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

- hypotonic	remove water, retain salt
-hyper-tonic	retain water, remove salt

excretory system and osmoregulation

excretory system: regulate solute movement between internal fluids and environment

filtration	filtering body fluids
reabso-rption	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 bicarb-onate), urea, glucose, amino acids, drugs/poisons
reabso-rption	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)

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