

1. _____ pressure is the force due to fluid pressing against a vessel wall.

OPPOSING PRESSURES:

2. _____ pressure is the pressure of blood in the capillaries against the capillary wall.

This pressure pushes fluid _____ capillaries. (*into or out of*)

3. _____ pressure is the pressure due to interstitial fluid against the capillary wall.

This pressure pushes fluid _____ capillaries. (*into or out of*)

NET HYDROSTATIC PRESSURE

4. Give the equation for net hydrostatic pressure. _____

5. _____ is the force due to nondiffusible molecules in fluids.

OPPOSING PRESSURES:

6. _____ pressure is due to a large number of plasma proteins.

This pressure moves water _____ capillaries. (*into or out of*)

7. _____ pressure is due to only a few plasma proteins.

This pressure moves water _____ capillaries. (*into or out of*)

NET COLLOID OSMOTIC PRESSURE

8. Give the equation for net colloid osmotic pressure. _____

HYDROSTATIC PRESSURE - OSMOTIC PRESSURE INTERACTIONS

9. _____ pressure is the balance between hydrostatic and osmotic pressures, and is responsible for movement of fluids into or out of capillaries.

10. Give the equation for net filtration pressure _____

11. If $NHP > NCOP$, fluids move _____ (*into or out of*) capillary because _____ forces dominate.

This is called _____.

12. If $NCOP > NHP$, fluids move _____ (*into or out of*) capillary because _____ forces dominate.

This is called _____.

13. Which hydrostatic pressure is normally higher, and causes filtration? (*BHP or IHP*) _____

14. Which osmotic pressure is normally higher, and causes reabsorption? (*BCOP or ICOP*) _____

15. What happens if the capillary fluid and interstitial fluid are isotonic? _____

16. Which process (*filtration or reabsorption*) increases interstitial fluid? _____
 Excess interstitial fluid is called _____.
 This excess fluid is picked up by _____ and transported to the _____ system, and is eventually excreted by the _____.
17. List some things that will increase blood pressure. _____

18. List some things that will decrease blood pressure. _____

CARDIOVASCULAR REFLEXES

19. _____ are pressure receptors located in the carotid and aortic sinuses.
 _____ maintain blood pressure and blood flow to systemic blood vessels.
 _____ maintain blood flow to the brain.
20. Baroreceptors are _____ by decreased blood pressure.
 How does this affect these centers in order to increase the blood pressure?
 Cardioinhibitory centers _____ }
 Cardioacceleratory centers _____ ; _____ cardiac output.
 Vasomotor centers _____ ; _____ occurs.
21. Baroreceptors are _____ by increased blood pressure. **Fig 21-14**
 How does this affect these centers in order to decrease the blood pressure?
 Cardioinhibitory centers _____ }
 Cardioacceleratory centers _____ ; _____ cardiac output.
 Vasomotor centers _____ ; _____ occurs.
22. _____ are located in the carotid and aortic bodies. **Fig 21-15**
23. Chemoreceptors are _____ by decreased pH and elevated CO₂.
 How does this affect these centers in order to increase pH and O₂, and decrease CO₂?
 Cardioinhibitory centers _____ }
 Cardioacceleratory centers _____ ; _____ cardiac output & BP.
 Vasomotor centers _____ ; _____ occurs and ↑ CO & BP.
 Respiratory centers _____ ; _____ respiratory rate.
24. How does hyperventilation affect CO₂? _____
25. How does hypoventilation affect CO₂? _____
26. What is the body's short term response to decreased blood pressure and blood volume?
Fig 21-15a _____

27. What is the body's long term response to decreased blood pressure and blood volume?

Fig 21-15a _____

28. What is the body's response to increased blood pressure and blood volume?

Fig 21-15b _____

DISTRIBUTION OF BLOOD DURING EXERCISE

29. What is the effect of strenuous exercise on blood distribution to these organs?

Skeletal muscles _____

Heart _____

Brain _____

Kidney _____

CARDIOVASCULAR RESPONSE TO HEMORRHAGING AND BLOOD LOSS

30. What is the body's short term response to decreased blood pressure and blood volume?

Fig 21-17 _____

31. What is the body's long term response to decreased blood pressure and blood volume?

Fig 21-17 _____

1. hydrostatic
2. blood hydrostatic; out of
3. interstitial fluid hydrostatic; into
4. $NHP = BHP - IHP$
5. osmotic
6. blood colloid osmotic; into
7. interstitial fluid colloid osmotic; into
8. $NCOP = BCOP - ICOP$
9. Net filtration
10. $NFP = NHP - NCOP$
11. out of; hydrostatic; filtration
12. into; osmotic; reabsorption
13. BHP
14. BCOP
15. no net water movement
16. filtration; edema; lymphatic capillaries; venous system; kidneys
17. epinephrine, norepinephrine, renin-angiotensin system, erythropoietin, aldosterone
18. stress, trauma, extreme heat, ANP, BNP
19. baroreceptors; aortic sinus baroreceptors; carotid sinus baroreceptors
20. inhibited; inhibited; stimulated; increased; stimulated; vasoconstriction
21. stimulated; stimulated; inhibited; decreased; inhibited; vasodilation
22. chemoreceptors
23. stimulated; inhibited; stimulated; increased; stimulated; vasoconstriction; increases
24. increases CO_2 because not getting enough O_2
25. retain CO_2 , pH decreases; may pass out; respiratory centers increase breathing rate
26. sympathetic nervous system increases cardiac output and vasoconstriction
27. kidney activates renin-angiotensin system which stimulates cardiac output, aldosterone and ADH secretion, and increases thirst; kidney produces erythropoietin which increases RBCs → blood pressure and blood volume increase
28. ANP and BNP are released by the heart which increase Na and water loss in urine, decreases thirst, stops production of ADH, aldosterone, epinephrine and norepinephrine, causes vasodilation → blood pressure and blood volume decreased
29. skeletal muscles (increased); heart (increased); brain (stays same); kidney (decreased)
30. baroreceptors and chemoreceptors stimulate cardiovascular centers; higher brain centers stimulate cardiovascular centers and sympathetic nervous system; also short term effects of ADH, angiotensin II, epinephrine and norepinephrine → increased cardiac output and vasoconstriction
31. hormonal control via ADH, angiotensin II, aldosterone and EPO → increased blood volume → increased cardiac output