

Asthma Facts and Statistics FAQs

What is Asthma?

Asthma is a disease of the lungs in which the airways become blocked or narrowed causing breathing difficulty. This chronic disease affects 2.74 million people in Canadaⁱ. Asthma is commonly divided into two types: <u>allergic</u> (extrinsic) asthma and <u>non-allergic</u> (intrinsic) asthma. There is still much research that needs to be done to fully understand how to prevent, treat and cure asthma. *Even though most asthmatics do not die as a result of the disease, they may spend part of their daily lives coping with the symptoms. But, with proper management, people can live healthy and active lives.*

What is an "Asthma Attack"?

Asthmatic lungs are often referred to as "twitchy", meaning they seem to overreact to stimuli such as aero-allergens and cold, dry air. Over time, the airways or bronchial tubes, become inflamed and sensitive, and if not treated, result in tightening of the muscles around the bronchial tubes (airways) and excess mucus production, further restricting airflow. This can lead to an asthma attack, when a person reacts to a trigger. During an attack, a person can experience some or all of the following symptoms:

- Shortness of breath
- Tightness in the chest
- Coughing
- Wheezing

Not all asthma attacks are the same. Symptoms during an attack can:

- Be mild, moderate or severe
- Flare up from time to time and then not appear for long periods
- Vary from one episode to the next
- Vary from person to person

What Causes asthma?

The exact cause of asthma is unknown. Asthma is complex with a large number of potential causes, including heredity, the environment, and an impaired immune system. (*From the American Asthma Foundation*)

However, the strongest risk factors (often called "triggers") for developing asthma are:

- A family history of asthma and/or allergy (eczema, allergic rhinitis)
- Exposure, in infancy, to high levels of antigen such as house dust mites
- Exposure to tobacco smoke or chemical irritants in the workplace



Other potential triggers include both allergic and non-allergic factors: **Allergic triggers:**

- Mould
- Animal dander
- Pollen
- Cockroach

Non-allergic triggers

- Certain drugs (ASA, beta blockers)
- Chemicals, fumes and odours
- Respiratory viral infections
- Weather (cold air, thunderstorms)
- Strenuous physical exercise if not managed properly
- Air pollution: Smog

Who is affected by asthma?

Asthma affects people all over the world andof all ages. In Canada, asthma accounts for approximately 80% of chronic disease cases.^{II} Those most affected in Canada are children and asthma continues to be a major cause of hospitalization for children in Canada.^{III}

- It is estimated that over 3 million people in Canada currently suffer from asthma^{iv}
- Asthma is the most common chronic disease among children^v.
- 485,700 (15.6%) Canadian Children between the ages of 4 and 11 years have been diagnosed with asthma^{vi}
- In 2010 8.5% of the population (aged 12 and over) reported that they have been diagnosed as having asthma.^{vii}
- This rate is even higher when you look at youth and children in Canada: 11.7% aged 12-19 years reported that they had been diagnosed as having asthma ^{viii} and 15.6% aged 4 11 years.^{ix}

Is asthma fatal? Are people dying from it?

- Unlike many other diseases, asthma is considered chronic which means that most people with asthma live a long time with their disease, coping with their symptoms. Despite advances in understanding the disease, and the availability of more efficacious medications, asthma is still a major cause of morbidity. This is often a result of under-diagnosis, under-treatment, lack of public understanding and knowledge about the disease, and inadequate asthma supervision. ^x
- In Canada, approximately 250 people die each year from asthma^{xi}
- It is estimated that more than 80 per cent of asthma deaths could be prevented with proper asthma education.xii



How is asthma diagnosed?

Canadian experts in the area of asthma have developed evidence-based, clinical practice guidelines that are used to diagnose and establish treatment plans for patients with asthma and other allergic diseases. The first set of Canadian Asthma Consensus Guidelines was developed in 1996, and was then revised in 1998 and again in 2001.

