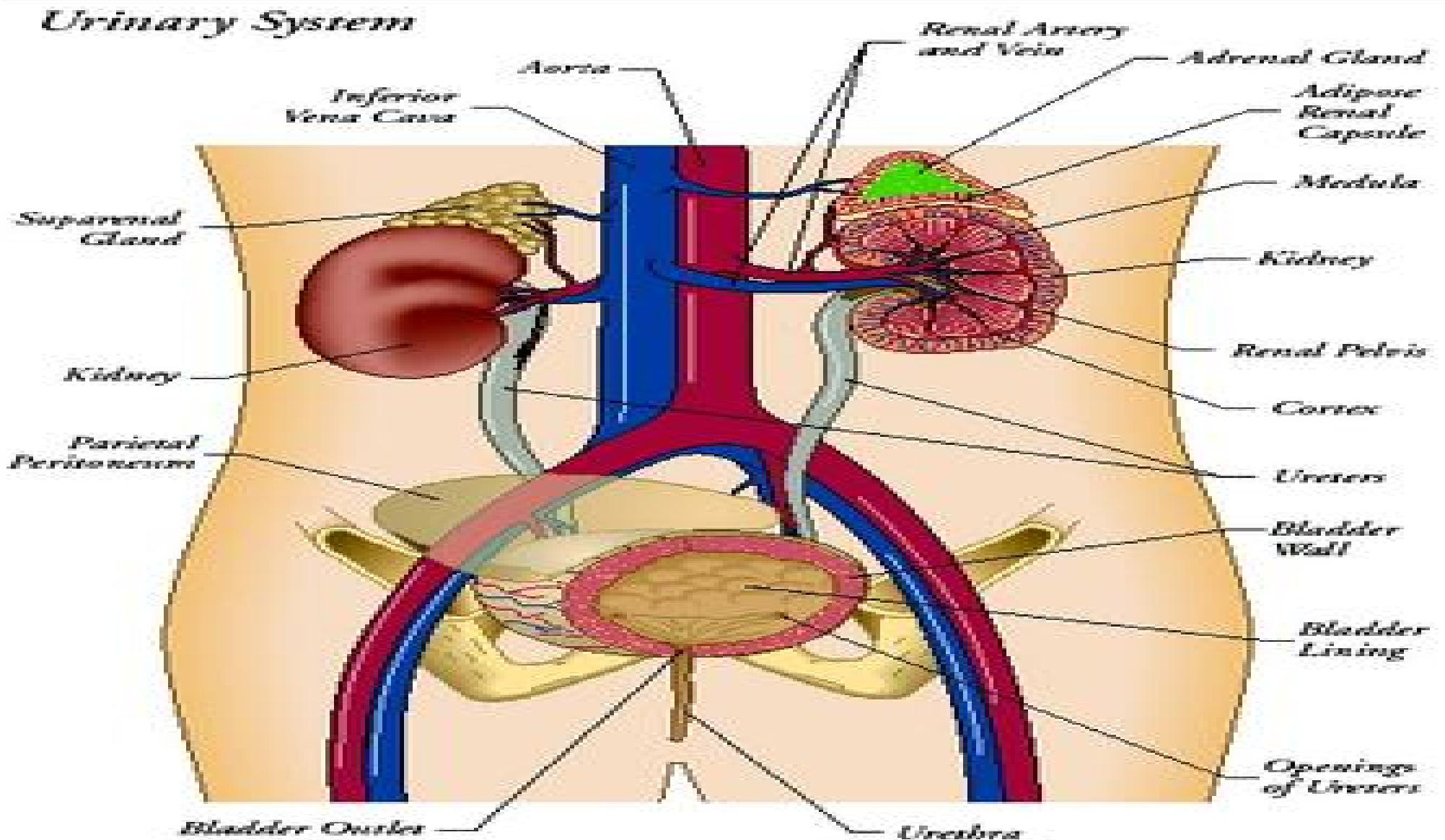
Excretory System



Excretion

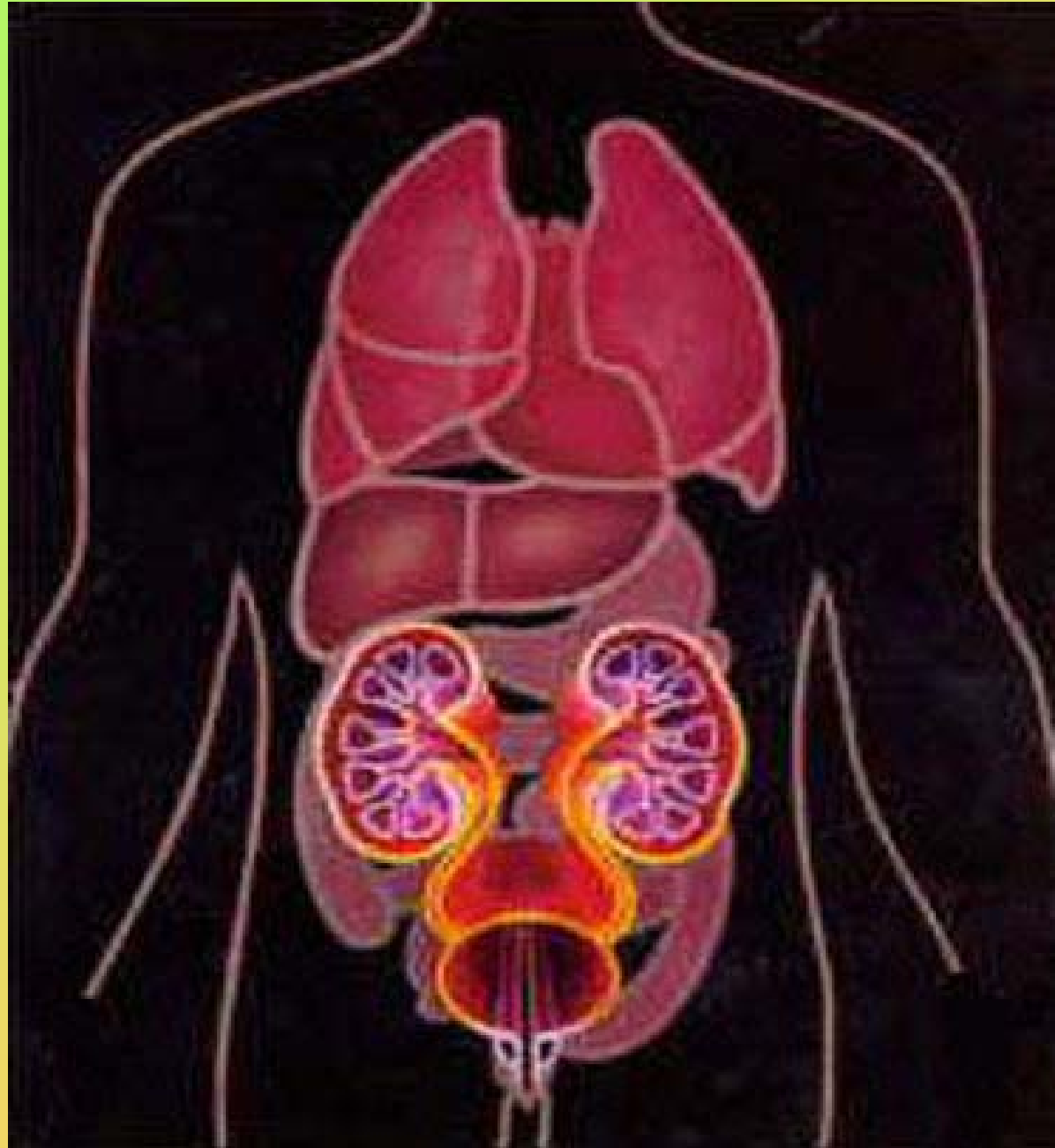
- The removal of metabolic waste from the body.
 - Includes carbon dioxide, water, salt, and urea.
- Waste diffuses from cells into blood and then out of the body through different organs.

