

## Extracurricular Activities in Children with Asthma

Auge Lesinskaite<sup>1\*</sup>, Rugile Brazinskaite<sup>1</sup>, Sigita Lesinskiene<sup>2</sup>

<sup>1</sup>Faculty of Medicine, Vilnius University, Vilnius, Lithuania

<sup>2</sup>Clinic of Psychiatry, Institute of Clinical Medicine, Faculty of Medicine, Vilnius University, Vilnius, Lithuania

\*Corresponding author: Auge Lesinskaite, Faculty of Medicine, Vilnius University, Lithuania. Tel: +37068653949; Email: auge.lesinskaite@gmail.com

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### Abstract

**Introduction:** Asthma is one of the most widespread chronic pathologies in the world. In recent years, the number of new patients with asthma in Lithuania has significantly increased. Frequently, asthma can lead children to feel less self-confident and cause psychological problems, negatively impacting children's extracurricular activities. Physical activity, such as various sports, is highly important to normal psychosocial development and is a considerable part of progressing self-conception.

**Aim:** The purpose of our study was to evaluate the most common leisure and extracurricular activities and to determine a specific favorite leisure and extracurricular activities in children with asthma. Moreover, this research was carried out to compare results with control group - children without asthma.

**Materials and Methods:** For this study we conducted interviews with children and adolescents (aged 7-17 years) with asthma and control group of children and adolescents (aged 7-17 years) without asthma. The questionnaire has been created for research purpose by the authors, it consists of six main questions, which are: a demographic section, a section about leisure time activities, a section about favorite leisure time activity, a section of extracurricular activities, a section of favorite extracurricular activity and a question for how long children attended those activities.

**Results:** Interviews were held with 75 children, of which 28 had asthma and 47 did not. Divided by gender 39 boys and 36 girls were questioned. The most common leisure activity was: riding a bike (66%) for children with asthma; walking (67%) for children without asthma. The most common specific favorite leisure activity was: riding a bike (24%) for children with asthma; basketball (46%) for children without asthma. The most common extracurricular activity was: clubs that do not require physical effort (55%) for children with asthma; sports clubs (70%) for children without asthma. The most common specific favorite extracurricular activity was: clubs that do not require physical effort (31%) for children with asthma; sports clubs (46%) for children without asthma. On the group of children with asthma 7% have never participated in any extracurricular activity, while the number in control group was only 2%. The children from control group attended their extracurricular activities longer than those with asthma.

**Conclusions and Discussion:** Most children with asthma ride bicycle in their free time and favor it. Most control group children enjoy walking in their free time and favor basketball. Children with bronchial asthma prefer clubs that do not require physical effort. Control group children prefer sports clubs. The children with asthma attend their extracurricular activities for a shorter period than those without sickness.

**Keywords:** Asthma; Children; Extracurricular Activities; Leisure Time Activities; Physical Activity

### Introduction

Asthma is one of the most widespread chronic pathologies in the world. In recent years, the number of new patients with asthma in Lithuania has significantly increased. In 2004, the diagnosis of asthma was confirmed for 17 children out of 1000, while in

2015 the number rose up to 42,8 [1]. Frequently, asthma can lead children to feel less self-confident and cause psychological problems, negatively impacting children's extracurricular activities. Physical activity, such as various sports, is highly important to normal psychosocial development and is a considerable part of progressing self-conception. Fear of recurrent asthma attack also plays a significant role as one of the main reasons why children with asthma avoid physical activity [2-4]. Researches show that

children often missed or were withheld from physical activity due to inappropriate in-school management of asthma symptoms, poor asthma control, lack of accessible medication, and stigma around publicly using asthma medication [5]. The data showed that for many children with asthma, physical activity is a challenge and there is a need for more consistent approaches to help this group to be more physically active [6,7]. Adolescents with asthma are less physically active than those without asthma and girls are less active than boys [8]. It is important to emphasize that adolescents may minimize their asthmatic symptoms and recognize an asthmatic attack less frequently [9]. Previous studies have highlighted the problem of asthma and decreased physical activity that is associated to other health problems, such as overweight and obesity, as the possibility to lead a physically active life is severely limited [3,10,11]. The prevalence of urinary stone disease and asthma was recently associated in both adult and pediatric patients [11]. Children and adolescents with low physical activity levels had an increased risk of new-onset asthma, and some had a higher risk of current asthma/or wheezing. Children who were physically inactive may have a higher risk of asthma/or wheezing compared with active children [12]. Health professionals reported that physical activity was beneficial for children with asthma and if managed appropriately, children with asthma could be as active as children without asthma [6]. Increased levels of leisure time physical activity have been linked to improved health and health outcomes across a variety of chronic diseases, including asthma [13].

Pooling of the longitudinal studies showed that subjects with higher physical activity levels had lower incidence of asthma. The available evidence indicates that physical activity is a possible protective factor against asthma development. This evidence suggests that training and high levels of physical activity play a role in the course and severity of asthma [14]. Understanding uniqueness in cultural, social and family background and developmental trajectories could help organize complex help for asthma patients. The purpose of our study was to evaluate the most common leisure and extracurricular activities and to determine a specific favorite leisure and extracurricular activities in children with asthma. Moreover, this research was carried out to compare results with control group - children without asthma.

