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From: scd@atria.com (Steve Daukas)
Subject: Bites/Stings/Allergic reactions...
Summary: Information post about allergic reactions, bites and stings
Keywords: allergic reactions, bites, stings
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This post is long (about 900 lines)! There is an intro and two section
beyond dealing with specific bites/stings and what to do about them.

I decided to post this information after seeing posts about treatments that
were not entirely accurate, or after reading discussions about bee stings
where people were recommending taking lots of over-the-counter meds (a few
months ago).
-
OK. Let me start by saying a few words. This post is informational only.
I am not a physician. I have lots of experience at the various levels of EMT
(Emergency Medical Technician). I have taught in the past (both medical and
rescue), have "worked" on a pharmacology text (soon to be published), and have
been a volunteer on various rescue squads since 1979 (I have been a rescue
squad commander and have held the rank of Lieutennant in charge of training).
Currently, I am not active in EMS, (as a result of moving into an area that
doesn't have many volunteer organizations), but I still hold many of my
certifications and licenses and am nationally registered with the Dept. of
Transportation (the governing body of EMS in the US). My current licenses
are valid in those states that recognize the National Registry of Emergency
Medical Technicians. OK - enough of the Resume! ;-)

My information comes from a variety of texts, many dealing specifically with
prehospital care, and my experiences. I do not claim that this information
is accurate for all jurisdictions in this country. In fact, some of what
I present is illegal in certain areas (even for EMT-Paramedics). Again, its

for those who are curious...

After some soul-searching, I decided to include descriptions of some of the advanced treatments often used for various conditions. These descriptions are clearly marked. I was hesitant to include these descriptions because they are advanced, meaning you can do more harm than good if you do it wrong, but in the end I thought it would be OK as most people wouldn't be able to do them for lack of equipment or people would try based on some "treatments" that are based on "hollywood" and are only partially correct and if performed as shown on TV are, by definition, wrong.

Advanced treatment requires medical training and certification! This includes CPR and other procedures described. As stated above, this info is provided as a matter of information and to give an indication as to how serious certain events are given the treatments used by individuals such as EMTs and others. DO NOT ATTEMPT these treatments!!

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A word about tourniquets... Tourniquets are used to stop both venus and arterial blood flow to a limb. There is NEVER and reason to use a tourniquest for bites or stings, unless the limb is bleeding severely and it can't be stopped (e.g, the person will die from blood loss). Constricting band are used to stop venus blood flow only. When properly used, there will still be a pulse in the wrist or foot, for example. The use of the constriction band for bites is very controversial in EMS, some areas still do not allow their use. Don't use anything like these devices unless your on the top of Mt. Everest and an MD tells you to do it!

ALWAYS call for help BEFORE doing anything!

Oe final note to this intro: NEVER eat or drink anything if there is any question of a serious medical condition, such as an allergic reaction. Never eat "herbal remedies" or take chicken soup! I have had one pateint die on me because she ate a common flowering plant used to make a heart med (she knew quite a bit about

medicinal flora). Having "food" in your belly can complicate treatments at the ER, especially if there is any medicinal value to what you have eaten! Having you stomach pumped will delay proper treatment (they will pump it.) In the case of a severe allergic reaction, I am not aware of any "household" remedy that will stop someone from going into anaphylactic shock and passing away.

The next two sections...

Section 1 provides background on allergic reactions

Section 2 deals with basic information and treatment of certain common bites/stings.

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Section 1 - Alleric Reactions

Concepts and Terminology (boring, but useful)

To understand what takes place during an allergic reaction and in anaphylaxis, several concepts and terms need to de defined:

The imune response is designed to guard the body against dangerous foreign substances such as infection and antigens. In the normal imune response, the protective cells of the body recognise the dangerous intruders, and destroy them. The allergic reaction or response, on the other hand, is an _oversensitive_ and harmful response against a foreign body.

Immunity is the body's natural protective state of being resistant to poisons and foreign substances.

An antigen is a foreign substance that induces the formation of antibodies. Antigens are such things as bacteria or viruses.

An antibody is a protective protein substance formed in the body as a result of contact with a foreign antigen.

When antigens and antibodies interact in the body, an immune response develops. This response can cause allergies and anaphylaxis.

An allergy is an abnormal and individual hypersensitivity to substances that are ordinarily harmless.

An allergen is an antigen that the body is oversensitive to.

Sensitisation is the process of exposure to an allergen and then results in the production of antibodies. An important fact to note is that an allergic reaction cannot occur with the first contact with a potential antigen because antibodies have not yet formed.

Anaphylaxis means without protection (literally). It is an acute generalised allergic reaction that occurs within minutes to hours after the body has been exposed to an allergen. Anaphylaxis is a serious medical condition that can lead to death in minutes.

