Physiological Milestones in Sports History

Sports History And Human Physiology · Practice Test · 10 Questions

1. In 1954, Roger Bannister became the first person to run a sub-four-minute mile. What physiological barrier did many medical experts at the time incorrectly believe this feat would cross, potentially causing human death?

A) Cardiac arrest due to extreme tachycardia
B) Pulmonary hemorrhage or lung rupture
C) Muscle tissue liquefaction from heat
D) Cerebral edema from blood pressure spikes

2. The 'blood doping' scandal involving the 1984 U.S. Olympic cycling team relied on increasing the body's capacity to transport oxygen. What specific component of the blood were they aiming to artificially elevate?

A) White blood cells
B) Platelets
C) Red blood cells
D) Plasma volume

3. Which athlete's 1968 Olympic world record in the long jump was so statistically anomalous that it prompted scientific debates about whether human biomechanics had reached a 'biological ceiling'?

A) Bob Beamon
B) Jesse Owens
C) Carl Lewis
D) Mike Powell

4. In 1996, the International Olympic Committee officially recognized 'hypohydration' as a risk factor. What percentage of body mass loss due to water depletion is generally cited as the threshold where cognitive and physical performance severely degrades?

A) 1-2%
B) 3-4%
C) 5-6%
D) 7-8%

5. Before the widespread use of sports supplements, which 19th-century endurance sport led to the first clinical observations of 'glycogen depletion' (bonking) in athletes?

A) Professional rowing
B) Pedestrianism (long-distance walking)
C) Bare-knuckle boxing
D) Cycling

6. What physiological phenomenon, discovered through studies of elite swimmers in the 20th century, explains the heart's adaptation to extreme aerobic demand, resulting in increased left ventricular chamber size?

A) Athletic heart syndrome
B) Myocardial hypertrophy
C) Coronary artery calcification
D) Atrial fibrillation

7. What was the primary physiological reason that the 1968 Mexico City Olympics resulted in so many world records in sprint events despite the high altitude?

A) Increased lung capacity
B) Reduced air resistance (lower density)
C) Hyper-oxygenation of the blood
D) Higher metabolic efficiency

8. During the 1970s, researchers studying Finnish cross-country skiers discovered the correlation between high VO2 max and what specific genetic and environmental adaptation?

A) Increased mitochondrial density
B) Larger lung surface area
C) Higher hemoglobin concentration
D) Lower resting cortisol levels

9. The 'Fosbury Flop' revolutionized the high jump in 1968. From a biomechanical perspective, why is this technique superior to the 'straddle' method in relation to the athlete's center of mass?

A) It allows the center of mass to pass beneath the bar
B) It eliminates the need for muscle contraction at the peak
C) It increases the vertical velocity of the jump
D) It maximizes the leverage of the trailing leg

10. What term describes the physiological state induced by the 'taper' period in athletic training, intended to allow for glycogen supercompensation and tissue repair?

A) Neural adaptation
B) Supercompensation phase
C) Catabolic recovery
D) Hypertrophic atrophy