Excretory System



Excretory System

- Organs
 - Lungs
 - *Carbon Dioxide*
 - Liver
 - Sweat Glands
 - Kidneys

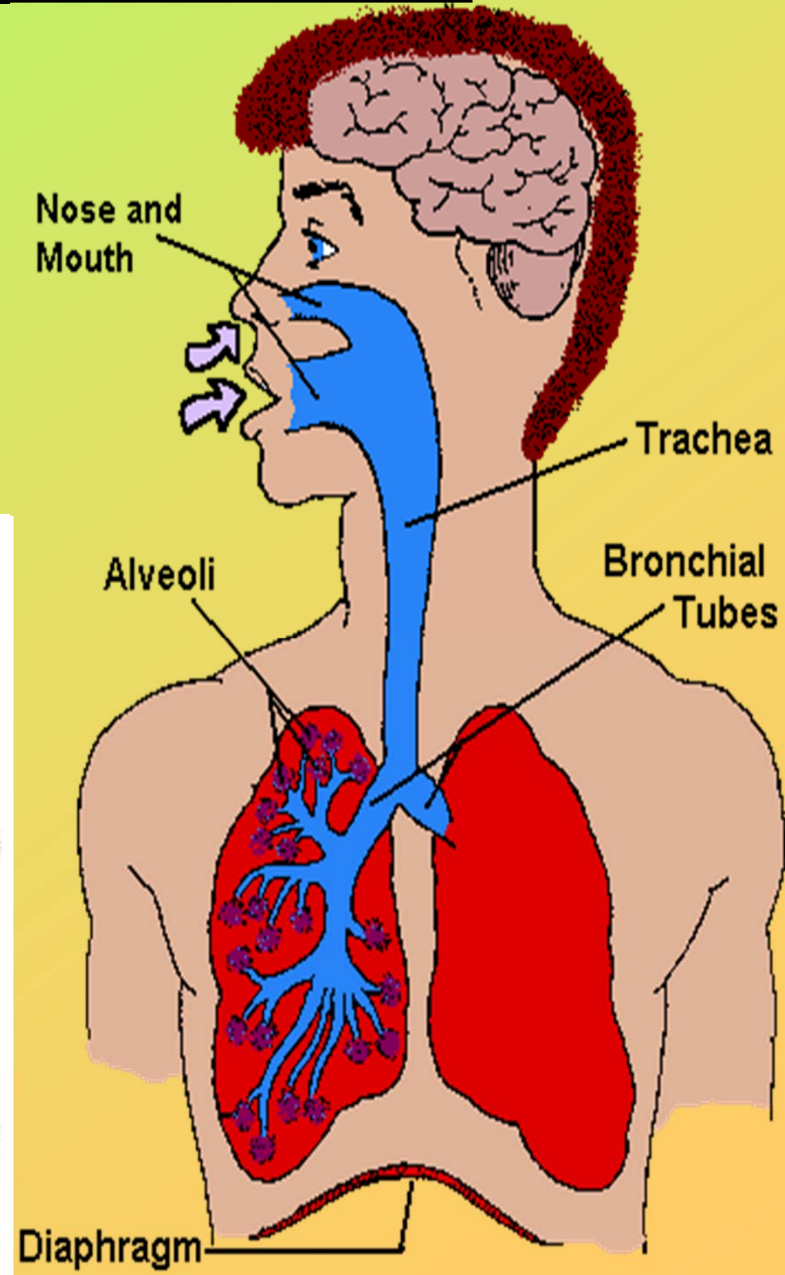
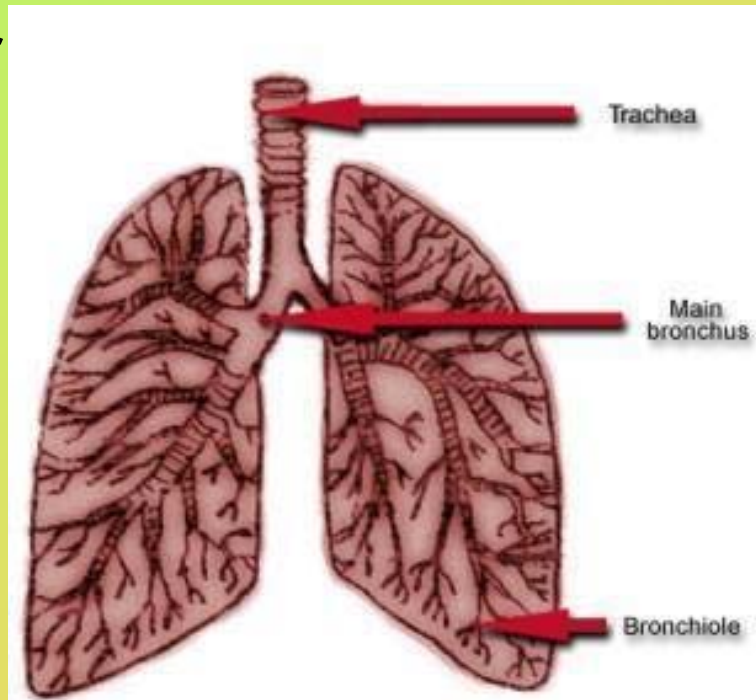


