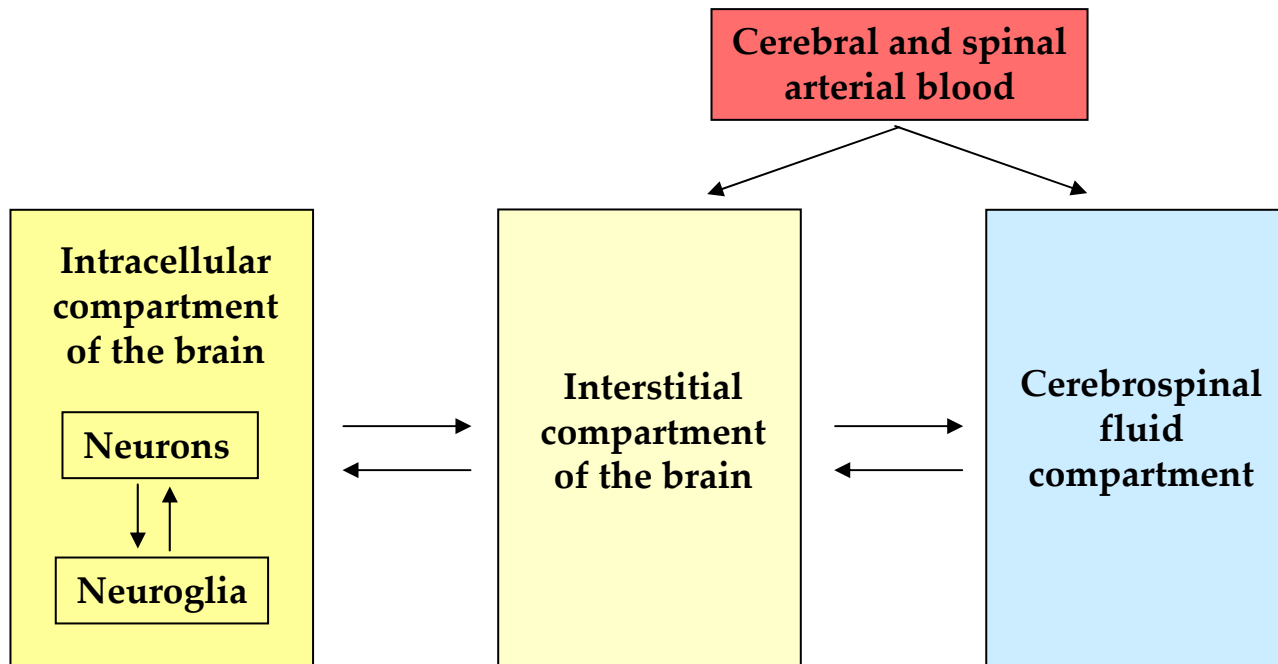
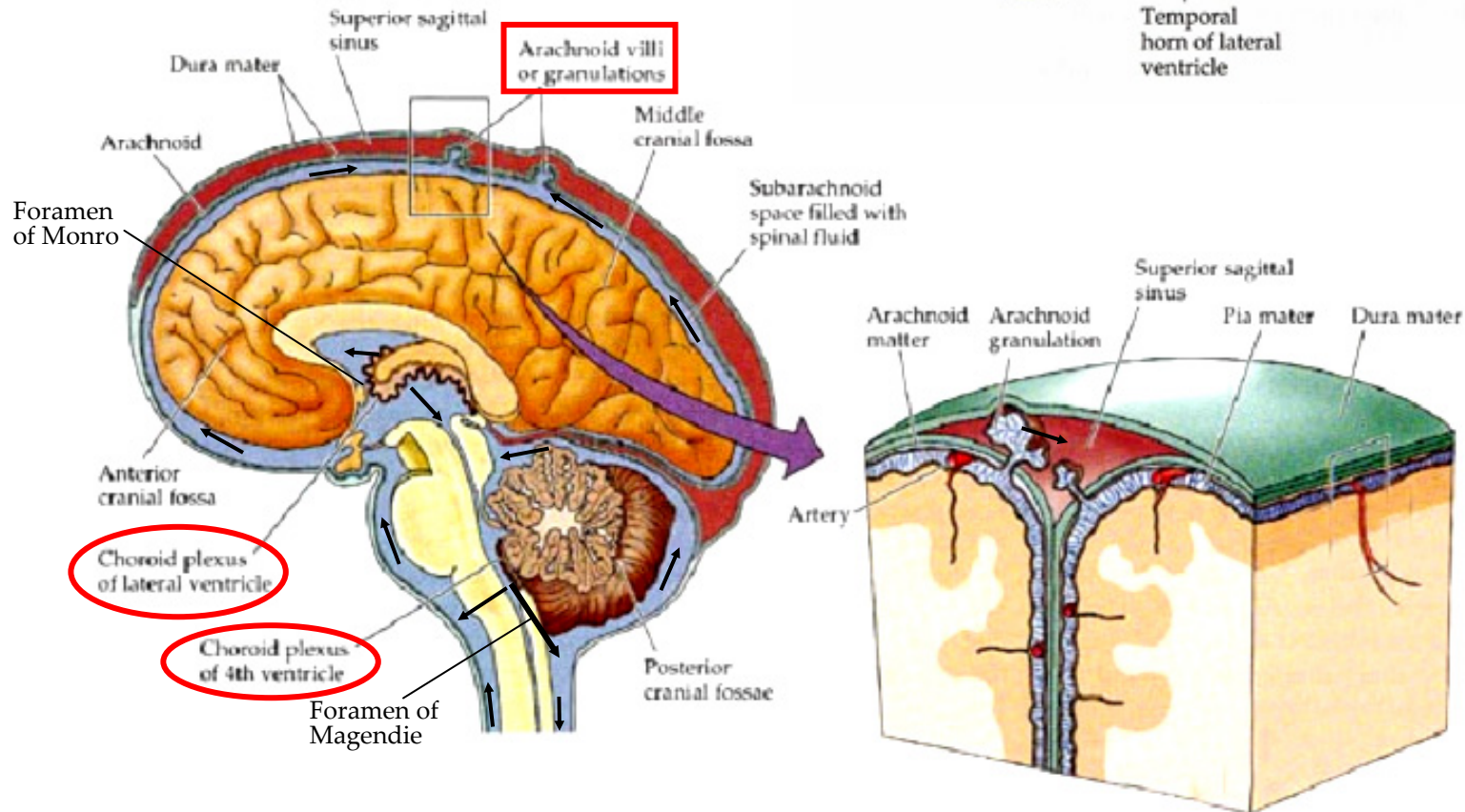
