

## Chapter 2: Basic Patient Assessment: Vital Signs and Breath Sounds

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### MULTIPLE CHOICE

1. What is the correct term to describe a patient with a body temperature of 101 degrees F?
- a. Hypertension
  - b. Hyperthermia
  - c. Hypotension
  - d. Hypothermia

ANS: B

Abnormally high body temperature is termed **Hyperthermia**.

PTS: 1

2. A patient has a pulse rate of 50 beats per minute. Which of the following could be the cause of this?
- I. Hypothermia
  - II. Emotional stress
  - III. Vagal stimulus
  - IV. Depressant drugs
  - V. Hypoxemia
- a. IV and V
  - b. II and V
  - c. I, II, III
  - d. I, III, IV

ANS: D

Causes of bradycardia are **hypothermia, stimulation of the vagus nerve, depressant drugs, infection, and heart abnormalities**.

PTS: 1

3. What is described as having a rapid upstroke and a rapid downstroke tracing, with a maximum point of intensity between the peak and the base of the pulse pressure?
- a. Bounding pulse
  - b. Hypertension
  - c. Plateau pulse
  - d. Blood volume loss

ANS: A

With a **bounding pulse**, there are both a rapid upstroke and a rapid downstroke, with a maximum point of intensity between them. This may be caused by an abnormally high blood pressure (hypertension) or exercise.

PTS: 1

4. A child has a respiratory rate of 30/minute. This is called \_\_\_\_\_.
- a. tachypnea
  - b. apnea
  - c. normal
  - d. bradypnea

ANS: C

The **normal** rate for children is between 20 and 40 respirations per minute. For adults the normal rate is between 12 and 20 and

PTS: 1

5. What pressure is being measured during a blood pressure reading during the ventricular contraction?
- a. Bounding pressure
  - b. Systolic pressure
  - c. Plateau pressure
  - d. Diastolic pressure

ANS: B

The **systolic** pressure is the pressure measured at the time the ventricles are contracting.

PTS: 1

6. The patient has a blood pressure of 150/100. Which of the following could cause this?
- I. Renal failure/fluid retention
  - II. Hormonal imbalances
  - III. Shock
  - IV. Emotional stress
  - V. Depressant drugs
- a. I, II, IV
  - b. III and V
  - c. I, II, III
  - d. IV and V

ANS: A

Causes of hypertension ( $>140/90$ ) are **renal failure/fluid retention, hormonal imbalances, emotional distress**, cardiovascular imbalances, exercise, and stimulant drugs, .

PTS: 1

7. What determines the loudness (intensity) of a sound?
- a. Duration
  - b. Frequency
  - c. Amplitude
  - d. Pitch

ANS: C

The **amplitude** of a sound wave determines its intensity. The greater the amplitude, the higher the intensity of the sound wave.

PTS: 1

8. Which type of breath sound would be described as low-pitched, soft sounds that have an inspiratory phase longer than the expiratory phase?
- a. Tracheal
  - b. Broncho-vesicular
  - c. Bronchial
  - d. Vesicular

ANS: D

**Vesicular** breath sounds are relatively low-pitched, soft sounds. They have been described as whispering or rustling in nature. The inspiratory phase is longer in duration than the expiratory phase.

PTS: 1

9. What breath sound is described as a loud, higher pitched breath sound with the expiratory phase longer than the inspiratory phase, with a short pause between phases?
- a. Vesicular
  - b. Tracheal
  - c. Bronchial
  - d. Bronchovesicular

ANS: C

**Bronchial** breath sounds are loud and generally of higher pitch. The expiratory phase is longer than the inspiratory phase, with a short pause between phases.

PTS: 1

10. Which breath sounds are heard above the clavicular notch, are very harsh and quite high-pitched, and have the expiratory phase lasting a little longer than the inspiratory phase?
- a. Tracheal
  - b. Bronchial
  - c. Bronchovesicular
  - d. Vesicular

ANS: A

As the name implies, **tracheal** sounds are characteristically heard over the trachea. Above the clavicular notch, they are very harsh and quite high-pitched, with the expiratory phase lasting a little longer than the inspiratory phase.

