

Anaphylaxis: It Can Take Your Breath Away

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Anaphylaxis is an allergic reaction to a foreign protein that has life-threatening effects on the circulatory and respiratory systems. Some of the most common allergic reactions are caused by stinging insects, peanuts, and medications. The onset of symptoms follows quickly after exposure (minutes after a sting or bite, 30 to 60 minutes following ingestion) and can recur over the next 24 hours. Signs and symptoms include shortness of breath; increased pulse rate; decreased blood pressure; itching; hives; upper and lower airway obstructions; and swelling of the mouth, face and neck. Epinephrine should be administered to patients having symptoms suggestive of an acute system reaction (generalized skin rash, difficulty breathing, or facial swelling).

Wilderness Medical Associates advises the following protocol **for staff trained in treating anaphylaxis:**

1. Maintain an open airway, assist ventilations if necessary, and put the patient in a comfortable position. Initiate CPR if necessary.
2. Inject 0.3 mg of 1/1000 epinephrine for adults or 0.15 mg of 1/1000 epinephrine for children (person less than 66 pounds) into the lateral aspect of the deltoid, or the anterior aspect of the thigh.
3. Repeat injections every 5 minutes if the condition worsens or every 15 minutes if the condition does not improve, for a total of up to three doses.
4. Administer 50 to 100 mg of diphenhydramine (Benadryl) by mouth every 4 to 6 hours if patient is awake and can swallow.
5. Consider Prednisone 40 to 60 mg/day (or equivalent dose of an oral corticosteroid).
6. Because a rebound reaction can occur, all victims of an anaphylactic reaction should be evacuated to and evaluated by a physician. Rebound reactions should be treated in the same manner as the initial reaction, using epinephrine in the same dosage.
7. Transport patient to the hospital. The patient should remain out of the field for at least 24 hours and may not return without the examining physician's approval.

Loss Control Comments: Use auto-injectors, such as Epi-pens or TwinJet, in the anterior aspect of the thigh, not the arm. The rescuer should firmly hold the leg in place and anticipate that the injection is going to hurt the patient, not because of the needle but because of the force of the propellant pushing the epinephrine into the body. Epinephrine is temperature sensitive and may require some special handling in extreme hot or cold environments.

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Many camp programs that conduct wilderness trips don't realize that one dose of epinephrine is often not enough. However, to send three auto-injector pens into the field at \$60 to \$75 a pen (with a shelflife of about 18 months) could be cost prohibitive. As an alternative, some camps are packaging up a vial of 1/1000 epinephrine that carries about 50 doses (and costs about \$7) with several 0.5 mg syringes and teaching the staff how to draw up the proper dose of epinephrine from the vial. Be aware that some state health departments do not permit camp staff to draw from a vial and permit only the use of auto-injectors for trained staff. Finally, keep in mind that whether using an auto-injector or a syringe, these items are now contaminated and must be handled carefully. As most wilderness trips don't carry Sharps containers, a nalgene water bottle will work well if it is properly sealed (with duct tape) and labeled.

Markel extends its appreciation to Wilderness Medical Associates for permission to reprint their protocol on anaphylaxis. This protocol will change slightly, so encourage your staff to keep up to date on their training and check in with your medical training provider to find out what changes may have taken place on this protocol and others.

If you have a safety or risk management question or a suggestion for a topic, please contact Markel's Risk Management Department at safety1st@markelcorp.com.