Other definitions include:

edema -	swelling
stridor -	harsh sounding breathing
dyspnea -	shortness of breath
cyanosis -	bluish colour
syncope -	temporary loss of consciouness

tachycardia -	very fast heart beat
bradycardia -	very slow heart beat
accessory muscles -	muscles used to help breath. located in neck, chest
hypotension -	low blood pressure
hypertension -	high blood pressure
sign -	objective evidence, such as edema
symptom -	subjective evidence, such as nasuea
Sx -	signs and symptoms
pulmonary edema -	fluid/blood build-up in the lungs (pink frothy mucus coughed up while breathing)
transport -	CALL 911 or equivalent

Common Allergens

Allergen groups include drugs, insect venom, food, and pollen. The causative agent may be injected, ingested, absorbed through the skin or mucus membranes, or inhaled. Inhaled substances rarely cause allergic reactions.

Insect stings/bites fall into the injection category. The allergic reaction is different from the toxic effects of the venom.

The insect order Hymenopter is the most common allergen. The four prominent members include the bumblebee, honeybee, white-faced hornet, and the yellow jacket. About 8 in 1000 are allergic to stinging insects and half of these are severe. This order has whats called "cross-sensitivity" meaning a bite from one may lead to an allergic reaction to a bite from another.

Ants, dear flies, ticks, and mosquitoes can all cause an allergic reaction.

Pathophysiology

In a simple anaphylactic reaction, the antigen-antibody interaction causes mild alleric signs and symptoms (Sx) limited to usually one or two body systems and without systemic cardiovascular effects. In an anaphylactic reaction, however, the antigen-antibody reaction is severe. This reaction takes place on the surface of mast cells and basophils (types of white blood cells) and signals the release of several chemicals, primarily histamine. Other chemicals include serotonin, bradykinin, and SRS-A (slow reacting substance of anaphylaxis).

These chemicals cause three primary reactions: capillary dialation, increased capillary permeability, and smooth muscle spasm. As these substances travel around the body, the following Sx can be seen:

Skin	flushing, edema, itching, hives, rash, a feeling of warmth
Eyes	itching, tearing, edema
Nose	congestion, itching, sneezing
Upper Airway	pharyngeal or laryngeal spasm, hoarsness, stridor, bronchospasm, tightness in the neck
Lower Airwar	Dyspnea, wheezing, use of accessory muscles to breath, cyanosis, pulmonary edema
Cardiovascular	tachycardia, irregular pulse, weak pulse, hypotension
Gastrointestinal	nasuea, vomiting, diarrhea, abdominal cramps
Neurogenic	Anxiety, dizziness, syncope, weakness, seizure, headache

A person may experience these Sx within seconds after exposure, or the

reaction may be delayed for several hours. The initial Sx usually occur in the Skin. The primary rule for determining severity is simple: the sooner the onset of Sx after exposure, the more severe the reaction. Injected antigens can produce Sx immediately, but usually this happens after 5 minutes to as much as thirty minutes later. Injested antigens usually cause a reaction in about 2 hours.

The effect on the cardiovascular system progresses as follows:

- caplillary beds dialate (located in skin and internal organs)
- increase in capillary permeability (fluid leaks out)
- blood pools in capillary beds (especially the skin)
- decreased amount of blood returns to heart
- decreased cardiac output
- early stages of hypovolemic shock (low blood volume)

The effect on the airway is simply this: the airway constricts (usually from swelling) and spasms resulting in decreased airflow into the lungs and a reduced oxygenation of the blood. Loss of the airway is the primary concern.

Commonly used drugs include epinephrin (adrenalin) and diphenhydramine. Others are used in the prehospital setting as well.

Epinephrin counteracts the effects of histamine and the other chemicals by vasoconstriction, bronchial dialation, and restoration of the tone and permeability of the blood vessels. Epinephrin's major side effect is the development of cardiac irritability. IV administration of Epinephrin can cause serious arrhythmias. This drug is short acting and may be needed every 15 minutes.

Diphenhydramine is an antihistamine that antogonizes the adverse effects of histamine and prevents further release of histamine. This drugs is not used on pregnent patients. The major side efect is a dry mouth and caridac

arrhythmias.

Section 2

Patient Assessment

The victim of a bite will usually be agitated. Try to calm them and determine what happened, where, how long ago, and what the culprit might have been (determine if it walked, flew, swam, etc.).

Determine if the threat is still nearby and move from the area if this is the case. If the culprit is dead, collect it carefully and put it into a container that can be handled safely.

If the victim has no Sx, don't leave them alone - monitor them for at least four hours. (Clearly, I'm not talking about a mosquito bite here.)

If itching, a feeling of warmth, tightness in the throat or chest, or a rash appear (usually the first signs) summon help immediately. Knowing when the bite took place will help determine how severe the condition is - remember the sooner Sx folow the bite, the more severe the reaction. If the situation worsens, concern yourself with maintaining an airway.

