



# PHYSIOLOGY AIMS PYQ

Medsynapse by Dr. Nikita

In a study to detect extracellular fluid volume, 10 gm mannitol was injected by intravenous route and after waiting for adequate time for equilibration of levels, concentration was measured as 50 mg/100 ml. In this time, 10% mannitol was excreted. What is the calculated volume of ECF?



- a) 10 Litres
- b) 18 Litres
- c) 42 Litres
- d) 52 Litres



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If the interstitial hydrostatic pressure is 2 mm Hg, interstitial oncotic pressure is 7 mm Hg and capillary hydrostatic pressure is 25 mm Hg. What should be the capillary oncotic pressure to allow a net filtration pressure of 3 mm Hg?



- a. 20
- b. 21
- c. 23
- d. 27



Medsynapse by Dr. Nikita

What is the rise of blood flow if the radius of blood vessel is increased by 50%?



- a. 5 times
- b. 10 times
- c. 20 times
- d. 100 times



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$$R = \frac{8\eta L}{\pi r^4}$$

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Medsynapse by Dr. Nikita

Which of the following is secreted by beta cells of pancreas along with insulin?



- a) Somatostatin
- b) Amylin
- c) Pancreatic polypeptide
- d) Glucose like peptide

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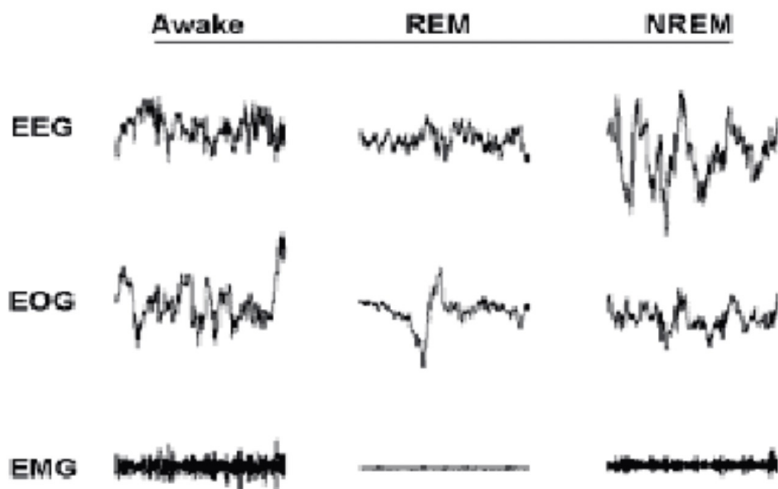
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In the given image, stage represented is :



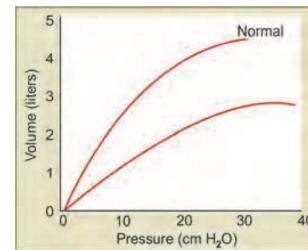
- a) REM
- b) NREM
- c) Quiet wakefulness
- d) Awake

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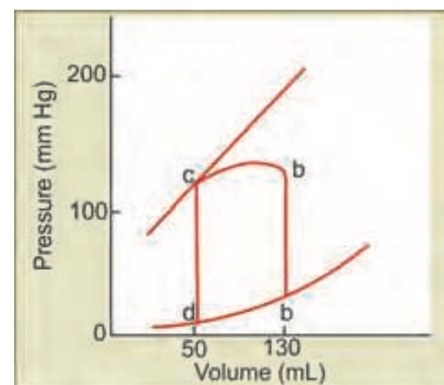
The given graph likely depicts which of the following disease?



