

Pre-training and post-training test exam

1. Regarding reflective surfaces, which of the following is true?
 - A. Reflective surfaces do not modify the echoes during an ultrasound.
 - B. Reflective surfaces are the interfaces between two different physical media.
 - C. Reflective surfaces are independent of the medium's density.
 - D. Reflective surfaces only reflect echoes and never let them pass through.
2. Which of the following is/are true about the piezoelectric effect?
 - A. It transforms electrical energy into acoustic energy, and vice-versa.
 - B. It is caused by the crystals present in the exploration probes.
 - C. It gives information that is processed in the processing unit and transformed into images on the monitor.
 - D. All of the above are true.
3. With the Doppler effect:
 - A. We measure the speed of a moving surface.
 - B. When colourising the image, red colour shows that the fluid is approaching the probe and blue colour that the fluid is moving away from it.
 - C. Neither of the above are true.
 - D. A and B are both true.
4. The probes or transducers can be:
 - A. Convex or low frequency for superficial tissues.
 - B. Linear or high frequency for deep tissues.
 - C. Sectorial with a small, low-frequency contact area that allows high-resolution images to be taken of deep structures.
 - D. None of the above are correct.
5. The elementary images in ultrasound are:
 - A. Anechoic images are those with no internal echoes, and they are generated by liquid substances.
 - B. Hypoechoic images are those that show a higher echogenicity compared to the surrounding tissue (whiter).
 - C. Hyperechoic images are those that show a lower echogenicity compared to the surrounding tissue (darker grey).
 - D. All these answers are true.
6. The indicator on the transducer:
 - A. Helps us orient ourselves.
 - B. Should be positioned preferably facing right or upwards.
 - C. Will be shown on the left side of the monitor.
 - D. All of the above are true.

7. Pulmonary ultrasound:

- A. Cannot be used because the lungs are filled with air and you cannot see them.
- B. Could help in the diagnosis of different pathologies.
- C. Makes the presence of pleural effusion easily visible.
- D. B and C are correct.

8. Which of these images are pathological on a chest ultrasound?

- A. Bat sign.
- B. A-lines.
- C. Lung sliding.
- D. More than 8 confluent B-lines.

9. If we see any of these signs when performing lung ultrasound, we can be sure of the presence of pneumothorax:

- A. Jellyfish sign.
- B. Lung sliding.
- C. B-lines in any number.
- D. Lung point.

10. Pleural effusion could be seen as:

- A. An anechoic or hypoechoic entity, even though there may be isoechoic or hyperechoic tracts.
- B. A phrenic line.
- C. Neither of the above is correct.
- D. Both A and B are correct.

11. The presence of multiple B-lines or comet tails indicates:

- A. Increased air in the lungs.
- B. Increased fluid in the lungs.
- C. Potential acute respiratory disease syndrome (ARDS).
- D. Answers B and C are correct.

12. In a patient with pneumothorax, which of the following signs would we NEVER observe?

- A. Lung sliding.
- B. Lung point.
- C. Stratosphere sign (M-mode).
- D. B-lines in the area without pneumothorax.

13. Which of the following definitions is NOT correct:

- A. In a patient who is not breathing, we will not be able to visualise lung sliding.

- B. B-lines are an artifact present in the normal lung.
- C. The seashore sign is present in M-mode in normal lung.
- D. The stratosphere sign is present in M-mode in normal lung.

14. Regarding B-lines, which of the following definitions is correct:

- A. They emerge from the pleural line.
- B. B-lines are a sign of perialveolar oedema.
- C. B-lines are absent when there is pneumothorax.
- D. All of the above are correct.

15. Regarding A-lines, which of the following definitions is NOT correct:

- A. They are parallel to the pleural line.
- B. They are absent when there is pneumothorax.
- C. A-lines may overlap with B-lines.
- D. A-lines might be seen in patients with ARDS.