The airway is the primary concern. The simple rule of ABC is used; Airway, Breathing, Circulation. The basic techniques tought for CPR are whats used to establish and maintain an open (patent) airway and to ensure circulation.

Establish basic vitals: A pulse in the wrist means a BP sufficient for total body profusion, but it will not tell you if the patient is in shock or not. An very week pluse in the wrist means the person is very likely in shock and is very likely in bad shape! One way to ascertain if the person is on the way to shock is by pinching the bed of a fingernail until it goes white and then releasing. If it takes more than 2 seconds for the normal pink colour to return, this is an ominous sign. (Obviously, nail polish must first be removed.)

Determine LOC (level of consciousness). If the person seems "drunk" or "sleepy", you must seek treatment. If the person is abnormally agitated or even verbally abusive, this is a sign of a change in mentation, an early indicator of neurogenic involvement.

If you suspect a severe reaction and the airway is failing, judgement is called for. Don't wait for transport unless it is very close at hand. If you live in a rural or lightly suburban area, use the phone to inform the dispatcher what is going on and that you feel as though you should take the victim to the ER and what route will be used. Ask them to intercept you along the way. Follow your instincts, BUT ALWAYS FOLLOW THE DISPATCHER'S INSTRUCTIONS! In any case, you should explain the situation and ask for an "ALS" response, that is, an Advanced Life Support response.

The victim of other vectors may exhibit similar Sx. The same basic treatments apply.

Specific Treatments

Snakebite (Pit Vipors)

There are posionous snakes in every state except Alaska, Hawaii and Maine. Of the 120 species in the US, about 20 are posionous. Of the bites that do take place, about 55% are from rattlesnakes, 34% from copperheads, 10% from water moccasins, and 1% from coral snakes.

Sx generally occur immediately, but only about one-third of all bites manifest Sx. When no Sx present themselves, probably no venom was injected.

Nonpoisonous bites are not considered an emergency. Poisonous bites contain some of the most complex toxins known; venoms can affect the central nervous system, brain, heart, kidneys, and blood.

Signs that indicate a poisonous bite include:

One or two distinct puncture wounds (fang marks). Nonposionous bites usually leave a series of shallow, small puncture wounds. The coral snake is one exception. This snake leavs a semicircular marking from its teeth. A row of punctures does not rule out a posionous bite, but fang marks _always_ confirms a posionous bite.

The patient experiences severe burning and pain almost immediately, but always within 4 hours of the bite.

The wound begins to swell and discolour usually immediately, but always within 4 hours.

Most posionous snakes have the following characteristics:

Large fangs
Elliptical pupils - nonposionous snakes have round pupils
Presence of a pit - a heat sensitive organ - between the eyes
A variety of blotches on a brightly coloured skin, including pink, yellow, olive, tan, grey, red, or brown.

A triangular head that is larger than the neck.

The one exception to all this is the coral snake. It has round pupils, no fangs, and a small head. Because its mouth is so small and teeth are short, most bites are on the finger or toes. Coral snakes are generally small and have rings of red, yellow and black; the red and yellow touch each other.

The seriousness of the bite can be determined by assessing several items:

1 - Age, size and health of the victim. Bites are most dangerous in children and the elderly.

2 - Depth, location, and number of bites. A single glancing blow is less dangerous than multiple wounds. Bites on the head or torso are usually fatal, as is a bite that punctures a blood vessle.

3 - Duration of the bite. Was it a quick hit or did the snake hold on.

4 - Clothing. A bite that hits the skin directly is worse than one that went through clothing.

5 - Maturity of the snake. The older, the more dangerous.

6 - Condition of the fangs and venom sacs. (Not recommended for inspection by untrained professional.)

7 - How angry the snake was. The more agitated, the more venom.

What to do when you go to help:

BE CAREFUL!!! Snakes will often be found within a twenty foot radius of the area in which the bite occured!

The priorities of emergency care for snakebite are to limit the spread of venom and to transport ASAP!

If the victim was bit by a pit vipor (rattlesnake, copperhead, or cottonmouth), proceed as follows:

Look for Sx...

Immediate and severe burning pain, swelling. The entire extremity swells within 8 to 36 hours. (As a rule, no burning/pain, no venom.)

Purplish discoloration within 2 to 3 hours.

Numbness and possible blistering around the bite within a few hours.

Nausea and vomiting.

Rapid heartbeat (tachycardia), low blood pressure (hypotension), weakness and syncope (fainting).

Numbness and tingling of the tounge and mouth.

Excessive sweating (diaphoretic)

Fever and chills.

Muscular twitching.

Convulsions.

Dimmed vision.

Headache.