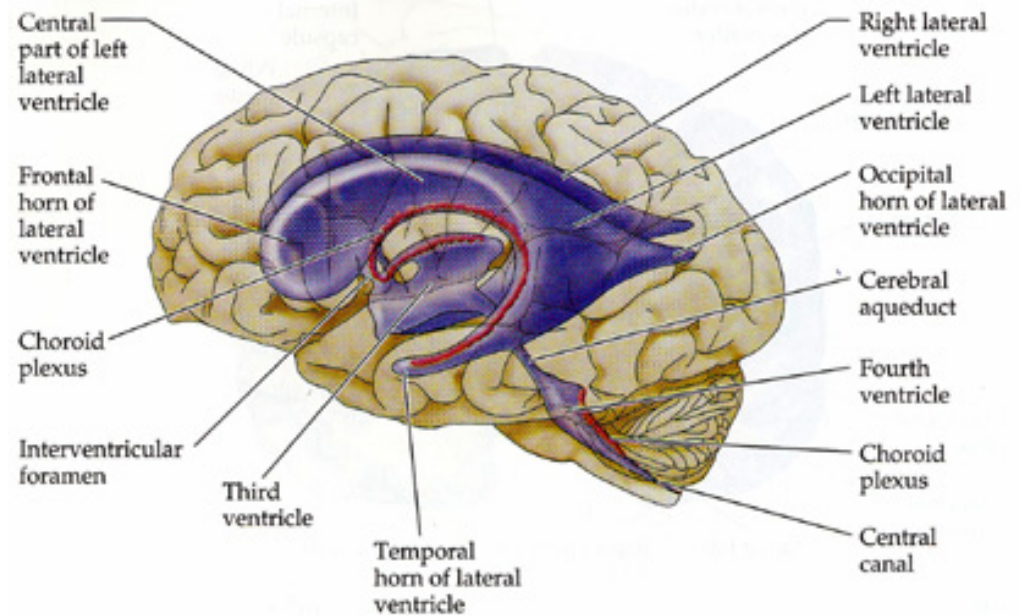