Excretory System

- Lungs

- Remove the waste products of cellular respiration

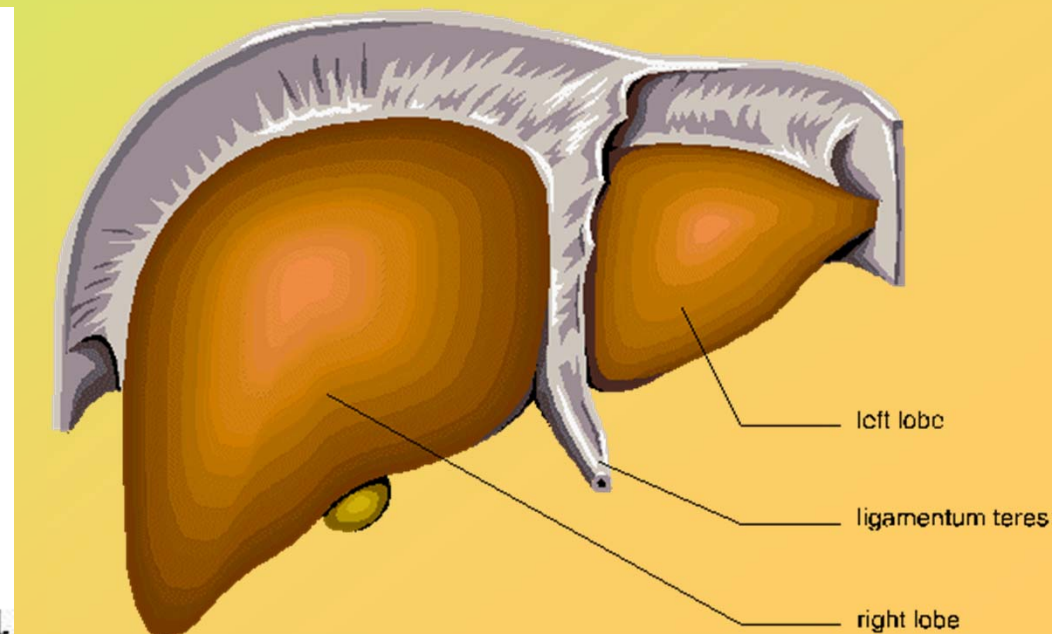
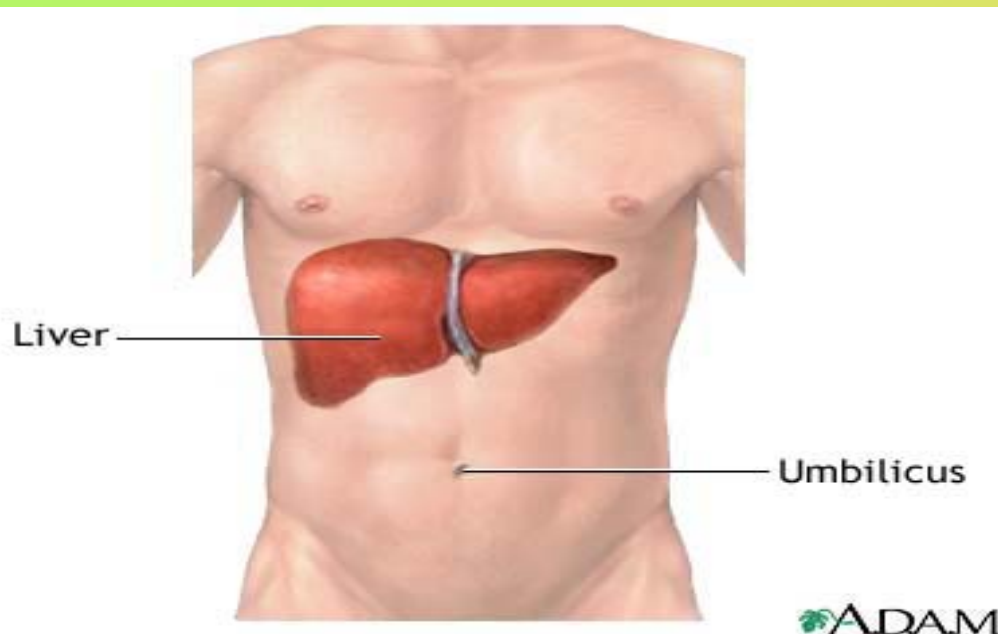
- *Carbon Dioxide and water vapor*



Excretory System

- Liver

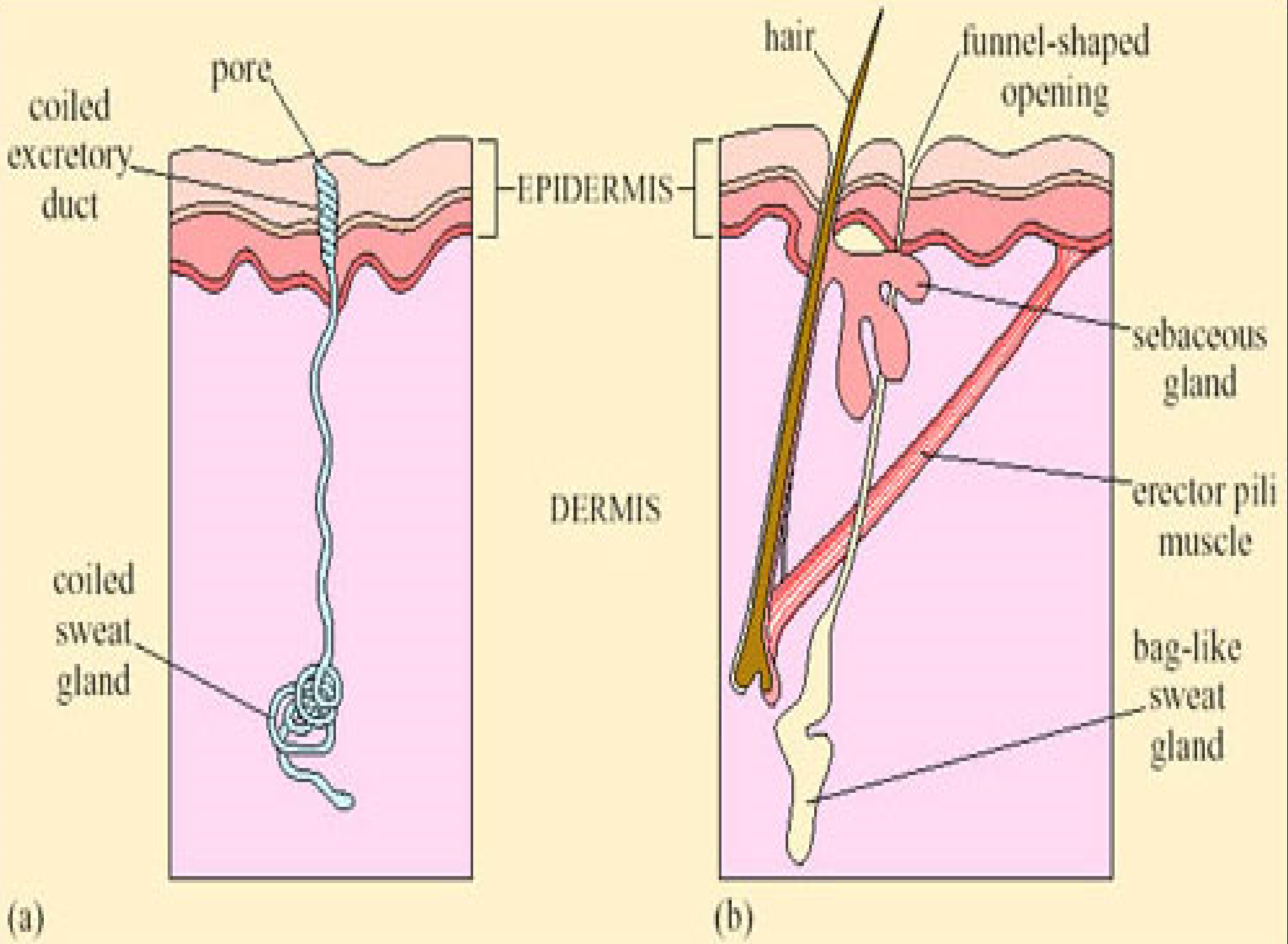
- Breaks down and gets rid of excess amino acids
- Converts amino acids to urea
- Breaks down red blood cells



