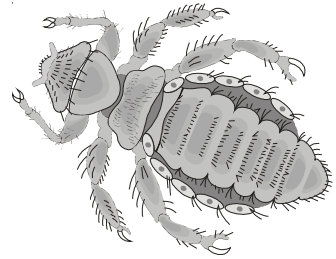


OUCH!



BITING, STINGING AND/OR BLOOD FEEDERS OVERVIEW

Have You Just Been Bitten or Stung?

What you don't know can hurt you.

When it comes to bites and stings - prevention is your best medicine.

What can you do?

First, learn which creatures can bite or sting.

Next, understand what you can do to avoid a problem.

Last, know what to do and whom to call if you get bitten or stung.

Help is simply a phone call away. If you are bitten or stung, call your local health care provider or physician to determine if you can be treated at home, need to be seen by a physician or should go directly to a hospital emergency department. If you can be treated at home, your health care provider should keep in phone contact with you by calling back and checking on your condition. If your condition worsens, you should go to the nearest emergency department or call the paramedics or an ambulance. **The following suggestions are not intended to replace proper medical care. Always treat a small area before using any product, herb, oil, shampoo, soap, cleaner or any material you put on your body.**

Things you can do to prevent venomous bites or stings: (It helps if you do not look or smell like a flower or wear flashy jewelry.)

When hiking -

- ☺ Wear plain, light-colored clothing: long, heavy pants, long sleeves, netting and high-top, lace-up leather shoes or boots that cover the ankles.
- ☺ Watch out for snakes and stinging insects. Be extra cautious when daytime temperatures stay over 82° F. Snake encounters are more likely on south sides of slopes and hills.
- ☺ Use a walking stick - it can be a good hiking companion. It can be used in an emergency to help avoid a snake or creature.
- ☺ Carefully look around rocks or logs before stepping down.
- ☺ Watch for bee hives, colonies or swarms when outdoors - Don't poke at or touch them.
- ☺ Don't place your hands where you can't see.
- ☺ Be very cautious under rocks or logs.
- ☺ Don't wear scents of any kind, e.g., perfume, after shave or hair spray.

- ☺ Don't wave at, yell at, handle, annoy, touch or try to play with wild animals, spiders, stinging insects, snakes or Gila monsters. Walk around them if you can.

When camping - or at home -

- ☺ Check and shake bedding, clothes, boots and shoes before use.
- ☺ Do not leave any food around that is not tightly sealed in glass. Food odors attract insects and wildlife.
- ☺ Close and zip and then duct tape all tent closures during the night.
- ☺ Be aware that during the hot summer months rattlesnakes are more active and hunt at night.
- ☺ Keep a good first aid kit with you. A snake bite kit is usually not necessary.

THINGS YOU CAN DO TO PREVENT VENOMOUS BITES OR STINGS AROUND YOUR HOME:

- ☺ Get rid of rocks, mulch, litter, wood, paper, logs and debris from your yard.
- ☺ Wear plain, light-colored and long sleeved clothing, heavy work gloves, high top boots and long pants when working outside around your yard.
- ☺ Keep doors and windows tight fitting with good weather stripping.
- ☺ Make sure other openings (such as where air conditioners, swamp coolers or exhaust fans enter your house) are closed, sealed or fitted with a fine mesh screen and are dusted with talcum powder.
- ☺ Fill all cracks in the foundation of the house and around all water faucets.
- ☺ Look before you place your hand under or into something, especially rocks.
- ☺ Make periodic checks for bee hives or swarms; if found, carefully follow the directions in [The Best Control II](#)© or [The Bug Stops Here](#)©.
- ☺ Be very careful when operating vibrating equipment (lawnmowers, chain saws, weed eaters, etc.) that may disturb a fire ant, bee hive or wasp nest.
- ☺ Carefully check all line-dried clothing prior to bringing any of it inside the house.
- ☺ Do not leave shoes, boots, drinks, clothing items and towels outdoors.
- ☺ Always protect your feet and wear shoes when outdoors, especially around the pool at night.
- ☺ Don't aggravate stinging insects that approach you.
- ☺ Always check your clothing, bed and footwear before getting in them.
- ☺ For help in removing snakes or other venomous creatures from your property, read [The Best Control II](#)©. Call 1-800-221-6188 to order your CD-ROM copy.