**Relationships between brain fluid compartments**

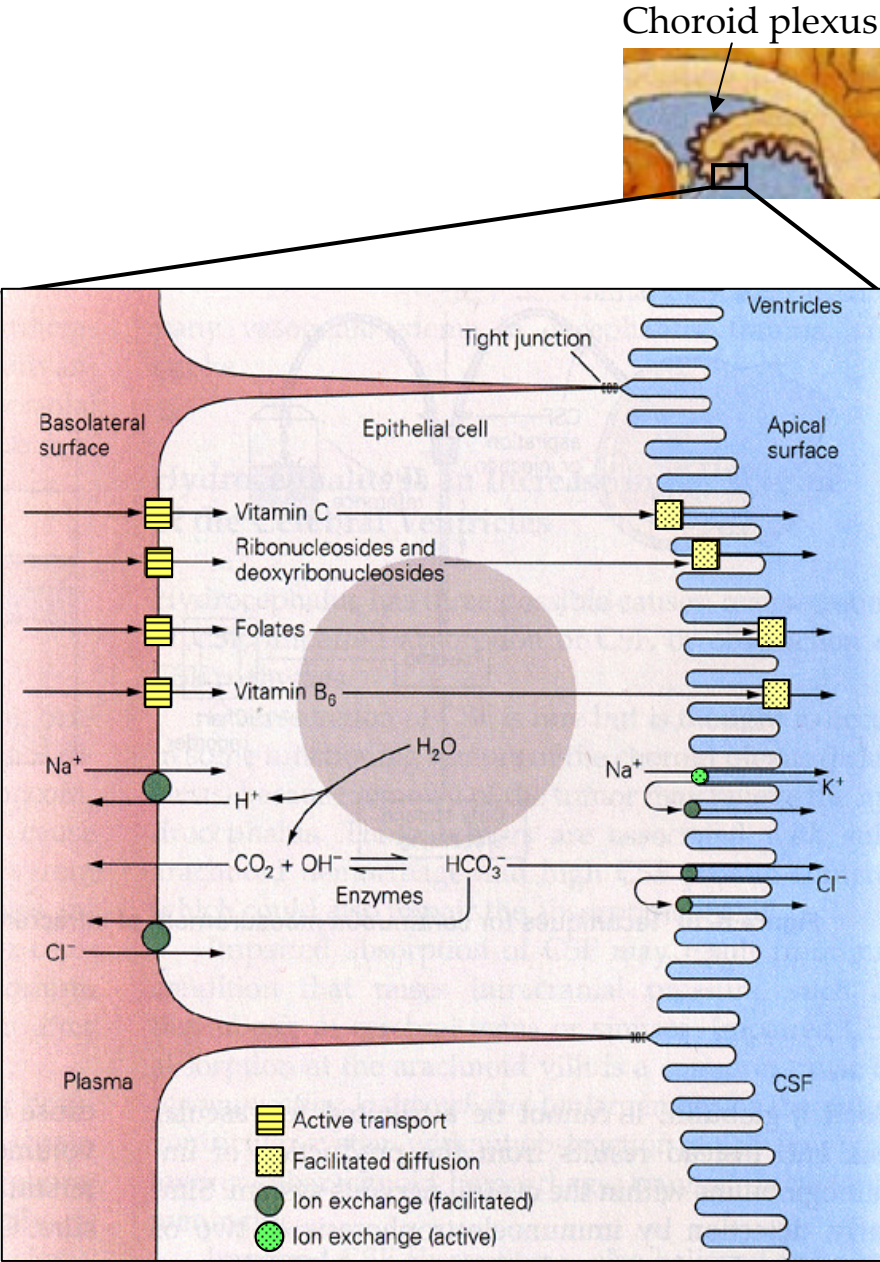


## Ventricular system of the human brain

### Distribution of the cerebrospinal fluid (CSF)



# Morphofunctional characteristics of the choroid plexus: The blood-CSF barrier

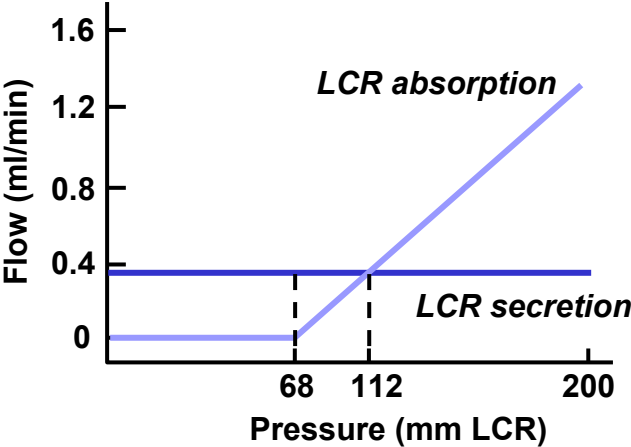