Excretory System

- Sweat Glands

- Excrete waste, water, salts, and small amounts of urea.
- This waste diffuses between capillaries and sweat glands.
- The mixture of waste and water is perspiration.
- Regulates body temperature (homeostasis).



Questions

- Which human body system includes the lungs, liver, skin, and kidneys?
 - a) Respiratory
 - b) Digestive
 - c) Transport
 - d) excretory

Questions

- In humans the organ that breaks down red blood cells and amino acids is the?
 - a) Kidney
 - b) Liver
 - c) Gallbladder
 - d) Small Intestine

Aim: how would a disruption in the excretory system affect your body?

Do Now: state 3 organs of the excretory system along with there function.

Homework: None

Aim: How does the build up of waste affect our body's?

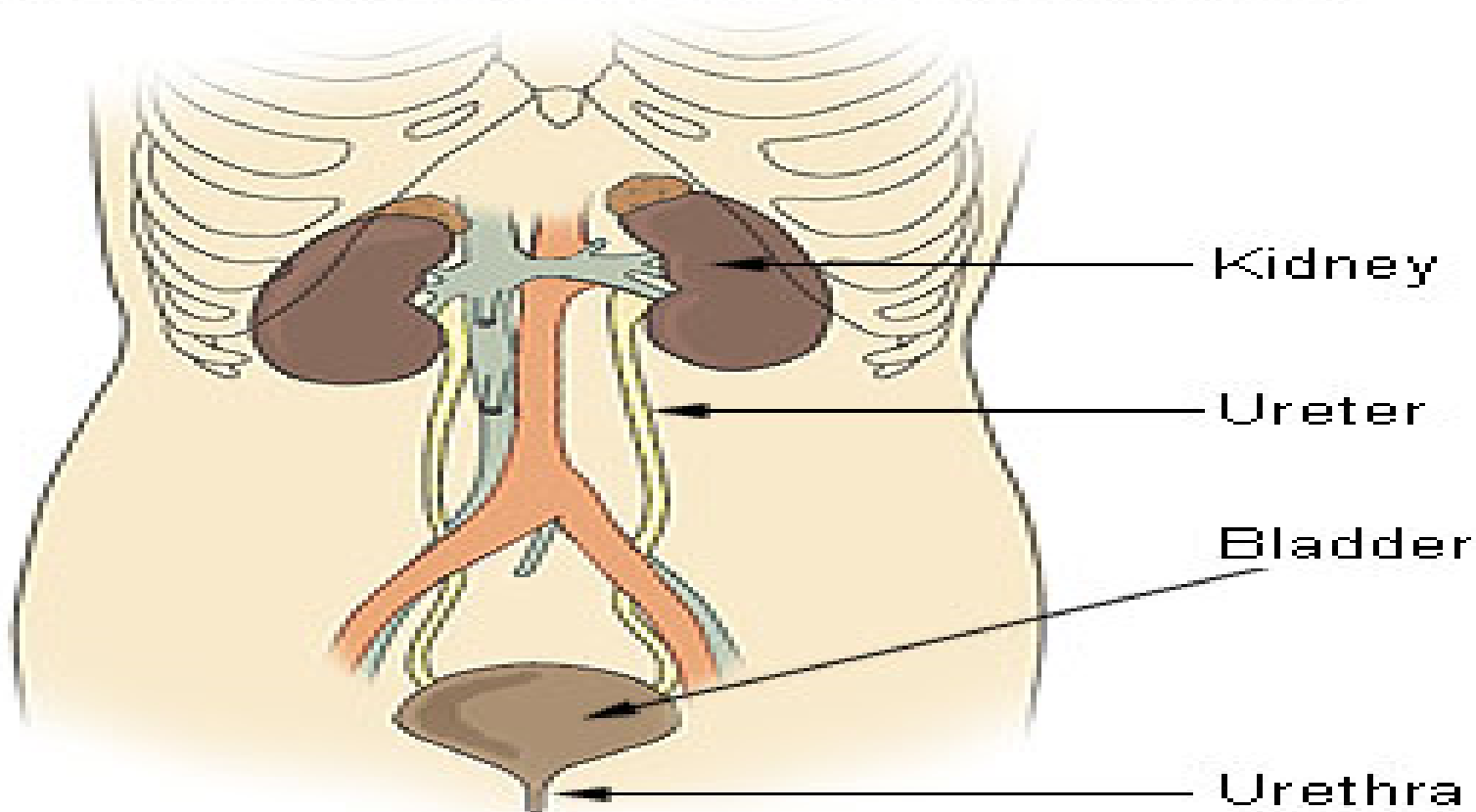
Do Now: How can you tell if your body is properly hydrated?

Homework: text book pg 595 – 599 Questions 1-5 on pg 599

Urinary System

- The body system that filters and excretes waste out of the body.

