

Part 8 Excretory System




Name: _____

and Integumentary System

Part 8 Lesson 1 The Excretory System

The excretory system provides a pathway to remove _____ from the body.

The excretory system removes excess... Circle the correct answer below.

 Nutrients Marrow Cells Oxygen	 Oxygen Nutrients Plasma Air	 Water Salts CO₂ Urea
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The process that removes these wastes is called _____.

Which two do the lungs remove. Give them an extra circle above.

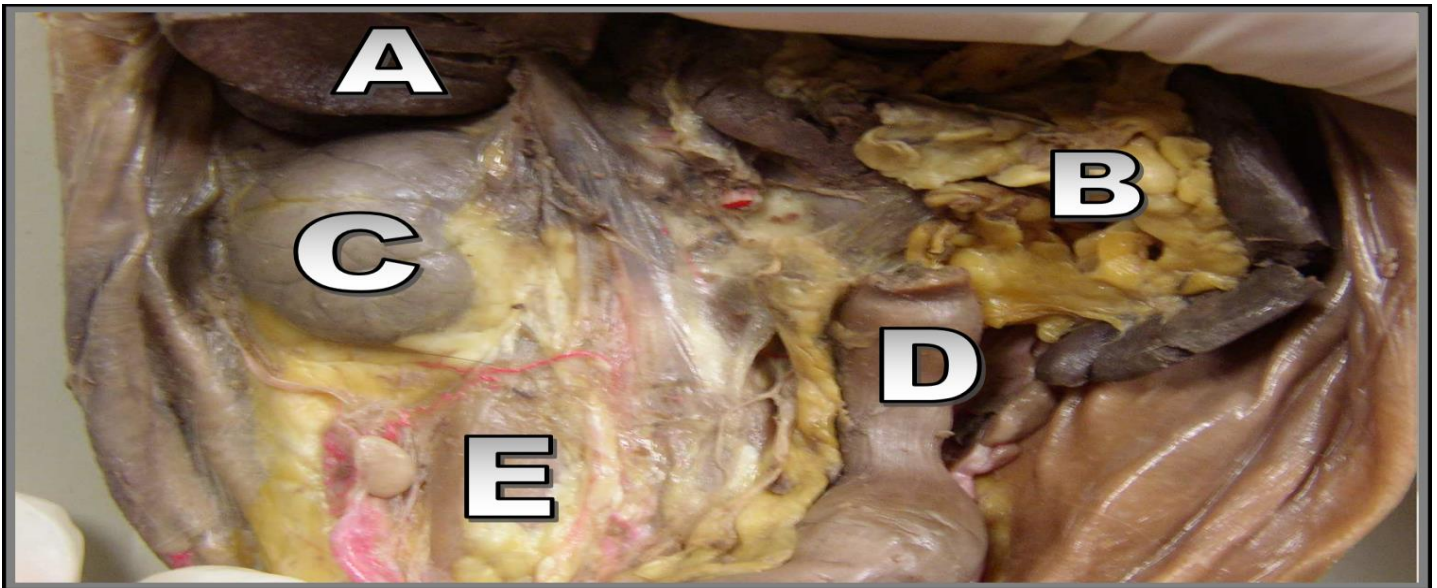
The remaining organs of the excretory system are the _____, _____, and _____.

The Urinary System / Renal System

The Kidneys: They _____ waste products from the blood to keep it clean and _____.

Which letters below are the kidney's (Cat)