## Volume and pressure of the CSF

Normal volume of CSF: 150 ml

Normal production of CSF: 550 ml/day

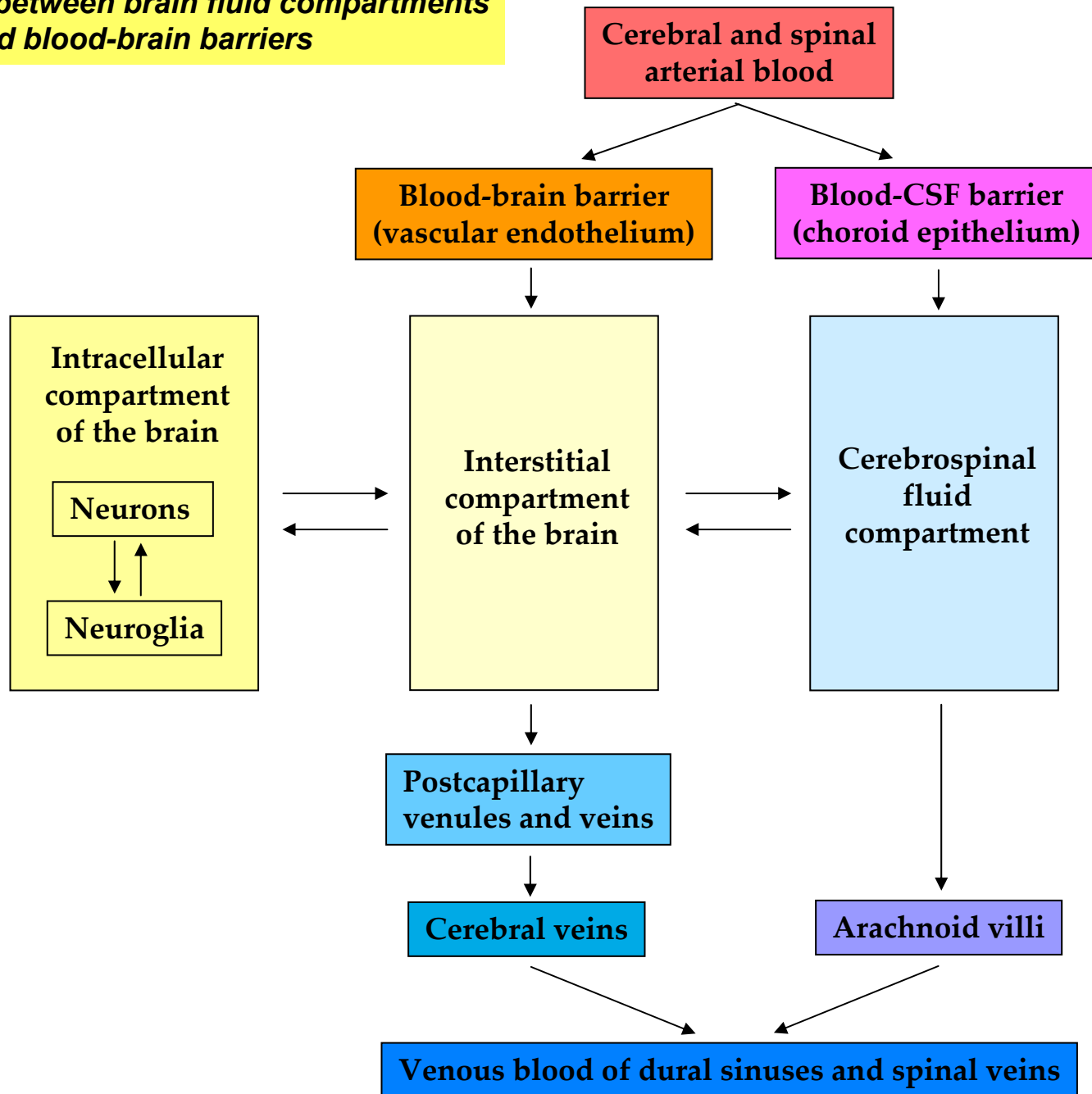
Normal pressure: 70-180 mm CSF



## CSF composition compared to blood serum

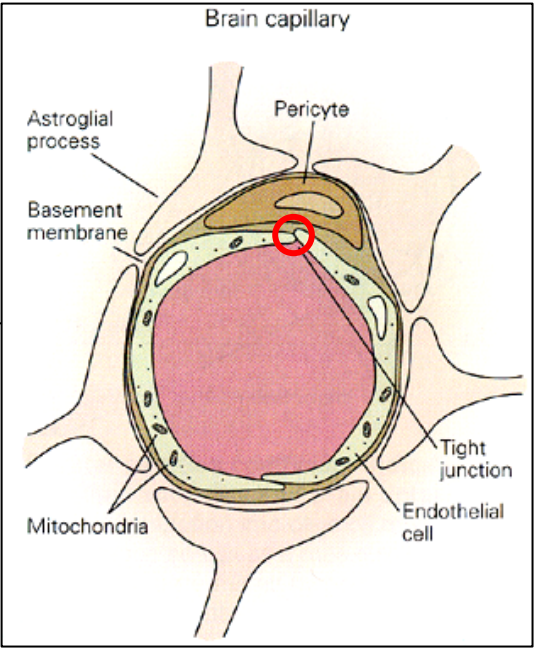
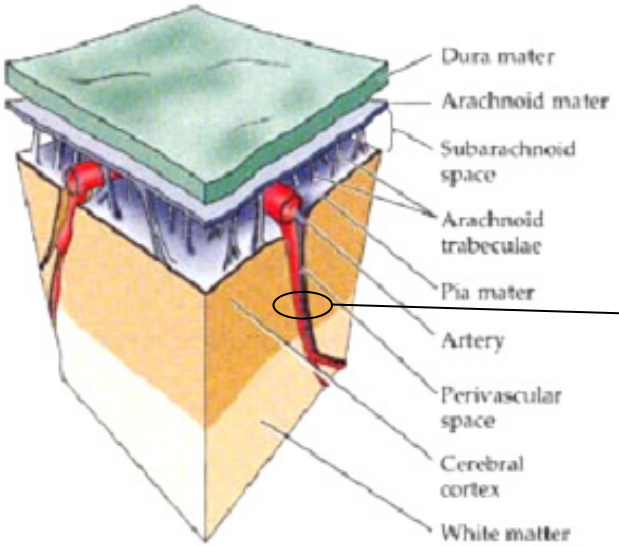