Priorities for treatment are:

1. Move the person away from the site. If you can do so without endangering yourself, kill the snake and transport it with the victim.

2. Lie the person down and keep them quiet.

3. Keep the extremity below the level of the heart and immobilize it in a position of function. Remove jewelry.

4. Wash the wound area with alcohol, soap and COOL water, hydrogen peroxide. Do not scrub or tear the tissue. Irrigate the area with saline or clean cool water.

5. Transport ASAP!

6. NEVER EVER apply ice to the bite area! Ice can cause tissue damage, gangrene, or rebound vasodialation when the ice is removed!

ADVANCED TREATMENT

NOTE: The following descrption is provided in order to dispell the "hollywood" treatment of how to deal with a snake bite.

7. Find the fang marks. Wrap _flat_, soft rubber tubing that is at least 3/4" wide around the extremity two to four inches both above and below the fang marks. The tubing should be tight enough to stop blood flow through the veins, but not stop arterial blood flow. You should be able to put two fingers between the skin and constriction band. There should still be a distal pulse. _Never_ place these bands on either

side of a joint, or around the neck, head, or torso. Loosen these bands if swelling takes place.

--DISCLAIMER-- Many EMS jurisdictions do no allow for this procedure, even by trained personnel.

8. --DISCLAIMER-- Only if you are more than 30 minutes from medical treatment and only if directed to do so by a physician...

Incise and suction the fang marks. Only do so if on an extremity and with a sterile instrument.

Locate the fang marks. Pinch the skin up between the thumb and forefinger to avoid hitting a vein. Make longitudinal (vertical) cut marks through each fang mark, only deep enough to go just below the skin. Incision should be parallel to each other, 1/8" to 1/4" long and made in the direction of the fang entry. NEVER make an X or cross the cuts!

Apply suction to the wound directly over the incisions. You can "milk" the incision with your fingers if necessary. Suction with your mouth only as a last resort and only as directed by a physician! Only use your mouth if you have no wounds in your mouth.

NOTE - because venom spreads so rapidly, incising and suctioning is of no value unless it is done withing 5 minutes of the bite.

--DISCLAIMER-- Many EMS jurisdictions do no allow for this procedure, even by trained personnel.

9. Use basic life support procedures as appropriate. Treat for shock, Keep the victim warm and lying down, with legs elevated (unless bite is on leg). Be prepared to perform CPR. Apply O2 at 2 to 4 L/min.

Snakebite (coral snake)

Coral snakes - and other neurotoxic snakes like the cobra, mamba, sea snake, and krait - are the most posionous of all.

Instead of having fangs, the coral snake has several pairs of short, groved, fang-like teeth in its upper jaw. It chews its victims instead of striking with a clean blow. The venom is absorbed very quickly and is disseminated throughout the body.

There is generally little or no pain involved with the bite. The bite leaves one or more tiny scratch marks in the area of the bite.

One to eight hours after the bite, the victim will experience blurred vision, drooping eyelids, slurred speech, increased salivation and sweating, and drowsiness. As time passes, nasuea, vomiting, difficulty of breathing, paralysis, convulsions, shock and coma may ensue. Depending on the size of the victim, total CNS (central nervous system) shutdown can occur in as little as 10 minutes.

Treatment is similar to that of the Pit Vipor, with a few important differences:

!. Transport the victim immediately.
2. Transport the victim immediately.
3. Transport the victim immediately.
4. Flush the bite area with WARM soapy water. Use several quarts.
5. NEVER incise the bite. NEVER use constricting bands.

Black Widow Spider Bite

Habitat background:

The female black widow spider is characterized by a shiny black body, thin legs, and a crimson red marking on its abdomen, usually in the shape of an hourglass or two red triangles. Do not be confused by appearances, however. Of the five species in the US, only three are black, and not all have the characteristic red marking.

The female is one of the largest spiders in the US. Males generally do not bite; females bite only when hungry, agitated, or protecting the egg sack. Contrary to folklore, the black widow spider is not aggressive. In fact, many bites occur when a finger or hand enters the web and is mistaken as prey.

Black widow spiders, as is true for most spiders, are usually found in dry, secluded dimly lit areas. The spider is known for its extremely strong, funnel-shaped web. More than 80% of all bite victims are adult men.

Venom:

Black Widow Spider bites are among the leading cause of death from _spider_ bites in the US. The venom - 14 times more toxic than rattlesnake venom, is a neurotoxin that causes little pronounced local reaction, bites results in pain and spasm in the large muscle groups (which are the abdomen, upper leg, buttocks, etc.) within thirty minutes to three hours. Severe bites will affect the respiratory system and can result in respiratory failure, coma, and death.

Those at the highest risk for developing severe bites are children under 16, the elderly over 60, and people with chronic illness and anyone with hypertension.