The diagnosis of asthma begins with a thorough history and a physical examination. Alrflow in the lungs is also measured using a spirometer, a machine which objectively measures the amount of air inhaled and exhaled, in order to determine the level of airway obstruction. Allergy skin testing is performed to determine which specific substances trigger the airway inflammation that can lead to asthma attacks. During skin testing, a tiny amount of allergen is scratched or lightly pricked into the skin. If a person is allergic to a specific allergen, a 'wheal' or bump will appear on the skin. Allergen exposures that are known to be asthma triggers, should be avoided.

How is asthma treated and managed?

According to Guidelines^{xiii}, the goal of asthma management is to reduce airway inflammation through environmental control and the use of regular controller medication, rather than intermittent therapy that is focused on short-term relief of symptoms.

Because asthma is a *chronic* condition, it usually requires continuous medical management. Medication therapies are designed to treat the airway inflammation of asthma, thereby minimizing airway narrowing. Patients with moderate to severe asthma have to take long-term controller medication daily (for example, anti-inflammatory drugs? Inhaled steroids) to control the underlying inflammation and prevent symptoms and attacks. If symptoms occur, short-term medications such as inhaled short-acting beta2-agonists) are also used to relieve them.

Medication is not the only way to control asthma. Environmental control measures are also important to avoid or eliminate factors that trigger asthma flare-ups. Allergy test results can help individual become aware of and avoid their personal asthma triggers.

Although asthma symptoms may be mild, failure to use appropriate medication or comply with treatment, coupled with an under-recognition of the severity of the problem, can lead to worsening symptoms and unnecessary deaths, most of which occur outside hospital.

Economic Impact

Respiratory illness costs the Canadian economy \$5.83 billion annually taking into consideration the costs of care (hospitals, drugs and physicians).^{xiv} As a chronic disease requiring varying levels of care over a person's lifetime, asthma contributes significantly to these costs.

- Lung disorders, including asthma and COPD, are the leading cause of production losses from short-term disability in Canada^{xv}
- A conservative estimate developed by the Conference Board of Canada suggests that without concerted action, the cost of asthma alone will rise to \$4.2 billion by 2030^{xvi}
- Asthma is the leading driver of children's health care costs at over \$2 billion per year^{xvii}



ⁱ Public Health Agency of Canada (2007). Life and breath: Respiratory disease in Canada. Ottawa ON

ⁱⁱ Public Health Agency of Canada (2007). Life and breath: Respiratory disease in Canada. Ottawa ON

^{III} Public Health Agency of Canada (2007). Life and breath: Respiratory disease in Canada. Ottawa ON

^{iv} Conference Board of Canada (2012), Cost Risk Analysis for Chronic Lung Disease in Canada

^v <u>http://www.who.int/mediacentre/factsheets/fs307/en/index.html</u>

^{vi} Public Health Agency of Canada (2007). Life and breath: Respiratory disease in Canada. Ottawa ON

^{vii} Statistics Canada, Canadian Community Health Survey, 2010

viii Statistics Canada, Canadian Community Health Survey, 2010

^{ix} Public Health Agency of Canada (2007). Life and breath: Respiratory disease in Canada. Ottawa ON

^{xi} Conference Board of Canada (2012), Cost Risk Analysis for Chronic Lung Disease in Canada

^{xii} Institute for Clinical Evaluative Services in Ontario (ICES) 196. ICES Practice Atlas (second edition), June 1996
^{xiii} L-P Boulet, TR Bai, A Becker, et al. What is new since the last (1999) Canadian Asthma Consensus Guidelines?
Can Resir J 2001;8(Supl A): 5A-27A.

^{xiv} Projected from Health Canada (2002). Economic Burden of illness in Canada, 1998. Ottawa ON Health Canada ^{xv} Economic Burden of Illness in Canada, 1998. P.52

^{xvi} Conference Board of Canada (2011) Cost Risk Analysis for respiratory health in Canada

^{xvii} To, T., Cicutto, L., Degani, N., McLimont, S. & Beyene, J. (2008). Can a community evidence-based asthma care program improve clinical outcomes? A longitudinal study. Medical Care, 46(12), 1257-1266

^{*} Statistics Canada. Millar, Wayne J. and Gerry B Hill. Childhood Asthma, Health Reports, Vol. 10, No. 3 (Winter 1998); pg 12