
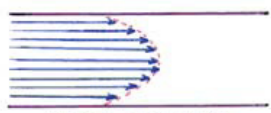


Fisiología del Aparato Circulatorio. Circulación. Circulaciones especiales




$Q = \Delta P / R$ energía cinética = $1/2 mv^2$

1 mm Hg = 1,36 cm agua = 1333 dinas/cm²



FLUJO LAMINAR




FLUJO TURBULENTO

$N_R = \rho \cdot D \cdot \bar{v} / \eta = \frac{2 \dot{V}}{\pi r^3 \eta / \rho}$

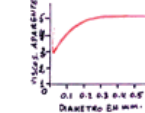
LEY DE POISEUILLE:

$$Q = \frac{\Delta P \cdot \pi r^4}{8 \eta l}$$

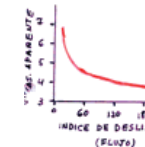
$$R = \frac{8 \eta l}{\pi r^4} = (8/\pi) \cdot \eta \cdot l \cdot (1/r^4)$$



45% H_c ~ 4-5 x H₂O



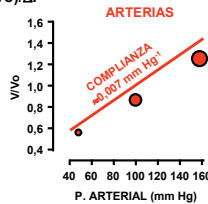
EFFECTO SIGMA O FARBERG-LINQVIST (SKINNING) MAX a 8-10 μ.



FORMACION DE FILAS DE MONEDAS

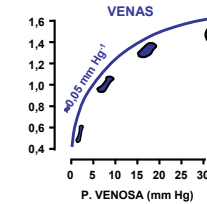
COMPLIANZA
= (ΔV/ΔP)

ARTERIAS



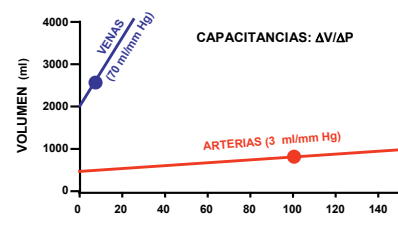
COMPLIANZA ≈ 0,007 mm Hg⁻¹

VENAS



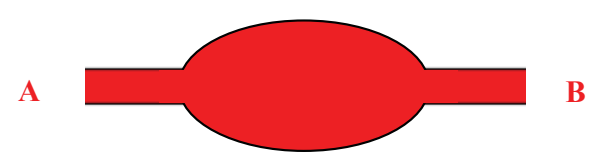
≈ 0,05 mm Hg⁻¹

CAPACITANCIAS: ΔV/ΔP



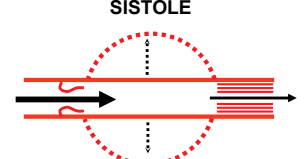
VENAS (70 ml/mm Hg)
ARTERIAS (3 ml/mm Hg)

Las grandes arterias acumulan energía (elástica) durante la sístole y la liberan durante la diástole

