

# Asthma Risk Factors and Triggers



---

## HIGHLIGHTS

- Factors that increase the likelihood asthma will develop are known as risk factors. Risk factors include family history of asthma and atopy, and early exposure to dust mites, tobacco smoke and other airborne substances. Breastfeeding appears to reduce the likelihood of developing asthma.
  - Factors that can provoke asthma symptoms in persons with asthma are called triggers. Colds or infections, exercise, tobacco smoke, dust and pollen were the top five asthma triggers found in a national study.
- 

## INTRODUCTION

Research has identified factors that increase the likelihood of the development of asthma or which provoke asthma symptoms. These are known as risk factors and triggers, respectively.

## RISK FACTORS FOR ASTHMA

A number of factors are associated with an increased likelihood of developing asthma. Examples of specific risk factors for asthma are described below:

- Sex— young boys appear to develop asthma more often than young girls. This situation reverses with age as more adult women than men develop asthma.<sup>2</sup>
- Parent history of asthma, especially if the parent is the mother.<sup>2</sup>
- Atopy— a greater than usual immune response to foreign substances.
- Fetal exposure to maternal smoking and exposure of infants and young children to second-hand smoke.<sup>2</sup>
- An infant feeding method other than breastfeeding.<sup>10</sup>
- Low income—it is not clear whether the higher prevalence among this group is a function of other factors such as smoking, diet, residential status or work exposures.<sup>2</sup>
- Exposure to dust mites— one study found a continuous dose-response relationship between the concentration of dust mites and the risk of developing childhood asthma. This study provides evidence that infant exposure to the mite allergen may be an important factor in inducing the onset of asthma.<sup>12</sup>
- Bronchitis or allergies in childhood—these may be risk factors, as more children with these conditions are later diagnosed with asthma.<sup>1</sup> However, the similarities between these conditions make them difficult to differentiate, so an initial diagnosis of bronchitis might in fact be the early stages of asthma.

## ASTHMA TRIGGERS

Factors that induce or worsen symptoms of asthma are called triggers. Triggers differ between individuals and may change over time. Triggers can be divided into three broad categories: allergens, irritants and those that are neither allergen nor irritant.

Asthma allergens include things such as animal dander, dust mites, pollen, mould and plants.<sup>5</sup> People with asthma react to allergens when their immune systems have been ‘sensitized’ to them. The effects of allergens on asthma symptoms are typically more severe than effects from irritants.<sup>13</sup>

Irritants are substances that can affect anyone but may cause asthma symptoms in people with asthma. These reactions are not the result of an immune response. Irritants include things such as paint fumes and other strong odours, air pollutants, cold air and high humidity.<sup>13</sup> Tobacco smoke in indoor environments and in vehicles is a common asthma trigger, as is ozone, a common outdoor air pollutant.

Other asthma triggers that are neither allergens nor irritants include bacterial or viral respiratory infections, medications and exercise.<sup>1,2</sup>

Indoor air quality is a factor in the development and persistence of asthma symptoms because of the types of allergens and irritants found indoors and the amount of time spent indoors either at home, at school or in the workplace. Canadian children and adults spend the majority of their time indoors.<sup>14</sup>

The most common asthma triggers as identified through the *1996/97 National Population Health Survey—Asthma Supplement* are shown in Table 1 (*see following page*).

Overall, the top five triggers for asthma symptoms found in this survey were colds or infections, exercise, tobacco smoke, dust and pollen. Although the list of triggers varied by age group, colds or infections and tobacco smoke ranked among the top three triggers in each age group.

**Table 1—Prevalence of Asthma Triggers among Those Diagnosed with Active Asthma, by Age Group, Canada, 1996–1997**

Asthma Triggers	Age Group				Total
	2–19 Years	20–34 Years	35–64 Years	65+ Years	
Colds/infection	84	81	76	78	80
Exercise	68	72	58	54	65
Tobacco smoke	55	67	70	73	64
Dust	47	70	70	54	60
Pollen	54	67	67	49	60
Cold air	47	64	68	71	59
Dampness and humidity	52	56	63	61	57
Animals	48	62	54	34	52
Air pollution	38	50	57	58	48
Emotions	40	47	57	54	48
Mould	38	44	56	37	44
Change in temperature	42	35	46	45	42
Feathers	29	39	37	34	34
Perfumes	21	31	46	41	33
Fumes from wood stove	24	25	41	35	30
Food	14*	15	25	NR	18
Medicine	9*	8*	12	NR	10

\* High sampling variability

NR = Not released due to small numbers

Source: The National Asthma Control Task Force. *The prevention and management of asthma in Canada: a major challenge now and in the future*. Ottawa: 2000. (Data—Statistics Canada, 1996/97 National Population Health Survey—Asthma Supplement Survey).

It is interesting to note that of the 47% of children aged five to 19 years surveyed as part of the Canadian childhood asthma study who reported pets were an asthma trigger, 56% had a pet in their home.<sup>6</sup> Additionally, 55% of children with asthma reported being exposed to environmental tobacco smoke and 35% of these children were exposed in their own homes on a regular basis.<sup>6</sup>

Data from the 1996/97 Ontario Health Survey indicated that 28% of Peel residents with asthma were regularly exposed to smoke inside their homes. In addition, over one-quarter of those with asthma in Peel were current smokers themselves (26% in Peel and 27% in Ontario).