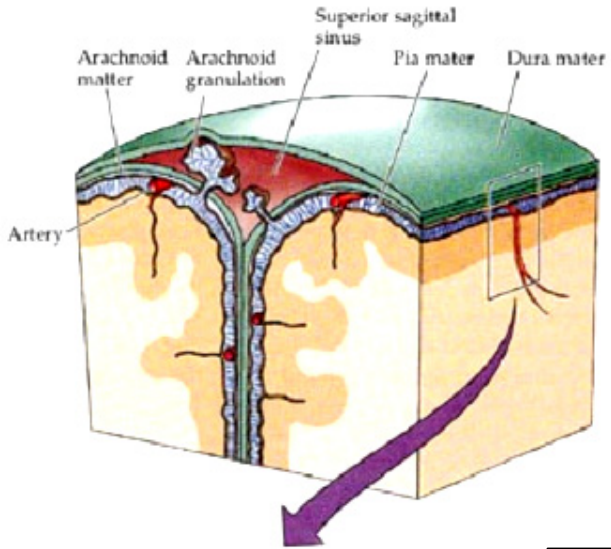
Component	CSF	Serum
Protein (mg/dl)	35	7000
Glucose (mg/dl)	64	100
Osmolarity (mOsm/l)	295	295
Na <sup>+</sup> (meq/l)	138	138
K <sup>+</sup> (meq/l)	2.8	4.5
Ca <sup>2+</sup> (meq/l)	2.1	4.8
pH	7.33	7.41
Uric acid (mg/dl)	1.5	5.0
PCO <sub>2</sub> (mm Hg)	50.2	39.5