Answer=

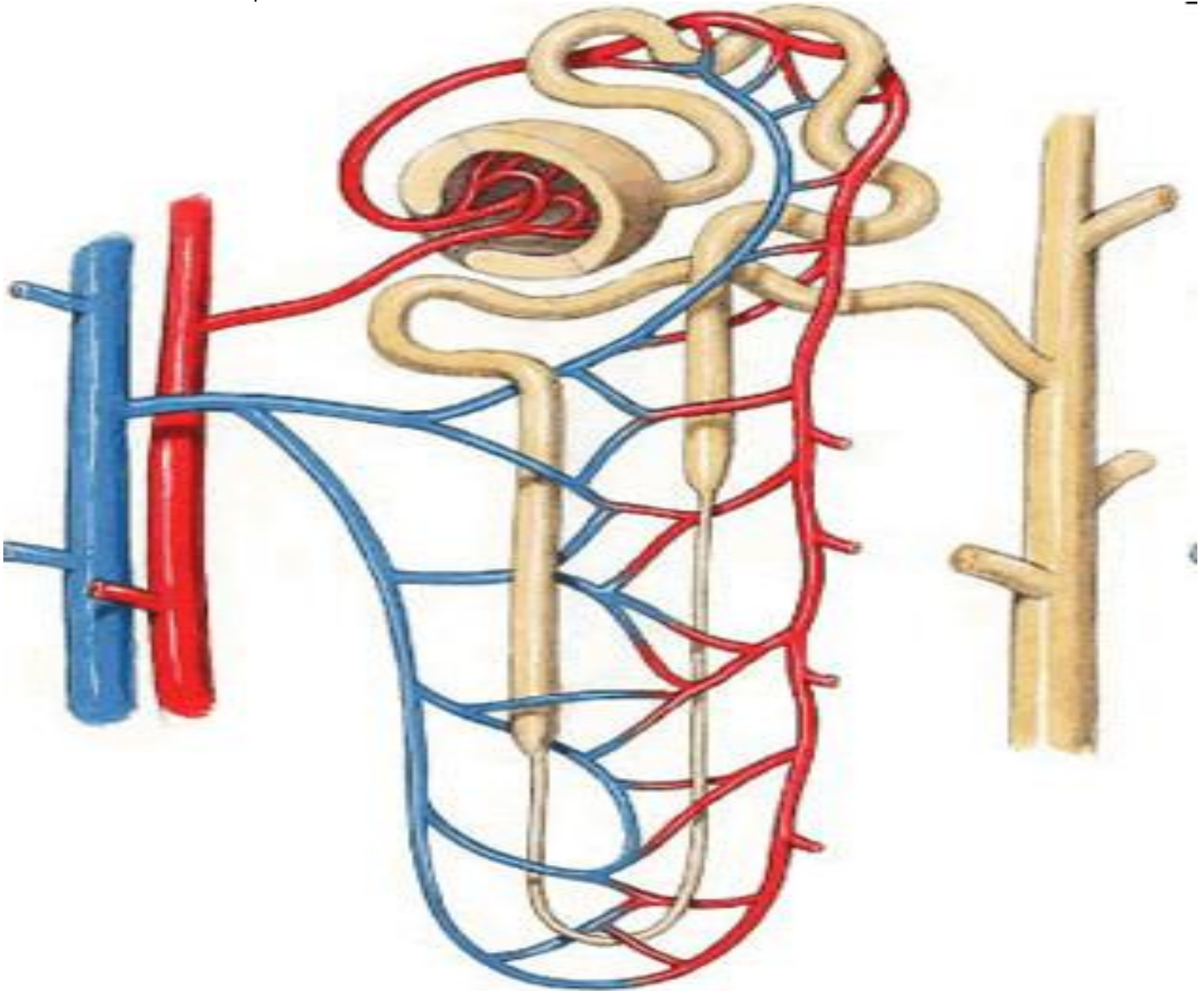


Waste comes from old tissues / cells and from food as the body uses energy and _____ itself.

This waste, if not _____ will build-up and cause damage.

A _____ is the basic structural and functional unit of the kidneys that regulates water and soluble substances in the blood by _____ the blood, _____ what is needed, and excreting the rest as _____.

Please label the Nephron below as described in the slideshow.



_____ Duct: reabsorbs solutes and water from filtrate. Leads to Ureters.

Glomerulus: Filters small solutes from _____.

Loop of Henle: Reabsorbs Na^+ and Cl^- from the filtrate. Allows water to pass.

Proximal tubule: Secretes and _____ ions, water, and nutrients, removes toxins, adjust pH.

_____ Tubule: Secretes and absorbs ions to maintain blood pH.

_____ : A membranous structure surrounding the glomerulus of each nephron in the kidneys that extracts wastes, excess salts, and water from the blood. In the nephron, a tiny blood vessel (capillary) -intertwines with a tiny urine-collecting tube called a tubule.

The tiny blood vessels in the nephrons act like strainers.

Waste in the blood spills out through the holes while the nutrients and blood do not

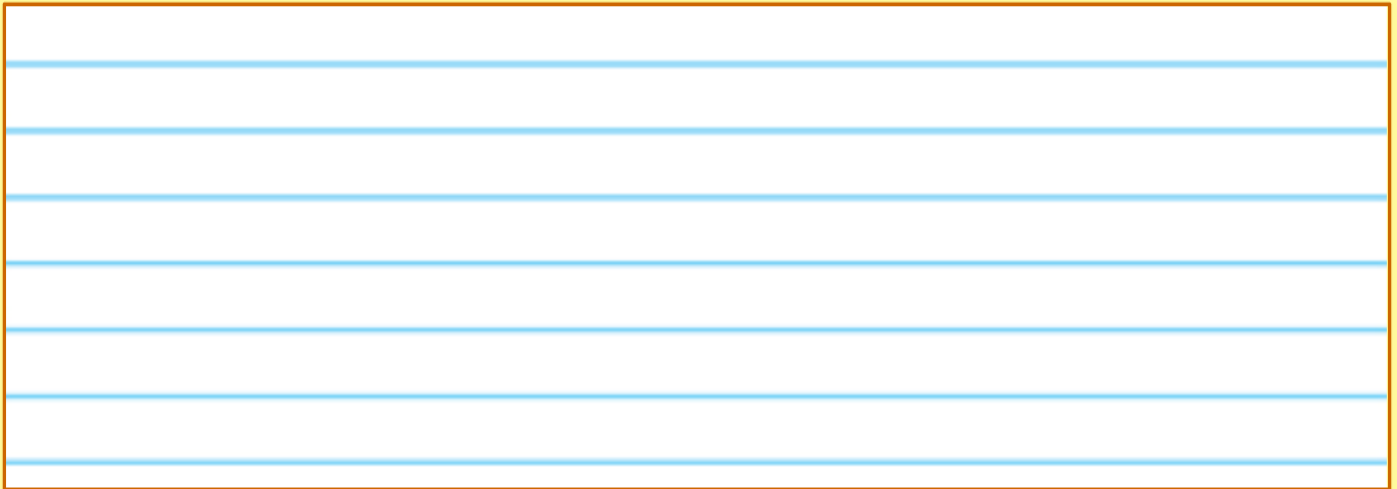
The kidneys measure out chemicals such as sodium, phosphorus, and potassium and release _____ to return to the body.

The kidneys regulate / balance the bodies level of these substances.
Called H_____ (Maintain balance)

Part 8 Lesson 2

Can you drink your own urine? Why?

- If you're stuck on a raft etc. in a survival situation in the middle of the ocean.



Kidney _____: A hard mass formed in the kidneys, typically consisting of insoluble calcium compounds.

Urine travels from the kidneys through narrow tubes called _____ to the bladder.

Urinary Bladder: _____until excretion.

Please draw a urinary system / kidneys and bladder below as described in the slideshow.



Urethra: Tube that connects the _____ to the _____ for the removal of fluids out of the body.

The Liver: Vital organ that among other jobs filters _____ from the blood.

The liver produces bile which is stored in gall bladder.