Signs and Symptoms (Sx):

The most common sign of a Black Widow Spider bite is high blood pressure.

The most common symptoms are flushing, sweating, and grimacing of the face within ten minutes to two hours. Other Sx include:

A pinprick sensation at the bite site, becomming a dull ache within 30 to 40 minutes

Pain and spasms in the shoulders, back, chest, and abdominal muscles within 30 minutes to 3 hours

Rigid, boardlike abdomen

Restlessness and anxiety

Fever

Rash

Headache

Nausea or vomiting

The symptoms generally last from 24 to 48 hours. The headache and general weakness, however, may last for several months.

Treatment (Tx):

Prehospital care is generally not effective in the long-term treatment of the bite. The goal is general wound care and transport. General treatment consists of:

Administer care for shock

Apply a cold compress to the bite area - do not use ice!

Do not allow scratching of the would and do not clean the wound, simply cover it with a loose dressing.

Transport as quickly as possible

Black Widow anitvenoms are risky and are reserved for high risk patients. Nevertheless, you should try to find the spider and bring it with you so that positive identification can be made. ID can be made even if the spider is crushed.

Brown Recluse Spider (aka fidler)

This spider is generally brown, but can range in color from yellow to chocolat brown. The characteristic marking is a brown violin-shaped marking on the upper back. The bite of this spider is a serious medical condition.

The bite in non-healing and necrotic. It requires surgical intervention and skin grafting to repair.

Most victims will never know they were bitten until several hours after it takess place. The following Sx will result:

The bite becomes a bluish area with a white periphery, gradually becomming surrounded with a red halo (a "bulls-eye" pattern).

Within 24 hours, the following will develope:

- fever
- joint pain
- nasuea and vomiting
- chills

Within 7 to 10 days, the bite becomes a large ulcer.

Treatment:

1. Administer care for shock
2. Administer O2 and artificial ventillation if needed
3. Transport ASAP
4. Positively identify the culprit, but be careful!
5. Surgical Intervention Required

Ticks

Ticks often carry Rocky Mountain Spotted Fever and prolonged attachment of a female tick can mimic Sx of Polio. 10% of victims die.

Sx include nasuea and vomiting, abdominal pain, headache, generalised weakness, flaccid paralysis, and respiratory failure.

Treatment:

1. Transport ASAP. If transport is delayed...

2. paint the tick with ether, gasoline, or nail polish, or coat it with petrolium jelly.

3. Wait for the tick to back out on its own.

ADVANCED TREATMENT

4. If the tick doesn't back out, carefully scrape the tick away

   from the skin.

5. If the head of the tick remains in the skin, cover and transport
   for surgical removal.

6. provide BLS during transport.

Other Insects

See the next section on insect stings

Insect Stings

The normal reaction to an insect sting is a sharp "stinging" pain (thats how a sting got its name) followed immediately by an itchy, swollen, painful wheal. Swelling may persist for several days, but usually subsides withing 24 hours.

Redness, tenderness, and swelling at or around the bite site, even if severe, in the absence of other Sx, is considered to be a local reaction. Local reactions are rearely serious or life-threatening and can be treated successfully with a cold compress.

An allergic reaction, however, is a serious matter. Stings may cause death (on the average) within 10 minutes of the sting, but almost always within one hour.

As noted earlier, the culprits most responsible are a group of the

hymenoptera, the insects with membranous (partially see through) wings. This group consists of the honeybee, the wasp, the hornet, and the yellow jacket. Stings from wasps and bees are more common than all other insect bites combined.

When someone falls victim to one of these little culprits, it is important to determine what kind of insect inflicted the sting...

Honeybees leave the stinger and sac behind embedded in the skin. Hornets and Wasps do not. Hornets like trees and shrubs. Yellow jackets stay close to the ground and often nest in the ground. Hornets build their nests close to the ground. Wasps love high places, like attics and eaves. Honey bees cluster around flowers and flowering shrubs, including clover.

Signs and symptoms of anaphylaxis:

Faintness, dizziness, generalised itching, hives
flushing, generalised swelling including the eyelids, lips and tongue,
upper airway obstruction (sounds like a seal bark),
difficulty swallowing, shortness of breath, wheezing or stridor,
labored breathing, abdominal cramps, confusion, syncope,
convulsions, low blood pressure/shock.

Some people will have these symptoms delayed for as much as two weeks! In these cases, the Sx are: rash, fever, joint pain, neurological problems, and secondary infections.

What to do:

- Lower the affected limb below the heart and in a position of function

- Get the person's medical history, including any medications being taken

- If there is a history of asthma or heart disease, transport ASAP.

- Keep the person warm. Lie them down and elevate the legs and lower the head (DO NOT ELEVATE the leg if it is the site of the bite).