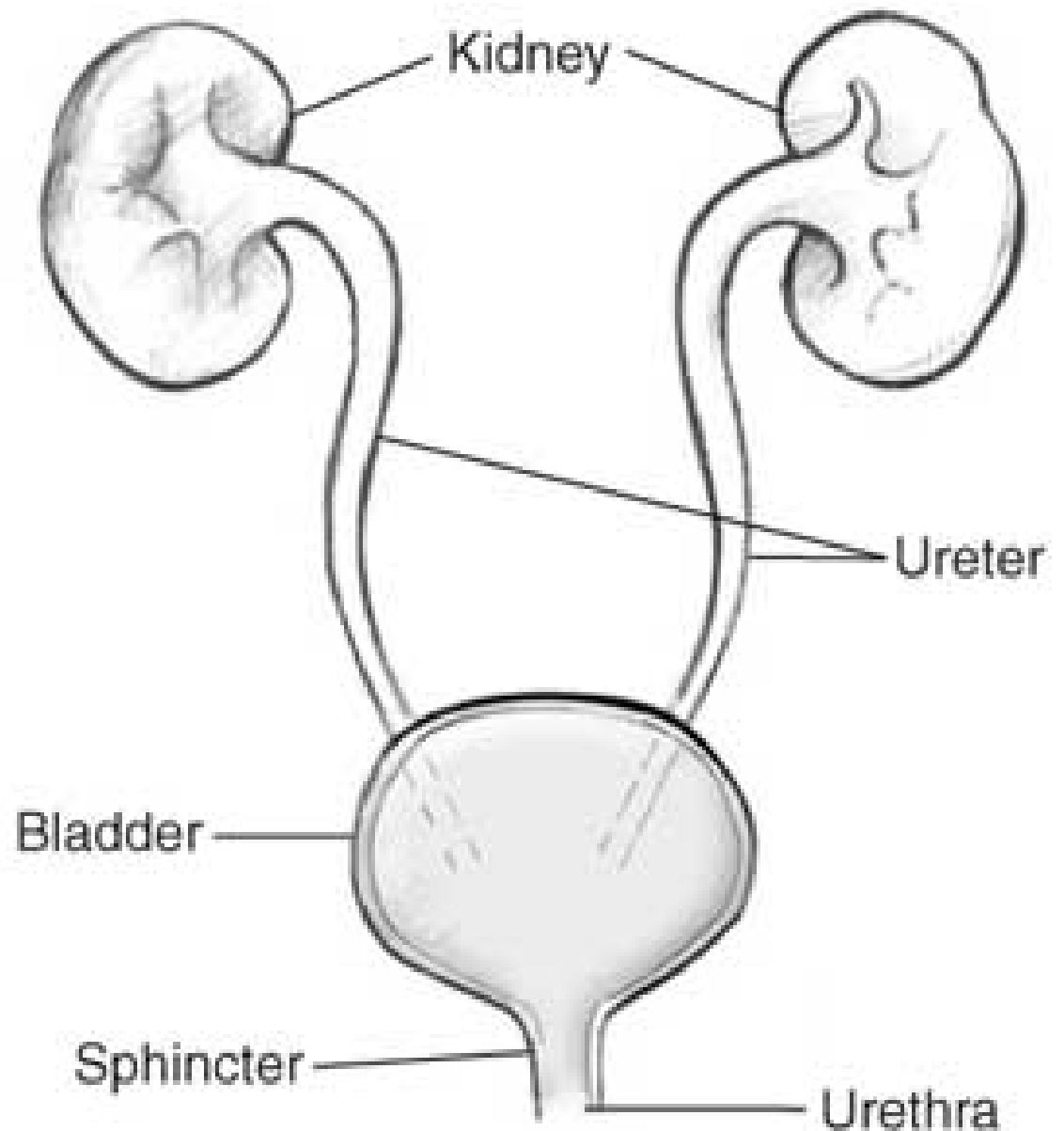
Components of the Urinary System



Urinary System

- Organs

- Kidneys
- Ureters
- Urinary bladder
- Urethra

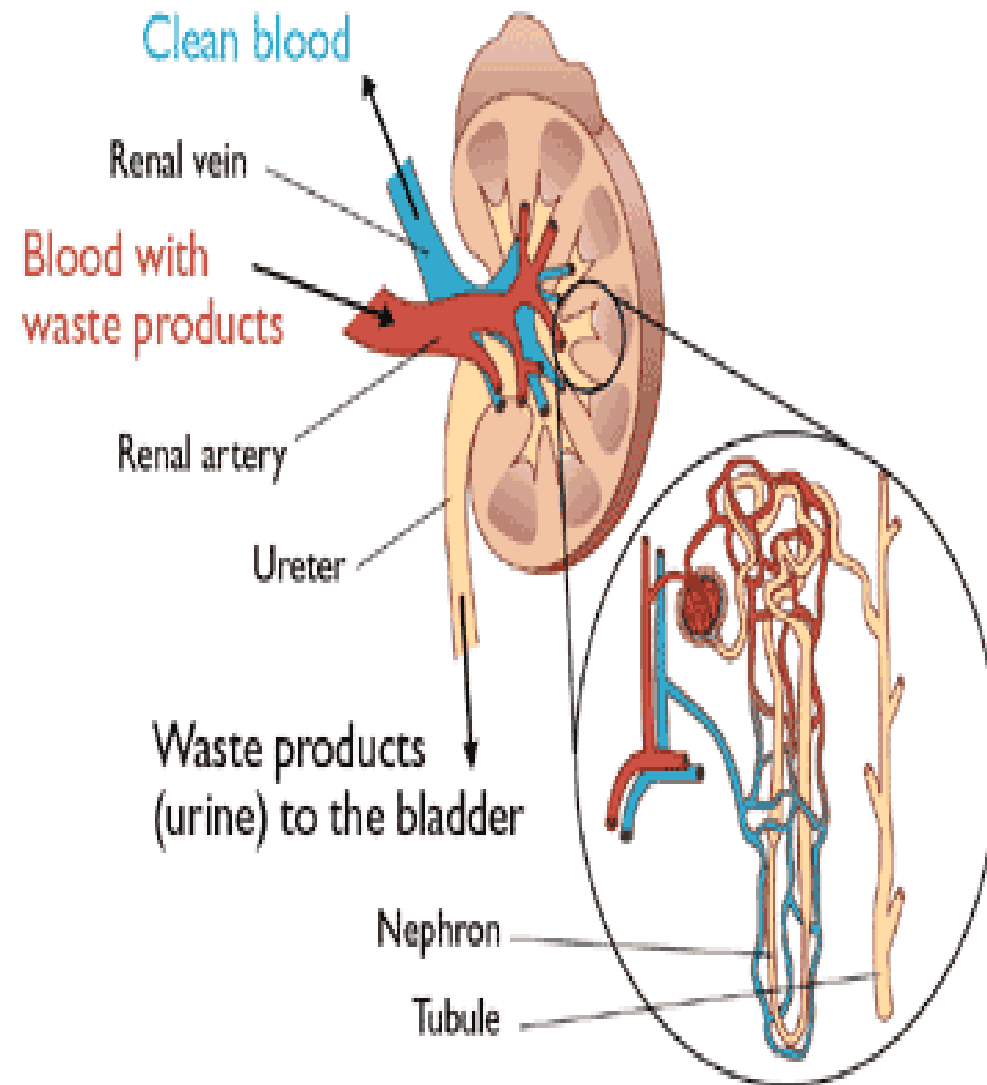


Urinary System

- Kidney's

- Main function is filtration.
- Removes urea from blood.
- Nephron is the functional unit of the kidney.
- Urine is created here.