Repellants - Bathing in a tub of warm water with 2 capfuls of chlorine bleach can repel insects, arachnids and/or mites for hours. Certain bath oils, Noxema, Vicks Vaporub and/or some sunscreens also can repel pests. Thiamine chloride (a B vitamin) taken orally or 60 milligrams of zinc taken daily also will act as a natural repellent.

Rattlesnakes

Rattlesnakes have a flattened, triangular shaped head with a heat-sensing device located between the nostril and eye on each side that is used to locate and trail prey. Different species of rattlesnakes can be of different lengths, with the Western Diamondback growing up from 10 inches at birth to 6 feet in length. The most common rattlesnakes include the Western Diamondback, Mohave, Sidewinder, Black-tailed, Speckled and Tiger. Rattlesnake bites are rarely fatal but can be extremely painful. Caution and common sense should be used. Most bites happen when you accidentally or purposely disturb or handle or play with the snake. It's far better to walk around or avoid it. Extra caution should be taken, especially when daytime temperature stays above 82° F. or 28° C. Baby rattlesnakes are typically born at the end of July and can bite at birth. The shaking of the rattle can serve as a warning but rattlesnakes can strike without warning or making any sound. They can strike ¼ to ½ of their body length. Coloring varies by species, but most blend with their environments, so they are extremely hard to see. **If you must kill them, wear protective clothing and use a shovel to decapitate them. Remember, even a severed head can still strike and kill!**

General Signs and Symptoms of a Snake Bites (Remember, at least 25% of all venomous snake bites in the USA are dry, or without venom being injected.)

- ☺ Immediate pain or a burning sensation generally will occur at the site of the bite.
- ☺ Fang marks are usually visible.
- ☺ A metallic or rubbery taste in the mouth.
- ☺ Significant swelling within minutes.
- ☺ Muscle weakness, sweating and/or chills, nausea and vomiting.

Note: A small percentage of rattlesnake bites are "dry," meaning that the snake has not injected venom. **But always seek medical help immediately.** Remember, protocols may vary from one hospital to another, so ask for the newest treatment. The venom injected contains several enzymes designed to attack tissue damage. The venom may also contain components that cause blood thinning and other effects on the body. The average cost to treat a venomous snake bite can be between \$15,000 and \$20,000 without medical complications, but almost half of the treated bites can become complicated, e.g., an allergic reaction to horse-based sera or to the venom itself. 95% of snake bites occur below the knees or below the elbows, so protect yourself!

Treatment

- ☹ *Don't* apply ice to the bite site or immerse the bite in a bucket of ice.
- ☹ *Don't* use a constricting band/cloth or tourniquet. Do not restrict blood flow in any manner.
- ☹ *Don't* cut the bite site or try to suck out the venom. Leave it bite site alone!
- ☹ *Don't* use electric shock or stun guns of any kind.
- ☹ *Don't* try to capture the snake to bring it to the hospital.
- ☺ *Do*, if you are not sensitive, take 2 - 3 droppers full of tincture of echinacea every hour for up to 12 hours in order to quickly activate the immune system.
- ☺ *Do* take high doses of vitamin C for its beneficial anti-allergy and antihistamine effects.
- ☺ *Do* use chewed crushed plantain leaves as they have antiinflammatory, antitoxic and antibacterial effects.

Seek medical help from a hospital emergency room or physician immediately. Back away quickly to prevent being bitten again. Identify the snake if you can. Rinse the bite area. Clean with soap and water or an antiseptic; apply a bandage or clean cloth. Remove constrictive items. Monitor for allergic reaction and/or shock. If possible and safe, remove venom. Keep victim as calm, relaxed and quiet as possible. Immobilize and splint the bitten extremity and then keep it below heart level. Don't allow the victim to drink alcohol, eat food or take any medications. You need to be evaluated and perhaps be administered antivenin. Move slowly if necessary to get help. You have time to reach medical care. Don't panic. Stay as calm as possible. If bitten on the hand, remove all jewelry before swelling begins. You can take echinacea internally and externally. Take high doses of vitamin C. Freshly crushed or chewed plantain leaves can be applied as a poultice. You can also make a daily poultice of echinacea, comfrey and/or calendula if you are not sensitive.