## Materials and Methods

For this study we conducted interviews with children and adolescents (aged 7-17 years) with asthma and control group of children and adolescents (aged 7-17 years) without asthma. The questionnaire has been created for research purpose by the authors, it consists of six main questions, which are: a demographic section, a section about leisure time activities, a section about favorite leisure time activity, a section of extracurricular activities, a section of favorite extracurricular activity and a question for how long

children attended those activities. There were two types of questions: three of them were closed-end questions in which children had to choose their leisure time activities (basketball, football, volleyball, outdoor tennis, cycling, roller skating/ skateboarding, mobile outdoor games, sledging, walking, other activities), extracurricular activities (sports clubs, swimming, dancing, singing, clubs that do not require physical effort, do not attend); two of them were open-ended (qualitative) questions in which children had to write down their favorite leisure time activity and their favorite extracurricular activity and mark for how long they were attending those activities (<1 month, 1 - 6 months, 6 months - 1 year, 1 - 3 years, 3 - 5 years, >5 years). Children suffering from asthma filled in questionnaires by themselves or, in some cases, with parental help. The data was collected in two hospitals: The Public Institution Centro Poliklinika and Children's Hospital, Affiliate of Vilnius University Hospital Santaros Klinikos. The control group - children without asthma - filled questionnaires at different schools in Vilnius. The data was analyzed using Microsoft Excel and SPSS 21.

## Results

Interviews were held with 75 children, of which 28 had asthma and 47 did not. The age varied between 7-17 years. The age average was: for children with asthma was  $11,2 \pm 3,6$  years old; control group -  $15,1 \pm 0,96$  years old. Divided by gender 39 boys and 36 girls were questioned. The results of the pilot study show that the most common leisure activities were: riding a bike 66%, mobile outdoor games 55%, walking 48% for children with asthma; walking 67%, riding a bike 63% and football, basketball, volleyball 35% for children without asthma. When asked to enter a specific favorite leisure activity, children with asthma indicated that they prefer to ride bicycles (24%), while basketball was the favorite in the control group (46%) (Table 1).

Participants	Leisure activity	Control group
45%	Basketball, football, volleyball	35%
3%	Outdoor tennis	17%
66%	Cycling	63%
28%	Roller skating/ skateboarding	35%
55% (p=0,002)	Mobile outdoor games	20%
21%	Sledging	28%
48%	Walking	67%
21%	Other activities	24%

**Table 1:** The results of the pilot study show that the most common leisure activities.

The data revealed that the most common extracurricular activities were: clubs that do not require physical effort (55%), dancing (52%) and sports clubs (38%) for children with asthma; sports clubs (70%), clubs that do not require physical effort (52%) and swimming (48%) for children without asthma. When asked

to enter a specific extracurricular activity, children with asthma indicated that they prefer clubs that do not require physical effort (31%), while sports clubs were the favorite in control group (46%). Significantly more children of control group took part in sports clubs ( $p=0,003$ ) (Table 2).

Participants	Extracurricular activity	Control group
38% ( $p=0,003$ )	Sports clubs	70%
28%	Swimming	48%
52%	Dancing	43%
28%	Singing	22%
55%	Clubs that do not require physical effort	52%
7%	Do not attend	2%

**Table 2:** The results of the pilot study show that the most common Extracurricular activities.

Our data also revealed some differences between the attendances of extracurricular activity. Of the children with asthma 7% have never participated in any extracurricular activity, while the number in control group was only 2%. The children from control group attended their extracurricular activities longer than those with asthma. By average, children with asthma took part in their favorite activity 1-3 years, while those without sickness - more than 5 years.

## Conclusions and Discussion

Our study found that most children with asthma ride bicycle in their free time and favor it. Most control group children enjoy walking in their free time and favor basketball. Children with bronchial asthma prefer clubs that do not require physical effort. Control group children prefer sports clubs. The children with asthma attend their extracurricular activities for a shorter period than those without sickness.

Findings presented here indicate that children with asthma need more encouragement from health professionals and parents to be more physically active. The improved activity increases the level of self-efficacy, which is associated with a better quality of life for asthmatic children and their care givers [15]. A recent analysis indicated that maternal sport-specific support related positively to adolescent's sports club participation and that adolescents' self-efficacy increased along with maternal self-efficacy to stimulate child to participate in physical activity [16]. Family members, therefore, have a significant impact on a level of asthma control in children. A study on children (6-12 years) with asthma showed that family empowerment also improves asthma control in school-age pediatric patients [17]. It is very important to raise the interest

of parents, teachers at school, especially physical teachers and educate them about asthma control and treatment possibilities that leads to good physical condition and could help an asthmatic child to be as physical active as other children without asthma. A recent cross-sectional study had shown that parents tend to restrain their asthmatic children from physical activity [18]. Although 96% of mothers answered that physical activity was important to their children, 37% of them admitted limiting the child's daily exercise due to negative beliefs and prejudice [18]. A qualitative study from Scotland also found that parents and young people still held strong negative beliefs about the safety of physical activity, which influenced child's willingness to exercise [19]. Another study put forth correlations between asthmatic children's' and their mothers' belief in physician, adherence to prescribed medical regimes and quality of life [20]. These findings show that special and informative programs are needed for children with asthma and their families to get acquainted with the possibilities. Health promotion programs (interventions regarding physical activity, nutrition, smoking cessation and psychosocial wellness) were shown to successfully reduce asthma exacerbations by encouraging physical exercise [21]. All these asthmatic children require special complex help with implementing new guidelines for providing possibilities about their physical activity and asthma control. It is also obligatory to continue studies about this problem as they can progress.

## Conflicts of Interest

The authors declare that there is no conflict of interests regarding the publication of this paper.

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