

osmoregulation

about preventing dehydration

- for terrestrial animals

why does osmoregulation work?

endocrine-mediated regulation of excretory system

antidiuretic hormone (ADH) or vasopressin (AVP)

triggered by increase in osmolarity

makes collecting duct of nephrons more permeable to water

increase water retention

variation in urine

- remove water, retain salt
hypotonic

-hyper- retain water, remove salt
tonic

excretory system and osmoregulation

excretory system: regulate solute movement between internal fluids and environment

filtration filtering body fluids

reabsorption reclaiming water & valuable solutes

secretion adding nonessential solutes and wastes from the body fluids to filtrate

excretion processed filtrate containing nitrogenous wastes released from the body

kidneys

nephrons function excretory unit in kidney

interfaces w/ circ system (bowman's capsule)

collecting ducts pass filtrate to the ureter

filtrate includes water, NaCl, ions (H bicarbonate), urea, glucose, amino acids, drugs/poisons

reabsorption active&passive transport

water, NaCl, bicarbonate, glucose, amino acids

- of water and NaCl occurs along loop of henle

-solute [] (osmolarity) of interstitial fluid increases towards the center of kidney

overall filtrate is:

highly reduces in volume (water is retained by the body)

highly reduced in important solute [NaCl]

highly concentrated in waste solutes (urea)