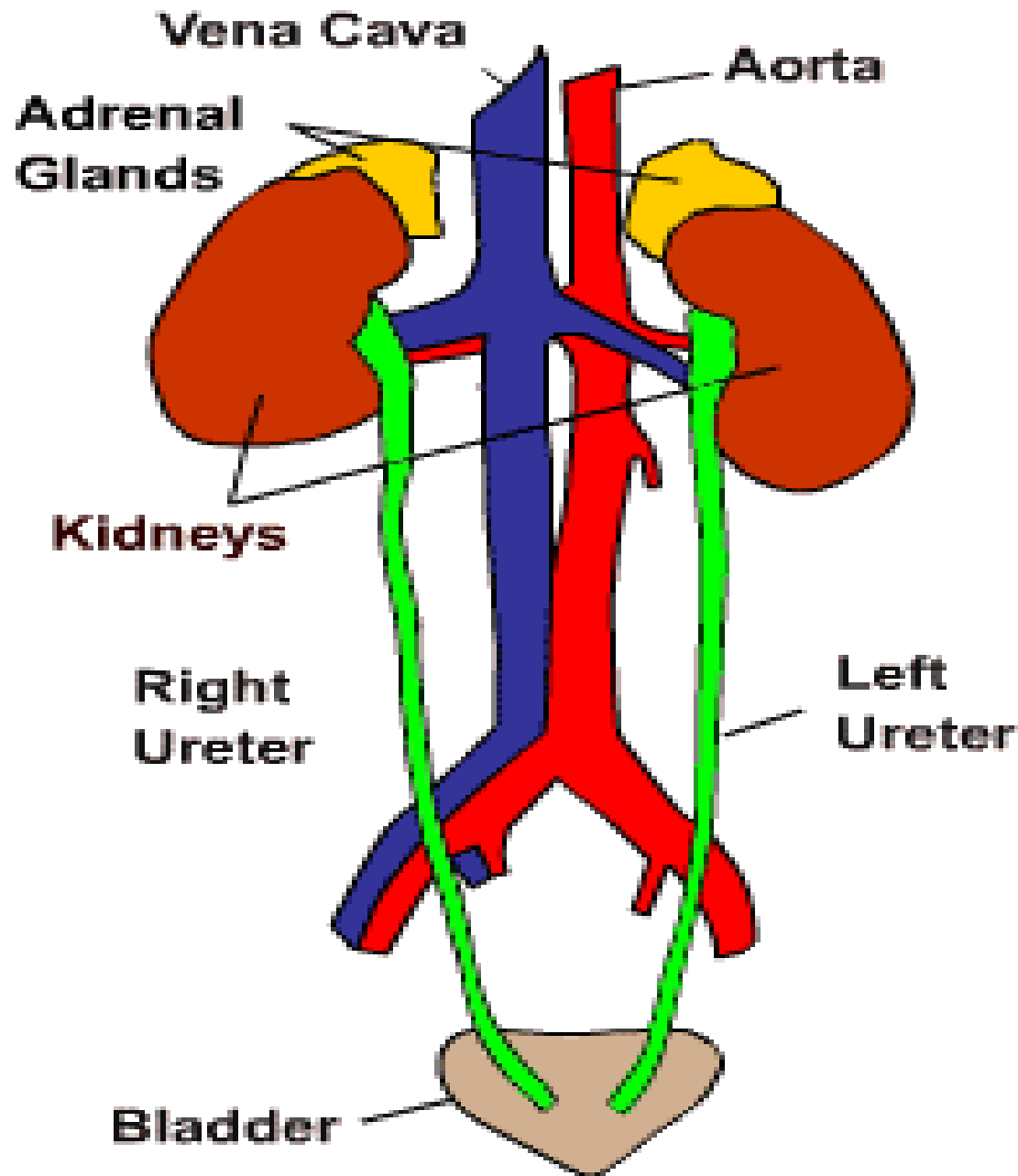
How the kidney works



Urinary System

- Ureters

- The large tubes connected to the kidneys and the urinary bladder.