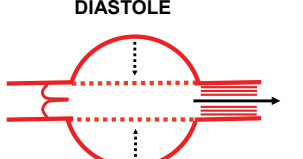


LAS ARTERIAS ELASTICAS SON UN RESERVOIRIO DE PRESION

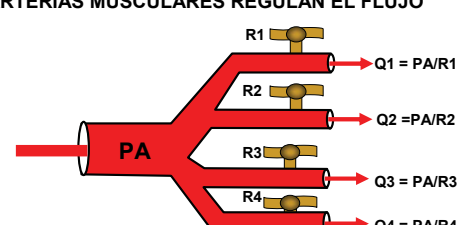
SISTOLE



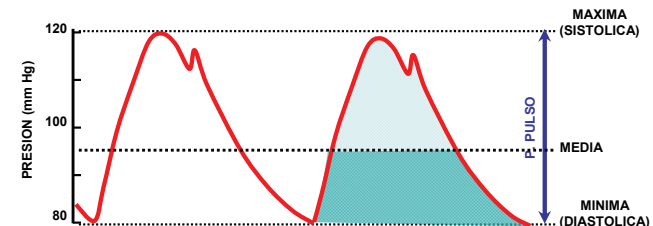
DIASTOLE



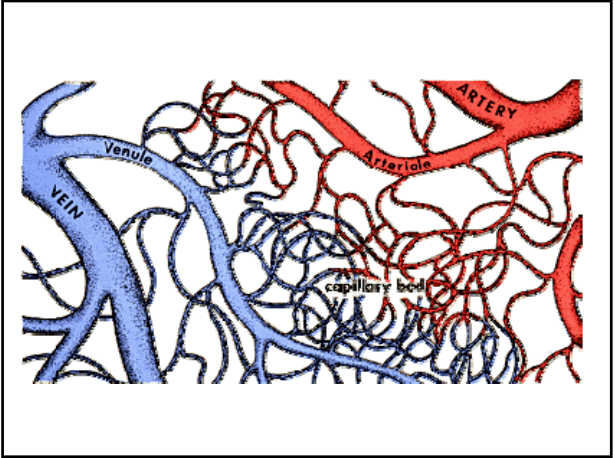
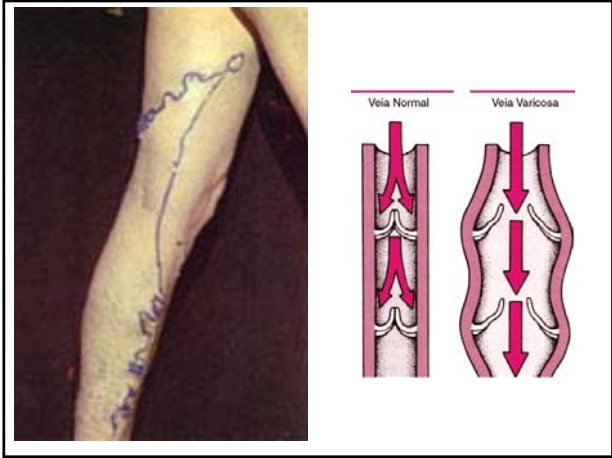
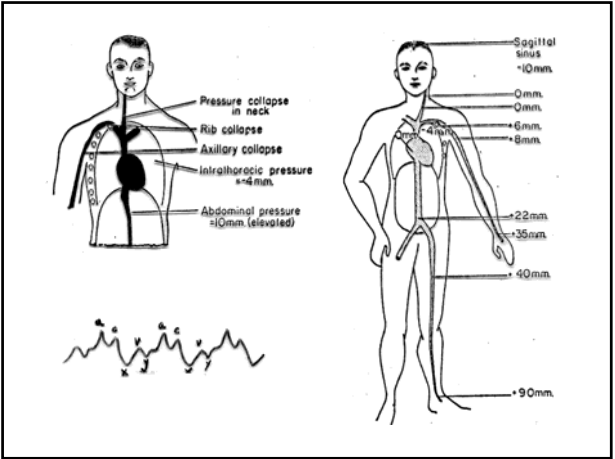
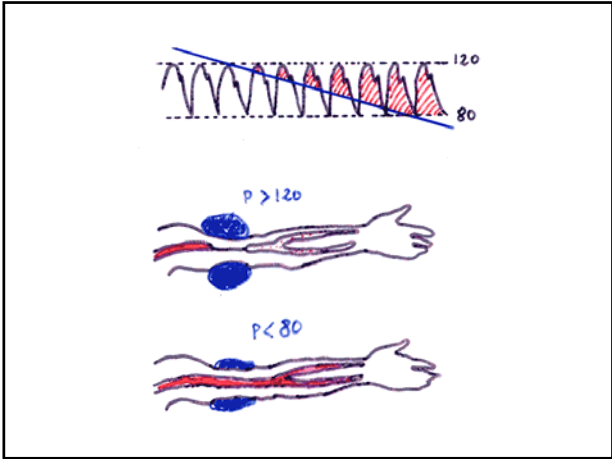
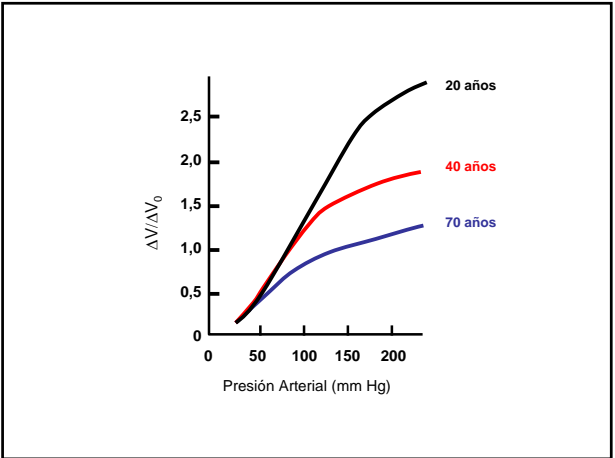
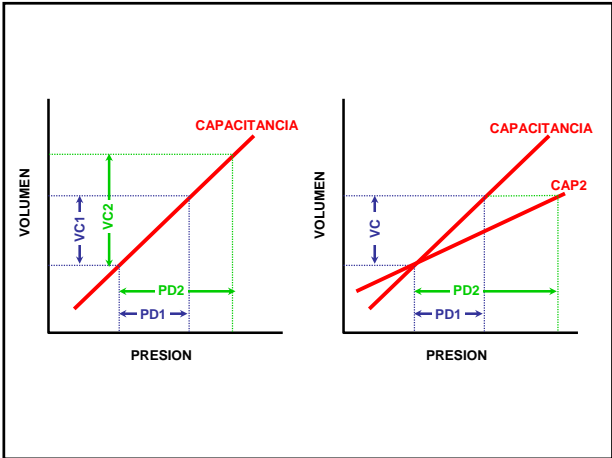
LAS ARTERIAS MUSCULARES REGULAN EL FLUJO

