Physiology and Human Performance in Drama

Drama And Performance Health · Practice Test · 20 Questions

1. Which specific muscle group, when fatigued during prolonged vocal performance, most significantly increases the risk of functional dysphonia?

A) The intrinsic laryngeal muscles
B) The masseter muscles
C) The rectus abdominis
D) The external obliques

2. In ballet and stage performance, what is the primary physiological mechanism by which 'turnout' is achieved in the hip joint without causing femoral acetabular impingement?

A) External rotation of the tibia
B) External rotation of the femur via the deep lateral rotators
C) Abduction of the lumbar vertebrae
D) Plantar flexion of the talocrural joint

3. Which cranial nerve is most directly responsible for the motor control of the cricothyroid muscle, critical for pitch modulation in professional actors?

A) Trigeminal nerve (V)
B) Facial nerve (VII)
C) Vagus nerve (X)
D) Hypoglossal nerve (XII)

4. During a sustained 'stage scream', which physiological response helps prevent mechanical trauma to the vocal folds?

A) Increased glottic closure pressure
B) Activation of the lateral cricoarytenoid muscles
C) Increased subglottal pressure without vocal fold hyperadduction
D) Maximal contraction of the sternocleidomastoid

5. What is the primary metabolic byproduct that accumulates in the muscle tissue of dancers during high-intensity aerobic stage sequences, contributing to localized acidosis?

A) Pyruvate
B) Lactate
C) Creatine phosphate
D) Adenosine triphosphate

6. Which structural adaptation in the human spinal column allows for the extreme extension required in certain contemporary dance techniques without compromising the spinal cord?

A) Hypertrophy of the intervertebral discs
B) Increased range of the facet joints in the thoracic spine
C) Elongation of the ligamentum flavum
D) Development of extra vertebrae in the lumbar region

7. What role does the diaphragm play in 'resonant projection' for stage actors beyond simple pulmonary ventilation?

A) It creates positive pressure in the abdominal cavity to stabilize the core
B) It serves as the primary anchor for the hyoid bone
C) It regulates the flow of air to prevent vocal fold desiccations
D) It compresses the esophagus to improve resonance

8. In terms of cardiovascular health for performers, what is the 'Staircase Effect' (or Treppe) observed during repetitive, high-intensity stage movement?

A) A decrease in stroke volume over time
B) An increase in myocardial contractility due to cumulative calcium availability
C) A sudden drop in systemic blood pressure
D) The inhibition of sympathetic nervous system output

9. Which part of the brain is primarily responsible for the 'mirror neuron' activity involved in empathetic dramatic performance and physical mimicry?

A) The cerebellum
B) The ventral premotor cortex
C) The thalamus
D) The pineal gland

10. What is the clinical term for the repetitive strain injury often found in pianists and violinists that involves the inflammation of the sheath surrounding the tendons?

A) Epicondylitis
B) Tenosynovitis
C) Bursitis
D) Osteoarthritis

11. During 'stage combat', which anatomical structure is most vulnerable to acute shearing forces during abrupt changes in rotational acceleration?

A) The anterior cruciate ligament
B) The glenohumeral labrum
C) The symphysis pubis
D) The hyoid bone

12. What is the physiological consequence of 'breath holding' (Valsalva maneuver) frequently used by stage actors to create dramatic tension?

A) Increased venous return to the heart
B) Decreased heart rate via baroreceptor reflex
C) Increased intrathoracic pressure causing transient hypotension
D) Improved oxygenation of the cerebral cortex

13. Which endocrine gland regulates the release of cortisol, the hormone primarily responsible for the 'fight or flight' stress response experienced by performers before a show?

A) Pituitary gland
B) Adrenal cortex
C) Thyroid gland
D) Pancreas

14. How does the 'Alexander Technique' physically influence human posture in performance settings?

A) By permanently altering the shape of the vertebrae
B) By reducing excessive tonus in the longus colli and suboccipital muscles
C) By increasing the length of the Achilles tendon
D) By stimulating the growth of muscular connective tissue

15. What is the primary physiological reason dancers are instructed to avoid 'locking' the knee joints during extended standing on stage?

A) To prevent the compression of the infrapatellar fat pad
B) To maintain venous return via the skeletal muscle pump
C) To avoid the fusion of the patella to the femur
D) To increase the activation of the quadriceps femoris

16. Which sensory system is the most critical for maintaining equilibrium during rapid, disorienting stage rotations (pirouettes)?

A) Proprioceptive system
B) Vestibular system
C) Visual tracking system
D) Auditory system

17. What is the biochemical effect of 'vocal warm-ups' on the vocal fold mucosa?

A) Increased viscosity of the lubricating mucus
B) Decreased vascular permeability
C) Increased elasticity of the hyaluronic acid within the lamina propria
D) Depletion of glycogen stores in the thyroarytenoid

18. In the context of theatrical lighting and health, what is the primary risk of long-term exposure to high-intensity ultraviolet (UV) emission from stage lights?

A) Corneal photokeratitis
B) Increased production of vitamin D
C) Degradation of the optic nerve
D) Suppression of the pineal gland

19. What is the specific anatomical term for the 'stage whisper' mechanism that produces sound without vocal fold vibration?

A) Glottal fry
B) Aphonic whispering
C) Breathy phonation
D) Turbulent glottic airflow

20. Which muscle is the primary mover during the 'plie' exercise, providing the stability required for dramatic lower-body physical expression?

A) Gluteus medius
B) Quadriceps femoris
C) Gastrocnemius
D) Sartorius