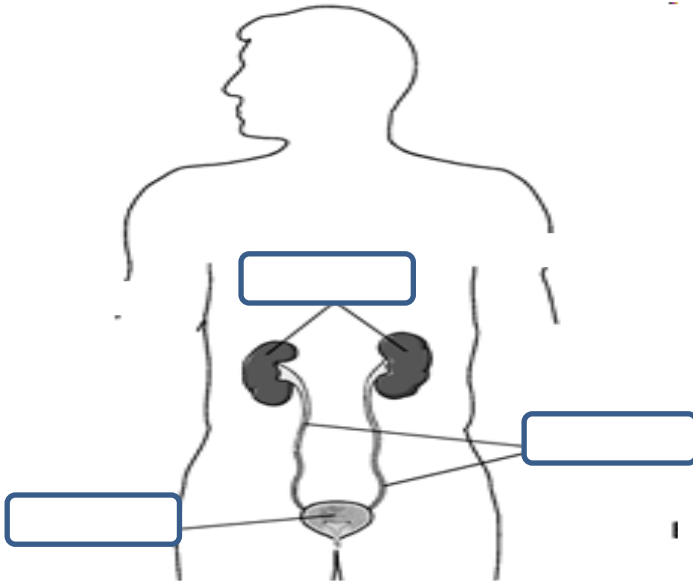
This is given to the small intestine and used to break down acidic wastes such as ammonia as well as fats and ethanol, converting them into harmless substances.

_____ is a late stage of scarring (fibrosis) of the liver caused by many forms of liver diseases and conditions, such as hepatitis and chronic alcoholism. Each time your liver is injured — whether by disease, excessive alcohol consumption or another cause — it tries to repair itself.

What's this a picture of? What does this organ do for your body (Excretory), ◊ and why should you take care of it?



◇ Name the organs below?



_____ : These filter waste products from the blood to keep it clean and balanced.

_____ : Tubes from the kidneys that deliver urine to the bladder.

_____ : Stores urine until excretion.

Across

2. Kidney _____ : A hard mass formed in the kidneys, typically consisting of insoluble calcium compounds.
3. Tube that connects the urinary bladder to the genitals for the removal of fluids out of the body.
5. _____ Tubule: Secretes and absorbs ions to maintain blood pH.
9. Vital organ that among other jobs filters toxins from the blood.
10. Filters small solutes from blood
12. Collecting _____ : Reabsorbs solutes and water from filtrate. Leads to Ureters.
13. This is a late stage of scarring (fibrosis) of the liver caused by many forms of liver diseases and conditions, such as hepatitis and chronic alcoholism.
14. The process that removes these wastes is called...
16. Urine travels from the kidneys through narrow tubes called _____ to the bladder.

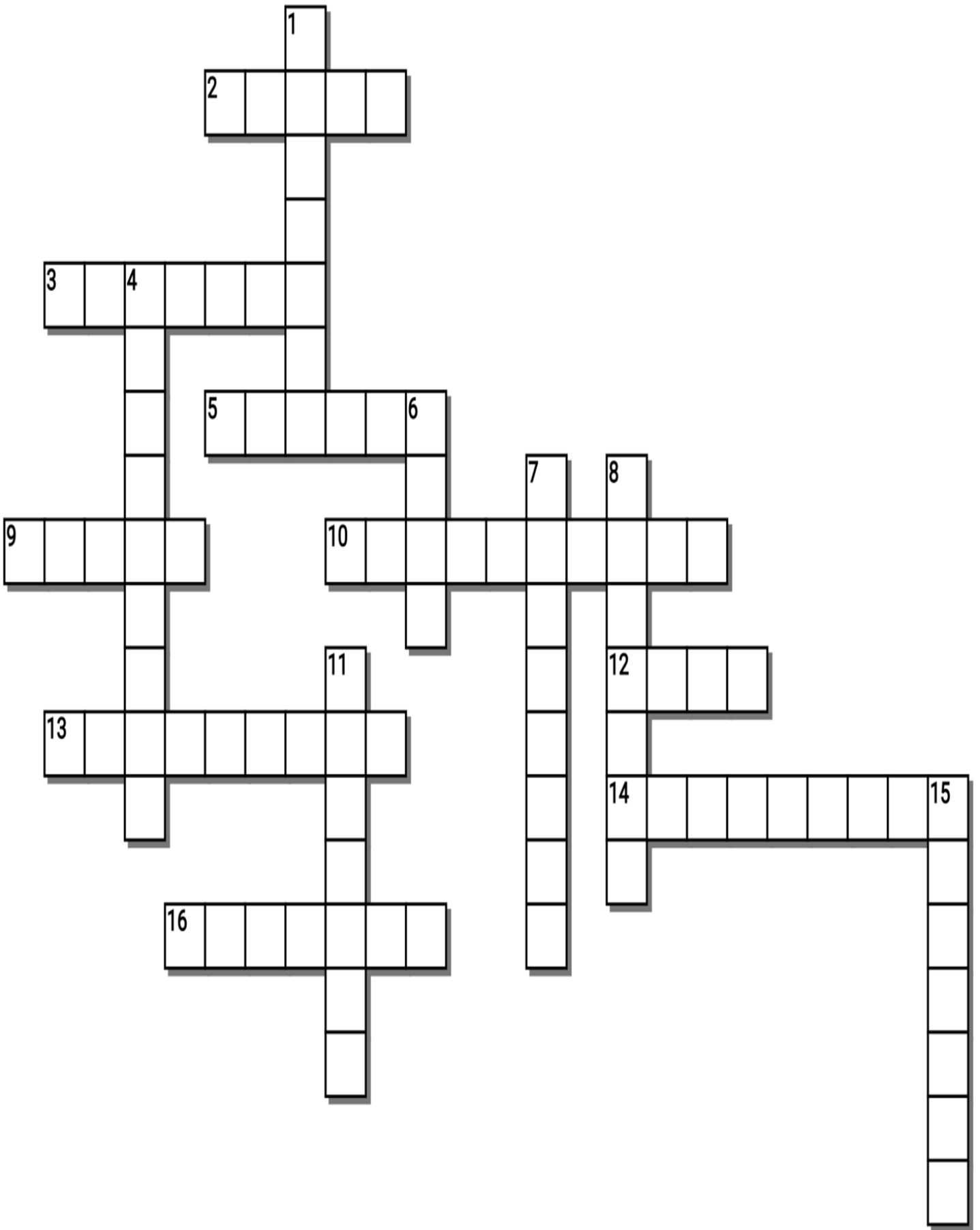
Down

1. _____ Capsule: A membranous structure surrounding the glomerulus of each nephron in the kidneys that extracts wastes, excess salts, and water from the blood.
4. The _____ system is the system of an organism's body that performs the function of excretion, the bodily process of discharging wastes
6. _____ of Henle: Reabsorbs Na⁺ and Cl⁻ from the filtrate. Allows water to pass.
7. _____ tubule: Reabsorbs ions, water, and nutrients, removes toxins, adjust pH.
8. Stores urine until excretion.
11. These filter waste products from the blood to keep it clean and balanced.
15. The basic structural and functional unit of the kidneys that regulates water and soluble substances in the blood by filtering the blood, reabsorbing what is needed, and excreting the rest as urine.

