

Chapter 2

Lifespan Changes in the Respiratory and Phonatory Systems

Multiple Choice Questions

1. What are the periods in Boliek's conceptual model of speech breathing?
 - a. Adaptation
 - b. Refinement
 - c. Emergence
 - d. All of the above
 - e. A and B only
2. What is the level of the larynx in the neck of an infant relative to the cervical section of the vertebral column?
 - a. C1 – C2
 - b. C2 – C3
 - c. C3 – C4
 - d. C4 – C5
 - e. C5 – C6
3. What is the length of the vocal folds in the adult female?
 - a. 11 – 15 mm
 - b. 17 – 21 mm
 - c. 25 – 30 mm
 - d. 2 – 3 mm
 - e. 1 – 2 mm
4. What is the length of the vocal folds in the adult male?
 - a. 11 – 15 mm
 - b. 17 – 21 mm
 - c. 25 – 30 mm
 - d. 2 – 3 mm
 - e. 1 – 2 mm
5. What is the average fundamental frequency range of an infant?
 - a. 125 – 175 Hz
 - b. 200 – 3 Hz
 - c. 300 – 400 Hz
 - d. 400 – 600 Hz
 - e. 900 – 1100 Hz
6. What is the mean vital capacity of a teenage male?
 - a. 2.12 liters
 - b. 6.63 liters
 - c. 5.03 liters
 - d. 2.98 liters
 - e. 3.55 liters
7. What is the mean expiratory reserve volume of a 50-year-old adult female?
 - a. 1.22 liters
 - b. .48 liters
 - c. 1.50 liters

- d. .28 liters
 - e. 3.44 liters
8. What is the thyroid angle in the larynx of a post-pubescent male?
- a. 90 degrees
 - b. 120 degrees
 - c. 30 degrees
 - d. 200 degrees
 - e. 150 degrees
9. How much does the male fundamental frequency change as a result of puberty?
- a. 2.5 semitones
 - b. 2 octaves
 - c. 1.5 semitones
 - d. 1 octave
 - e. 3 semitones
10. What causes reduction in secretions of the glandular epithelium, dehydration of the mucosa, tissue congestion, increased mucosal viscosity, and thinning of the vocal mucosa?
- a. Caffeine
 - b. Aspirin
 - c. Estrogen
 - d. Progesterone
 - e. Androgens
11. What is the extent of fundamental frequency change in females that results from taking prescribed testosterone?
- a. An average 100 Hz elevation
 - b. An average 100 Hz drop
 - c. Very little
 - d. An average 200 Hz elevation
 - e. An average 200 Hz drop
12. What is the typical shape of the epiglottis of an infant?
- a. V-Shaped
 - b. Flat
 - c. Omega
 - d. Alpha
 - e. Circular
13. What happens to the laryngeal cartilages as a result of the aging process?
- a. Muscular atrophy
 - b. Ossification
 - c. Thinning
 - d. Fibrosis
 - e. Neuronal decrease
14. What laryngeal joint appears to be the most affected by the aging process?
- a. Cricothyroid
 - b. Thyroarytenoid
 - c. Aryepiglottic
 - d. Thyroepiglottic
 - e. Cricoarytenoid
15. What tends to happen to the epithelium in aging females?

- a. Shortening
 - b. Thickening
 - c. Thinning
 - d. Lengthening
 - e. Narrowing
16. How does the voice change in post-menopausal women?
- a. F0 decreased
 - b. Sustained phonation is disrupted
 - c. Loudness decreases
 - d. All of the above
 - e. None of the above
17. What is senescence?
- a. Female voice perception
 - b. Male voice perception
 - c. Fluctuation in F0
 - d. Fluctuation in I0
 - e. Senile voice
18. What is the term that describes the aging larynx?
- a. Presbyterian
 - b. Presbycusis
 - c. Presbyphonia
 - d. Presbyocular
 - e. Presbylateralis
19. What is the average IC in a 25-year-old male?
- a. 2.61 liters
 - b. 1.14 liters
 - c. 3.62 liters
 - d. 2.05 liters
 - e. 1.55 liters
20. What is the average IC in a 25 year old female?
- a. 2.61 liters
 - b. 1.14 liters
 - c. 3.62 liters
 - d. 2.05 liters
 - e. 1.55 liters
21. According to Scheiner, at what stage does the baby start to engage in vocal play?
- a. Stage 1
 - b. Stage 2
 - c. Stage 3
 - d. Stage 4
 - e. Stage 5
22. What is/are characteristics of the infantile larynx?
- a. Epiglottis is omega shaped
 - b. F0 range is 100 – 200 Hz
 - c. Lamina propria is undifferentiated
 - d. A & C
 - e. B & C

