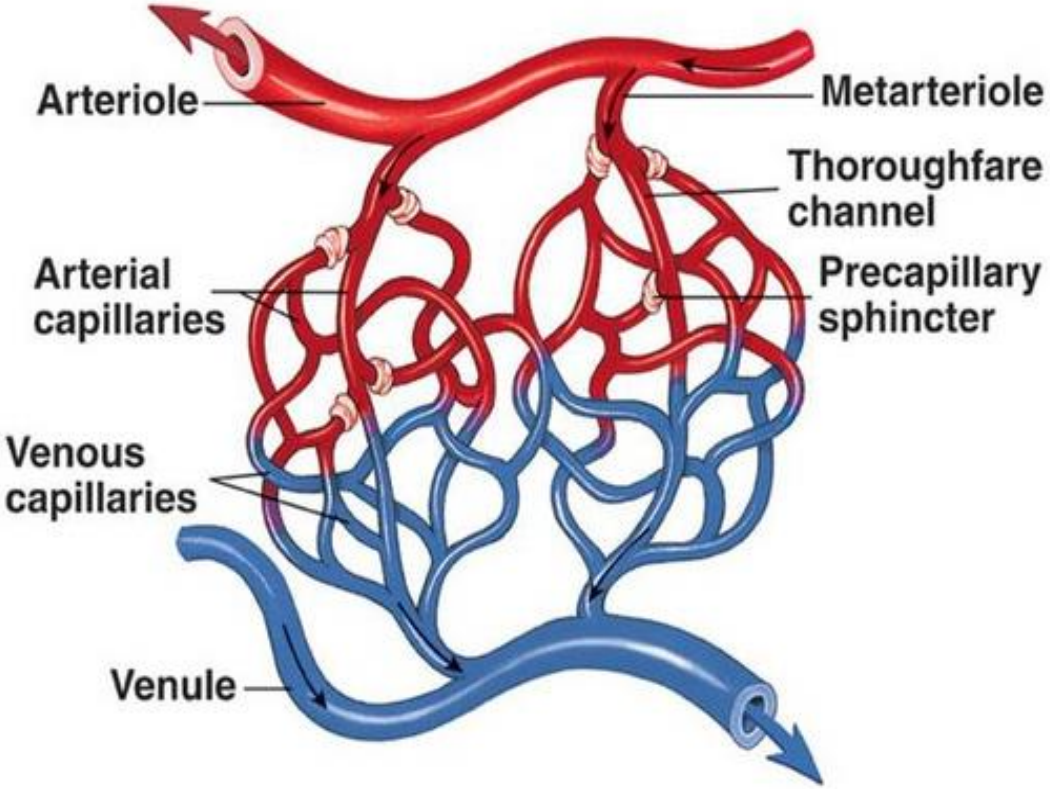
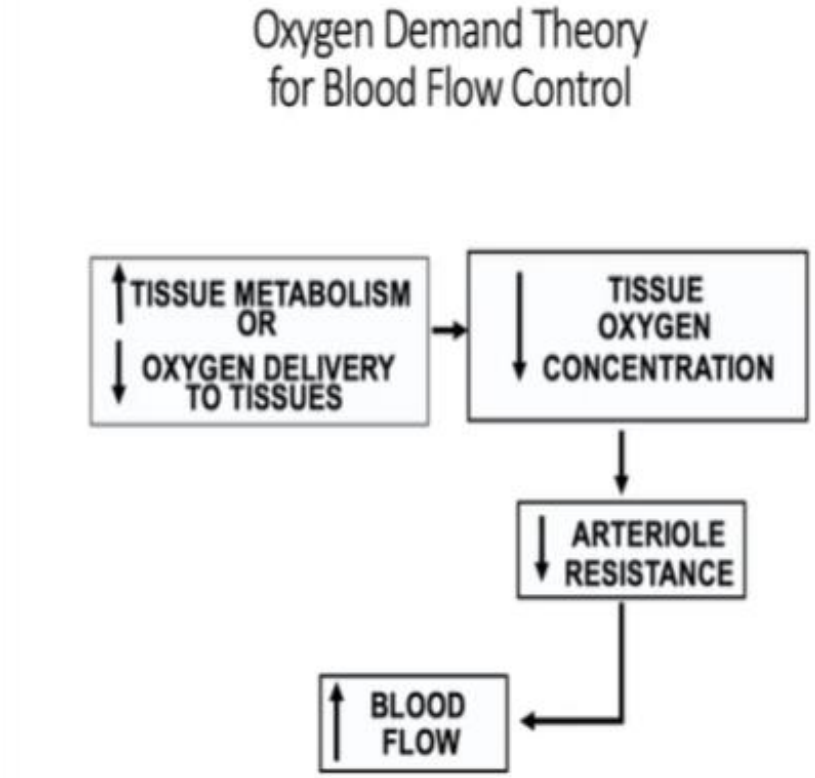
Blood flow to tissues