-----Teacher can remove this word bank to make puzzle more challenging-----

Possible Answers

BLADDER, BOWMANS, CIRRHOSIS, DISTAL, DUCT, GLOMERULUS, KIDNEYS, LIVER, LOOP, NEPHRON, PROXIMAL, STONE, URETHRA, EXCRETION, EXCRETORY, URETERS



Part 8 Lesson 3 The Integumentary System

The integumentary system is the organ system that _____ the body from damage.
Comprising the skin and its appendages (including hair and nails.)

Skin: Large organ that covers body.

Aids in _____

Keeps in _____

Makes _____

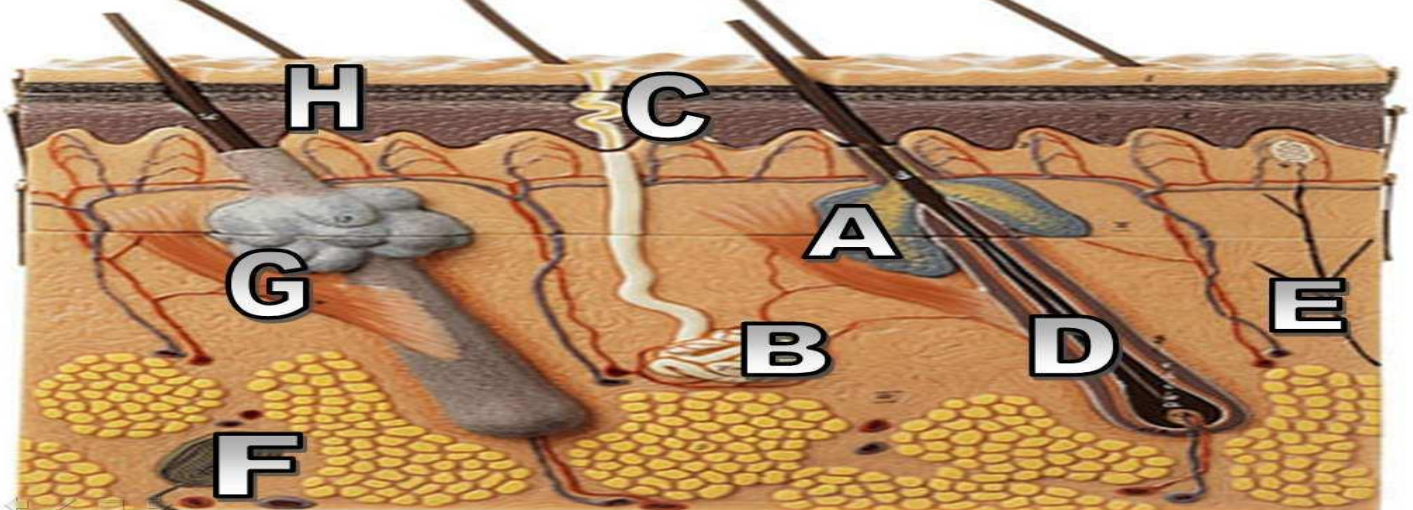
Regulates body _____

Excretes _____

The integumentary system (Skin) is the organ system that...

◇ Please match the correct letter next to the term below

Sweat Gland Hair Follicle Dermis
 Epidermis Sweat Pore Subcutaneous Layer
 Pili Muscle Sebaceous Gland



A=	B=	C=	D=
E=	F=	G=	H=

Activity! (Optional) Fingerprints

- <http://www.youtube.com/watch?v=PegPDzjzXYE>
- Watch video and make five thumb prints using a pencil and masking tape.
- Each person in group to make one thumb print on piece of tape.
- Move those single prints around without damaging them and try to identify your prints from your neighbors.

R. Thumb	R. Index	R. Middle	R. Ring	R. Little
L. Thumb	L. Index	L. Middle	L. Ring	L. Little

Why do we sweat?

Part 8 Lesson 4 Quiz Review Excretory and Integumentary System

1.)	6.)
2.)	7.)
3.)	8.)
4.)	9.)
5.)	10.)

*11.) Bonus (5pts):	*12) Bonus (5 pts)
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Unit Notes

A large rectangular area with a light blue background and a purple border, containing horizontal blue lines for writing and a vertical red margin line on the left side.

Part 8 Excretory System




Name: _____

and Integumentary System

Part 1 Lesson 1 The Excretory System

The excretory system provides a pathway to remove **wastes** from the body.

The excretory system removes excess... Circle the correct answer below.

		
<p>Nutrients Marrow Cells Oxygen</p>	<p>Oxygen Nutrients Plasma Air</p>	<p>Water Salts CO₂ Urea</p>

The process that removes these wastes is called **excretion**.