- Transport the victim as soon as possible (e.g., call 911)

- Make certain the victim is under observation for at least 24 hours. If any Sx appear, transport immediately.

- Inhalation products and antihistime products WILL NOT WORK. Nothing should be taken by mouth.

ADVANCED TREATMENT

- If the stinger is still in the skin, remove the stinger by GENTLY scraping against it with your fingernail, with the edge of a knife, or with a credit card. NEVER use "tweezers." Be careful not to squeeze the stinger, you will inject additional venom into the area. Make certain you also remove the sac as it is capable of secreting venom even without the stinger attached.

- Apply a commerical cold pack or ice bags to the site to releive pain and swelling. If using ice, DO NOT PLACE THE ICE ON THE WOUND. Wrap the ice in a moist cloth and place the cloth on the wound. DO NOT allow the ice to remain on the wound for more than 15 minutes.

- If the person begins to have difficulty breathing, apply O2 at 2 to 4 L/min.
- If respiration are not adequate, give mouth-to-mouth ventillation.

- Find the bite site. Wrap _flat_, soft rubber tubing that is at least 3/4" wide around the extremity two to four inches above bite. The tubing should be tight enough to stop blood flow through the veins, but not stop arterial blood flow. You should be able to put two fingers between the skin and constriction band. There should still be a distal pulse. _Never_ place these bands above a joint, or around the neck, head, or torso. Loosen this band if swelling takes place.

--DISCLAIMER-- Many EMS jurisdictions do no allow for this procedure, even by trained personnel.

MORE ADVANCED TREATMENT

- If you know the person is allergic to stngs, DO NOT WAIT for the Sx to occur - delay can be fatal. If the victim has an insect sting kit, assist them in administering the contents of the kit. Transport the person immediately!

--DISCLAIMER-- Many EMS jurisdictions do no allow for this procedure, even by trained personnel.

OK, FROM HERE OUT, I'M DESCRIBING WHAT A EMT-I/A/P MIGHT DO

- Administer diphenhydramine, 25 to 100 mg IM or IV

- Frequently asses vitals, LOC, airway

- If respiratory involvement ensues without shock, administer 0.1 to 0.5 mg epinephrin 1:1000 subcutaneously. (This is what is usually in the insect sting kit.) Pediactric dose is 0.01 mg/kg. Diphenhydramine may be given IV in this case.

- If the victim is in shock, give high flow O2! Hyperventillate the patient as ssoon as is possible. Intubation is required even if the person is conscious, ventillate with a bag-valve-mask if necessary. Adminsiter lactated ringer's or normal saline solution, infusion rate depending on blood pressure. Administer epinephrin 0.3 to 0.5 mg 1:1000 IV, very slowly. If IV initiation is delayed, give subcutaneously.

- Administer additional drug therapy as ordered by a physician. This usually includes phenhydramine 25 to 100 mg IV. Theophylline ethyl-

enediamine (aminophylline) at a loading dose of 6mg/kg IV infusion, diluted in 100 mL D5W or normal saline over a 20 minute period is useful for bronchospasm. The pediatric loading dose is the same, but in D5 0.9% NaCl.

Aquatic Bites/Stings

There are some basic differences between bites from marine life and those of land animals. The venom from aquatic creatures usually cause more extensive damage to the tissues. Second, venoms from marine life can be destroyed with heat. So, NEVER EVER EVER USE ICE on this type of bite. This does not mean that you should deep-fry the injury either! Just use something WARM (heat pack, or water).

Given the amount of tissue damage likely, treat like any other trauma:

Control bleeding (direct pressure, elevation, pressure points)
Treat for Shock (lye down, elevate the legs, keep warm)
Give BLS (Basic Life Support - mouth-to-mouth, etc.)
Transport ASAP

General treatment for venomous bites includes:

Transport ASAP (call 911)

Apply a constricting band above the bite or sting. Check for a pulse in the limb to ensure you havn't made a tournequit.

Remove any material that sticks to the site on the _surface_ of the skin. Don't use your bare hands! Use forceps or tweezers.

Irrigate the wound thoroughly with water.

If the skin is _unbroaken_, wash the area with a mild agent such as Alcoholic Zephiran, strong soap solution, or ammonia. NEVER SCRUB THE WOUND. Make _certain_ the fluids flow away from both you and the patient. These fluids will induce further reactions!

Remove stingers and barbs the same way in which you would remove a bee stinger. Be careful not to squeese more venom into the wound. If the stinger is barbed and you can't EASILY remove it, support the stinger or barb with gause and bandages such that it can't move. Transport for surgical removal.

Apply heat and maintain the area at a temperature of 110 to 114 degrees F for 30 to 40 minutes. Apply heat for another 30 minutes if Sx reappear.