Lizard Bites from Gila Monsters

This large, heavy-bodied lizard displays contrasting markings of pink, yellow, orange and black. It measures up to 2 feet long and weights up to 2 pounds. It is the only venomous lizard in the United States, and it is a shy creature. Bites usually only happen when it is cornered or picked up. The Gila monster prefers canyon bottoms, rocky areas and outlying desert residential areas. It spends less than 2 weeks per year above ground. From early March to mid-May, Gila monsters are active during the day and this changes to nighttime beginning with the monsoons.

Signs and Symptoms of a Gila Monster Bite

A bite produces intense pain within 30 seconds, followed by swelling, weakness, dizziness, nausea and chills.

Treatment

Once a Gila monster bites, it does not generally let go. Therefore, you or someone with you may have to pull it off. The longer it remains on you, the more venomous the bite. Once off, wash the bite site with soap and water or an antiseptic to help remove some of the venom from the bite site. Apply ice or cold compresses to the area to help keep the venom localized. Do not wait for symptoms to occur: go to the closest medical facility or physician for treatment.

Scorpions

All U. S. scorpions can sting, but only the bark scorpion can cause serious medical problems. It chooses to live in well defined geographic areas. The small bark scorpion only measures from 1 to 1-½ inches in length. Its color varies from light tan to a dark golden brown. It also is the only scorpion that curls its tail to the side while at rest.

A nighttime feeder, it is most commonly found near irrigated areas, pools, in palm trees, concrete block fences and wooden fences and on the walls in homes. The bark scorpion is the only scorpion that can climb walls and walk across ceilings. It, therefore, can show up in bathtubs, sinks and beds, having fallen from the ceiling. It also has the ability to cling to the underside of wood, making it important to be extremely cautious when handling wood or outdoor furniture. Many times scorpions are found in cupboards, showers and other unexpected places. Scorpions are most active when the daytime temperatures are 70°F. or above.

Special Precautions

Because children under 10 years old are more likely to develop severe symptoms if stung by a scorpion, special care should be taken if you are visiting or reside in a bark scorpion-prone area:

- ☺ To prevent scorpions from either climbing or falling into the crib, place netting over the crib and place the crib legs in clean, wide-mouth jars.
- ☺ Place duct tape sticky-side up and secured with (masking) tape on the edges along the edges of walls and/or around the bed and/or furniture.
- ☺ Roll back bed linens and carefully inspect for scorpions before getting into bed.
- ☺ Shake and examine all clothing and shoes before putting them on.
- ☺ Move furniture and beds away from the walls.
- ☺ No bare feet; always wear shoes when outdoors, especially around a pool at night.
- ☺ Be especially careful of wet/damp towels in the bathroom and pool area.

Signs and Symptoms of a Scorpion Sting

In infants and children watch for excessive crying, rapid, jittery or uncoordinated eye movements and increased drooling or saliva. They constantly rub their noses and faces, indicating facial numbness, tingling and visual disturbances. Bark scorpion stings can cause one or several of the following symptoms, usually within the first 2 - 3 hours following the sting:

- ☺ Immediate local pain/burning/prickly sensation. **No swelling or redness.**
- ☺ The site of the sting is very sensitive; a slight touch causes great pain.
- ☺ Numbness and tingling moves from the sting site to distant body parts.
- ☺ Difficulty swallowing and “swollen tongue” sensation with excessive drooling.
- ☺ Slurred speech.
- ☺ Muscle twitching.
- ☺ Restlessness and irritability.
- ☺ Respiratory problems with possible respiratory arrest.

Treatment

Call your medical provider to determine whether the sting victim can be managed at home or will require medical treatment, e.g., intravenous medication to relieve muscle pain and spasm. **If in doubt, go to the emergency room.** Garlic has been used to relieve scorpion stings. It is thought the sulfur components help neutralize the toxins.

Black Widow Spiders

A mature female black widow spider has a large, black, shiny body and measures approximately 3/8 inch long, with 1inch legs. An hourglass shape in bright red or orange-red color can be found on the abdomen. Black widow spider webs are very irregular, not in lively concentric rings; they are white and very strong. They are most often found in areas where water and insects are readily available. Around the home they can be found under or in outdoor furniture, barbecue grills, pool pumps and in storage areas, garages, wood piles, block fences and the corners of porches and patios.

