SELF-REPORTED ASTHMA AND EXERCISE-INDUCED RESPIRATORY SYMPTOMS IN MARATHON RUNNERS AND CROSS-COUNTRY SKIERS

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Asthma and asthma-like symptoms are frequently reported among elite runners and cross-country skiers. These sports both involve high ventilatory activities with different competition seasons, and the exposure to certain environmental factors may contribute to the development of asthma. Though there are strong genetic influences on the occurrence of asthma, the prevalence of the condition remains predominantly determined by the environment. Previous studies on runners and skiers have principally involved elite athletes and control groups not involved in active competitive sports. However, mass-participation marathons and cross-country ski races mainly involve non-elite subjects, and the purpose of this study was to compare the prevalence of self-reported asthma and exercise-induced respiratory symptoms in non-elite runners and skiers. The skiers and runners are exposed to different climatic conditions during their competition seasons and we hypothesised that the prevalence of asthma and respiratory symptoms in skiers would be higher than in runners because of exposure to colder and dryer winter climate. A questionnaire was mailed to the entrants of a marathon and a cross-country ski race in Norway and the 827 subjects whose main sport activity was running (n=512) or skiing (n=315) were included in the study. The questionnaire was developed from an existing list of questions, which had already been used in multinational studies. It was modified for this study in order to evaluate the prevalence of self-reported asthma as diagnosed by a physician and associations between respiratory symptoms (during and/or after exercise during the last year) in relation to exercise and climate. The prevalence of physician-diagnosed asthma was 7.1% in runners and 10.6% in skiers and did not differ significantly. However, asthma was more frequent in women (15.5%) than in men (7.4%) and more prevalent in the age group 18-39 years (12.2%) than in older subjects (6.4%). Among the exercise-induced respiratory symptoms, cough was the most common symptom in both groups and the prevalence was dependent on age, amount of training and climatic conditions. In subjects exercising for zero to three hours per week (n=133) in the three months previous to the marathon and ski competitions, no differences in prevalence of cough were found between the runners and skiers. However, in subjects exercising more than three hours per week (n=675) a significantly higher frequency of cough was registered among skiers (40.3%) than in runners (23.2%). A higher frequency was also registered in subjects living in municipalities with the lowest January temperatures (T_a). Cough was reported by 38.0% (T_a = -12 to -8°C), 31.4% (T_a = -8 to -4°C) and 23.1% (T_a = -4 to 4°C) of the subjects living in the three climatic areas. In terms of amount of training, no differences in cough were registered in the subjects who trained for zero to three hours in the different areas (25.0%, 28.8% and 24.0%). In subjects who trained for more than three hours per week the corresponding values were 39.7%, 31.9% and 23.2%. This demonstrates the importance of exercise level and climate on exercise-induced respiratory symptoms.

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