Which two do the lungs remove. Give them an extra circle above. **Circled in orange.**

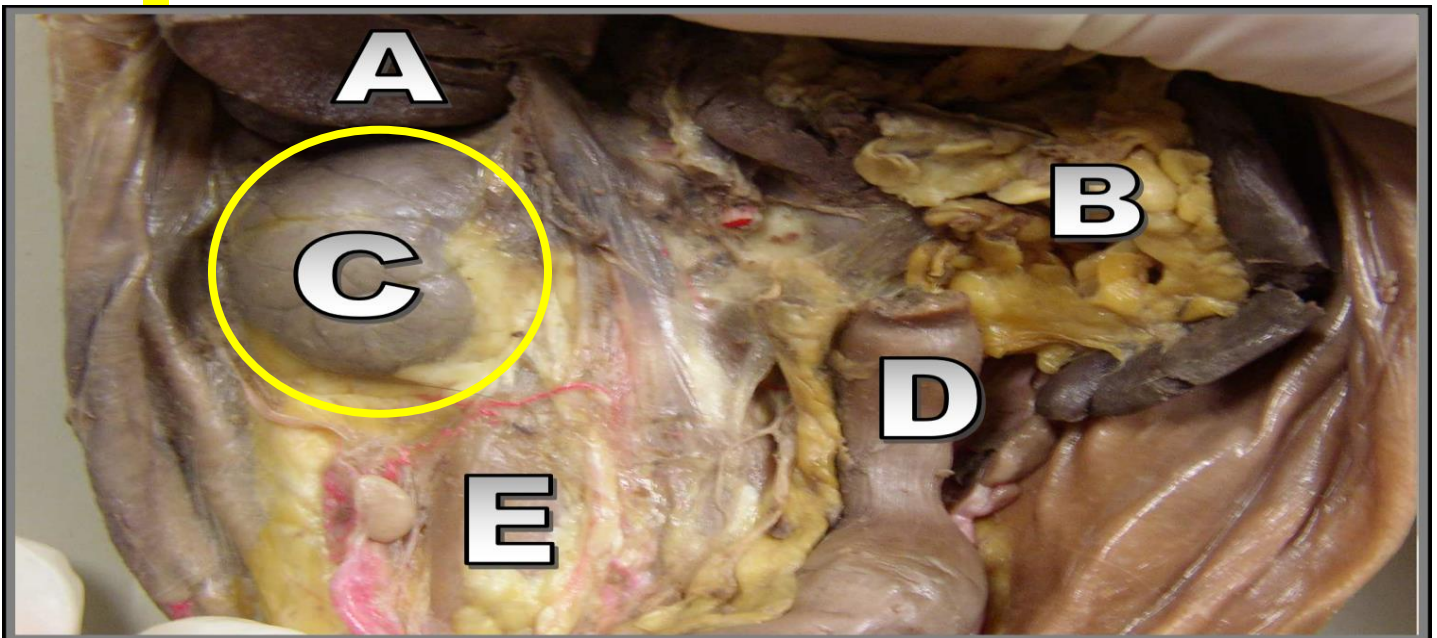
The remaining organs of the excretory system are the **kidneys, liver, and skin.**

The Urinary System / Renal System

The Kidneys: They **filter** waste products from the blood to keep it clean and **balanced**.

Which letters below are the kidney's (Cat)

Answer= **C**

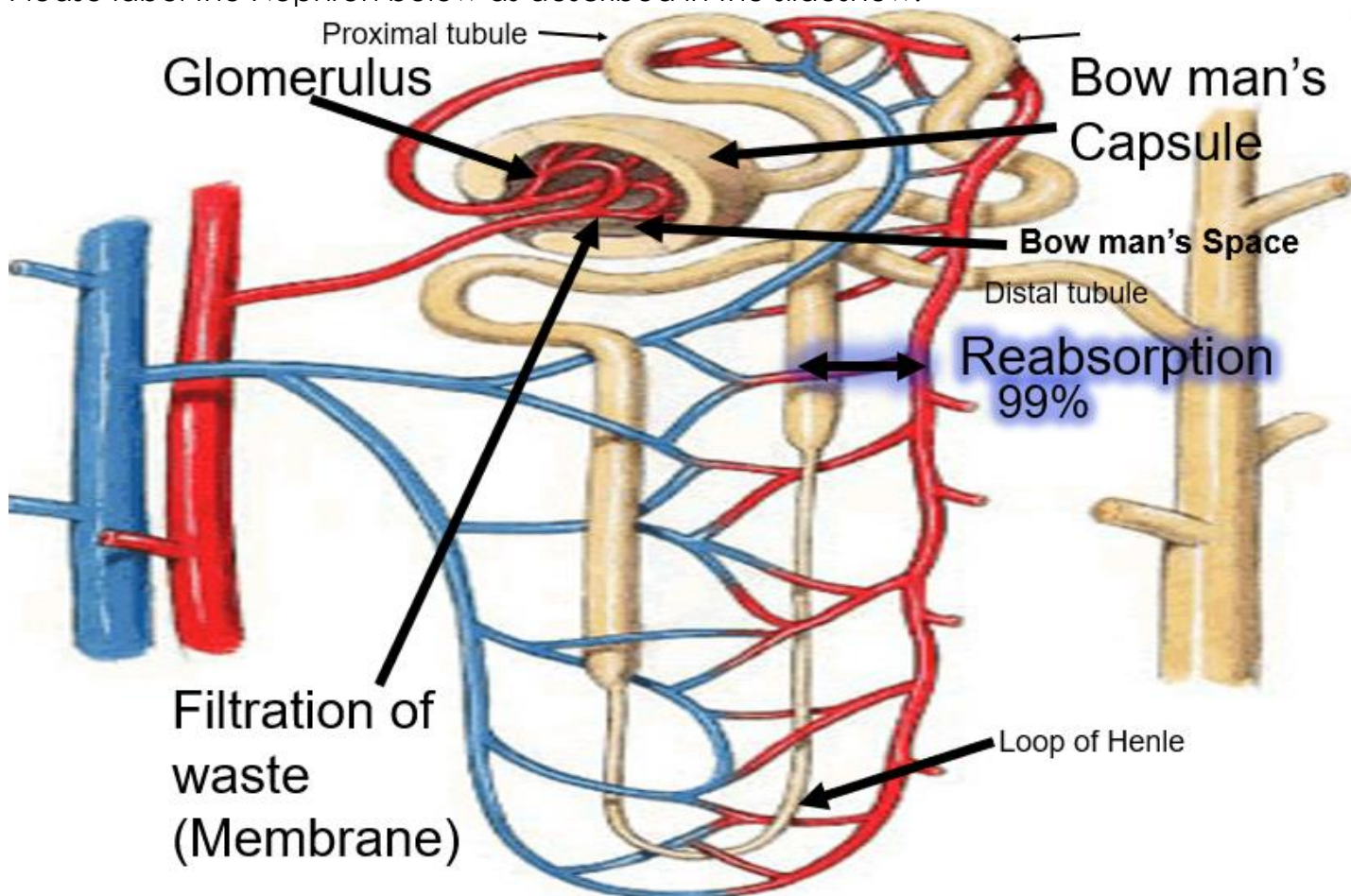


Waste comes from old tissues / cells and from food as the body uses energy and **repairs** itself.