The black widow is shy. She hides near the web by day and is most active at night where she waits in her web for prey to enter. She produces hundreds of babies hatched from egg sacs that look like little moth balls. The young black widows are white in color and spread quickly after hatching. The male black widow is much smaller and is brown and white in color. Because of its size, its bite cannot pierce skin and is, therefore, not dangerous to humans.

Black Widow Spider Control

A “live and let live” attitude is the best approach for living in harmony with all nature. But if you have a problem of

close contact with the black widow or you have young children who play outside, you may have to take steps to control the black widow population around your house. To control the black widow populations, locate the black widow spider, using a flashlight at night to find her in her web; then vacuum her and her web and her eggs up and safely dispose of the bag.

Signs and Symptoms of a Black Widow Spider Bite

The initial bite may feel like a tiny prick and may go unnoticed. At first, there may be little or no visible signs of the bite such as swelling. A red circular mark may appear about 6 hours after the bite. The symptoms may progress to aching sensations, muscle pain at the bite site spreading to the lower back, thighs and limbs. A black widow spider bite can cause intense abdominal pain that can be confused with appendicitis. Symptoms can last 36 hours and lingering effects may last for several weeks.

Treatment

Keep the bite site lower than the level of the victim's heart and clean the wound/bite site with alcohol or a moist aspirin or soap and water. Then apply ice or cold packs to the bitten area to slow the circulation of the venom. Remove rings or constricting items since the bitten area may swell. Never cut or suction a spider bite. Keep the victim quiet and watch for signs of shock. Call your medical provider immediately to determine whether the bite victim can be managed at home or will require treatment by a physician or hospitalization. Several cases may require antivenin treatment.

Africanized Honey Bees (Killer Bees)

The Africanized honey bee looks the same as the European honey bee, but is much more aggressive in defending its hives or colonies and can attack without warning. One or even hundreds of bees target the head in an attack. A single sting is no more powerful or painful than that of the European honey bee, but killer bee victims can be stung hundreds of times. If attacked, cover your head and run in a zigzag pattern and find shelter in a building or car or dark area as quickly as possible. Then quickly remove all stingers from the skin.

European Honey Bees

The European honey bee pollinates crops and flowers. It is about 1 inch long and is colored golden brown with black strips encircling its fuzzy abdomen. A honey bee's venom is just as dangerous as that of a rattlesnake, only there is less toxin involved in a single sting. So it is vital to remove the poison sac as soon as possible. After a sting, the barbed stinger remains in the skin with the venom sac attached. Do not attempt to pull out the stinger with your fingers because as you squeeze, you force more venom into your body. Instead, use a piece of hard plastic (credit card) or fingernail to scrape or flick the stinger out of the skin. Bees are more easily agitated on cloudy days, or by dark or bright clothing, or by vibrations or loud noises. Bees typically attack the head and ankles. 100 - 200 stings can be fatal to an average adult. The venom from a dozen stings can cause rapid onset of swelling, headache, muscle cramps and fever. If you have been stung multiple times or are experiencing any allergic reactions, e.g., swelling in other parts of the body, breathing problems, chest constriction, abdominal cramps or shock, get emergency medical help immediately. If attacked, see above.

Ants

Many ants can sting or bite and use their venom to kill smaller creatures or to keep intruders away. Therefore, the best prevention is to avoid stepping on or sitting on all of their nests. Dust your feet with talcum powder.

Wasps

Wasps are slender with a relatively thin waist and four wings. Smooth and somewhat shiny, wasps have brightly colored "skin," often with sharply contrasting black and yellow patterns. Females can sting multiple times. The males have wings but no stingers. Wasps are predators and feed on insects and spiders. Because its stinger is not barbed, it can be removed and reinserted repeatedly, each time injecting out enough venom to cause considerable pain.

Yellow Jackets

Yellow jackets have jagged bands of yellow and black. The stings are painful and they attack viciously outdoors when their nests are bothered.