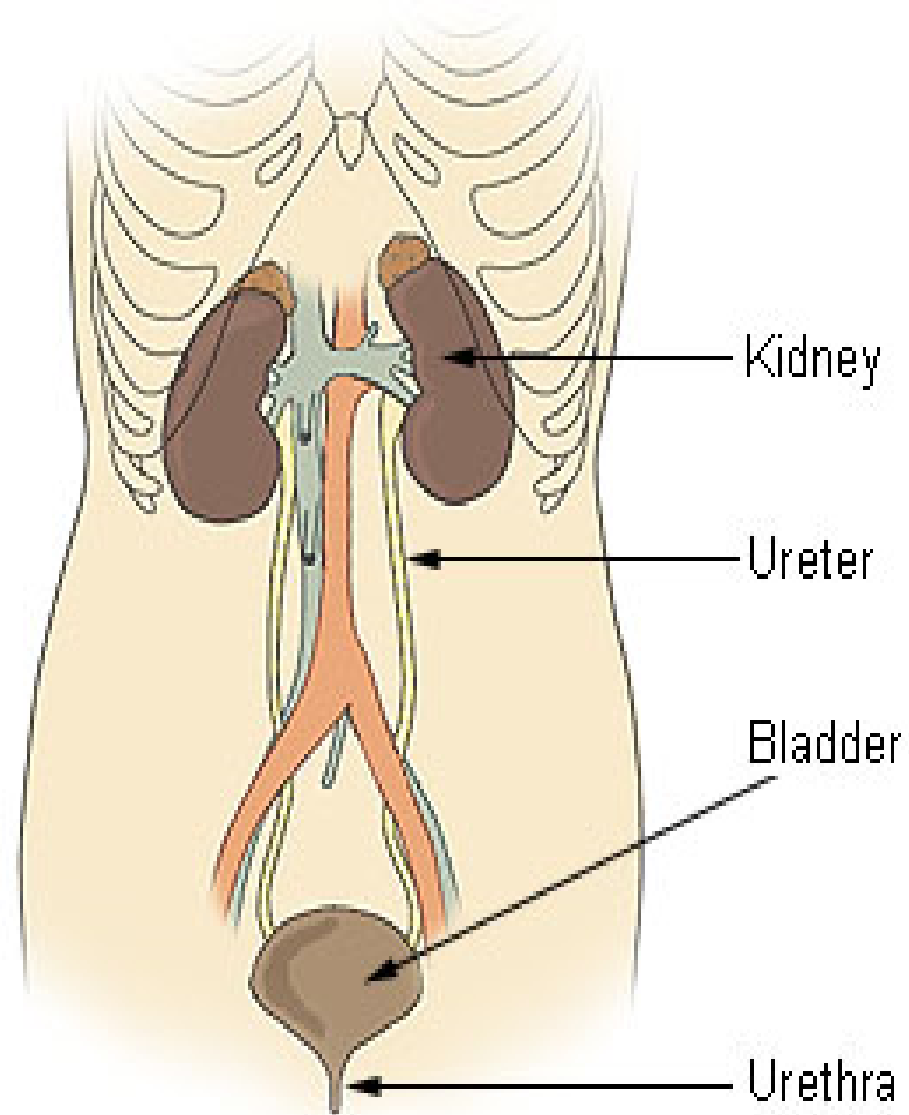


Urinary System

- Urinary Bladder

- A muscular organ that temporarily stores urine.

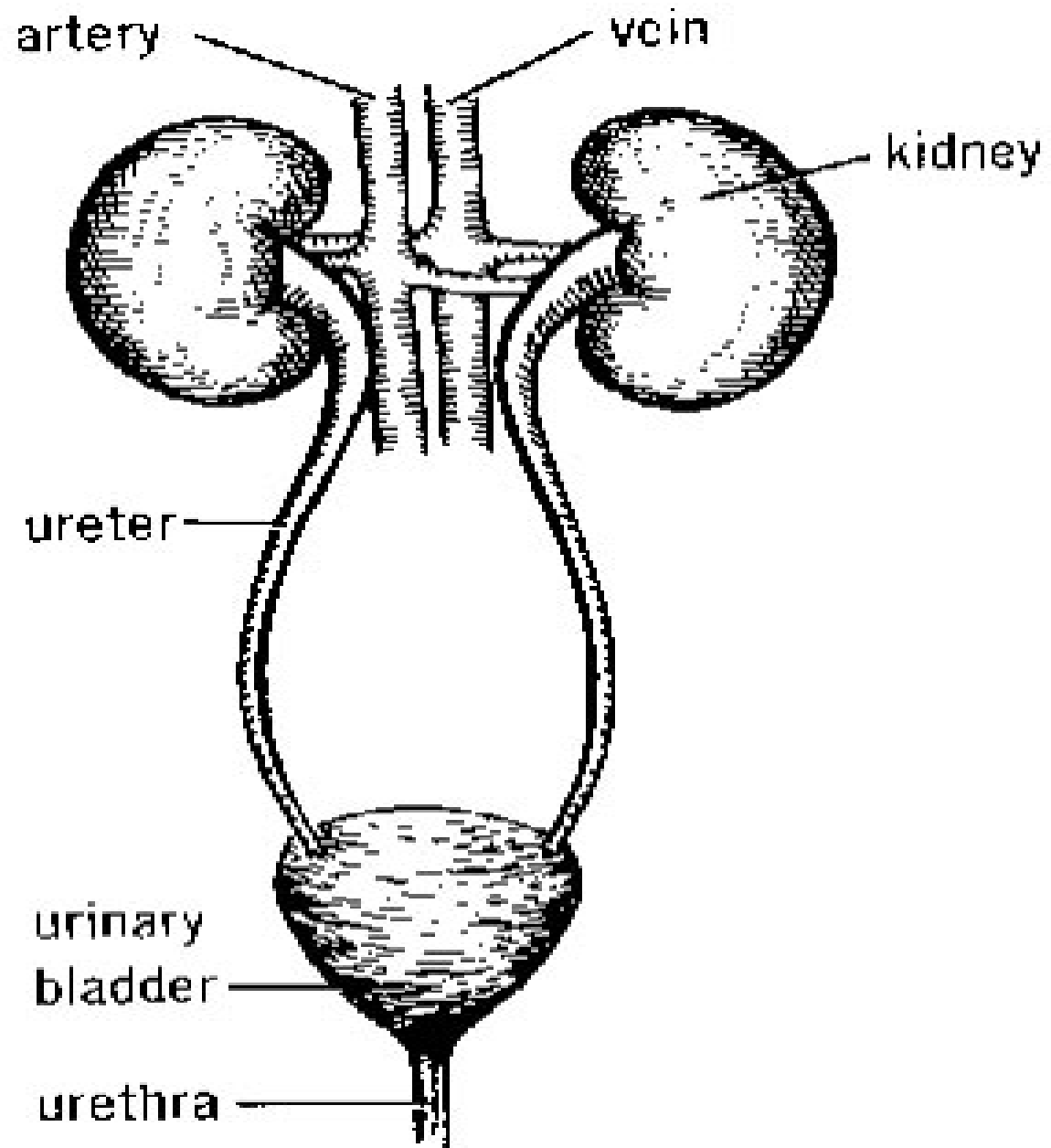
Components of the Urinary System



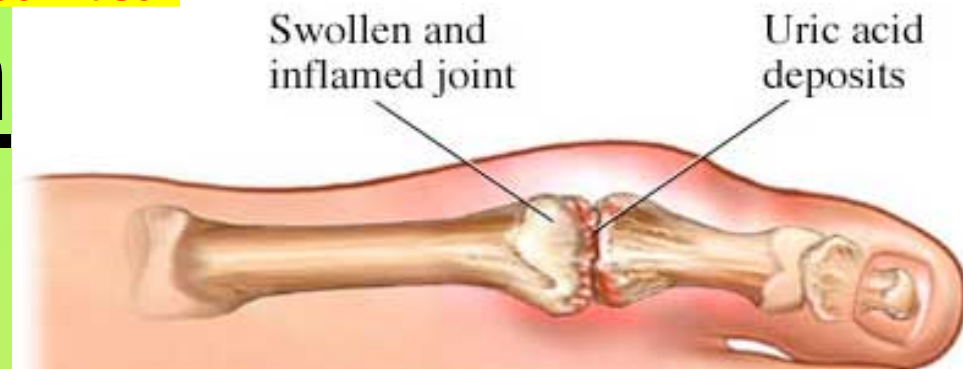
Urinary System

- Urethra

- A tube that expels urine out of the body.



