

Complete 30 Hypertension MCQ Questions

1. Which of the following statements correctly describes primary hypertension?
 - A. It represents a temporary elevation of blood pressure that occurs only during severe emotional stress and disappears permanently afterward.
 - B. It is chronic elevation of arterial blood pressure without evidence of another underlying disease and accounts for the majority of hypertensive patients.
 - C. It is caused exclusively by adrenal gland tumors that secrete excessive catecholamines into systemic circulation.
 - D. It develops only in elderly patients because vascular resistance remains normal in younger adults.
2. Which of the following is considered a controllable risk factor for hypertension?
 - A. Heredity and family genetic background affecting vascular responsiveness.
 - B. Race-related predisposition observed in certain populations worldwide.
 - C. Increased salt intake associated with excessive dietary sodium consumption.
 - D. Age-related vascular stiffening occurring after middle adulthood.
3. Which of the following correctly explains why hypertension is commonly referred to as “the silent killer”?
 - A. Because it always produces severe neurologic symptoms before vascular damage develops.
 - B. Because many patients remain asymptomatic despite progressive cardiovascular and renal injury.
 - C. Because it causes immediate circulatory collapse within a short period after onset.
 - D. Because it selectively affects the nervous system without damaging other organs initially.
4. Which of the following blood pressure readings is classified as Stage 1 (mild) hypertension according to the lecture?
 - A. 118/76 mmHg.
 - B. 128/84 mmHg.
 - C. 142/94 mmHg.
 - D. 182/114 mmHg.
5. Which of the following conditions is MOST strongly associated with secondary hypertension?

- A. Essential idiopathic vascular dysfunction without identifiable disease.
- B. Chronic renal disease affecting vascular resistance and fluid balance.
- C. Temporary anxiety during blood pressure measurement in clinics.
- D. Physiological adaptation to moderate physical exercise.

6. Which of the following hormones is released by the adrenal medulla during sympathetic stimulation and contributes to blood pressure elevation?

- A. Insulin.
- B. Thyroxine.
- C. Epinephrine.
- D. Glucagon.

7. Which of the following best describes the function of baroreceptors in arterial blood pressure regulation?

- A. They provide long-term hormonal regulation lasting several months without adaptation.
- B. They regulate moment-to-moment fluctuations in blood pressure through rapid reflex mechanisms.
- C. They stimulate sodium excretion directly from renal tubules during dehydration.
- D. They function only when arterial pressure exceeds 220 mmHg.

8. Which of the following nerves transmits impulses from carotid sinus baroreceptors toward the medulla oblongata?

- A. Facial nerve.
- B. Hypoglossal nerve.
- C. Glossopharyngeal nerve.
- D. Phrenic nerve.

9. Which of the following statements correctly describes sympathetic stimulation of the cardiovascular system?

- A. It decreases heart rate and promotes generalized vasodilation throughout systemic circulation.
- B. It increases cardiac contractility and causes vasoconstriction of arterioles and veins.
- C. It inhibits norepinephrine release from sympathetic nerve endings permanently.
- D. It produces marked reduction in venous return and stroke volume.

10. Which of the following is the MOST potent vasoconstrictor discussed in the renin-angiotensin system?
- A. Angiotensin II.
 - B. Renin.
 - C. Aldosterone.
 - D. Bradykinin.
11. Which of the following correctly describes aldosterone?
- A. It promotes sodium and water excretion leading to reduced blood volume.
 - B. It is secreted by the adrenal gland and increases sodium and water reabsorption.
 - C. It directly inhibits protein synthesis in renal tubular epithelial cells.
 - D. It lowers arterial pressure through vasodilation of arteriolar smooth muscle.
12. Which of the following receptors are primarily responsible for water reabsorption in the renal collecting ducts under the influence of ADH?
- A. Alpha-1 receptors.
 - B. Beta-2 receptors.
 - C. V1 receptors.
 - D. V2 receptors.
13. Which of the following is considered an uncontrollable risk factor for hypertension?
- A. Excessive alcohol consumption.
 - B. Lack of exercise.
 - C. Obesity.
 - D. Age.
14. Which of the following lifestyle modifications is recommended for hypertensive patients according to the lecture?
- A. Increasing salt intake to stabilize vascular osmolarity.
 - B. Avoiding physical activity to reduce cardiac workload completely.
 - C. Smoking cessation and stress management.

- D. Consuming high-fat diets to improve arterial elasticity.
15. Which of the following best describes the role of the parasympathetic nervous system in circulation?
- A. It plays the major role in regulating peripheral vascular resistance continuously.
 - B. It primarily decreases heart rate and contractility through vagal stimulation.
 - C. It stimulates vasoconstriction in arterioles through alpha-adrenoceptor activation.
 - D. It directly stimulates adrenal medullary secretion of catecholamines.
16. Which of the following conditions may occur as a complication of prolonged uncontrolled hypertension?
- A. Kidney failure.
 - B. Improved myocardial efficiency.
 - C. Reduced risk of aneurysm formation.
 - D. Permanent decrease in cardiac workload.
17. Which of the following structures contains the vasomotor center responsible for blood pressure control?
- A. Cerebellum only.
 - B. Reticular substance of the medulla and lower pons.
 - C. Occipital cortex.
 - D. Basal ganglia exclusively.
18. Which of the following mechanisms contributes to increased arterial pressure during exercise?
- A. Suppression of sympathetic nervous activity.
 - B. Increased vasodilation without any rise in cardiac output.
 - C. Activation of cardioaccelerator and vasoconstrictor centers.
 - D. Complete inhibition of adrenal catecholamine secretion.
19. Which of the following stimuli triggers renin release from the juxtaglomerular apparatus?
- A. Increased renal perfusion pressure.
 - B. Elevated plasma sodium concentration.
 - C. Decreased renal perfusion and sympathetic stimulation.
 - D. Excessive arterial stretch in renal vasculature.

