

## Time to start packing Epipens?

**I am sure** that most readers have been hearing a lot about Epipens® lately. The bulk of what you have been hearing probably has related to the outrageous cost increases in the product and how this fits into the broader narrative about health care costs in the U.S. While that is a topic about which I have very definite beliefs, this is not the place for them!

Epinephrine is a naturally occurring hormone that has been available as a pharmaceutical for decades. In the hospital, it is most often found in the intensive care unit, where continuous intravenous infusions maintain blood pressure in critically ill patients.

For a long time, we have known that epinephrine could also treat many of the manifestations of serious allergic reactions. In fact, as a resident, I frequently prescribed injections of epinephrine for asthma attacks. It worked well, and still could except that there are many better modern alternatives.

### **The mother of all allergic reactions**

Epinephrine has also been the mainstay in treating the life-threatening systemic allergic reaction called anaphylaxis. Most allergic reactions (think “hay fever,” poison ivy, or hives) are nuisances that rarely present a risk of serious outcome and are reasonably easy to control. Anaphylaxis is the mother of all allergic reactions. In addition to itchiness, a rash, and wheezing, the person having anaphylaxis may develop shock and complete obstruction of breathing from swelling of the upper airway.

While a devastating occurrence, the actual number of cases of fatal anaphylaxis in the U.S. is quite small. Although good data are scarce, two hundred to three hundred deaths annually is a reasonable estimate. Of these, more than half result

from a reaction to a medication. Of the remainder, food (especially peanuts and tree nuts) and insect envenomation are major causes.

For individuals with a history of anaphylaxis, the ability to provide an epinephrine injection immediately upon onset of symptoms can be life-saving. Until rather recently, however, this was difficult to accomplish. Prescription epinephrine was available in a couple of different strengths, packed in glass “ampoules” which are challenging for the uninitiated to open, and the correct dose would then need to be pulled into a syringe for administration. This all changed with the invention of a delivery system (Epipen and others), which was preloaded with the correct dose and strength in a device the non-professional could inject.

There are a few versions of these devices available, so this is not the place to provide specific instructions. Suffice it to say that all are quite easy to figure out, and come with detailed instructions; many videos are also available.

At the first sign of anaphylaxis in a susceptible person, immediate discharge of an Epipen into muscle is indicated. Since many folks today have quite a bit of fat over muscle, the preferred location for injection is the side of the thigh, a part of the body where muscle is closest to the skin. “Rebound” after treatment is not unusual, so even if the symptoms improve the individual must be taken for definitive medical care.

Should we all start carrying epi-

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nephrine in our wilderness first aid kits? In meetings of outdoor educators and wilderness physicians, I have yet to hear of a well-documented anaphylaxis death on a wilderness trek. Certainly, anyone who has been prescribed an Epipen by a physician should carry the device on a trek. In fact, current recommendations call for carrying two, in the event that one cannot be located or if a second injection is needed.

A more complicated question is whether Epipens should be carried by trek leaders for possible administration to individuals suspected of having anaphylaxis but who do not carry such a diagnosis. This is a very controversial issue upon which I am agnostic. Despite all the hype, the condition is still very rare, and there are thousands of well-documented accidental injuries from Epipens. It is also a legal gray area. So, stay tuned.

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