

ANAPHYLAXIS

Allergies

An allergy is the immune system's excessive reaction to a normally harmless substance, called an allergen. When the body is first exposed to an allergen, it responds by creating IgE antibodies. When the body is exposed to the allergen again, the IgE antibodies cause chemicals (e.g., histamine) to be released from mast cells, which are found in many areas of the body including the mouth, nose, eyes and stomach. When mast cells release these chemicals, signs such as hives, itching and swelling are seen. Allergic reactions can vary from mild to life-threatening.

Anaphylaxis

Anaphylaxis is a severe allergic reaction that can result in death due to airway obstruction or a severe drop in blood pressure. It is an extreme total body reaction.

The course of a life-threatening allergy can vary from person to person. Anaphylaxis can potentially occur when a person has experienced only minor allergic reactions previously. Others may show a general progression of increasingly severe allergic reactions that lead up to anaphylaxis. Another person may experience an anaphylactic reaction without any previous signs of an allergy.

Allergens

Anaphylactic reactions can be triggered by minute amounts of an allergen, measured in micrograms.

Foods that more commonly cause anaphylaxis

- peanuts, nuts
- fish, shellfish
- milk
- eggs
- soy
- wheat
- sesame

Other allergens that can cause anaphylaxis include insect stings, medications and latex.

Risk Reduction

Avoidance of allergens is the only way to prevent an anaphylactic reaction. Although it can be difficult to achieve complete avoidance of an allergen, reducing the child's exposure to the allergen is possible.

The greatest risk of exposure to food allergens is in new situations or when normal daily routines are

interrupted such as field trips, birthday parties and other special events.

Young children are at greatest risk of accidental exposure, while deaths may occur among teenagers due to their increased independence, peer pressure and reluctance to carry an adrenaline auto-injector.

Schools and licensed child care facilities in Manitoba are required to have an anaphylaxis policy which includes avoidance strategies.

Signs of Anaphylaxis

After exposure to the allergen, any combination of the following signs may occur to signal the onset of anaphylaxis. Signs do not always occur in the same sequence, even in the same individual.

When remembering the signs of anaphylaxis, think F.A.S.T. (face, airway, stomach, total body).

Face

- red watering eyes
- runny nose
- itchiness
- redness and swelling of face, lips and tongues

Airway

- throat tightness
- change of voice
- difficulty swallowing
- difficulty breathing
- coughing
- wheezing

Stomach

- vomiting
- diarrhea
- cramps

Total body

- swelling
- hives
- itchiness
- sense of doom
- change in behavior
- pale or bluish skin
- dizziness, fainting (signs that blood pressure is dropping)
- loss of consciousness

An anaphylactic reaction most commonly begins within seconds or minutes of exposure to the allergen. The time from the first signs to death can be as little as a few minutes, if epinephrine is not given. It is possible for signs of anaphylaxis to occur up to four hours after exposure to the allergen, but it is rare. Even when signs have subsided after epinephrine is given, they can return as much as eight hours after exposure when the epinephrine starts to wear off.

Treatment of Anaphylaxis

Epinephrine is the drug used to treat anaphylaxis. It is a chemical that the body naturally produces and is responsible for the “adrenaline-rush” under stress. It is effective in treating anaphylaxis by constricting muscles around blood vessels to elevate blood pressure, relaxing airway muscles, reducing swelling, reducing the release of chemicals that cause anaphylaxis and stimulating the heart. Epinephrine is clear and colorless.

Epinephrine should be given immediately when signs of anaphylaxis are first seen. There is clear evidence that a delay in giving epinephrine increases the odds of the person dying from anaphylaxis.

There is no significant cause for concern if epinephrine has been given to a person who has a life-threatening allergy but an anaphylactic reaction did not occur. The life-saving benefit of injecting epinephrine in cases of suspected anaphylaxis outweighs any small risk of side effects.

Antihistamines are **not** recommended in the immediate treatment of anaphylaxis.

Adrenaline auto-injector

Epinephrine is available in self-administration devices such as the EpiPen®, Twinject® and Allerject™. It is a disposable spring loaded needle and syringe that contains a pre-measure dose of epinephrine. It is for single use only. It is stamped with an expiry date and should be replaced by the parent/guardian when expired.

It is recommended that the child carry the adrenaline auto-injector at all times. If the child is not able to carry the adrenaline auto-injector, it should be worn by the adult responsible or kept in an unlocked, safe and accessible location. It is the responsibility of community program personnel to be aware of the adrenaline auto-injector’s location.

DO NOT

- Refrigerate or leave outdoors in the winter.
- Use if epinephrine is discolored (i.e., brown).
- Use it on a child that is NOT diagnosed with a life-threatening allergy.
- Use another child’s adrenaline auto-injector if the child’s own adrenaline auto-injector is not available.

How to Use the adrenaline auto-injector

1. Secure the child’s leg.
2. Identify the injection area on the outer middle thigh.
3. Grasp the adrenaline auto-injector in your fist and remove the safety cap(s).
4. Firmly press the tip into the thigh at a 90° angle until you hear a click.
5. Hold in place for a slow count of 10.
6. Discard it following your program’s policy for disposal of sharps or give to EMS personnel.

The Twinject® has a second dose which community program staffs do NOT use as it is not a safety regulated needle.

How to Respond to an Anaphylactic Reaction

1. Inject the adrenaline auto-injector in the outer middle thigh (as described above).
2. Activate 911/EMS.
This should be done simultaneously with injecting the adrenaline auto-injector by delegating the task to a responsible person.
3. Notify the child’s parent/guardian.
4. If signs of anaphylaxis persist or recur, give backup adrenaline auto-injector (if available) every 10 to 15 minutes.
5. Stay with the child until EMS personnel arrive.