- a. Bronchial asthma**  
**b. Emphysema**  
**c. Interstitial lung disease**  
**d. Normal study**

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Calculate the ejection fraction from the given volume pressure curve:



- a. 40%**  
**b. 55%**  
**c. 50%**  
**d. 60%**

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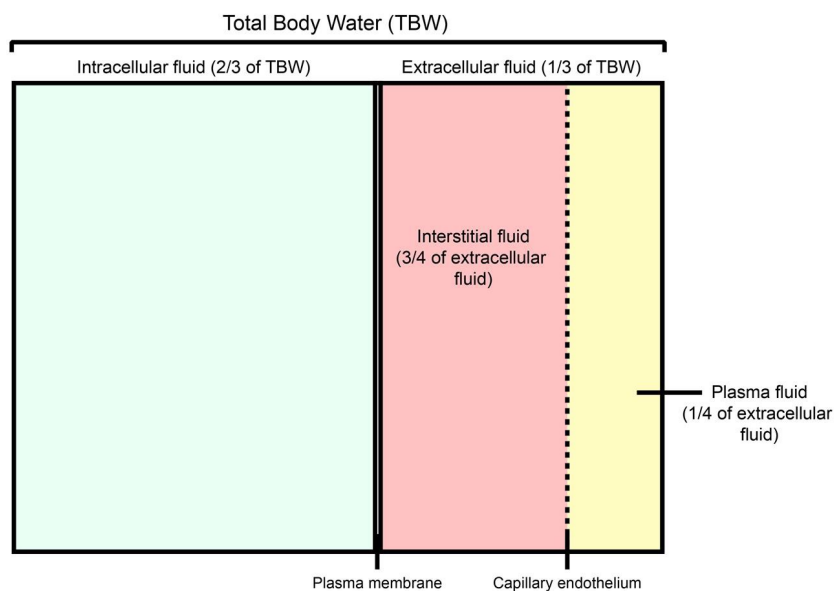
Interstitial fluid volume can be determined by:



- MEDSYNAPSE
- Radioactive iodine and radiolabelled water
  - Radioactive water and radiolabelled albumin
  - Radioactive sodium and radioactive water
  - Radioactive sodium and radioactive labelled albumin

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### Body Fluid Compartments



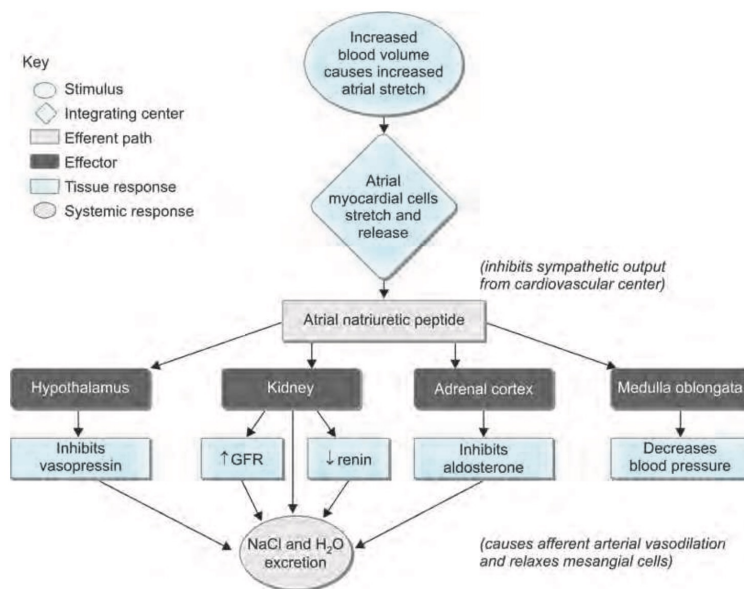
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All of these are actions of Atrial Natriuretic Peptide except:



- a. Afferent arteriole dilation**  
**b. Mesangial constriction**  
**c. Decreased sodium absorption in PCT**  
**d. Inhibition of sodium reabsorption in medullary collecting duct**

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Considering the latent period of a muscle twitch to be 10 ms, contraction time 40 ms and relaxation time 50 ms, what will be the tetanizing frequency for this muscle?



- a. 25Hz
- b. 50Hz
- c. 100Hz
- d. 75Hz



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