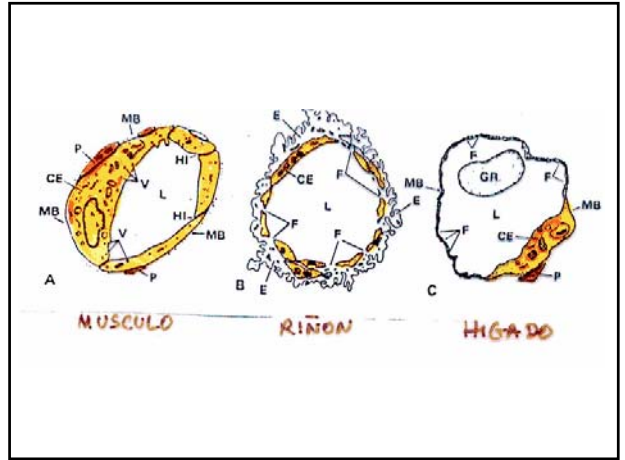


$Q_1 = PA/R_1$
 $Q_2 = PA/R_2$
 $Q_3 = PA/R_3$
 $Q_4 = PA/R_4$



$PA_{MEDIA} \cong PA_{MIN} + (P_{PULSO}/3)$

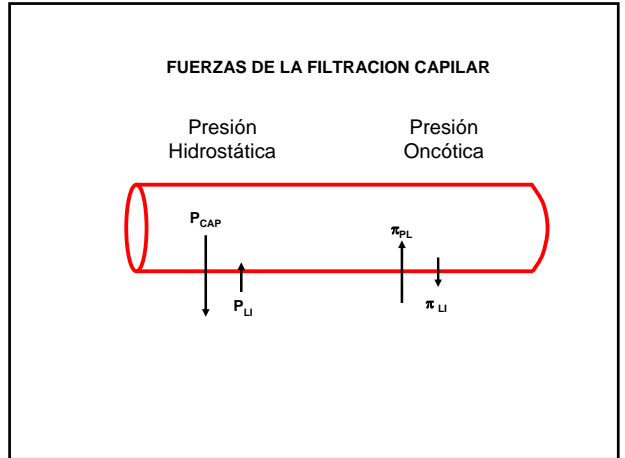




SUBSTANCIA	P. MOLECULAR	PERMEABILIDAD
Agua	18	1,00
CINa	58,5	0,96
Glucosa	180	0,80
Sacarosa	384	0,60
Inulina	5.000	0,20
Mioglobina	17.600	0,03
Hemoglobina	68.000	0,01
Albúmina	69.000	0,0001