20. Which of the following statements about pressure diuresis is correct?

- A. Increased arterial pressure causes the kidneys to retain additional extracellular fluid.
- B. Increased arterial pressure promotes excretion of excess fluid and sodium by the kidneys.
- C. Pressure diuresis occurs independently of renal function.
- D. Pressure diuresis decreases urinary sodium excretion significantly.

21. Case: A 45-year-old man presents with persistent blood pressure readings around 168/102 mmHg. He has central obesity, sedentary lifestyle habits, and excessive dietary salt intake. Laboratory investigations show no endocrine abnormalities. Which of the following is the MOST likely contributing factor to his hypertension?

- A. Reduced extracellular fluid volume due to chronic sodium deficiency.
- B. Lifestyle-related primary hypertension associated with modifiable risk factors.
- C. Acute parasympathetic overactivity causing vascular instability.
- D. Congenital absence of sympathetic vasoconstrictor fibers.

22. Case: A patient with severe dehydration develops increased plasma osmolarity and reduced blood volume. ADH secretion rises significantly. Which of the following effects is MOST likely to occur?

- A. Increased water loss in urine to normalize plasma osmolarity.
- B. Enhanced renal water reabsorption leading to conservation of body fluids.
- C. Complete suppression of thirst sensation despite dehydration.
- D. Persistent vasodilation with reduced peripheral resistance.

23. Case: A 39-year-old woman presents with episodic headache, sweating, palpitations, and severe hypertension. Imaging reveals a catecholamine-secreting adrenal tumor. Which diagnosis BEST explains this presentation?

- A. Cushing's syndrome.
- B. Coarctation of the aorta.
- C. Pheochromocytoma.
- D. Essential hypertension.

24. Case: A patient suddenly stands up from a lying position and briefly feels dizzy due to reduced cerebral perfusion. Which immediate compensatory response would MOST likely restore arterial pressure?
- A. Increased sympathetic stimulation causing vasoconstriction and elevated heart rate.
 - B. Marked inhibition of cardiac contractility through vagal activation.
 - C. Immediate suppression of the vasomotor center within the medulla.
 - D. Reduced venous return caused by venodilation.
25. Case: A 61-year-old hypertensive patient receives an ACE inhibitor as part of treatment. Which of the following physiological changes would MOST likely result from this medication?
- A. Increased conversion of angiotensin I into angiotensin II.
 - B. Reduced vasoconstriction due to decreased angiotensin II formation.
 - C. Increased aldosterone secretion with enhanced sodium retention.
 - D. Enhanced breakdown of sodium within renal tubular cells.
26. Which of the following medications lowers blood pressure primarily by reducing heart rate and cardiac workload?
- A. Beta-blockers.
 - B. Vasodilators.
 - C. Calcium supplements.
 - D. Mineralocorticoids.
27. Which of the following statements correctly describes the effects of sympathetic stimulation on veins?
- A. Venous constriction increases venous return and ventricular filling.
 - B. Venous constriction decreases circulating blood volume permanently.
 - C. Veins lack sympathetic innervation and do not influence blood pressure regulation.
 - D. Sympathetic stimulation causes venous dilation leading to severe hypotension.
28. Which of the following best explains why obesity contributes to hypertension according to the lecture?
- A. Adipose tissue accumulation may impair normal regulatory sensing mechanisms related to blood pressure control.
 - B. Obesity permanently suppresses sympathetic nervous system activity.

- C. Increased adipose tissue causes chronic sodium deficiency and hypotension.
- D. Obesity eliminates renin secretion from the kidneys completely.

29. Which of the following best describes the effect of angiotensin II on the kidneys?

- A. It decreases sodium reabsorption in proximal tubules causing fluid loss.
- B. It enhances sodium and water retention contributing to elevated blood pressure.
- C. It inhibits aldosterone secretion from the adrenal glands.
- D. It blocks sympathetic stimulation of renal vasculature permanently.

30. Which of the following statements correctly describes the baroreceptor response to elevated arterial pressure?

- A. Increased arterial stretch enhances baroreceptor firing leading to reduced sympathetic activity.
- B. Elevated arterial pressure suppresses all baroreceptor activity completely.
- C. Baroreceptors respond only to decreases in blood pressure below 60 mmHg.
- D. Increased arterial pressure stimulates sympathetic vasoconstrictor discharge directly.

Model Answers

1. B

2. C

3. B

4. C

5. B

6. C

7. B

8. C

9. B

10. A

11. B

12. D

13. D

14. C

15. B

16. A

17. B

18. C

19. C

20. B

21. B

22. B

23. C

24. A

25. B

26. A

27. A

28. A

29. B

30. A