Specific Treatments:

For tentacle stings from jellyfish, coral, hydras, and anemones:

1 Remove the victim from the water, BE CAREFUL

2 Call 911

3 Pour rubbing alcohol on the affected areas to denature the toxins

4 Sprinkle meat tenderizer on the affected areas to destroy the toxins

5 Sprinkle talcum power on the affected areas

6 Transport ASAP

For puncture wounds like those from a stingray or from spiny fish:

1 Remove the victim from the water, BE CAREFUL

2 Call 911

3 Immobolize the injured part

4 Soak the injured part in hot water for at least 30 minutes,
   chaning the water to maintain temperature (~110 degress F)

5 Transport ASAP

Hope this is informative.

Regards,
Steve
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Date: Sat, 21 May 94 20:08 MDT
From: Galatia.9@debug.cuc.ab.ca
Newsgroups: rec.gardens

[text deleted]

For wasp and bee stings, etc, my husband has found the "old wives tale"
of putting a cut onion on the wound to be true. Reading several books on
the matter, I think I know why. Onion releases sulfer, which is
antiseptic and anodyne, thus calming the inflammation and pain. It also
seems to slow the toxin. For bee stings, the usual advice is to scrape

away the stinger and venom sac with a credit card, never fingers or tweezers, since the sac can be easily squeezed. For wasp, hornet and yellowjacket stings all you can do is try to ease the pain. Aloe vera gel seems to help here also.
With all bees, once you get stung, get the hell out of there! A stinging bee, wasp, etc puts out a scent that calls the rest of the hive to war. Since wasps, yellowjackets and hornets have much vicious natures than honey bees (and much more dangerous venom), getting out of town is even more important.
Keeping wasps, yellowjackets and hornets away from picnics and such is relatively easy once you understand that they're carnivorous. Set a piece of meat or fish away from the picnic site for them and they'll generally converge on that and leave you alone.   In terms of temper, honeybees require a fair bit of provocation to sting, wasps somewhat less, yellowjackets get irate if you swat at them, and I've found that the less said about hornets, the better ;) Bumble bee workers don't have stingers (and aren't generally inclined to use them anyways), but the drones do and they resemble wasps both in manner and appearance.
Never mess with queens of any kind :)
The only colours that most bees-etc seem to disdain are white and beige. Anything else might grab attention and no one seems to be able to say for sure which colours attract the most. Perfumes attract bees-etc, but they dont seem to like coriander (Tom's of Maine deodorant gets another star)   I'm not certain how they feel about lavender or cedar, but at least they keep mosquitos away.
Not much help, Im afraid, but thats what I know about them.. I haven't been stung.

-==- Ennien

Ennein & Robin Ashbrook	
Internet: Galatia.9@Debug.cuc.ab.ca	" To each, their own. "
UUCP: calgary!debug!galatia.9	

From: Jim.Dixon@f295.n353.z1.fidonet.org (Jim Dixon)
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Most people know and fear the yellow-and-black striped yellowjacket wasps that are common, uninvited guests to late summer picnics. Their stings are painful and for those people allergic to insect venom, they are dangerous. Many people confuse bees, which are fuzzy and only feed on flower nectar,with wasps, which have shiny bodies and are predators. What most people don't realize is that yellowjackets capture enormous numbers of flies,caterpillars and other insects to feed their young. They have been seen bringing in more than 225 flies an

hour to a single nest; one study found that over a three day period, just two wasps collected 20 grams of imported cabbageworms. It is usually only in late summer, when their populations are at their peak and wasps are attracted to plants with ripening fruit or aphid honeydew deposits on the leaves that most conflicts arise between humans and yellowjackets. Although they are touchy defenders of their nests, most stings are a result of accidentally trapping or pinching a wasp.

> You can avoid being stung by following a few rules:

1. Remove all outdoor food sources attractive to wasps. Feed pets indoors and keep garbage cans tightly covered and wash cans regularly to remove spilled food. Bury fallen fruit and table scraps deep in compost piles and don't compost meat scraps or bones.

2. Watch where you sit or step (don't go barefoot!). Be especially careful to look before reaching into berry bushes or picking fruit. Thirsty wasps are attracted to moisture so be cautious when sitting on or handling wet beach towels.

3. Never swat at a yellowjacket hovering around you--it is a good way to ge t stung. Instead, quietly move away or let the wasp leave of her own accord. The only exception to this is if you have accidentally disturbed a nest and hear wild buzzing. In this case protect your face with your hands and RUN!

4. Pick fruit in the early morning or evening while it is cool and most wasps are still in their nests.

>To reduce yellowjacket problems at picnics and barbeques:

1. Minimize the length of time food is available by keeping it tightly covered until just before it is to be eaten. Clear away scraps and dirty plates as soon as the meal is over.

2. Serve sweet or alcoholic drinks in covered cups with drinking straws through the lids so wasps can't get inside and then sting you in the mouth as you drink. When drinking out of a can, keep the opening covered with your thumb between sips.