Signs and Symptoms of Bee, Ant or Wasp Stings

The severity of an insect sting reaction varies from person to person. A normal reaction will result in pain, swelling and redness around the sting site. A large local reaction includes swelling and redness beyond the sting site. Although frightening in appearance, these large local reactions usually will go away over several days. The most serious reaction to any insect bite or sting is an allergic one. Any of these reactions requires immediate medical attention. Symptoms of a severe allergic reaction or "anaphylaxis" may include one or more of the following:

- ⊗ Redness, hives, itching or swelling in areas other than the sting/bite site.
- ⊗ Tightness in or constriction of the chest and difficulty breathing.
- ⊗ Abdominal cramps.
- ⊗ Hoarse voice or swelling of the tongue.
- ⊗ Dizziness or a sharp drop in blood pressure.
- ⊗ Unconsciousness, shock or cardiac arrest.
- ⊗ **Delayed reactions can also occur.**

This type of reaction can occur within minutes after the sting/bite and may be life-threatening. People who have previously experienced an allergic reaction to an insect sting or bite have a good chance of a similar or worse reaction if stung or bitten again by the same kind of insect. If you have severe allergies to any insect, always carry appropriate medicine prescribed by your physician with you when you go outdoors. To relieve minor stings or itches, apply a paste of baking soda and water, half of a cut onion, apple cider vinegar or meat tenderizer or a moist aspirin to the sting/bite. **Remember that baking soda is alkaline and will neutralize the acidic stings of bees and that vinegar is an acid and will help soothe the alkaline sting of a wasp.**

Treatment

Wash the sting/bite site with soap and water or an antiseptic to help remove some of the venom from the skin's surface. Apply cold compresses to the site to help keep the venom localized. Have the victim rest. Apply freshly chewed or crushed plantain leaves to the site or apply a paste of warm water and powdered bentonite clay or activated charcoal to the site. You can also ingest a few capsules of activated charcoal. Other products that have helped people relieve bee stings are honey, lemon, lime, onion, papaya, vinegar, half an onion, Swedish bitters, cold milk compresses, baking soda pastes, a moist aspirin, essential oil of lavender, vitamin B, fresh aloe, vitamin C paste, witch hazel, meat tenderizer and/or enzyme cleaners or Not Nice to Skin Irritations™ or, in a pinch, a mud pack. Call your health care provider to determine whether the bite can be managed at home or will require medical treatment. If you are bitten or stung and did not see the insect, call your health care provider. From the symptoms you describe, the nurses or doctors will determine if your bite or sting could be poisonous and if you need to be examined by a doctor.

Arizona Brown Spiders (Fiddleback Spiders)

This small brown spider does have the potential to be venomous. Brown spiders are about the size of a half-dollar, including legs, and are distinguished by a violin or "fiddle" marking on the back of the head. This timid arthropod produces an irregular web. It tends to live in the foothills or desert areas that are dry, littered and undisturbed. There it may seek shelter in garages, wood, dead cactus, pack rat nests, storage areas or trash piles. On rare occasions it may be found in bedding or clothing - but again, only in desert-situated settings. If you believe you have been bitten by an Arizona brown spider, try to capture it and bring it with you to the medical facility. Call your health care provider to determine whether the bite victim can be managed at home or will require medical treatment.

Brown Recluse Spiders

The brown recluse spider is shy, sedentary and builds an irregular web that is often not even recognized as a spider web. Females lay eggs in flattened egg sacs that are frequently attached to the underside of objects. Mating in

this species occurs from February to September. Up to 40 spiderlings may hatch from a single egg sac. A single female may produce up to five egg sacs in a summer. Females can live up to four years, males less.

Indoors, the brown recluse can usually be found in infrequently disturbed areas away from light sources, such as behind pictures, beneath or behind furniture, in boxes, in clothing, among stored papers, between the corrugation of boxes, under food sacks and behind old boards leaning against walls.

The natural habitat of the brown recluse includes the underside of rocks, loose bark and crevices in decaying logs (Hite et al. 1966). However, many outdoor hiding areas provided by the activities of man are frequently inhabited by the brown recluse spider. For example, a survey of piles of junk in Kansas, piles of old tires and inner tubes, furniture, old boards and trash were found to be inhabited by the brown recluse. Once the debris/harborage was removed and the natural vegetation returned to the area, the colony was eliminated. There are at least 13 species in the U. S.

Signs of a Brown Recluse Bite (Hobo spider bites are similar but normally less severe.)