This waste, if not **removed** will build-up and cause damage.

A **nephron** is the basic structural and functional unit of the kidneys that regulates water and soluble substances in the blood by **filtering** the blood, **reabsorbing** what is needed, and excreting the rest as **urine**.

Please label the Nephron below as described in the slideshow.



Collecting Duct: reabsorbs solutes and water from filtrate. Leads to Ureters.

Glomerulus: Filters small solutes from **blood**.

Loop of Henle: **Reabsorbs** Na^+ and Cl^- from the filtrate. Allows water to pass.

Proximal tubule: Secretes and **reabsorbs** ions, water, and nutrients, removes toxins, adjust pH.

Distal Tubule: Secretes and absorbs ions to maintain blood pH.

Bow Man's Capsule: A membranous structure surrounding the glomerulus of each nephron in the kidneys that extracts wastes, excess salts, and water from the blood.

In the nephron, a tiny blood vessel (capillary) -intertwines with a tiny urine-collecting tube called a tubule.

The tiny blood vessels in the nephrons act like strainers.

Waste in the blood spills out through the holes while the nutrients and blood do not

The kidneys measure out chemicals such as sodium, phosphorus, and potassium and release them back to the blood to return to the body.

The kidneys regulate / balance the bodies level of these substances.

Called **Homeostasis** (Maintain balance)

Part 9 Lesson 2

Can you drink your own urine? Why?

- If you're stuck on a raft etc. in a survival situation in the middle of the ocean.

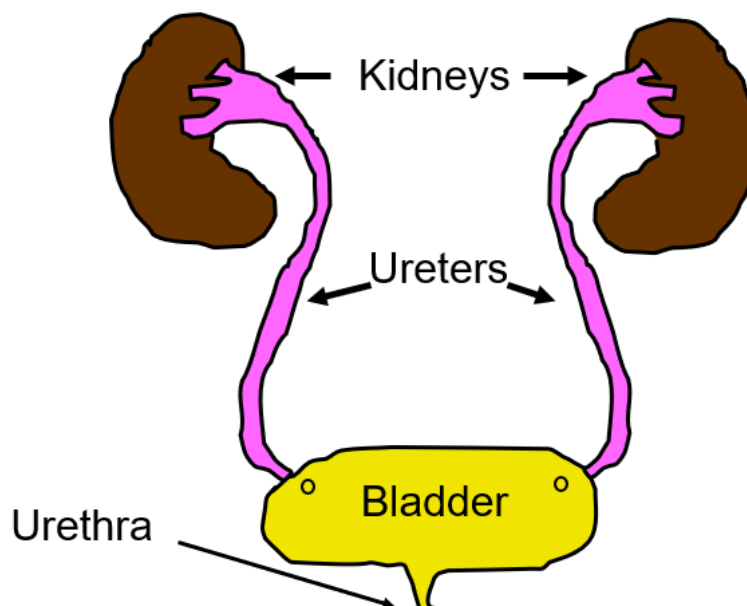
Drinking your urine may keep you alive an extra day or two. It's mostly water so it can replenish lost water (95%). The other 5% is going back to your kidneys and after a day or two this highly concentrated waste can cause kidney failure. It's not recommended to consume urine more than once or twice if in an extreme survival situation. You will be in trouble from either total dehydration or complete kidney failure.

Kidney **Stone**: A hard mass formed in the kidneys, typically consisting of insoluble calcium compounds.

Urine travels from the kidneys through narrow tubes called **ureters** to the bladder.

Urinary Bladder: **Stores urine** until excretion.

Please draw a urinary system / kidneys and bladder below as described in the slideshow.



Urethra: Tube that connects the **urinary bladder** to the **genitals** for the removal of fluids out of the body.

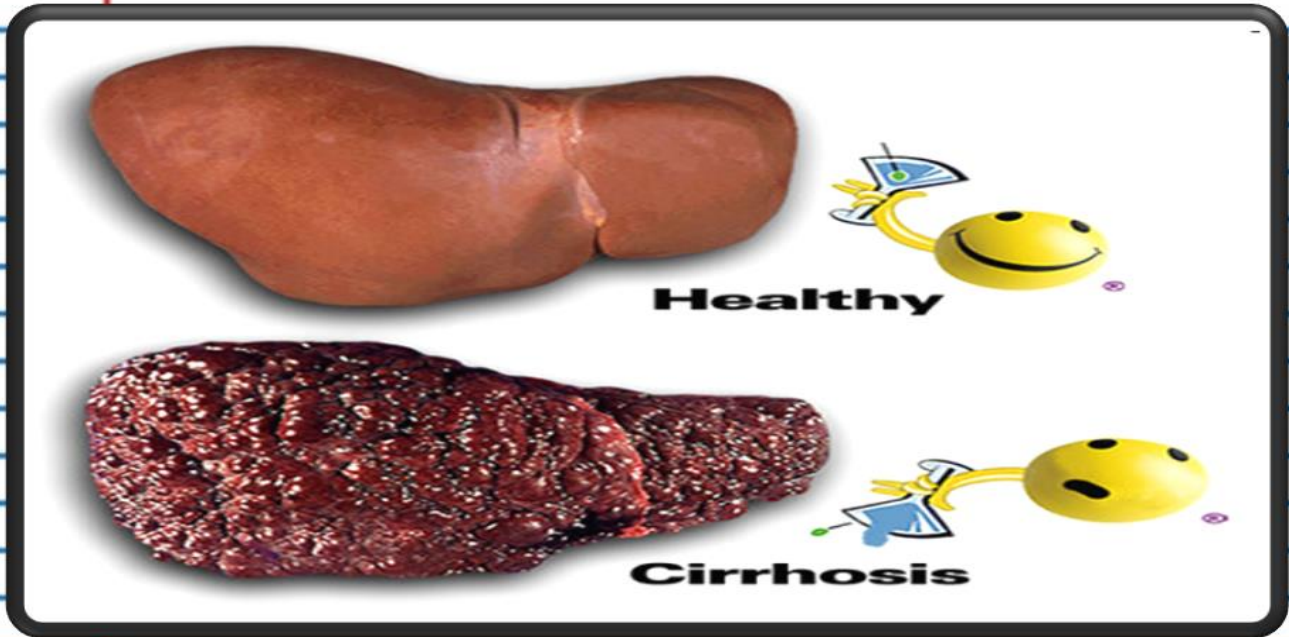
The Liver: Vital organ that among other jobs filters **toxins** from the blood.

