

Recommendations for Participation in Sport Activities and Exercise for Persons with Exercise-Induced Bronchospasm: Review Questions

Jacalyn J. Robert McComb, PhD, FACSM

The questions below are based on the article “Recommendations for Participation in Sport Activities and Exercise for Persons with Exercise-Induced Bronchospasm,” which begins on [page 23](#) of this issue. Choose the single best answer for each question.

1. During a routine physical examination, a 9-year-old boy reports experiencing breathlessness and chest tightness during soccer practice. His uncle has allergic rhinitis. How can a diagnosis of exercise-induced bronchospasm (EIB) be supported?

- (A) Document airflow obstruction by showing a maximal voluntary ventilation (MVV) of less than 85% of that predicted for age and height after 6 to 8 minutes of moderate exercise
- (B) Document a 10% to 15% decrease in forced expiratory volume in 1 second (FEV₁) from the resting baseline value after 6 to 8 minutes of strenuous exercise
- (C) Document that the ratio of FEV₁ to forced vital capacity is below the lower limit of normal after 6 to 8 minutes of moderate exercise
- (D) Establish reversibility by showing a decrease in FEV₁ of 10% or more following inhalation of a long-acting β_2 -agonist after 6 to 8 minutes of moderate exercise

2. Evidence from the canine airway model of leukotriene blockade attenuating EIB supports which of the following theories of EIB's initial stimulus?

- (A) α -Adrenergic blockade theory
- (B) Airway-drying theory
- (C) Rebound hyperemia theory
- (D) Thermal exchange theory
- (E) Vagal reflex bronchoconstriction theory

3. An 11-year-old girl with mild persistent EIB seeks advice about safe participation in a summer swim

program. She competes in the 200-meter freestyle event. What advice should be given?

- (A) Avoid participation
- (B) Enroll in an inspiratory-muscle training program for 8 weeks before participating
- (C) Inhale a high-dose corticosteroid 1 to 2 hours before competing
- (D) Inhale 2 puffs of cromolyn via a pressurized metered-dose inhaler 5 to 60 minutes before competing
- (E) Inhale 2 to 4 puffs of sustained-release theophylline 1 to 2 hours before competing

4. Which of the following best describes the physiologic adaptations in persons with EIB after they participate in an exercise-training program?

- (A) Effects of aerobic training in persons with EIB are similar to those in persons without EIB
- (B) Fewer episodes of EIB occur in physically trained persons, most likely because of a change in the underlying disease pathophysiology
- (C) Fewer episodes of EIB occur in physically trained persons, most likely because of decreased minute ventilation at higher workloads and, thus, decreased stimulus for the disease
- (D) Physically trained persons can achieve a higher maximum heart rate (HR) and, thus, a higher double product (ie, HR \times systolic blood pressure) than untrained persons
- (E) Physically trained persons experience breathlessness during exercise at the same level of intensity as untrained persons

For answers, see [page 71](#).

Dr. McComb is an Associate Professor of Exercise Physiology, Department of Health, Exercise, and Sport Sciences, Texas Tech University, Lubbock, TX; and an American College of Sports Medicine Certified Exercise Specialist and Clinical Program Director.

Answers to the review questions asked on [page 45](#). The article on exercise-induced bronchospasm begins on [page 23](#).

1. (B) Document a 10% to 15% decrease in forced expiratory volume in 1 second (FEV₁) from the resting baseline value after 6 to 8 minutes of strenuous exercise
2. (B) Airway-drying theory
3. (D) Inhale 2 puffs of cromolyn via a pressurized metered-dose inhaler 5 to 60 minutes before competing
4. (C) Fewer episodes of EIB occur in physically trained persons, most likely because of decreased minute ventilation at higher workloads and, thus, decreased stimulus for the disease

Copyright 2003 by Turner White Communications Inc., Wayne, PA. All rights reserved.