Brown Recluse bites are sharp but not initially painful like those of the Black Widow, but a small, white blister is quickly raised, broken, and surrounded by a red welt. An hour or more may pass; then there may be intense pain. The depressed center of this raised, red circle (the size of a dime to a quarter) turns dark within a day. The dead tissue regularly sloughs away, and the bite area scars over in one to eight weeks. Death seldom occurs, but the bite is debilitating and psychologically traumatic. Note: A bite from a brown recluse may also produce an intensely sore lump, even several weeks after the initial injury.

Treatment

Seek medical attention immediately. Keep the bite site lower than the level of the victim's heart and wash the wound with alcohol or a moist astringent, soap and water. Then apply ice or cold compresses to try to slow the circulation of the venom. Keep the victim quiet and watch for signs of shock. **See a health professional.**

Conenose Bugs (Kissing Bugs)

This slow-moving bug is dark brown to black with yellow/red markings on the abdomen and measures ½ to 1 inch long. Its body is long with 3 pairs of legs and a cone-shaped head. The conenose bug usually bites and feeds on the blood of its victim when the victim is asleep. Seen in the spring and early summer, it makes its home inside rodent and bird nests. During the day it may hide indoors under furniture or in closets. Put down duct tape, sticky side up and held down with (masking) tape, on the edges to trap these pests.

Signs and Symptoms of a Conenose Bug Bite

The bite can be painful with redness, swelling and itching. Each time a bite takes place, the victim becomes more sensitive. Each bite can then cause a serious allergic reaction that causes itching scalp, palms and soles, welts or rash, nausea, vomiting and breathing problems. Anaphylactic reaction can occur in very sensitive people.

Call your health care provider to determine whether the bite victim can be managed at home or will require medical treatment. If possible, capture the bug in order to confirm the bite was that of a conenose bug.

Ticks

If you do not wish to wear any repellent, wear light colored clothing and tuck pants into socks or tape them to the legs tightly. Leave as little skin exposed as possible. If you are in a tick infested area, inspect hourly for ticks, especially between the ankle and the knee. Have someone help you check your entire body at noon and at bedtime after you shower and before you go to bed. Be extremely careful when you inspect the head, back, groin and armpits. Remember: An engorged nymph will only be the size of a poppy seed. If any ticks are found on you or your pet, don't kill them; cover them with Vaseline, melted wax or fingernail polish. Maybe they will back out on their own or suffocate. If they don't, take a pair of tweezers, gently pull them out with a slow, steady pressure. Don't twist. Once the tick has been removed, drop it into a plastic pill bottle with alcohol to kill it and then wash the bite site with soap and water and then apply iodine or another antiseptic. Save the tick and call your doctor for

further advice. Wash all clothing in borax and put all other non-washable materials in a clothes dryer - the dryer's temperature will kill all ticks.

Unknown Bites and Stings

If you are bitten or stung and did not see the insect or creature, wash the area with soap and water or a moist aspirin or apple cider vinegar or an antiseptic and call your health care provider immediately, especially if you experience any discomfort. From the symptoms you describe, the nurse or doctor can normally determine if your bite or sting could be poisonous or serious and if you need to be personally examined by a doctor.

Treatment of Minor Animal Bites

- Wash the bite with soap and water to remove saliva and any other contamination.
- Tincture of calendula or echinacea can be diluted 5 to 1 with warm water to disinfect the site.
- Essential oil of tea tree or lavender can be added at a rate of 6 - 8 drops per cup of warm water or put a drop right on the wound or bandage. Oils get into the blood stream quickly.
- Open the wound and pour in some 3% hydrogen peroxide until it foams up.
- Plantain leaves can be chewed or crushed into a slippery mass and then applied to minor bites and wounds. Apply ice and elevate the area if there is any swelling; to stop bleeding elevate the area above the heart level and cover the entire wound with a clean cloth and press it firmly against the wound.
- Call and/or see your medical care provider as soon as possible.

Note: if you are not sensitive, a dropper full of tincture of echinacea can also be given internally every hour for three hours for minor animal bites. Before treatment with any material, be sure you are not sensitive to it.