***Relationships between brain fluid compartments and blood-brain barriers***

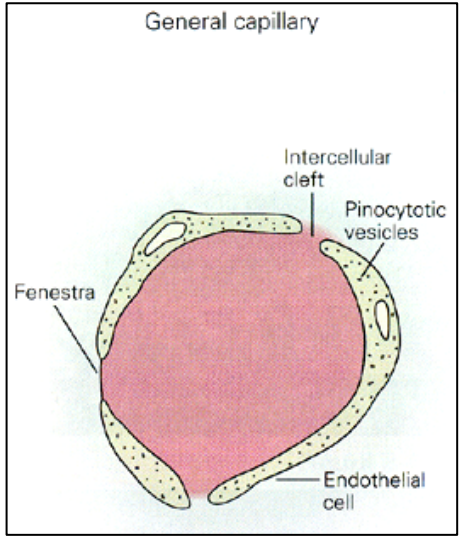




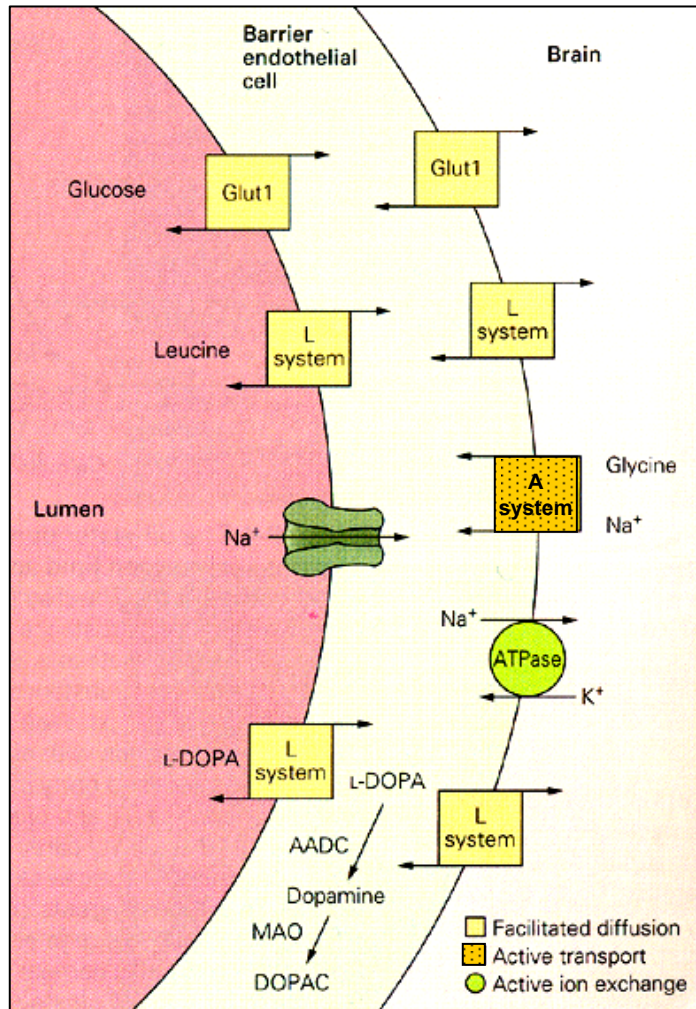