The liver produces bile which is stored in gall bladder.

- This is given to the small intestine and used to break down acidic wastes such as ammonia as well as fats and ethanol, converting them into harmless substances.

Cirrhosis is a late stage of scarring (fibrosis) of the liver caused by many forms of liver diseases and conditions, such as hepatitis and chronic alcoholism. Each time your liver is injured — whether by disease, excessive alcohol consumption or another cause — it tries to repair itself.

What's this a picture of? What does this organ do for your body (Excretory), ◊ and why should you take care of it?



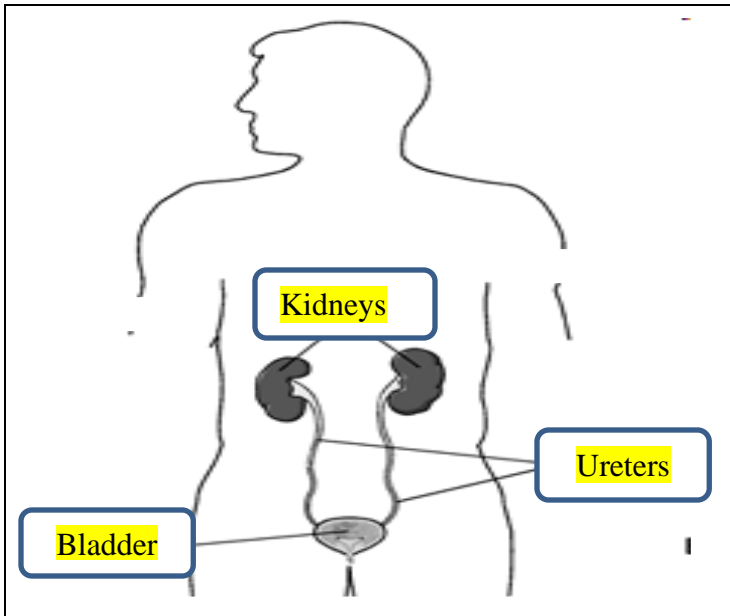
This is the liver. It filters toxins from the blood. You need to take care of it because every time it gets injured, it tries to repair itself, leading to scar tissue, or cirrhosis. It won't be able to do its job with too much scar tissue.

◊ Name the organs below?

Kidneys: These filter waste products from the blood to keep it clean and balanced.

Ureters: Tubes from the kidneys that deliver urine to the bladder.

Bladder: Stores urine until excretion.



Across

2. Kidney _____: A hard mass formed in the kidneys, typically consisting of insoluble calcium compounds.
3. Tube that connects the urinary bladder to the genitals for the removal of fluids out of the body.
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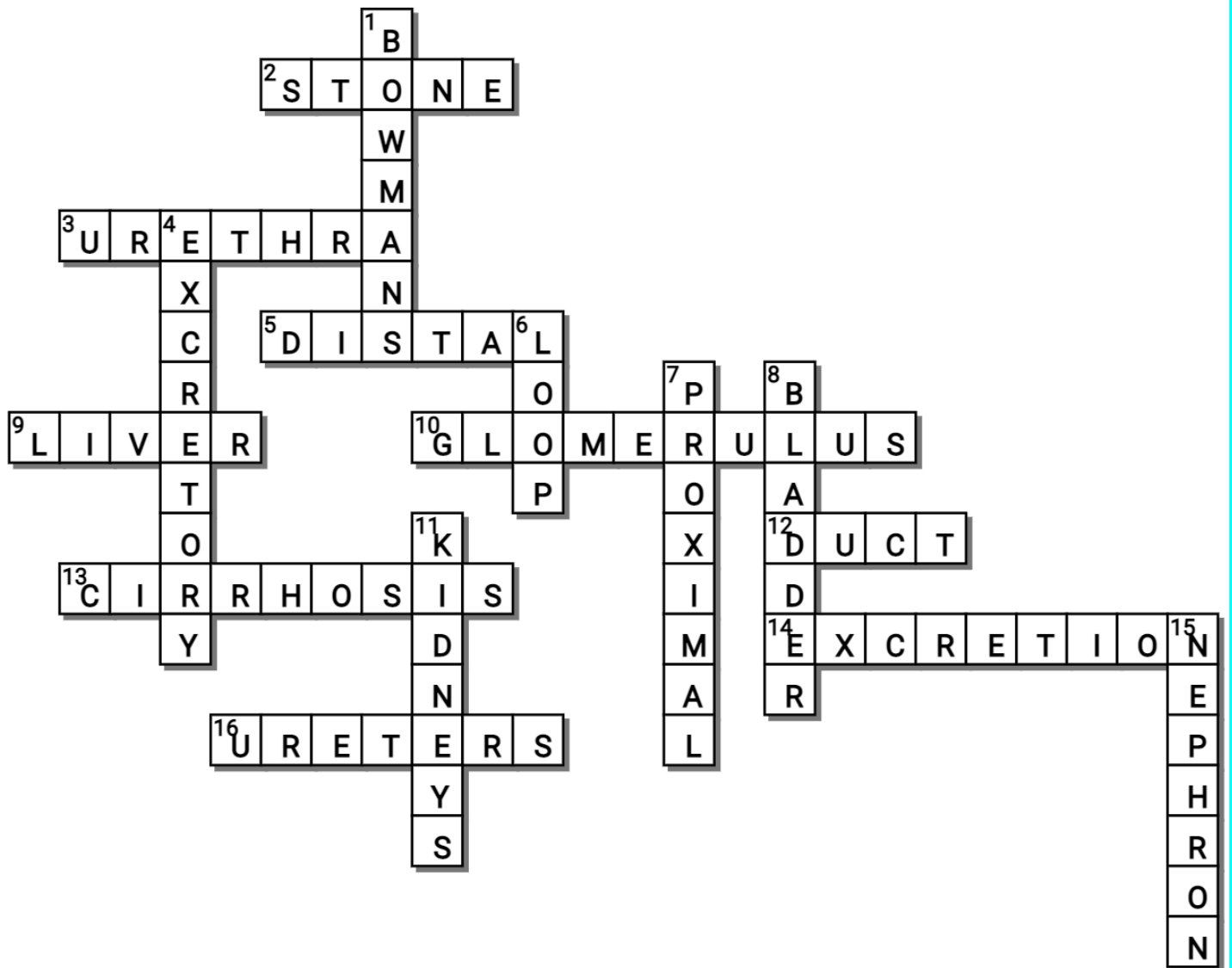
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1. _____ Capsule: A membranous structure surrounding the glomerulus of each nephron in the kidneys that extracts wastes, excess salts, and water from the blood.
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Part 9 Lesson 3 The Integumentary System

