

Asthma Facts & Statistics

What is Asthma?

Doctors define asthma as a "chronic inflammatory disease of the airways" that can cause any or all of the following symptoms:

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

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. This increased inflammation, if not treated, will often lead to an asthma attack, which involves changes in the bronchial tubes and airways, in the following ways:

- The muscles around the bronchial tubes tighten, causing the airways to narrow. This is known as bronchospasm or bronchoconstriction.
- Mucus is produced within the bronchial tubes further restricting air flow.

Asthma symptoms can:

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

Asthma is one of the most prevalent chronic conditions affecting Canadians. Asthma can first be diagnosed at any age, but often starts in childhood.

Causes & Triggers

The prevalence of asthma in Canada has been increasing over the last 20 years and it is estimated that currently over 3 million Canadians have asthma. Researchers have yet to pinpoint the cause for the increase in asthma, however.

The strongest risk factors 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 triggers.

Other potential triggers include:

Allergic triggers:

- Mould
- Animal dander
- Pollen
- Cockroach
- Dust mites

Non-allergic triggers:

- Certain drugs (ASA, beta blockers)
- Chemicals, fumes and odours
- Respiratory viral infections

- Weather (cold air, thunderstorms),
- Strenuous physical exercise can exacerbate asthma.
- Tobacco smoke
- Air pollution: Smog

Urbanization appears to be correlated with an increase in asthma. The nature of the risk is unclear because studies have not taken into account indoor allergens although these have been identified as significant risk factors.

Experts are struggling to understand why prevalence rates world-wide are, on average, rising by 50% every decade.

Diagnosis and Treatment

Canadian experts in the area of asthma have developed evidence-based, clinical practice guidelines that are used to diagnosis and establish treatment plans for patients with asthma and other allergic diseases. The first set of the Canadian Asthma Consensus Guidelines were developed in 1996, and was then revised in 1998 and again in 2001. According to the Guidelines¹, the goal of asthma management is to reduce airway inflammation through environmental control measures and the use of regular controller medication, rather than intermittent therapy that is focused on short-term relief of symptoms.

To diagnose asthma, a thorough history is taken and a physical examination is performed. A spirometer is used to objectively measure the amount of air inhaled and exhaled and to determine the level of airway obstruction. Allergy skin testing is conducted 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 large 'wheal' or bump will appear on the skin. If allergies are known to be an asthma trigger, immunotherapy then may be considered as a treatment option.

Because asthma is a *chronic* condition, it usually requires continuous medical care. Medication therapies are designed to minimize the airway inflammation component of asthma as well as to treat airway narrowing. Patients with moderate to severe asthma have to take long-term medication daily (for example, anti-inflammatory drugs) to control the underlying inflammation and prevent symptoms and attacks. If symptoms occur, short-term medications (inhaled short-acting beta2-agonists) are 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 induce or 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 for most people, failure to use appropriate drugs or comply with treatment, coupled with an under-recognition of the severity of the problem, can lead to unnecessary deaths, most of which occur outside hospital.

Prevalence

According to the World Health Organization, asthma is now a serious public health problem with over 100 million sufferers worldwide²

- According to Statistics Canada, 8.4% of the population (aged 12 and over) have been diagnosed as having asthma (200-2001).³
- Asthma is most common during childhood and affects at least 12% of Canadian children⁴

- Asthma continues to be a major cause of hospitalization of children in Canada.⁵

Attack Prevention

Many acute attacks in asthmatic children are preventable. One Canadian household survey found that half of asthmatic school-aged children reported that household pets triggered or worsened their disease yet 41% had a dog and 36% had a cat inside their home. Similarly, 54% of asthmatic children were exposed to second hand smoke, yet smoke was identified as worsening their asthma.⁶

Trends

- The prevalence of asthma among adults (15 years of age and over) has been increasing over the last 20 years:⁷
 - 1979 – 2.3 per cent
 - 1988 – 4.9 per cent
 - 1994 – 6.1 per cent
- In 1994 alone, there were 54,532 admissions to Canadian Hospitals for the treatment of asthma.⁸
- Between 100 and 150 million people around the globe suffer from asthma and this number is rising. World-wide, deaths from this condition have reached over 180,000 annually. In the United States, the number of asthmatics has leapt by over 60% since the early 1980s and deaths have doubled to 5,000 a year.⁹

Mortality

- In Canada, approximately 20 children and 500 adults die each year from asthma.¹⁰
- It is estimated that more than 80 per cent of asthma deaths could be prevented with proper asthma education.¹¹
- While the death rate from asthma in Canada has slowly decreased since 1990, there are still approximately 10 asthma deaths per week.¹²
- 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.¹³

Economic Impact

- Asthma is the leading cause of absenteeism from school and the third leading cause of work loss.¹⁴
- Every year in Canada, there are 146,000 emergency room visits due to asthma attacks.¹⁵
- In 1993 alone, over \$12 billion was spent on asthma in Canada.¹⁶

- Direct costs of asthma, which include medical/nursing care and medication, in Canada are estimated at \$600 million per year.¹⁷ In 1994, the cost of hospitalization alone for asthma was \$135 million.¹⁸
- World-wide, the economic costs associated with asthma are estimated to exceed those of TB and HIV/AIDS combined.¹⁹
- It is estimated that the total annual cost of asthma care in Canada is between \$504 and \$648 million (1990 dollars) annually.²⁰

Where can I get more information?

Contact the Asthma Society of Canada at (866) 787-4050 or visit our website at www.asthma.ca.

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- ⁴ Statistics Canada. National Population Health Survey, 1996-1997.
- ⁵ Statistics Canada. Millar WJ, Gerry BH. Childhood Asthma. *Health Reports*, 1998; 10(3): 12.
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- ⁸ Laboratory Centre for Disease Control (LCDC). Unpublished tabulations from the Canadian Mortality Database, 1998.
- ⁹ WHO Fact Sheet N°206 website [<http://www.who.int/mediacentre/factsheets/fs206/en/>]
- ¹⁰ Canadian Lung Association. "Lung Facts." 1994 Update.
- ¹¹ Institute for Clinical Evaluative Services in Ontario (ICES) 1996. ICES Practice Atlas (second edition), June 1996.
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