**Morphological basis of the blood-brain barrier**



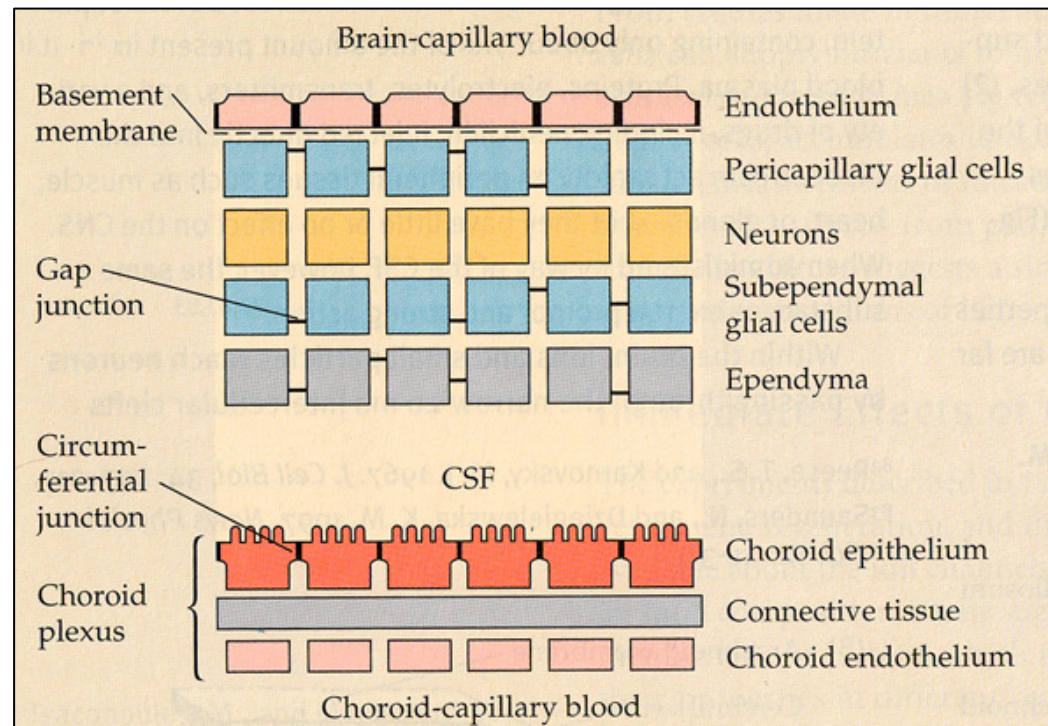
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## Blood-brain barrier transport properties