BLOOD FEEDING ARTHROPODS GENERAL DESCRIPTION

Blood feeding arthropod pests are of great concern not only because of their annoying and often painful bites, but more importantly because many can also be vectors (carriers) of pathogenic (disease) organisms, that seriously injure or kill humans and domestic animals, e.g., encephalitis, tularema, Lyme disease, malaria, yellow fever, Chaga's disease, bubonic plague, murine typhus, tapeworms, Rocky Mountain fever, etc. Specific identification is particularly critical in these dangerous pests because members of each group are very similar in appearance, but differ in their choice of hosts, habits and potential as disease vectors.

Every blood feeder needs a blood meal at some point to complete its life cycle. The only exception are some of the males of this group, e.g., male mosquitoes, male horse flies, etc., who don't need blood. Some blood feeders will feed on only one host species. However, most blood feeders have not only a preferred host, but also will feed on a wide range of substitute hosts. When multiple host species are involved, there is a greater possibility of disease transmission, e.g., the malarial parasite, yellow fever virus, rickettsiae of Rocky Mountain spotted fever, the bubonic plague bacillus, etc. Many wild animals can serve as reservoirs of disease organisms and still suffer only a few or no ill effects themselves, e.g., roof rats are reservoirs for human plague and typhus with fleas serving as the vectors of these diseases. Some of these blood feeders remind us we are not always on the top of every food chain.

1. **First, properly locate and identify** the blood-feeding pest(s) involved.
2. **Second, practice exclusion and prevention.** This consists of denying access into the structure of the hosts and the insects themselves. Access to any crawl spaces or attics must be denied so wild animals such as opossums, feral cats and dogs, skunks, birds, bats, commensal rodents, squirrels and raccoons cannot enter. Exclusion consists of reducing openings into the building so that wild animals and/or insects cannot gain entrance. This is done by carefully plugging or sealing holes with concrete, caulk or other appropriate material; carefully screening windows, doors and vents; reducing door threshold gaps, installing doorsweeps, installing negative ion plates, spraying Safe Solutions, Inc. enzyme cleaners, mopping with borax, etc.
3. **Indoor control and sanitation.** Mechanically reduce pests by vacuuming or steam cleaning or rinse-and-vacuuming all rugs, floors and fabric-covered furniture along with routine cleaning or properly disposing of all infested pet bedding. Remove and clean up all harborage debris; vacuum or steam all insects, spiders and/

or mites; remove all rodent nests; caulk all cracks and crevices; vent and cover all crawls; routinely and thoroughly clean with Safe Solutions, Inc. Enzyme Cleaner with or without Peppermint and/or borax.