PTS: 1

11. What breath sounds are normally heard over the sternum at around the second intercostal space, between the scapulae and over the right apex of the lung; are somewhat muted; are without a pause between inspiration and expiration; and have inspiratory and expiratory phases roughly equal in length?
- a. Vesicular
  - b. Bronchovesicular
  - c. Bronchial
  - d. Tracheal

ANS: B

**Bronchovesicular** sounds are normally heard over the sternum at around the second intercostal space, between the scapulae and over the right apex of the lung. They are somewhat muted, without a pause between inspiration and expiration. The inspiratory and expiratory phases are roughly equal in length. They are characterized by the combination of bronchial and vesicular sounds.

PTS: 1

12. Abnormal breath sounds are often referred to as \_\_\_\_\_.
- a. vesicular breath sounds.
  - b. bronchial breath sounds.
  - c. tracheal breath sounds.
  - d. adventitious breath sounds.

ANS: D

Abnormal breath sounds are often referred to as **adventitious** sounds. However, normal breath sounds heard in an uncharacteristic location are also abnormal.

PTS: 1

13. What breath sounds are thought to be produced by the sudden opening of alveoli or sections of the lung?
- a. Wheezes
  - b. Rubbing
  - c. Crackles
  - d. Rhonchi

ANS: C

**Crackles** are thought to be produced by the sudden opening of alveoli or sections of the lung. The resultant sudden change in pressure generates the sound.

PTS: 1

14. What are abnormal breath sounds called that are generated by air passing through a narrowed lumen?
- a. Wheezes
  - b. Rhonchi
  - c. Crackles
  - d. Vesicular

ANS: A

**Wheezes** are high-pitched sounds. It is thought that these sounds are generated by air passing through a narrowed lumen. Wheezes may also be described as continuous sounds in that they continue without interruption.

PTS: 1

15. What are continuous abnormal breath sounds described low-pitched and thought to be produced by fluid or secretions vibrating in the airways?
- a. Tracheal
  - b. Wheezes
  - c. Crackles
  - d. Rhonchi

ANS: D

**Rhonchi** are continuous sounds that are quite low-pitched. Rhonchi are thought to be produced by fluid or secretions vibrating in the airways. They may be heard throughout the lung fields.

PTS: 1

16. Which of the following is *not* an optimal position the patient should be in for chest expansion?
- a. The patient sitting in a Fowler's position
  - b. The patient lying supine while performing deep breathing
  - c. The patient dangling on the side of the bed
  - d. The patient sitting in a chair at the bedside

ANS: B

To optimize air flow, the patient should be sitting in an **upright** position to allow for good chest expansion. Air exchange and movement in the lungs are influenced by patient position.

PTS: 1

17. How should the patient breathe when you are auscultating the chest?
- a. Normally through the mouth
  - b. Breathing slowly and slightly deeper than normal through the nose
  - c. Breathing at a rate faster than normal at abnormal depth
  - d. Breathing slowly and slightly deeper than normal through the mouth

ANS: D

When auscultating the chest, have the patient breathe **slowly and slightly deeper than normal through the mouth.**

PTS: 1

18. Which of the following steps is *not* correct when systematically auscultating a patient's chest?
- a. Listen for one complete inspiratory and expiratory cycle
  - b. Contrast breath sounds with the patient nasal to oral breathing
  - c. Compare one side of the chest to the other side
  - d. Progress from the superior to the inferior segments of the lung

ANS: B

Listen for **one complete cycle**, inspiration and expiration at each segment. Listen carefully to each segment by comparing **one side with the other**. Progress **from the superior segments to the inferior segments** when auscultating either posteriorly or anteriorly.

PTS: 1

19. Which of the following environmental conditions should be considered when auscultating a patient's chest?
- I. Close the door before initiating the examination
  - II. The temperature should be comfortable, especially not too cold
  - III. Turn off noise producing appliances in the room
- a. III only
  - b. II and III
  - c. I and II
  - d. I, II, and III

ANS: D

If possible, **close the door and dismiss any visitors** prior to beginning the examination. The **temperature of the room should be comfortable and not too cold**. **Turn off** anything that may cause distracting noise while auscultating the chest. Lungs sounds are often faint and somewhat muffled making them difficult to hear.

PTS: 1

20. The practitioner places a sphygmomanometer on the patient's upper arm. The brachial artery is palpated and the cuff is inflated until the pulse disappears at 110 mmHg. How should this be recorded in the patient's chart?
- a. This is the systolic pressure
  - b. This is the diastolic pressure
  - c. This is the pulse pressure
  - d. This is the intrathoracic pressure

ANS: A

This is the **systolic blood pressure**. When measuring the blood pressure by palpation, palpate the brachial artery. Once the artery is located, slowly inflate the sphygmomanometer. When the artery becomes totally occluded, the pulse will no longer be felt. At this point, measure the reading on the pressure gauge.

