

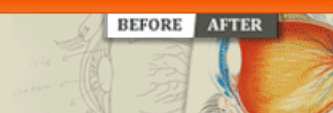
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September 2015 Volume 136, Issue 3, Pages 588–594

Next Article >

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Prevalence and characteristics of asthma in the aquatic disciplines

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Background

Despite the health benefits of swimming as a form of exercise, evidence exists that both the swimming pool environment and endurance exercise are etiologic factors in the development of asthma. The prevalence of

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asthma in swimmers is high compared with that in participants in other Olympic sport disciplines. There are no publications comparing the prevalence of asthma in the 5 aquatic disciplines.

Objective

The purpose of this study is to examine and compare the prevalence of asthma in the aquatic disciplines and in contrast with other Olympic sports.

Methods

Therapeutic Use Exemptions containing objective evidence of athlete asthma/airway hyperresponsiveness (AHR) were collected for all aquatic athletes participating in swimming, diving, synchronized swimming, water polo, and open water swimming for major events during the time period from 2004-2009. The prevalence of asthma/AHR in the aquatic disciplines was analyzed for statistical significance (with 95% CIs) and also compared with that in other Olympic sports.

Results

Swimming had the highest prevalence of asthma/AHR in comparison with the other aquatic disciplines. The endurance aquatic disciplines have a higher prevalence of asthma/AHR than the aquatic nonendurance disciplines. Asthma/AHR is more common in Oceania, Europe, and North America than in Asia, Africa, and South America. In comparison with other Olympic sports, swimming, synchronized swimming, and open water swimming were among the top 5 sports for asthma/AHR prevalence.

Conclusion

Asthma/AHR in the endurance aquatic disciplines is common at the elite level and has a varied geographic distribution. Findings from this study demonstrate the need for development of aquatic discipline-specific prevention, screening, and treatment regimens.

Key words:

[Asthma](#), [exercise-induced bronchoconstriction](#), [airway hyperresponsiveness](#), [swimming](#), [diving](#), [synchronized swimming](#), [water polo](#), [Olympic Games](#), [endurance training](#)

Abbreviations used:

[AHR \(Airway hyperresponsiveness\)](#), [BPT \(Bronchial provocation test\)](#), [FINA \(Federation Internationale de Natation\)](#), [IBA \(Inhaled \$\beta_2\$ -agonist\)](#), [IOC \(International Olympic Committee\)](#), [TUE \(Therapeutic Use Exemption\)](#), [WADA \(World Anti-Doping Agency\)](#)

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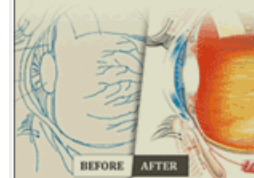
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