

# Canada Camps

The magazine for Canadian camp professionals.

## HealthMatters

By Mike Webster

### Dealing with Anaphylaxis

From the Epipen to the Twinject, camps now have multiple methods to battle sometimes deadly allergic reactions.

**W**ithin the camp community, anaphylaxis, a severe life-threatening allergic reaction, continues to be a high priority of concern. When it comes to the treatment of anaphylaxis, camps have three choices at their disposal: Epipens, the Twinject and epinephrine ampules.

Medical screening of campers, on-site preventive measures, specialized training for staff and treatment and response policies are all considerations for a successful program for both known and unknown anaphylactic responses. Ultimately, the treatment of anaphylaxis is dependant on recognition of its signs and symptoms, as well as early intervention. Keeping informed of the specific advantages and disadvantages of available anaphylactic treatment systems could help develop your response plan.

Currently, there are three popular systems that can be considered for the front line treatment of anaphylaxis: the Epipen line of auto-injectors, the new Twinject system, and the use of epinephrine ampules.

All three systems utilize the drug epinephrine, which, when administered to a person suffering from an anaphylaxis reaction, constricts his or her blood vessels and opens the airway and lungs. Constricting blood vessels helps maintain blood pressure, which keeps up perfusion (i.e., oxygen to the brain and body tissues) and limits swelling within vascular tissue while relaxing the bronchi of the lungs that can constrict and spasm during an anaphylactic reaction. It should be noted that epinephrine

is for frontline treatment only. It treats the immediate life-threatening effects of anaphylaxis, but not the underlying problem, which is an abnormal immune response causing a release of histamine.

This means that epinephrine alone will not save a life, as additional treatment with an antihistamine, such as Benadryl, needs to be administered as soon as possible. As well, an anaphylactic response must be evaluated at a hospital even if the person appears recovered because some symptoms can reoccur hours later.

#### AVAILABLE TREATMENT

When it comes to treating anaphylaxis reactions at camp or during outtrips, the most common system used is the Epipen. It is tried, tested, simple and reliable; not to mention it takes seconds to minutes to learn how to use and there isn't much that can go wrong with it. As per the name, the Epipen is shaped like a large pen and is administered by simply holding it against the thigh for 10 seconds. Besides its simplicity, advantages of the Epipen include: direct injection through clothing; generally available without prescription; stores easily; and durable enough to be carried by an active camper on a busy summer day.

Probably the biggest disadvantages of Epipens are the cost and that they only administer a single dose. The cost for an Epipen typically ranges between \$90 and \$120 — expensive enough for a camper's family but even more so if a camp has supplemental Epipens on standby at the health-care unit, while on wilderness trips and for any recurring or rebound situations. Also consider the fact that the epinephrine in the Epipen generally expires about 18 months after purchase. As for being single-dose only, one Epipen — in most camp settings — isn't going to be enough to manage rebound reactions. Considering that

rebound reactions can happen as quickly as 10 to 15 minutes after the initial injection, additional Epipens and oral antihistamines must be considered in remote camps and especially wilderness trips.

Besides Epipens, the newest system in the battle against anaphylaxis is the Twinject. It was created as the long-awaited replacement to the now defunct Anakit. Although its use and administration is the same as an Epipen, its biggest advantage is its ability to deliver two doses, particularly for use in rebound reactions. (About 35 per cent of anaphylactic attacks can have rebound effects, according to a recent Twinject study.)

The Twinject identifies each end of the device with red and green caps — supposedly to help identify a perceived deficiency with the Epipen in that some people might mix up the ends and inject the epinephrine into a thumb or hand instead of the thigh. With the Twinject, distributed in Canada by Palladin Labs, the first dose is delivered like an Epipen, while the second dose requires a bit more skill. A major disadvantage in delivering the second dose is that significant manual manipulation of a potentially contaminated needle may occur. Other advantages of the Twinject are that it generally does not require a prescription and is priced in the same range as the Epipen, although with two doses instead of one. Like the Epipen there is also a children's version.

The final method in use by some camps (e.g., wilderness tripping programs) is the syringe and 1ml ampule method. Ampules are completely sealed containers that have a bulbous end.

To draw the fluid out, this end must be broken off. Its main advantage is the fact that it has a readily available amount of epinephrine for rebound reactions at a low price. By utilizing this method, a camp could have equivalent resources to 12 Epipens for under \$30.


However appealing that may appear, this method offers the most risk and requires the most training because it creates an added stress in an existing emergency situation if people are not familiar or comfortable using syringes. Significant training for your staff in proper and safe administration should occur either from your camp medical team or wilderness medical and first-aid training organizations that offer this type of expertise.

This method also requires users to fill a syringe from an ampule, which could lead to unnecessary dosage errors. If ampules are used either for wilderness trips or at the

camp health unit, a 0.3 or 0.5 ml syringe is recommended with the injection usually delivered into the deltoid (meaty part of the shoulder).

An alternative method to dealing with an anaphylaxis reaction includes using both an EpiPen and ampules with syringes. In this instance, the EpiPen is delivered for initial reactions and any rebound reactions are treated with the ampule method. A syringe is drawn up with epinephrine after the initial use of the EpiPen and only used if there are rebound reactions. This method combines the simplicity of the EpiPen, but enjoys the cost saving measures of the ampule. It's not

for every organization but might be worth considering.

Regardless of the method used, camps should always emphasize good training and policy development for prevention, recognition and treatment of anaphylaxis. 

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