$J = P \cdot A \cdot d \cdot Conc$

Poros de 9 nm que ocupan un 0,1% de la superficie

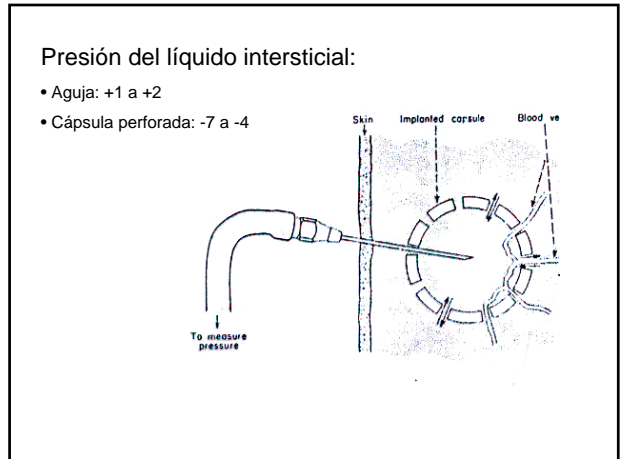


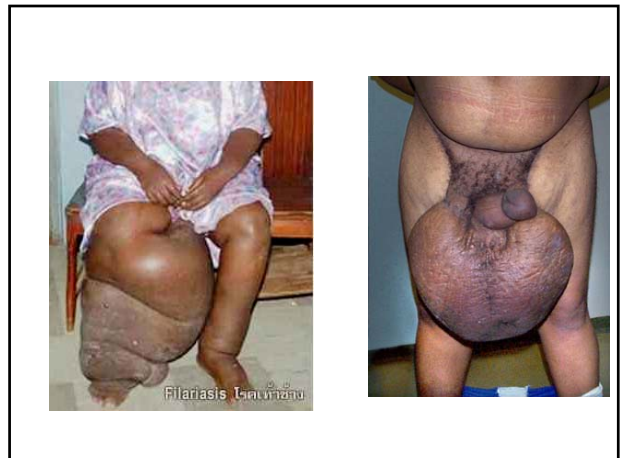
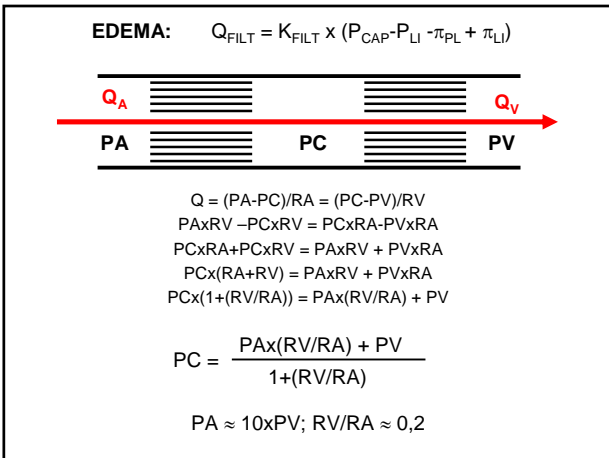
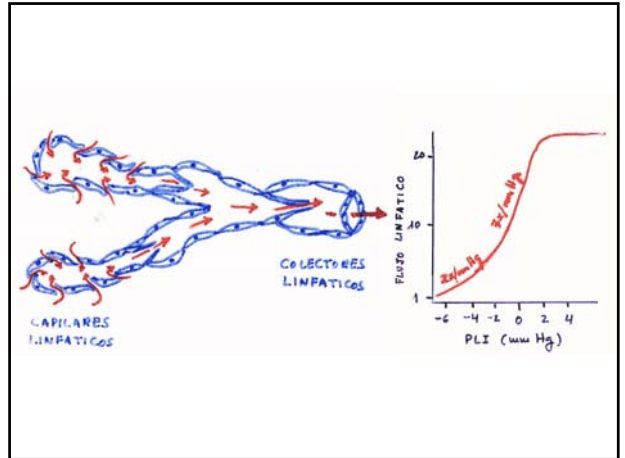
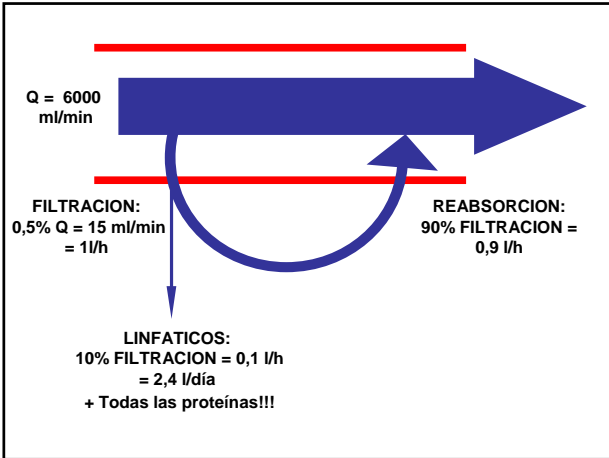
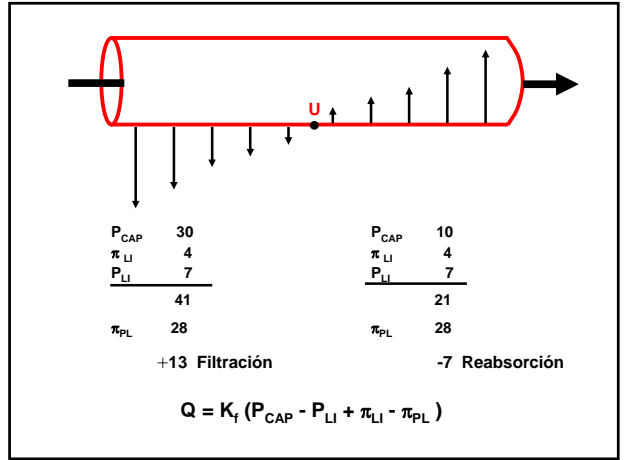
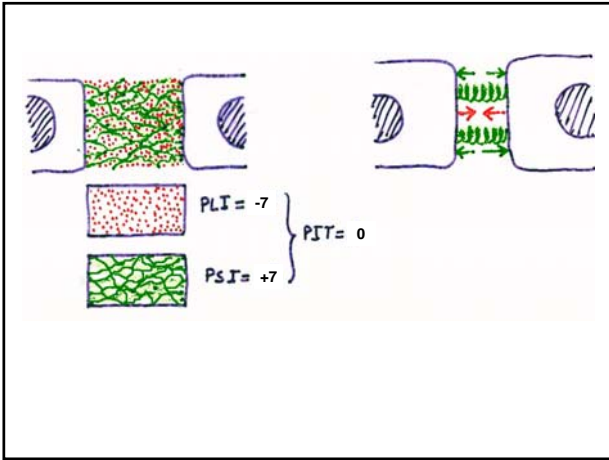
Presión Capilar:

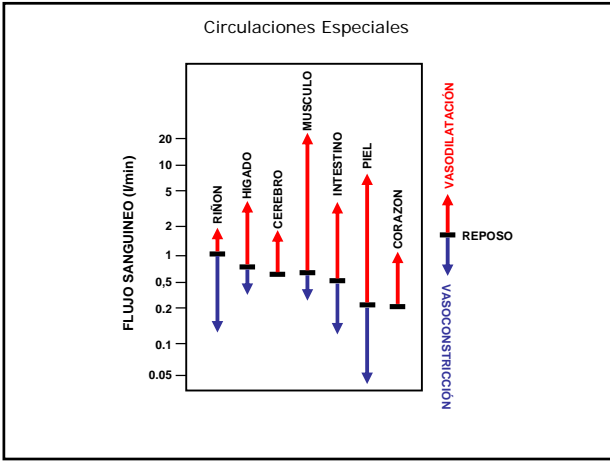
- Cánulas: 30-40 mmHg (Art)
10-15 mm Hg (Ven)
- Met. Isogravimétrico: 15-20 mm Hg

Presión

METODO ISOGRAVIMÉTRICO







ORGANO	Qs (ml/min)	Qs (ml/100g/min)	QO ₂ ml/100 g/min	DIF A-V ml/l
VISCEVAS	1400	35	1,4	40
MUSC. ESQUEL	1200	4	0,2	60
RINON	1100	350	6	20
CEREBRO	750	55	4	60
PIEL	350	5	0,1	10
CORAZON	300	85	9	120
OTROS	900	35	0,8	20
TOTAL	6000	8,5	0,4	45

