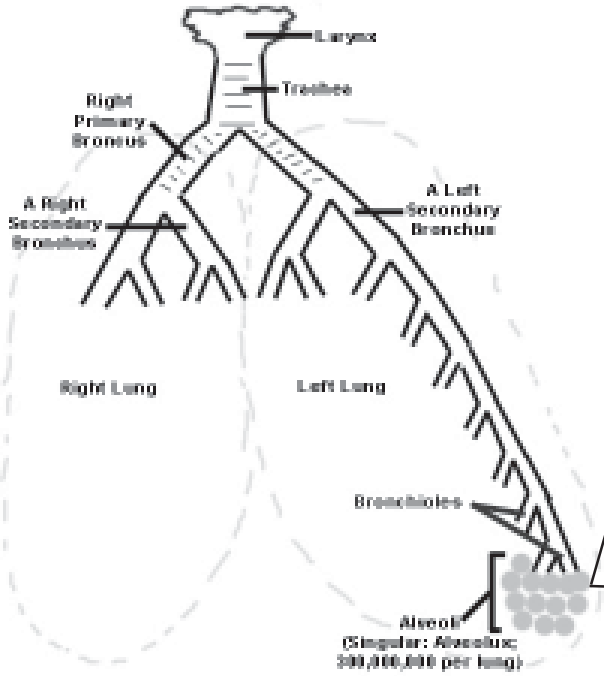
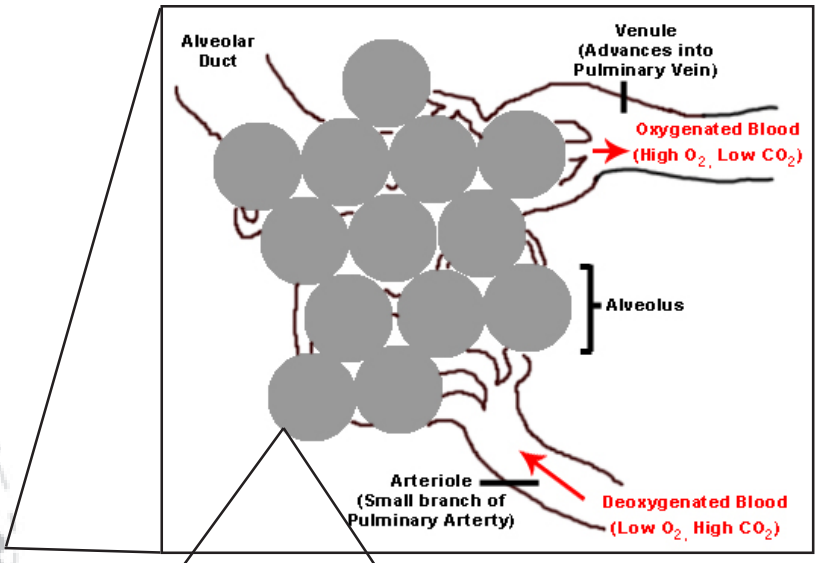
Respiratory (Ventillation) System



