

Excretory System Review

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1. Identify the primary metabolic wastes, and the structures that eliminate them

ammonia - removed by kidneys
 Urea - removed by kidneys and skin
 Mineral salts - removed by kidneys or skin
 Carbon dioxide - removed by lungs, intestines, skin
 Water - removed kidneys, lungs, intestines, skin

***If removed by kidney = in urine
 If removed by skin = diffusion or sweat

2. Identify the following structures on a diagram, and describe their **functions**:

- a. **Kidneys** = regulate body fluids (pH, volume, composition/solutes) by filtering the blood
renal artery = brings blood into the kidney
renal vein = bringing filtered blood out of the kidney
Ureter = transports excreted wastes into the bladder
Urethra = transporting urine in bladder out of the body
urinary bladder = holds/stores urine until it is to be expelled from the body
urinary sphincters = circular muscles that control the removal of urine from the bladder
 - internal sphincter (right below the bladder)
 -external sphincter (further down the urethra)

3. Identify **where** filtration, reabsorption, and secretion happen in the nephron, and **what role** each part of the nephron plays in filtration, reabsorption, and secretion.

- a. Include:

Structure	What happens	What role
afferent arterioles	Bringing blood into each Bowman's Capsule (starts filtration)	Carrying unfiltered blood
Bowman's capsule	Site of filtration	Houses and protects the glomerulus
collecting duct	Site secretion	-Allows for the final secretion of substances (H ions, K ion, drugs) -removes all the wastes
distal convoluted tubule	Reabsorption ending here, and secretion beginning	Allows for final removal of substances (water and other substances)
efferent arteriole	Bringing blood out of Bowman's Capsule (end of filtration)	Connect the filtered blood, with the capillaries that are reabsorbing substances
Glomerulus	Site of filtration (inside of the Bowman's Capsule)	Increase in blood pressure, to allow filtration to occur (separating the blood cells from plasma)
Loop of Henle	Site of reabsorption	Increasing surface area to allow for substances to be reabsorbed into the bloodstream
peritubular capillaries	Site of reabsorption (surround the Loop of Henle and other tubules)	Increase in surface area to allow for the uptake of the substances that are being reabsorbed.
proximal convoluted tubule	Beginning site of reabsorption (connects the Bowman's Capsule to the Loop of Henle)	Substances beginning to get transported out of the tubule for reabsorption

4. Describe the processes of ****ALL OF THESE HAPPEN IN THE NEPHRON!*****

Filtration: separating the water and dissolved components out of the blood
 : Separating blood cells out from plasma

: occurs in the Bowman's Capsule (glomerulus)

Reabsorption: reabsorption of substances that the body can still use/needs

: can be reabsorbed by passive or active transport

: Two step process = out of **tubules***** into space, then from space into the capillaries

*****proximal convoluted tubule, loop of henle, or distal convoluted tubule**

Secretion: the last stop for H ions, K ion, and drugs to be removed out of the blood.

: All the is left is then urine

: occurs at the collecting duct

: anything left (urine) in the duct will be transported to the bladder via the ureter



