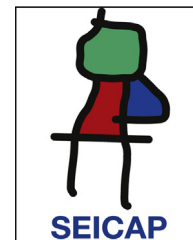


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### REVIEW

## The association of sedentary lifestyle with childhood asthma. The role of nurse as educator

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### KEYWORDS

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Students

### Abstract

**Background:** To provide a summary of the existing published knowledge on the association between sedentary lifestyle and childhood asthma. Twelve years ago, the first longitudinal studies carried out in children showed a relationship between physical activity and asthma. Several epidemiological studies confirmed these findings, with sedentary lifestyle predicting the onset of asthma.

**Methods:** A systematic review of epidemiological studies was conducted within the MEDLINE database. Epidemiological studies on children subjects, published in English were included in the review. A comprehensive literature search yielded 50 studies for further consideration. Following the application of the eligibility criteria, we identified 11 studies.

**Results:** A positive association and an excess risk of asthma during childhood were revealed to sedentary lifestyle. The findings proved the association between childhood asthma and sedentary lifestyle. The correlation between bronchial asthma and sedentary life during childhood and identifying whether preventable or treatable risk factors exist needs to be determined. Further research on the topic is essential for safer and standardised conclusions.

**Conclusions and practice implication:** Asthma can be controlled when managed properly. The role of the nurse as an educator should establish and maintain a relationship with patients in order to help them manage their disease. The steps towards asthma management will help paediatric patients to guide their approach to the condition.

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## Introduction

Twelve years ago, the first longitudinal studies carried out in children showed a relationship between physical activity and asthma.<sup>1</sup> Subsequently, several epidemiological studies confirmed these findings, where sedentary lifestyle predicts the onset of asthma.

Bronchial asthma is a common chronic disease in childhood; with a frequency variance between 7 and 11%.<sup>2</sup> Recent epidemiological studies suggest that despite its worldwide increase in the last decades, its occurrence seems to be stabilising in many countries. In Greece, the percentage of asthma oscillates from 8 to 11%. Asthma is caused by a combination of genetic and environment factors.<sup>3,4</sup>

However, the increase in asthma prevalence is related to environmental exposure, rather than to a change in genetic susceptibility. Many factors play an important role in the development of the disease, including outdoor and indoor air pollution; infections; tobacco smoking; allergen exposure; diet; and lifestyle patterns.<sup>2</sup>

Nowadays there is evidence that limited physical activity or sedentary lifestyle may be linked to childhood asthma, since several studies have shown that exercise functions as a barrier against certain diseases, such as in asthma.<sup>5-7</sup> The need for children to have aerobic exercise is now pressing and imperative due to the technological innovations where physical activity imposes, in a certain way, a rather customised sedentary, tense and unnatural way of life. Moreover, physical aerobic exercise is a unique antidote for biological deterioration, which activates all the cells of the body and exercises not only the muscles, but the respiratory and cardiovascular systems as well.<sup>3,8,9</sup>

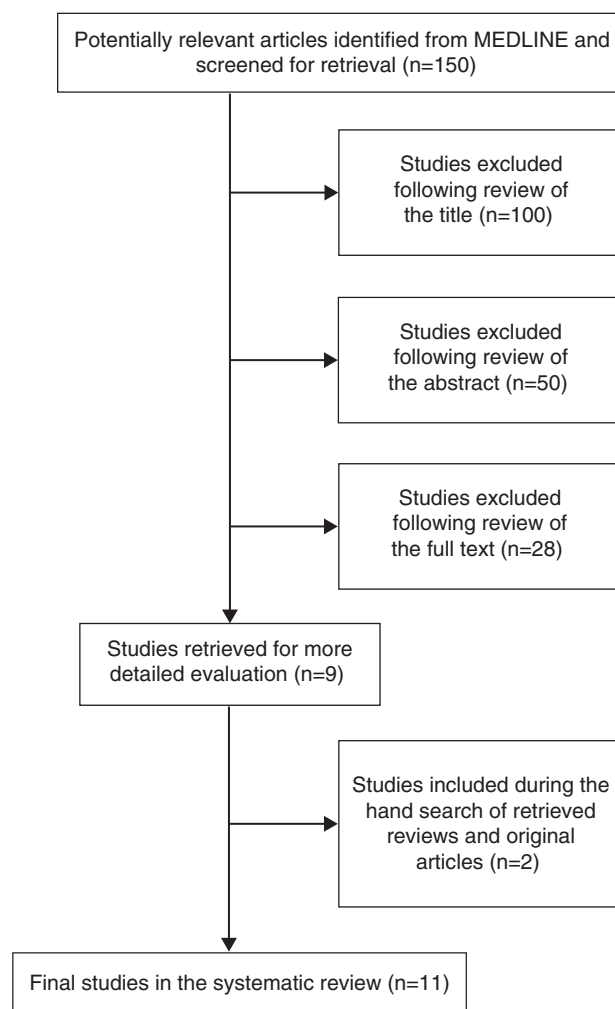
Many children and young asthmatics believe that limitations on their activity are an inevitable part of having asthma. On the contrary, a number of strategies which increase their participation in physical activity have been proposed. For example, previous studies and reviews reported that when swimming is compared to other sports, it is linked to a lower asthmogenicity and to a decrease of the severity of asthma symptoms.<sup>10-12</sup>

## Aim

The present systematic review aims to summarise the existing published scientific knowledge regarding the association between sedentary lifestyles and bronchial asthma in children.

## Method

A systematic review of the literature on the effect of sedentary lifestyle in children's asthma was performed. The following question was applied: "Given the existing epidemiological evidence, the question arises as to whether there is a connection between asthma and sedentary lifestyle on children". We drew up a review protocol in advance, following standards outlined in the MOOSE guidelines for meta-analyses and systematic reviews of observational studies.<sup>13</sup> Furthermore, a systematic comprehensive bibliographic search was carried out using the U.S National Library of Medicine Medline database for the



**Figure 1** Literature search and strategy outcomes.

years 1997–2010 and the published interface key terms used were: SEDENTARY LIFESTYLE, CHILDREN'S, ASTHMA, PHYSICAL ACTIVITY, LEISURE TIME AND STUDENTS. Retrieved studies were checked against a list of eligibility criteria while the references of each retrieved study were also checked for additional studies that met the eligibility criteria.

Prior eligibility criteria to restrict studies were defined. Epidemiological studies which referred to children, and published in English after 1997 were only included (of any study design) which compared asthmatic symptoms to inactivity during leisure time. Studies not meeting these criteria were excluded from the review. The following data were extracted from each study: main characteristics, study population, study local measures of effects, and confidence intervals for each outcome.

## Results

Fig. 1 shows the number of studies identified and excluded in each phase of the search. Manual searching of references provided an additional study that met the broad eligibility criteria. Ultimately, eleven studies were deemed suitable for inclusion in the review although one study included two

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