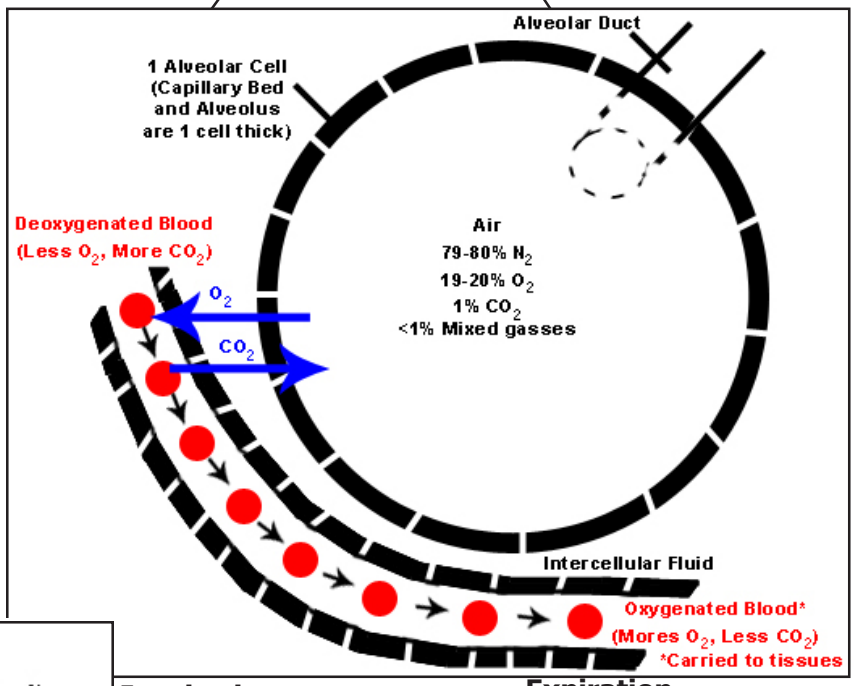


Medical Problems caused by Smoking:

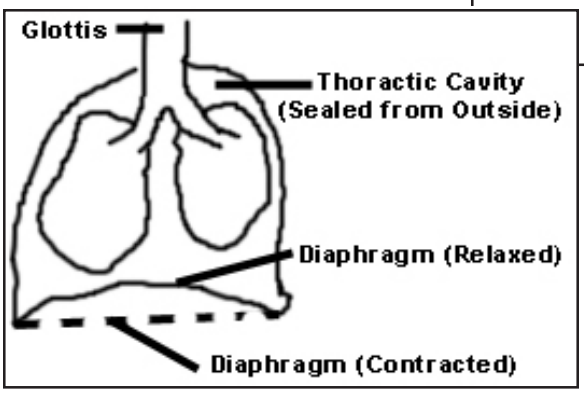
1. *Particular matter and tar* gather on the wall of the Alveolus (emphezima)
2. *Carcinogens* (cancer-causing chemicals) turn Alveolus cell cancerous

Spirometers measure lung volumes:

Residual Volume (air that must remain - approx. 1L)
Tidal Volume (Air in/out on typical breth)
Vital Volume (Max air out)
Total Lung Capacity = Vital + Residual



Thoracic Cavity:



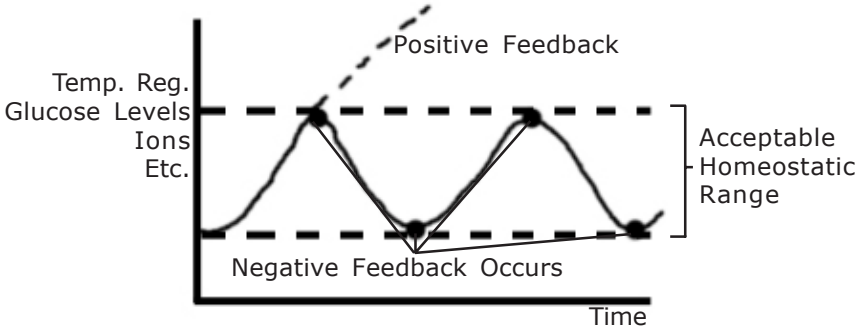
Inspiration

1. Contract diaphragm/use intercostal muscles that raise ribcage
2. Volume of thoracic cavity increases
3. Pressure in thorax decreases
4. Volume of lungs increases
5. Pressure in lungs decreases
6. Air enters negative partial vaccum

Expiration

1. Relax diaphragm/use intercostal muscles that lower ribcage
2. Volume of thoracic cavity decreases
3. Pressure in thorax increases
4. Volume of lungs decreases
5. Pressure in lungs increases
6. Air is pushed out of lungs

Homeostasis



Positive Feed-back Example:

Oxytocin - Hormone during birth

Begin Labor

Uterus Contracts

(More Oxytocin)

More Frequent/Harder Contractions

(More Oxytocin)