3. Set up baited yellowjacket traps around the ed
ge of the picnic area or on the end of the table to attract wasps away from the food to capture them. Small disposable cardboard traps or reusable ones made of wood and metal screen are sold at garden centers. They work by attracting wasps to bait placed under an inverted funnel. When the wasps have had their fill and instinctively fly upwards toward the light at the end of the funnel, they are trapped in an enclosed chamber above. In early and mid-summer, 1-2 traps should be enough for most picnics. In August and early September, however, six or more traps might be necessary. For much of the season, the best baits are Spam, ham, fish, cat food or meat scraps. La ter in the summer, when wasps need less protein because they aren't rearing their young, sweet baits such as jam, honey or rotting fruit are often more attractive. When the picnic is over, sink the traps in a bucket of soapy water to kill the wasps. Make very sure they are dead before cleaning out reusable traps.

> Removing wasp nests:

Although the number of yellowjackets in late summer invariably prompts many concerned inquiries on how to control them, usually there is little that can be done. The wasps will all die in a matter of weeks as fall approaches. Even if a nearby nest is discovered late in the summer, eliminating it may not have the desired effect because wasps can fly in from up to a mile away. It is never advisable to put out poison baits because children and pets may get into them and because other, beneficial, insects may take the bait and be killed. It is also a terrible idea to pour gas or kerosene into an underground wasp nest where it poisons the soil.
If yellowjackets do build a nest in a location likely to cause problems with people or livestock, the best time to remove it is early in the season, while it is still small. This is a job for a very careful person or a professional

pest control service. Chemical wasp sprays are available,but if you use them, consider very carefully where the stream of pesticide that misses the nest will land. Always use such products according to direction on the label. Remove an exposed nest that has been sprayed as soon as the wasps are dead. Wear rubber gloves and dispose of the nest to prevent birds from eating the poisoned larvae left inside.

> To remove a hanging wasp nest without using chemicals:

First, it is a good idea to get a helper. To be safe, both of you should we ar protective clothing from head to foot. Although a beekeeper's suit with hat and veil is ideal, you can assemble a similar suit for the occasion from heavy coveralls, a hat with a wide brim and a length of fine screening. Wear boots with your pants cuffs pulled outside the boot tops an d seal the cuffs around the boot top with rubber bands so that wasps can't get up your legs. Wear gloves and pull your sleeve cuffs over the tops of the gloves and seal them the same way. Drape the screening over the hat (the brim should keep it away from your face) and tie it around the neck,over the collar of the coveralls. Make sure there are no openings around th e collar or base of the veil. You should wear another layer of clothing underneath the overalls because wasp stingers are long enough to reach through one layer of cloth.
To remove the nest, approach in the evening or at night when the wasps are all home and less active because it is cool. Have your helper hold open a large, heavy bag or a box with a tight lid under the nest while you cut the attaching stem of the nest as quickly as possible using a long handled pruning hook, or other tool. When the nest is in the bag or box, close it immediately and seal shut. Kill the wasps inside by putting the whole package in a deep freeze for 24 hr. or by directing a wasp spray into the package through a small hole for several minutes. Don't neglect this last step because wasps can eventually chew their way out of almost anything.

> Wasp nests in walls:
Wearing suitable protection as above, spray pyrethrins (fast-acting,short-lived compounds extracted from pyrethrum daisies) into the opening of the nest at

night. Repeat applications nightly until no more wasps are seen leaving the hole. Never block up the opening as wasps can chew through wood or follow wiring to the interior of the house. In the fall, when the nest is definitely vacant, caulk or repair the crack to prevent recolonization next year.

> Underground Wasp nests:
This is a job better left to a pest control operator, who can dig and vacuum out the nest, however, you can apply pyrethrins sprays as above or pour several gallons of boiling water into the nest. Wear protective clothing as described and be extremely careful not scald yourself with the boiling water.

> Lifecycle:
In spring, the mated queen wasp crawls out of her overwintering shelter,fills herself on flower nectar and insects and then builds a nest in a hole in the ground, inside a wall cavity, or hanging from a branch or the eaves of a building. She chews up plant fibers and weathered wood to make a grey papery pulp for the first egg cells. The queen rears this first brood herself, foraging for food and feeding the larvae. In about a month these larvae become adult worker-daughters and take over cleaning, building and feeding chores for the next generation. The wasp population grows and the nest expands all season as the workers add new layers of cells. In late summer the queen stops laying eggs and the last of the brood matures. Among the last generation in late summer are both queens and males that develop i n special cells. When they emerge, they mate and the queen crawls away into a hiding place under bark, in an old stump or under litter to spend the win ter. The workers and males all die before winter, the nest falls apart and is not reused next year.

Jim