Urinary System

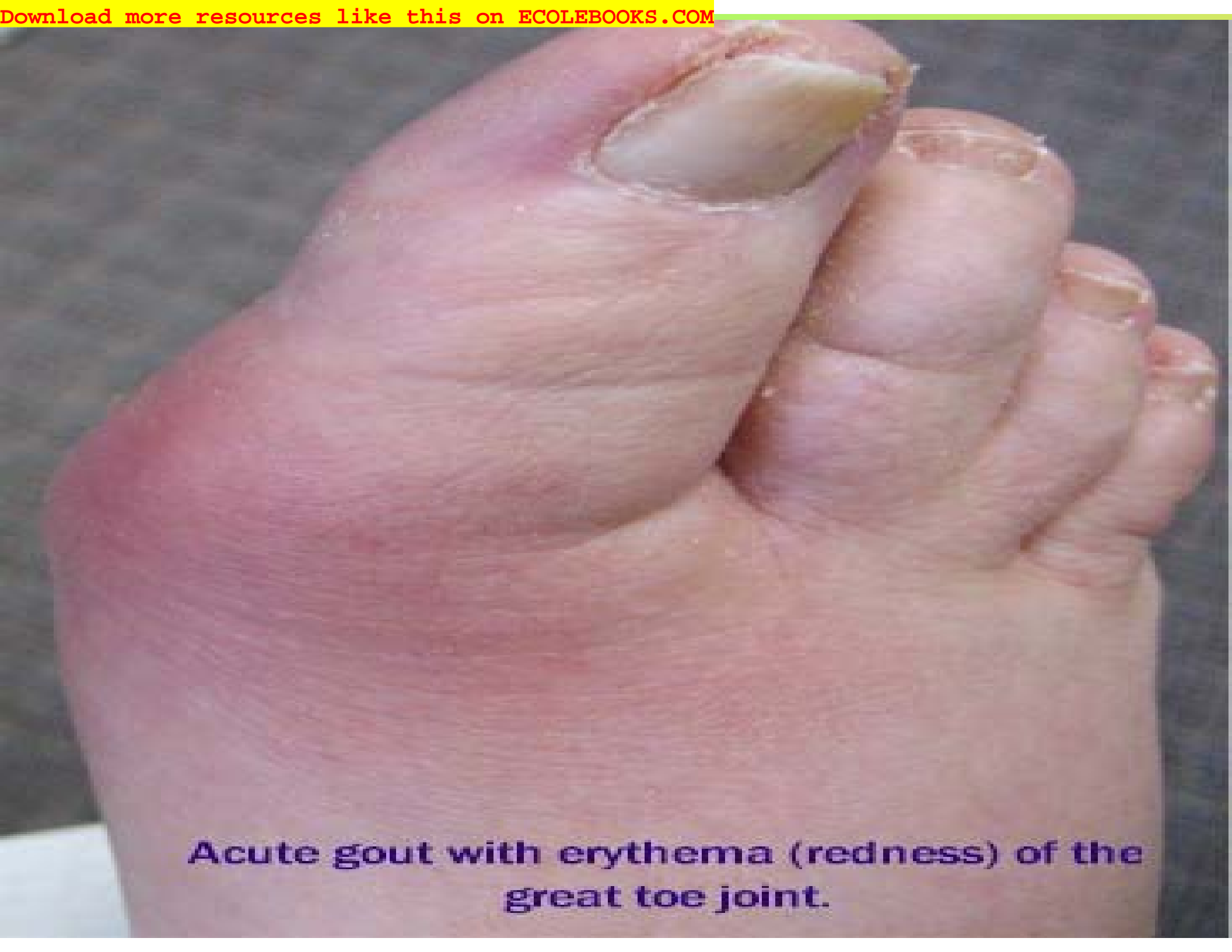


• Diseases of the urinary system

– Gout

- Causes symptoms similar to arthritis.
- Is caused by deposits of uric acid in the joints.
- Patients may suffer from severe pain and stiff joints.





Acute gout with erythema (redness) of the great toe joint.



- Sometimes people have this urge to urinate shortly after visiting the restroom. Then when they try to urinate, only a little urine comes out. This mostly happens during a bladder or urinary tract infection.
- Frequent urination is also a sign of pregnancy. The growing uterus applies pressure on the urinary bladder, which causes one to urinate frequently. Moreover, during pregnancy blood flow to the kidneys increases rapidly, thereby resulting in faster filtration and urine formation. About 2 to 4% pregnant women develop urinary infections, which can also be the reason for frequent urination sensation.

- Urine is often diluted and added to potted plants and plants in gardens. This is because, the adequate urea content in urine is a wonderful source of nitrogen to plants. So if you have a garden, you now know what to do!

- Have you heard of urine therapy? Well, urine therapy involves application of urine for medical or cosmetic purposes. People apply urine on the skin and even drink urine for medicinal benefits. Don't freak out, they drink their own urine only! Moreover, during wars in historic times, urine was applied on open wounds to destroy bacteria, due to its antiseptic qualities. According to them, the darker the urine, the more effective would be the urine!

- Urine should normally contain only salts, metabolic wastes and fluids. However, at times sugar is seen to be present in the urine. This is an indication of diabetes. Some other problems associated with the urinary system are polyuria (excess urine production), oliguria (little urine production), dysuria (difficulty and pain in urination), kidney failure, kidney stones, bladder control problems, prostate enlargement and urinary tract infections.

- Most of us have found ourselves in situations where we have had to control our full bladders due to the unavailability of a restroom. However, there is a control limit which shouldn't be exceeded. In the year 2007, Jennifer Strange (age 28) of California participated in a radio station's contest that involved drinking the maximum water without having to visit the restroom. She won the contest, however, was found dead the next day in her house. Doctors confirmed she died of water intoxication. Thus, it is important not to take the importance of the urinary system lightly.

Questions

- Which human body system includes the lungs, liver, skin, and kidneys?
 - a) Respiratory
 - b) Digestive
 - c) Transport
 - d) excretory

Questions

- In humans, the filtrate produced by the nephrons is temporarily stored in the?
 - a) Glomerulus
 - b) Alveolus
 - c) Gallbladder
 - d) Urinary Bladder

Questions

- The basic structural and functional excretory units of the human kidney are known as?
 - a) Nephridia
 - b) Nephrons
 - c) Alveoli
 - d) Ureters

Questions

- In humans the organ that breaks down red blood cells and amino acids is the?
 - a) Kidney
 - b) Liver
 - c) Gallbladder
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Questions

- Briefly describe how each of the following functions as an excretory organ
 - The liver;
 - The skin;
 - The lungs;