Kidney Function

Urine

-By volume, majority is water

-Excessive Ions (K^+, Cl^-, Na^+)

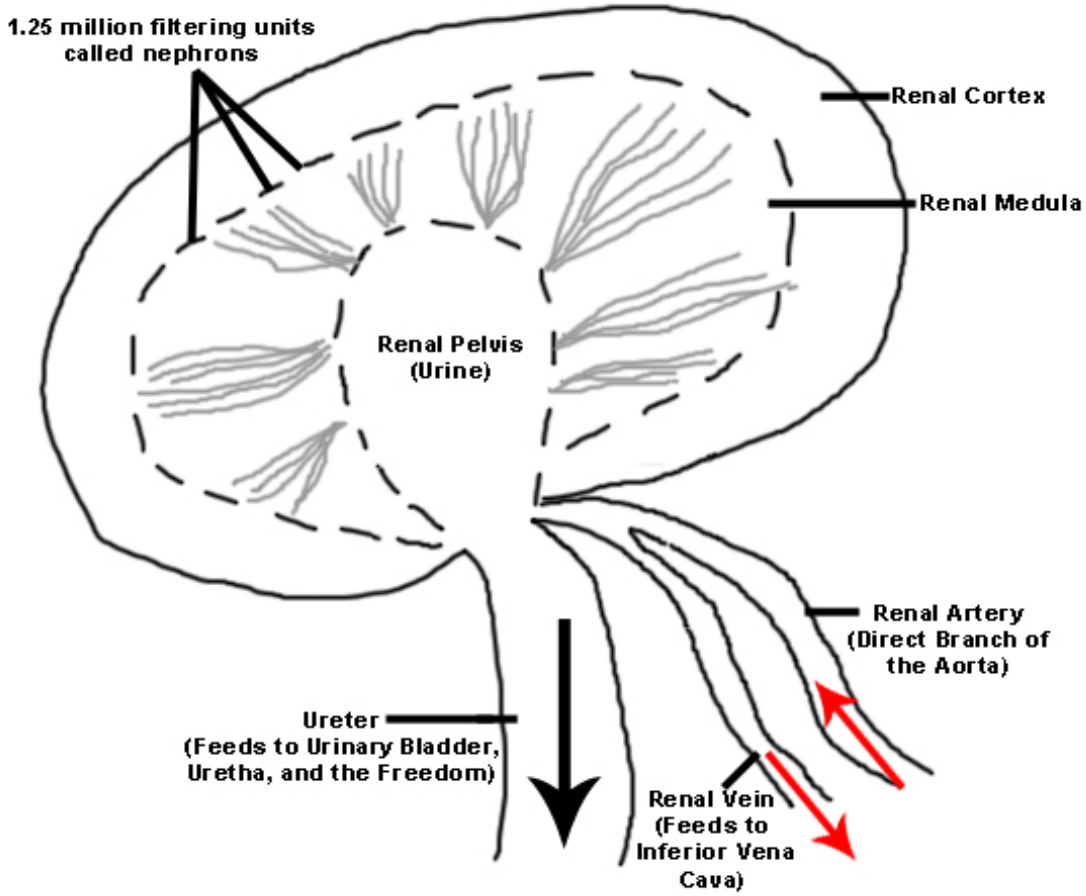
-Nitrogenous waste urea (most) very little is ammonia and uric acid