## The two barriers: blood-brain, blood-CSF





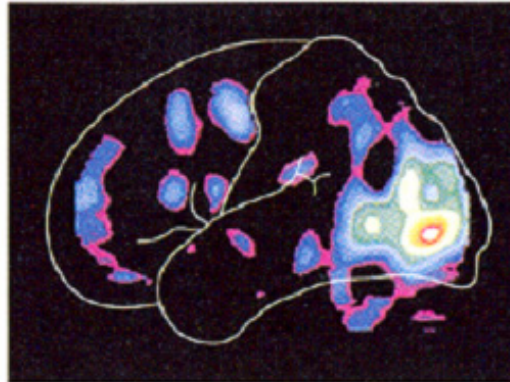
**Brain blood flow**

**Brain blood flow**

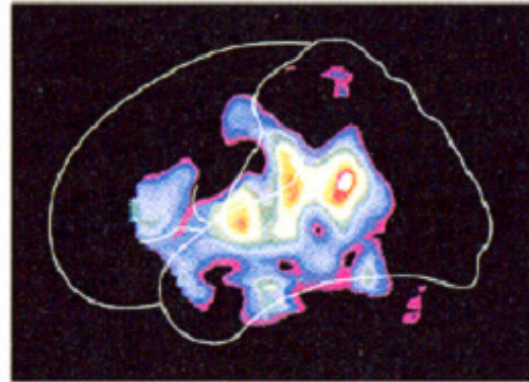
Total = 54 ml/min/100g of tissue  
Regional:  
Gray matter = 69 ml/min/100g of tissue  
White matter = 28 ml/min/100g of tissue

**Regional brain blood flow**

Passively viewing words

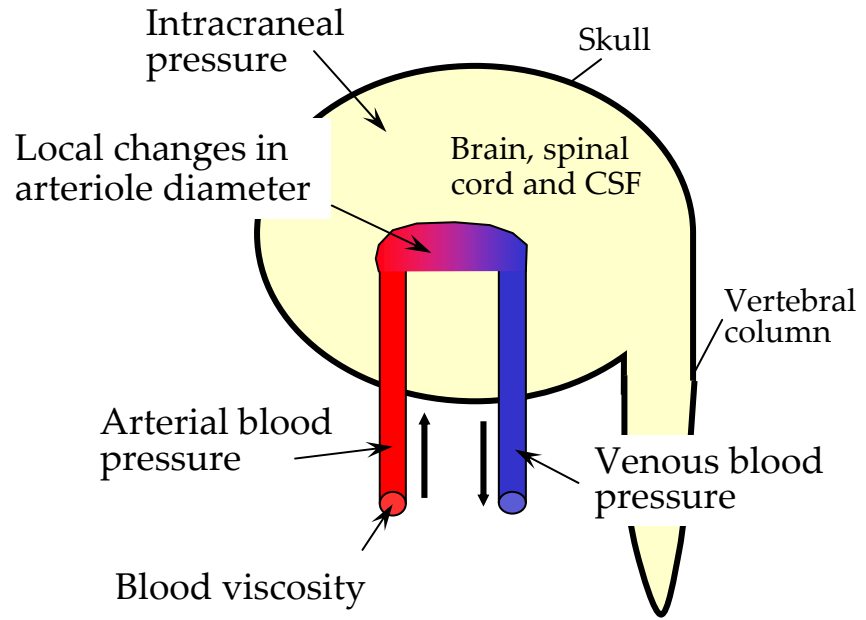


Listening to words



**Regulation of the brain blood flow**

**Factors affecting brain blood flow**



**Autoregulation of the brain blood flow**