PTS: 1

21. The practitioner auscultates the chest of an asthmatic patient and notes wheezing bilaterally. When describing the wheezing, what things should be documented when charting these breath sounds?
- I. Location
  - II. Intensity
  - III. Inspiratory or expiratory
  - IV. Pitch of the wheezing sounds
- a. I and II
  - b. III and IV
  - c. III only
  - d. I, II, III, IV

ANS: D

When recording your auscultation finding's in the patient's chart **describe the sound and its intensity, duration, phase, and location**.

PTS: 1

22. The practitioner records a carotid pulse of 45/minute. How should this be documented in the patient's chart?
- a. Tachycardia
  - b. Bradycardia
  - c. Hypotension
  - d. Hypertension

ANS: B

An abnormally low heart rate is termed **bradycardia**. The normal heart rate for adults ranges from 60 to 90-beats per minute. Children's pulses range from 90 to 120-beats per minute.

PTS: 1

23. A patient is brought to the emergency department after being involved in a motor vehicle accident. She has had massive blood loss and hypotension. What should the practitioner expect the heart rate to be?
- a. Tachycardic
  - b. Bradycardic
  - c. High pulse pressure
  - d. Absent

ANS: A

**Tachycardia** can be caused by hypoxemia, fever, emotional distress, heart abnormalities, and blood volume loss.

PTS: 1

24. What is the pressure called that is measured at the time the ventricles are at rest?
- a. Tachycardia pressure
  - b. Diastolic pressure
  - c. Systolic pressure
  - d. Bradycardia pressure

ANS: B

The **diastolic** pressure is the pressure in the arterial system when the ventricles are at rest.

PTS: 1

25. A practitioner is called to the emergency department to evaluate a patient from a nursing home in chronic renal failure with fluid retention. What would the practitioner would expect the patient's blood pressure to be?
- a. Hypotensive
  - b. Hypertensive
  - c. Normal
  - d. Lower than normal

ANS: B

Causes of **hypertension** are cardiovascular imbalances, hormonal imbalances, exercise, stimulant drugs, emotional stress, and **renal failure/fluid retention**.

PTS: 1

## ESSAY

1. Since the stethoscope should be used on bare skin, discuss what the problems can be caused by hair under the stethoscope and large breasts and how to correct these problems.

ANS:

Hair on a male patient's chest will often cause slight movement against the diaphragm of the stethoscope, producing the sound of crackles. Wet the hair slightly so that it will stick to the skin and not produce this unwanted distraction. Large breasts present an additional challenge in the auscultation of breath sounds. If the patient is alert and cooperative, ask her to move her breast to one side to facilitate use of the stethoscope. If the patient is unable to do so, it may be necessary for the practitioner to move the breast while preserving the patient's dignity.

PTS: 1

2. A patient comes to the emergency department in respiratory distress. What should be evaluated to assess the patient's distress?

ANS:

Immediate evaluation of the patient should be done through observation of the patient's general appearance, color, respiratory effort, diaphoresis, neck vein distension, peripheral edema, clubbing of the digits, nasal flaring, breath sounds, and chest movement. The vital signs should be assessed quickly to determine the patient's heart rate, respiratory rate and pattern, blood pressure, body temperature, and pulse oximetry. An ECG and a chest x-ray can be performed to help determine if the distress is from pulmonary or cardiac causes though there is a time element due to proper personnel notification. These can all be assessed quickly and non-invasively. Next, invasive techniques should be used to help determine the cause of the distress. Blood evaluation that can be done to determine the cause of the distress include arterial blood gases, white blood cell count, electrolytes, and complete blood count. A sputum sample can be sent to the lab for culture.

PTS: 1

3. A patient is admitted to the emergency department after being involved in a construction accident. The physician suspects the patient has a right tension pneumothorax. How would you assess the patient for a pneumothorax and why?

ANS:

Chest movement should be assessed. Asymmetrical chest movement with lag of movement on the right can mean a pneumothorax of the right thorax. Breath sounds should be assessed. Absent or diminished breath sounds on the right could indicate a right tension pneumothorax. Percussion of the chest would reveal a hyperresonant percussion note over a pneumothorax. A large tension pneumothorax will shift the trachea away from the affected side (toward the left). Finally a chest x-ray should be performed to assess for and confirm the presence of a pneumothorax.

PTS: 1