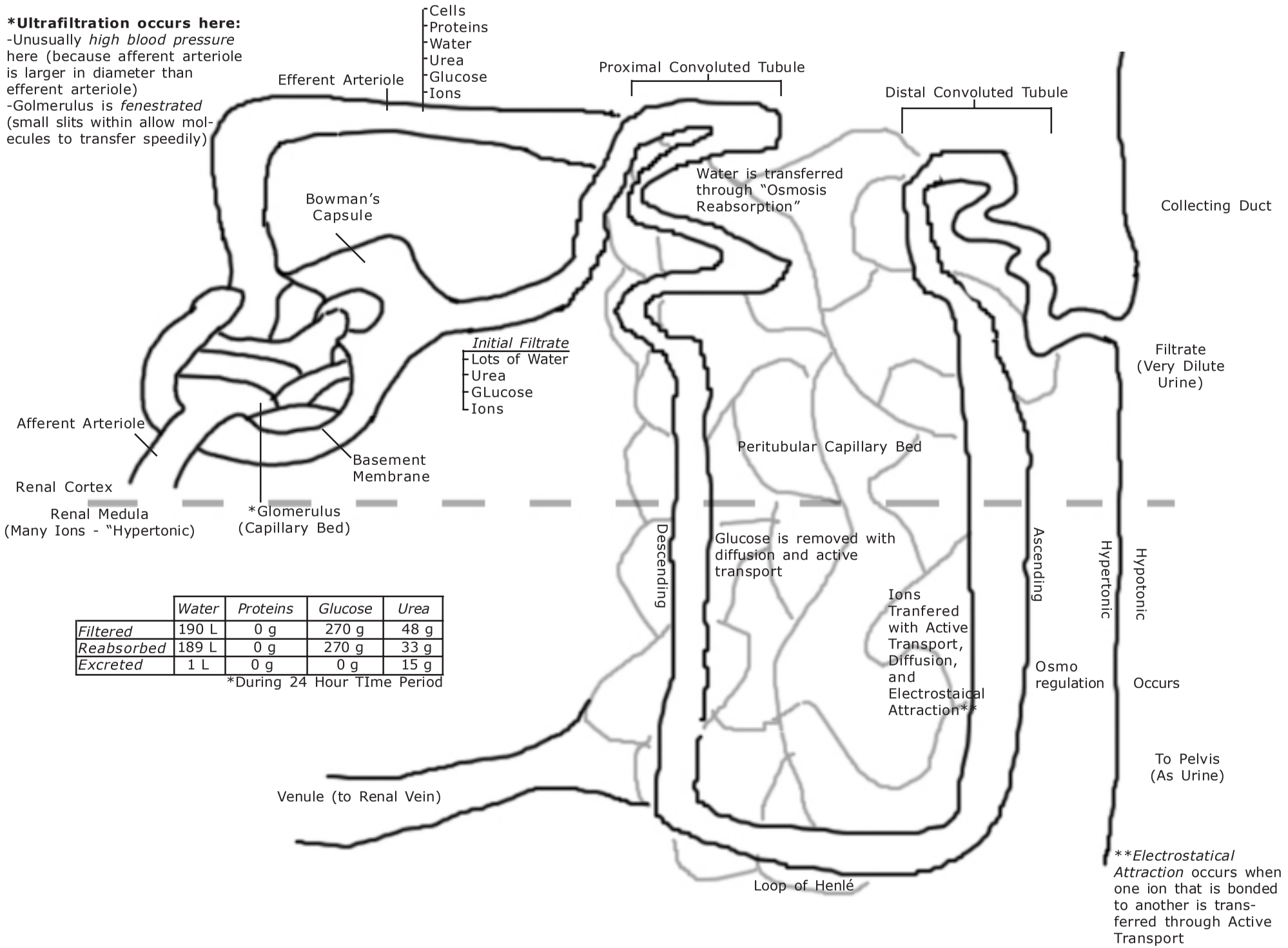
Nitrogenous Wastes

Ammonia	Urea	Uric Acid
NH_3	$H_2N-\overset{\overset{O}{\|\|}}{C}-NH_2$	Large, complex ring structure (contains multiple nitrogen atoms)
Very Toxic	Mildly Toxic	Nontoxic

More Energy to Produce Molecule →

← Water Solubility





	Water	*Proteins*	*Glucose*	*Urea*
Filtered	190 L	0 g	270 g	48 g
Reabsorbed	189 L	0 g	270 g	33 g
Excreted	1 L	0 g	0 g	15 g

*During 24 Hour TIme Period