

Toolbox Safety Topic

Bee Stings

- I. Nearly everyone has been stung by a bee sometime in his/her life. For most people, it's a temporary experience involving pain and itching. Only a very limited portion of the population is allergic or hypersensitive to bee or wasp stings – one or two people out of 1,000. Stinging insects are limited to the order Hymenoptera, which includes wasps, bees (yellow jackets, bumble bees, honey bees), and (fire) ants. Bees are beneficial in agriculture for crop pollination and honey production, but can pose a hazard for unsuspecting workers who accidentally disturb a nest, especially during certain times of the bees' life cycle. For example, a colony of yellow jackets rapidly increases in size and the number of adults may reach several hundred by August (peak population period). During this peak period, mating is occurring and food supplies are in short supply, which means that the bees are out of the nest more often, may be present where humans are eating and drinking, and are more likely to aggressively defend the nest.
- II. Did you know that a bee's stinger is a modified egg-laying apparatus and therefore only the females can sting? And that honey bees can only sting once before they die? Honey bees have a barbed stinger that typically remains in the sting site along with a venom sack that continues to pump venom into the victim even after the bee has departed, whereas wasps, hornets, and yellow jackets do not.
 1. For honey bees, the first thing you want to do is to remove the stinger and sack immediately. Usually a fingernail, credit card, or knife edge can be used to scrape off the sack and stinger barb. Do not attempt to pull it out because squeezing the sack causes more venom to be injected. If the stinger is below the skin's surface and cannot be easily removed, just leave it alone. It will be shed with normal skin healing.
 2. Wash the site with soap and water to prevent infection, especially for honey bee stings.
 3. To counteract any sting, apply insect sting relief pads from your first aid kit (if available), which will clean and provide some relief. Meat tenderizer (or table salt) mixed with a little water applied to the site for 20 minutes may be used as long as the sting site is not near the eye. **The key is to get the active ingredient on the site as soon as possible – some suggest within the first 3-4 minutes for the best results.**
 4. For honey bee venom, which is acidic, baking soda applied for 20 minutes is another possibility.
 5. For wasp and yellow jacket venom, raw cider vinegar or lemon juice may counteract the alkaline venom.
 6. An ice/cold pack can be applied to the area for 10-15 minutes at a time to help reduce pain and swelling.
 7. An antihistamine, such as Benadryl (diphenhydramine), may help reduce itching.
 8. Acetaminophen (Tylenol) and ibuprofen may also help with pain, but should only be used according to package directions – see contraindications on the package.
- III. There are two primary reactions to bee stings. For most people, there is allergic swelling around the sting site due to the venom injected. This swelling can persist for up to 5 days, and can often be quite severe. The area will be red, raised, hot, itchy, and tender. The next day, it may harden and gradually centralize into a "pimple". Watch for signs of infection, especially with honey bee stings. Increasing tender, red, swelling around the site, red streaks, drainage, fever, tender bumps in the groin or armpit upstream from the sting, or increased, unexplained pain and tenderness are common signs of infection. See a doctor immediately.

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The more severe type of reaction to bee stings is called anaphylactic shock. For people who are allergic to bee stings, a single sting can be deadly. Common signs include: faintness, dizziness, general itching, shortness of breath, or swelling in places away from the sting site, especially in the face or airway. Signs and symptoms can begin immediately following the sting or up to 30 minutes later, and may last for hours.

1. If the person is carrying prescription medication for such situations (ex. EpiPens) he/she should administer it immediately (usually jabbed into the person's thigh).
2. A designated dose of antihistamine may be prescribed by the victim's physician.

One other situation to consider is multiple stings on the victim, or "mass envenomation". Depending on the number of stings, the person may just be in a lot of pain and possibly feel sick, or the person may receive a lethal dose of venom. For honey bees, the lethal dose is estimated to be 8.6 stings per pound of body weight. This makes children more vulnerable and at higher risk than adults obviously. A healthy adult would have to be stung over 1,000 times to be at risk of death. A small child weighing 30 pounds may only have to be stung 200-250 times.

IV. Avoiding stings may be a better use of time and resources!

1. Bees and wasps can be attracted to, or may react to, odors in the environment. Avoid using perfume, cologne, or scented soaps.
2. Bees typically do not sting, unless provoked. Avoid swatting at bees or disturbing nests. Remember that yellow jackets often nest in the ground. Be observant of the area around you. Look for insects flying to and from a particular place.
3. Bees are attracted to brightly colored or patterned clothing. Wear solid light-colored clothing such as khaki or white.
4. Cover as much of your skin as possible. Wear long pants and long-sleeved shirts when disturbing bees is possible. Mosquito/gnat veils may also be warranted.
5. Insect repellents, such as those containing DEET, may provide some help, but are generally geared more towards repelling mosquitoes and ticks.
6. If a nest is disturbed, slowly walk away with both hands covering the face – towards dense vegetation or enter a vehicle or building.
7. Swift movements only attract more yellow jackets. Avoid swatting!
8. Bee and wasp traps may reduce the number of insects in the area.
9. Removing nests should be performed carefully! An insecticidal dust, such as Sevin 5% Dust, can be applied to yellow jacket (in ground) nests at night when all foragers are inside. Identify and mark the nest entrance during the daytime to avoid accidental disturbance at night. Yellow jackets are attracted to light; avoid using a flashlight. Pressurized insecticide sprays are more effective for above ground nests – read the labels before using.
10. Most colonies will be eliminated during the first hard freeze. If the nest is located in an out-of-the-way place where human or pet contact is unlikely, you may want to simply wait for cold weather to eliminate it.
11. If you are allergic to bee stings, wear a medical alert bracelet/necklace so care can be expedited. Let coworkers know about it and show them how to use your prescribed EpiPen in case you are unable to administer it yourself.
12. And last but not least...BEE CAREFUL!

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Date: _____

Meeting Conducted By: _____ Title: _____

Attendees

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