

MULTIPLE CHOICE

BR ANATOMY AND PHYSIOLOGY - PRACTICE SET

PROPOSED FOR REVIEW - questions are the author's verbatim Q&A; distractors are auto-selected from other answers in the same bank and must be checked by a subject-matter reviewer (a distractor could coincidentally be correct). Not authoritative assessment content.

1. Which hormone is principally responsible for milk synthesis during lactation?

- A. Oxytocin
- B. Estrogen
- C. Progesterone
- D. Prolactin

2. True or false: The pectoralis major muscle lies superficial to the retromammary fat layer on ultrasound.

- A. False
- B. True

3. Lymph from the medial portion of the breast most commonly drains to which nodal chain?

- A. Supraclavicular nodes
- B. Internal mammary nodes
- C. Mediastinal nodes
- D. Axillary nodes

4. Which of the following best describes the relationship between the level I, II, and III axillary lymph nodes and the pectoralis minor muscle?

- A. Level I is lateral, level II is posterior (deep), and level III is medial to the pectoralis minor
- B. All three levels lie lateral to the pectoralis minor
- C. Level III is the most lateral group and drains directly to the supraclavicular chain
- D. Level I is medial, level II is lateral, and level III is posterior to the pectoralis minor

5. Which hormone is primarily responsible for ductal proliferation in the breast during puberty?

- A. Prolactin
- B. Estrogen
- C. Oxytocin
- D. Progesterone

6. The nipple on ultrasound typically appears as:

- A. A hypoechoic structure with posterior acoustic shadowing
- B. An anechoic round structure
- C. An isoechoic mound with no acoustic effect
- D. A hyperechoic structure with through-transmission

7. In the menstrual cycle, the breasts are typically least nodular and least tender during which phase, making it the preferred window for clinical and sonographic evaluation?

- A. Mid-luteal phase
- B. Ovulation
- C. Late luteal phase, just before menses
- D. Follicular phase, shortly after menses

8. On ultrasound, which structure is most likely to be confused with a hypoechoic breast mass and is best clarified by changing transducer orientation?

- A. Fat lobule with surrounding Cooper ligaments
- B. The pectoralis major muscle
- C. An echogenic duct in cross section
- D. A simple anechoic cyst

9. Which quadrant of the breast contains the highest proportion of glandular tissue and is the most common site of malignancy?

- A. Lower inner quadrant
- B. Upper inner quadrant
- C. Lower outer quadrant
- D. Upper outer quadrant

10. True or false: Cooper ligaments insert into the deep pectoral fascia and the dermis of the overlying skin.

- A. True
- B. False

11. Which structure represents the dilated portion of the lactiferous duct just beneath the nipple, where milk pools during lactation?

- A. Lactiferous sinus
- B. Acinus
- C. Areolar gland of Montgomery
- D. Terminal ductal lobular unit

12. Approximately what percentage of lymphatic drainage from the breast flows to the axillary nodes?

- A. About 75 percent
- B. About 25 percent
- C. About 50 percent
- D. Nearly 100 percent

13. The Tanner stage in which the breast bud first appears beneath the areola is:

- A. Tanner stage 3
- B. Tanner stage 4
- C. Tanner stage 1
- D. Tanner stage 2

14. The functional secretory unit of the breast where most carcinomas and fibrocystic changes originate is the:

- A. Retromammary space
- B. Terminal ductal lobular unit
- C. Lactiferous sinus
- D. Cooper ligament

15. The breast extends anatomically from approximately the second to the sixth rib and from the sternal border to which lateral landmark?

- A. Midaxillary line
- B. Anterior axillary line
- C. Midclavicular line
- D. Posterior axillary line

16. The axillary tail of Spence represents which anatomic feature?

- A. A fibrous attachment between gland and pectoralis
- B. An accessory nipple in the axillary line
- C. A normal lymph node group in the upper outer quadrant
- D. An extension of breast tissue into the axilla

17. The principal arterial supply to the medial breast is the:

- A. Internal mammary (internal thoracic) artery
- B. Subscapular artery
- C. Thoracoacromial artery
- D. Lateral thoracic artery

18. Normal lactiferous ducts on ultrasound typically measure approximately:

- A. Greater than 8 mm in the non-lactating breast
- B. Up to about 2 to 3 mm in diameter in the non-lactating breast
- C. Up to about 1 cm in the non-lactating breast
- D. 5 to 7 mm in the non-lactating breast

19. Which sonographic finding is most characteristic of a normal Cooper ligament?

- A. Hypoechoic round mass with internal vascularity
- B. Anechoic tubular structure with through-transmission
- C. Thin echogenic linear band producing posterior acoustic shadowing when perpendicular to the beam
- D. Hyperechoic curvilinear band deep to the pectoralis muscle

20. The retromammary space is best described sonographically as:

- A. A muscular layer immediately deep to the skin
- B. A thin, predominantly fatty layer between the deep layer of superficial fascia and the pectoralis major
- C. A glandular layer surrounding the nipple
- D. A lymphatic plexus along the internal thoracic vessels

21. Which pair correctly matches a layer of the breast to its expected sonographic echogenicity?

- A. Cooper ligaments: anechoic; ducts: hyperechoic
- B. Subcutaneous fat: hypoechoic; fibroglandular tissue: hyperechoic
- C. Retromammary fat: anechoic; pectoralis: hypoechoic
- D. Subcutaneous fat: hyperechoic; fibroglandular tissue: hypoechoic

22. Differentiating subcutaneous (premammary) fat from retromammary fat on ultrasound is most reliably done by:

- A. Their echogenicity, since premammary fat is hyperechoic and retromammary fat is anechoic
- B. Their vascularity, since retromammary fat contains the main arterial supply
- C. Their thickness, since premammary fat is uniformly thicker than retromammary fat
- D. Their position relative to the glandular zone, with premammary fat superficial and retromammary fat deep to the gland

23. Polythelia refers to:

- A. Accessory nipples along the embryologic milk line
- B. Accessory glandular breast tissue without a nipple
- C. Complete absence of one breast
- D. Bilateral overdevelopment of the breast

24. On sonography of a young woman in her 20s, the breast is typically dominated by which tissue type?

- A. Fibroglandular (echogenic) tissue
- B. Calcified ligaments
- C. Fatty (hypoechoic) tissue
- D. Retromammary fat

25. The fascia that separates the posterior breast from the pectoralis major muscle is the:

- A. Clavipectoral fascia
- B. Endothoracic fascia
- C. Superficial layer of the superficial fascia
- D. Deep layer of the superficial fascia (retromammary fascia)