23. If the average SPFO range is 131 – 165 in males, what stage of voice change may he be in?
- 1
 - 2
 - 5
 - 4
 - 5
24. Characteristics of presbyphonia include which of the following?
- Hoarseness, breathiness, and increased rate
 - Altered pitch, strain, and slowed rate
 - Decreased F0 in males
 - Increased F0 in females
 - Increased intensity and decreased noise in the voice
25. Does the general opinion of a person deteriorate in response to the aging of that person's voice?
- Yes
 - No
 - Only in males
 - Only in females
 - There is no relationship

Matching Questions

- | | |
|---------------------------------|-------------------------------------|
| _____ 1. 15 weeks gestation | A. Old voice |
| _____ 2. Breathiness | B. Development of the larynx |
| _____ 3. Senescence | C. Level of the infant larynx |
| _____ 4. 11 mm to 15 mm | D. Last phase of Boliek's Model |
| _____ 5. C4 | E. Evident in aging larynx |
| _____ 6. 3-8 weeks gestation | F. Caused by a glottal gap |
| _____ 7. Adaptation | G. Level of adult larynx |
| _____ 8. Increased ossification | H. Length of the male vocal folds |
| _____ 9. C7 | I. Beginning of glottal activity |
| _____ 10. 17 mm to 21 mm | J. Length of the female vocal folds |

True/False Questions

- The pitch, loudness, and quality of a person's voice changes across the life span.

2. On balance infants and young children are abdominal breathers.
3. On balance older children and adults are also abdominal breathers.
4. Infant crying is not important to the development of human vocal communication.
5. Young children have reduced dynamic range and lower harmonic-to-noise ratios due to immature anatomic structures.
6. The female fundamental frequency drops by one octave as a result of puberty.
7. The voice of the post-pubescent female is slightly breathy because of a posterior glottal gap.
8. Oral contraceptives improve vocal quality during the menstrual cycle.
9. Ossification is more prevalent and more extensive in women than in men.
10. F0 increases in the aging male.
11. F0 increases in the aging female.
12. Speaker age can be judged by listening to the voice.
13. As age increases our opinion of the speaker decreases.
14. Boliek's conceptual model of speech breathing includes inhalation, exhalation, and adaptation.
15. The length of the adult male vocal folds is 17 – 21 mm.
16. The average fundamental frequency in an adult male ranges from 125 – 175 Hz.
17. The male voice drops approximately one octave as a result of puberty.
18. Menopause can increase the amplitude of vibration of the vocal folds.
19. Progesterone has a positive impact on phonation.
20. The senile voice is called senescence.
21. The most critical joint in the larynx is the cricoarytenoid joint.
22. Aging can reduce the range of motion of the arytenoid cartilages.
23. Healthy older adults are typically able to generate adequate respiratory support for speech.
24. The infantile epiglottis is alpha shaped.

25. The adult male larynx shows signs of aging in about the 3rd decade of life.

Short Answer Questions

1. Describe Boliek's conceptual model of speech breathing.
2. What are the parameters of the aging voice?
3. Describe the vocal characteristics associated with the premenstrual vocal syndrome.
4. Define the anatomical and acoustic changes triggered by pubescence in females and males.
5. Discuss the factors that influence change in the function and capacity of the respiratory system throughout life.

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True/False Questions

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