The integumentary system is the organ system that **protects** the body from damage.
Comprising the skin and its appendages (including hair and nails.)

Skin: Large organ that covers body.

Aids in **protection**

Keeps in **moisture**

Makes **new skin (repair)**

Regulates body **temp.**

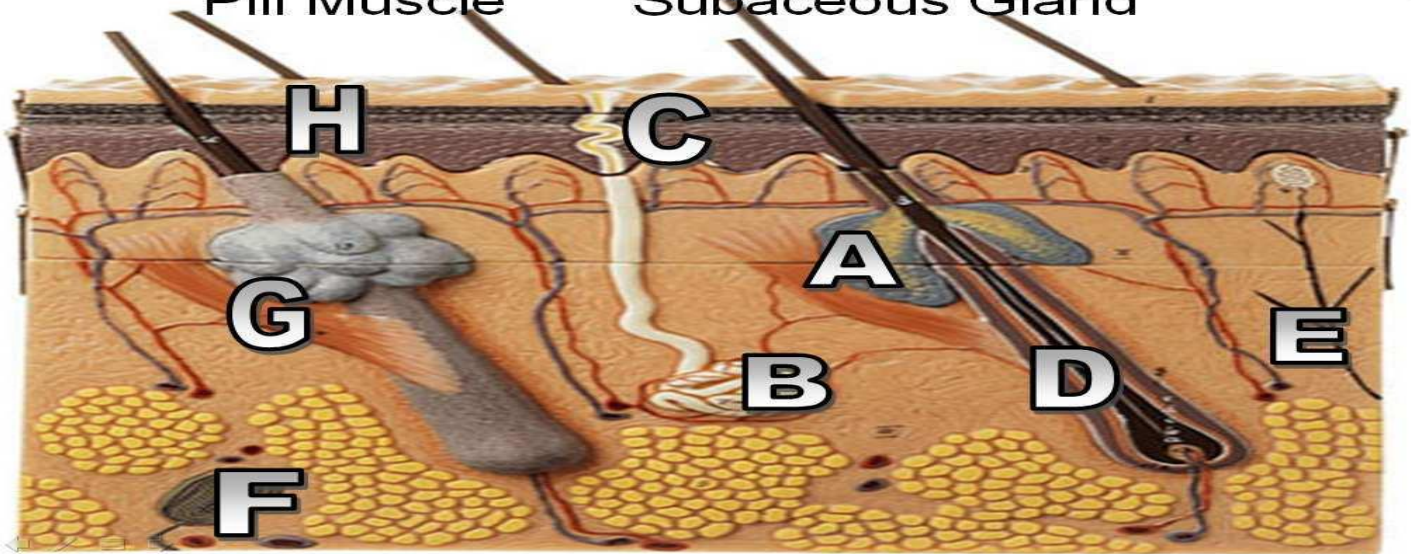
Excretes **waste**

The integumentary system (Skin) is the organ system that...

- Covers the body.
- Aids in protection
- Keeps in moisture
- Makes new skin (repair)
- Regulates body temperature
- Excretes waste

◇ Please match the correct letter next to the term below

Sweat Gland Hair Follicle Dermis
 Epidermis Sweat Pore Subcutaneous Layer
 Pili Muscle Subcutaneous Gland



A=Subcutaneous gland	B=Sweat gland	C=Sweat pore	D= Hair follicle
E=Dermis	F=Subcutaneous layer	G=Pili muscle	H=Epidermis

Activity! (Optional) Fingerprints

- <http://www.youtube.com/watch?v=PegPDzjzXYE>
- Watch video and make five thumb prints using a pencil and masking tape.
- Each person in group to make one thumb print on piece of tape.
- Move those single prints around without damaging them and try to identify your prints from your neighbors.

Why do we sweat?

We sweat because heat is removed from our bodies during the process and we are able to cool down.

Part 9 Lesson 4 Quiz Review Excretory and Integumentary System

1.) A: water, salts, CO ₂ , and Urea	6.) Blood
2.) Nephron	7.) D: a million nephrons
3.) Ureters	8.) A: Hydrated
4.) Liver	9.) A: releases nutrients
5.) A: Epidermis, B: Sweat pore, C: Sweat gland, D: Hair follicle, E: Dermis	10.) Sweat glands
*11.) Bonus (5pts): The Sandlot	*12.) Bonus (5pts): The Little Rascals