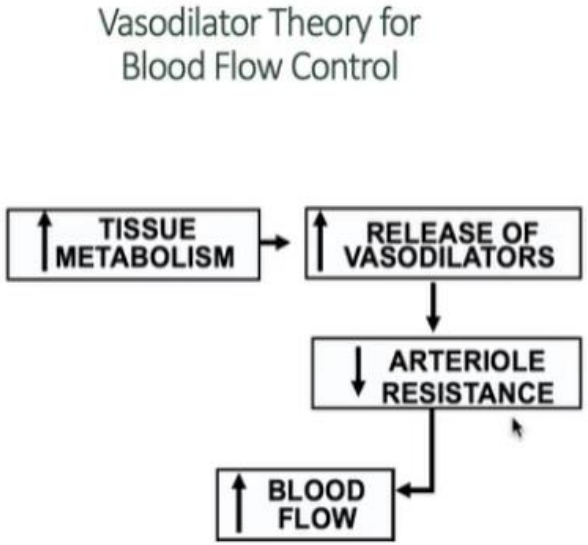
DR. Arwa Rawashdeh

Capillary unit

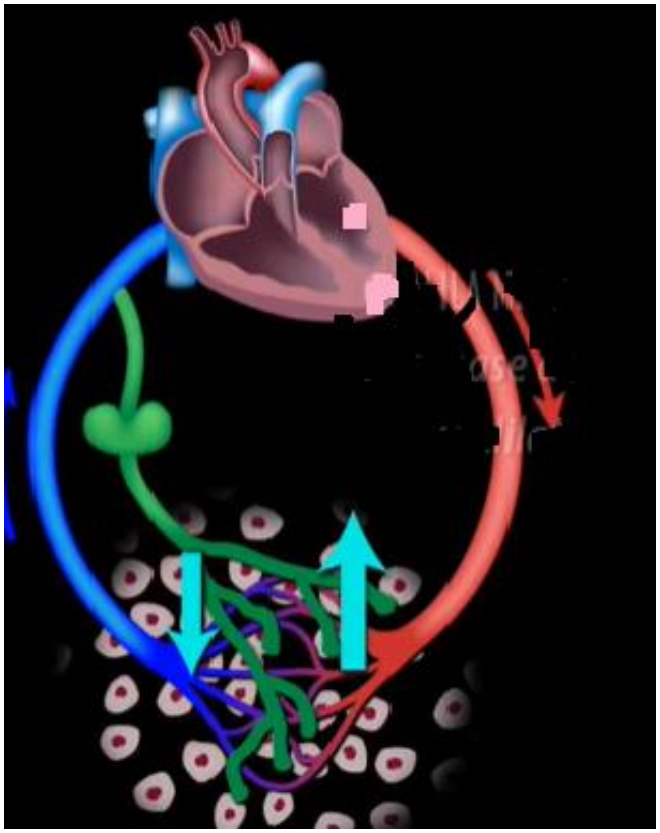


Metabolism theory

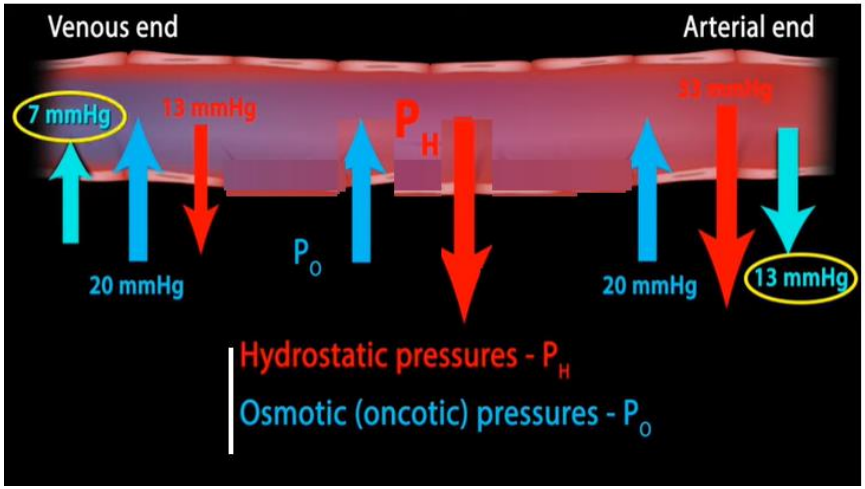




Organ	At rest (cm^3 per min)	Maximum effort (cm^3 per min)
Skeletal muscles	1000	26 000
Coronary vessels	250	1200
Skin	500	750
Kidneys	1000	300
Liver/gut	1250	375
Brain	750	750
Other	250	625
Whole body	5000	30 000



Starling force



Bulk flow

20 liters seeps out
17 liters is
reabsorbed
3 liters left in tissues
By lymphatic system

Swelling

Buildup of blood or fluid

Tran cellular compartment (Effusion)

Pericardial
Peritoneal cavity
Ascites
Cirrhosis
Double whammy (Decrease albumin)
Plural cavity
Secondary beaver dam of left heart failure
Joint cavities

Interstitial fluid or subcutaneous tissue (Edema)

Mechanisms of Edema

Dependent edema

Feet or ankle

Trouble in Venous blood

Gravity

Generalized edema (anasarca)

All over the body

Kidney Nephrotic syndrome (Albuminuria) podocytes

Heart

Liver

Cirrhosis or hepatitis (albumin)

Anaphylaxis

Increase capillary permeability widen the gap

Bind to precapillary sphincters of metarterioles and vasodilation

Sever burns leaks albumin

Heart beaver dams

Left heart failure, valvular stenosis, alcohol abuse or idiopathic

- Backup of blood
- Pulmonary edema
- Pulmonary hypertension
- Kussmauls's sign internal jugular vain
- Hepatomegaly
- Splenomegaly
- Ascites
- Dependent edema

Localized edema

Lymphedema

- Hemosiderin
- Thoracic duct general edema

Valve injury

Dysfunctional valves

Venous hypertension

Stasis dermatitis (long standing)

wearing compression stocks

Skin changes from swelling

ischemic

gangrene

Brown induration hemosiderin stains

Telangiectasia chronic venous stasis

Ulcers

Generalized edema

^ patient with liver disease (Beaver dam + ↓albumin made)

Skin changes from swelling