THE "INFO"-HALER

TAKE IN THE INFORMATION

An easy to understand, informative newsletter for our patients of all ages from the *Allergy & Asthma Associates of Michigan, P.* C.

HYMENOPTERA

Hymenoptera or "membrane-winged" insects include honey bees, yellow jackets, wasps, yellow hornets, and white-faced hornets. These insects have potential for causing serious allergic reactions in people. The females of the species have stingers containing small venom-filled sacs. The venom is injected into the victim through a hollow tube in the center of the stinger. Most hymenoptera can remove their stingers after injection and use them again and again. Honey bees, however, have barbed stingers and when they attempt to remove their stingers, the stingers and venom sacs are tom from their bodies, and the honey bee flies away to die. Honey bees feed their young honey and pollen and generally sting only to protect their hives. Yellow jackets, wasps, and hornets, however, sting in order to kill smaller insects to provide food for their young, as well as to protect their hives. Therefore, these insects tend to be more aggressive than honey bees.

When a person is stung by a hymenoptera, there are three potential outcomes. First, hymenoptera stingers may be contaminated with bacteria and cause an infection to develop. Secondly, there are toxic components in the venom which may cause irritating local skin reactions. Lastly, the venom contains certain chemicals (eg. histamine) and certain proteins (allergens) which may cause allergic reactions in many people.

The best way to treat a hymenoptera sting is to carefully and immediately remove any stinger left behind by flicking out the stinger with your fingernail or a credit card. Do not squeeze the venom sac during removal. The majority of venom is injected within the first twenty seconds of the sting, so speed in removal is very important. Wash the area thoroughly with soap and water to reduce the chances of infection. Apply a topical steroid cream or calamine lotion and ice. Oral antihistamines (eg. benadryl) are effective in reducing swelling or itching at the site. Aspirin may lessen the pain. Home remedies such as meat tenderizers and water pastes are rumored to be soothing since the enzyme papain found in the meat tenderizers is thought to denature the venom protein, though this has not been proven. Also a sodium bicarbonate and water paste or a weak solution of household ammonia occasionally gives soothing relief by working to neutralize the formic acid present in the venomous material, but again this has not been proven either.

The severity of an insect sting reaction varies greatly from person to person. There is a big difference between a local reaction and an allergic reaction. Most people are <u>not allergic</u> to insect stings. A local reaction affects the skin where the sting occurred. Local reactions consist of pain, swelling, and redness at the site. Often local reactions can cause swelling of an entire limb, but it is still considered to be a local reaction if the swelling is continuous with the site of the sting and not spread to other parts of the body. Allergic reactions, however, are the most serious reactions. Allergic reactions occur in people who have over-sensitive immune systems and the presence of venom IgE antibodies. This type of allergic, anaphylactic reaction requires emergency medical treatment. Symptoms of analyphlaxis include one or more of the following:

1. Hives, itching, and swelling in areas other than the sting site.
2. Tightness in the chest and difficulty breathing.
3. Rapid heart rate.
4. Swelling of the tongue, hoarseness, or difficulty swallowing.

5. Nausea and/or vomiting.
6. Dizziness or a sharp drop in blood pressure.
7. Unconsciousness or cardiac arrest.

This reaction usually occurs within minutes of the sting (though can be delayed) and may be life threatening. Treatment for this type of reaction consists of an injection of epinephrine followed by emergency center care, then follow-up with an allergist.

Preventative measures are very important for people who are sensitive to hymenoptera stings. The following precautions are recommended:

1. Avoid loose-fitting, dark or brightly colored, floral designed clothing, shiny belt buckles, or jewelry. Insects are less attracted to white, green, tan, or khaki colored clothing.
2. Always wear shoes outdoors.
3. A void scented perfumes, lotions, soaps, colognes, cosmetics, or hair sprays.
4. Avoid potential nesting areas such as old trees, clover, bushes, under logs or rocks, eaves of buildings, wood piles, shutters, or shrubs. Have all nests removed by professional exterminators.
5. Be cautious around garbage cans, bird baths, puddles, animal food bowls, gardens, and flowering plants.
6. When picnicking, keep food and drinks covered. Avoid eating sugary items such as candies, popsicles, ice cream cones, ripe fruit, and soft drinks outdoors.
7. If a stinging insect lands on you, gently blow it away. Do not slap at it or make rapid jerky movements.
8. If you know you are allergic to insect stings, wear a Medi-alert bracelet and carry an emergency Epi-pen or Ana-kit with you at all times. Make sure you and a significant other know how to use the emergency kit.

Insect stings can cause the most serious and acute forms of allergic reactions. A person's previous reaction to an insect sting may be a warning of a future severe reaction. Severe reactions occur most often in people over the age of thirty years. If you suspect that you have hymenoptera allergies, skin testing should be performed. Allergy injection therapy is available and thought to be 97% effective in preventing further allergic reactions from stinging insects. Within weeks the shots begin to work by stimulating the person's own immune system to become resistant enough to take an insect sting without over-reaction.

Hymenoptera envonomation affects nearly every person during their lifetime and 10-20% of the population annually. His estimated that nearly two million Americans each year have an anaphylactic reaction to insect stings and at least 300-500 people die each year from reactions to these stings. Bees and wasps kill more people than any other venomous animals, including snakes. People who have no other allergies are as likely to have an insect allergy as people who have hay fever, asthma, etc. Use caution and common sense when exposed to hymenoptera, and avoid confrontation whenever possible.

Stephanie Cook R.N., B.S.N.
Allergy & Asthma Assoc. of Mi. P.c.