

Anaphylaxis Facts

- Anaphylaxis is the most severe kind of allergic reaction, usually involving several body systems. It can be life-threatening and may arise from allergy to foods as well as to insect sting, medication, latex and exercise.¹ In cases where the cause has not been identified, it is known as *idiopathic* anaphylaxis.²
- Symptoms can vary widely and can affect the following:
 - **Skin:** hives, itching, swelling of lips, tongue, throat, face, redness, rash, etc.
 - **Gastrointestinal system:** nausea or vomiting, diarrhea or stomach cramps.
 - **Respiratory system:** coughing, wheezing, choking, change in voice, itchy nose and watery eyes, sneezing, trouble swallowing, difficulty breathing, etc.
 - **Cardiovascular system:** pale/blue color, weak pulse, passing out, dizziness/lightheadedness, shock.
 - **Other:** anxiety, feeling of "impending doom", headache.

If left untreated, the above symptoms can lead to loss of consciousness/coma/death.^{2,7}

- Food allergies are on the rise and are a growing public health concern. As many as 600,000 Canadians (1 - 2% of the overall population) are thought to be at risk of anaphylaxis stemming from food and insect allergy. It is commonly estimated that the incidence of food allergy in children is in the range of 2 to 4%. (The incidence is higher in children younger than three years of age and it is estimated that up to 6% may be at risk of allergic reactions to foods.^{3,4})
- The first study to estimate the prevalence of peanut allergy in Canada found an estimated prevalence of 1.50% among Montreal school children aged 5 to 9 years.⁵ The study is now being repeated and the preliminary results show an increase, with an estimated prevalence now in the vicinity of 2%. This study dealt only with peanut, so one would expect the overall incidence of food allergy would be somewhat higher. This supports the widely held belief that the incidence of food allergy is rising.
- The top nine food allergens in Canada are peanut, tree nuts, fish, shellfish & crustaceans, milk, egg, wheat, soy and sesame.¹ Trace amounts can trigger a severe reaction.^{1,2}
- Strict avoidance of the food allergen is the only way to prevent anaphylaxis in an at risk individual.⁶
- Persons diagnosed as being at risk of anaphylaxis must carry an epinephrine auto-injector at all times and should wear medical identification, for example a MedicAlert® bracelet.⁷
- Individuals at risk of anaphylaxis should not eat if they do not have their epinephrine auto-injector with them.⁷
- Best prevention measures are:
 - strict avoidance of the allergen
 - recognition of early symptoms by the patient and caregivers
 - early administration of epinephrine – within 10 minutes⁶

Delayed administration increases risk of death.⁸

- An anaphylactic reaction can occur within seconds of exposure and usually begins within a short time of the exposure to the allergen, but can be delayed up to two hours.²
- It is important to note that anaphylaxis can occur without hives or other skin symptoms.⁶
- Because it is impossible to predict in advance how a reaction will unfold, any symptoms in an individual who is at risk of anaphylaxis should be taken very seriously. Do not hesitate or wait to use the epinephrine auto-injector since it is easier to stop a reaction in its early stages.²
- An anaphylactic reaction can progress in severity very quickly. Without the immediate administration of epinephrine, death can result.²
- The treatment is immediate administration of epinephrine.² Deaths occur when the severity of the reaction is not recognized and when there is a delay in administering epinephrine.⁸
- If in doubt, administer epinephrine.² There are no contraindications to using epinephrine for a life-threatening allergic reaction.^{6,7}

- Failure to recognize early symptoms, delayed administration of epinephrine,⁹ and poorly controlled asthma increase the risk of death.²
- While epinephrine is usually effective after one injection, symptoms may recur and further injections may be required (biphasic reaction).⁷
- A second dose may be administered within 10 to 15 minutes, or sooner, **IF** symptoms have not improved.⁷
- Most victims of fatal allergic reactions are adolescents and young adults.¹⁰
- In a study by Drs. Hugh Sampson, L. Mendelson, and J. P. Rosen on fatal and near-fatal anaphylactic reactions to foods in children and adolescents, it was found that four out of six fatalities occurred at school. A delay in recognizing the severity of symptoms and a delay in administering epinephrine was associated with the deaths.⁸
- Most people who die of anaphylaxis do not have epinephrine available at the time of the reaction.¹⁰
- Deaths from anaphylaxis and asthma decreased significantly in Nebraska after an action plan was implemented in all schools and proper medication was available.¹¹

References:

1. Anaphylaxis - A Life-Threatening Allergy - AAIA August 2004
2. AAIA Anaphylaxis Reference Kit March 2004, pgs. 9 - 11, 13, 19, 21
3. Sampson HA, JACI 2004;113:805-19
4. Bock SA, Pediatrics 1987;79:683-688
5. Kagan et al, JACI 2003; 112:1223-8
6. Sampson HA Pediatrics 2003 111 Jun 1601
7. Anaphylaxis in Schools & Other Settings – 2005 pgs. 6, 8, 10, 41, 43
8. Sampson, et al, New England Journal of Medicine 1992;327(6):380-4
9. Sicherer, et al, Pediatrics Vol. 119 No. 3 March 2007, pp. 638-646
10. Bock et al, JACI 2001 Jan v107 p 191
11. Murphy et al, Ann Allergy Asthma Immunol 2006 Mar 96(3) 398-405

For additional information:

- *Anaphylaxis Reference Kit* - Allergy/Asthma Information Association March 2004
- *Anaphylaxis in Schools & Other Settings* - Canadian Society of Allergy and Clinical Immunology (2005). This can be ordered from the AAIA (English and French). Excerpts are available at www.allergysafecommunities.ca.
- *Anaphylaxis - A Life-Threatening Allergy* **PDF** - Allergy/Asthma Information Association August 2004
- *Anaphylaxis: A Handbook for School Boards* published by the Canadian School Boards Association (2001) pgs. 2-3 & 15-20. This can be downloaded from the CSBA website at cdnsba.org (go to Resources > Library).