4. **Outdoor control.** Begin with sanitation, e.g., debris removal; keep the grass and weeds mowed; trim all branches that touch or overhang the building; remove all old bird nests from the structure, and eliminate any alternate hosts and their harborage within 100 yards of the structure. Sanitation is followed by the application of diluted Safe Solutions, Inc. ((protease) enzyme cleaners with or without peppermint or other Pestsafes®, e.g., talcum powder, food-grade diatomaceous earth (DE), peppermint soap, Vaseline, freshly ground pepper, menthol rub and/or Tide® soap. Application may range from spot application along the exterior foundation wall and adjacent perimeter band treatment to whole yard treatment depending on the **imminent** danger to humans. Wettable powder and microencapsulated pesticide formulations can be effective, **if absolutely necessary** but, as in the case of **all** volatile, synthetic pesticide poisons, there is an obvious risk of contamination of wells, air, pets and people whenever they are used. Be sure there is **no** other alternative and **all** Pestsafes® have been tried first!
5. The best treatment for insect bites and stings is to avoid them in the first place. If practical, wear 2 layers of clothing, avoid floral prints, hair spray, perfumes and shiny jewelry. The color blue is the preferred color of mosquitoes; wear white, tan and/or light green clothing. Routinely shower with peppermint soap. Try orally taking 3 - 4 garlic capsules and Vitamin B and nutritional yeast daily. Avoid eating sugars, alcohol, tropical fruits and juices. Thread a sprig of elder through your hair. To create a mosquito-free environment, boil willow in water, burn artemesia in a campfire or diffuse various combinations of the oils of citronella, eucalyptus, pennyroyal, grape seed, almond, lavender, rosemary, tea tree, basil, geranium and/or sage into the areas. You can also make a room spray with water and a few drops of these essential oils or with enzymes. Essential oils, e.g., geraniol or geranium oil and coconut oil, diluted in olive oil or aloe vera nectar or jojoba can be applied topically to pulse points on your body every hour or so to repel insects (e.g., fire ants, ticks, fleas, mosquitoes, lice and gnats), but can be irritating to some people, **so always test them on a small area of your skin first!** As the odor lessens, so does the effectiveness. Try chamomile tea, thyme, sweet basil, yarrow, vanilla extract or try dilutions of camphor, tea tree, bergamot, patchouli, sandalwood, peppermint oil, Guatemalan lemon grass, lavender, cedar wood and pennyroyal (*Mentha pulegium*) individually or as blends. Pennyroyal's Latin name means mint and flea and the plant and smoke from its burning leaves help control these pests, but avoid mint plants if you are pregnant or sensitive. Other essential oils that can be made and used as repellents include menthol, citronella, eucalyptus, geranium and okra but they can stain clothing; do not drink them and be careful around your eyes and mouth when applying them. **See Natural Plant Caution , Chapter 19, Fleas.**
6. If bitten, leave the immediate, and if the bite is considered serious, go to a physician immediately, but first remove the stinger and cleanse the area as soon as possible . If you are not sensitive, you can ingest homeopathic *Apis mellifica* and rub an apis-based cream or a little epsom salt water or enzyme cleaner on the wound every 15 minutes until relief arrives. You can also apply echinacea tincture to the sting area and take it internally to help reduce allergic reactions and other immunological disturbances. If the bite/sting feels better when cold is applied or the area is already cold and/or numb, use homeopathic ledum. Ice alleviates pain and swelling and mud or clay, fresh garlic, onion juice, witch hazel, baking soda or meat tenderizer paste eases itching and aching. (Baking soda is an alkali that neutralizes acid. Applied to the skin it acts to reduce pain and swelling, draws out toxins and helps neutralize some of the inflammatory agents in the toxins.) Meat tenderizer is made from papain, an enzyme derived from papaya and helps break down the inflammatory properties of venom. (That is why protease enzyme cleaners and shampoos also work.) Various herbs rubbed into insect bites may also accelerate healing: ground-up comfrey, sweet basil, tea tree oil (a powerful wound healer and germicide), olive oil, marigold, yellow dock, wild marjoram, leek bulbs, crushed parsley or plantain and/or the leaves of rue, St. John's wort, plantain, house leek, aloe and pennyroyal. Apply calendula petals on a bee sting. Wasp stings are best treated with any wild mallow flower or freshly chewed or crushed plantain leaves, slices of onion or garlic or vinegar applied topically, accompanied by an internal dose of homeopathic vespa. Taking vitamin C and panthothenic acid over a period of 3 - 4 hours helps create a natural antihistamine effect, thus reducing swelling. The enzymes bromelain and quercitin also help reduce inflammation. If you are upset try taking a calming flower remedy under the tongue every 10 minutes until you settle down. If you are allergic to bee stings, get medical attention immediately. Spray the site with Not Nice to Skin Irritations. Your own urine on a cloth has antibodies that can neutralize an insect's venom. Apply pulped or crushed leaves of wormwood, rue or sage to alleviate the pain of scorpions, spiders or jellyfish, but some people may be sensitive, especially to wormwood or rue. Increase your intake of vitamin C and you receive antiinflammatory effects and boost your liver's ability to filter out the toxins. Take chlorophyll supplements to boost your immune system and help detoxify your blood.

Take shiitake or reishi mushroom supplements to help you detoxify. **Try spraying a mix of 1000 mg. of vitamin C in a cup of warm water (a 1% - 3% solution) or diluted Safe Solutions, Inc. Enzyme Cleaners from a small “spritzer” bottle on the bite/sting as a sting reliever.**

7. Bend the arm and note where it forms a crease at the elbow. Put your thumb at the point at the end of the crease, away from the body and press slowly into the joint. This accupressure point helps alleviate the redness and swelling of bites and stings.
8. Remember, the emotional reaction to a sting or bite is often more severe than the actual hazard from the venom.

One of the best natural or botanical pesticides for controlling bloodfeeding arthropods and other pests is Neem. **What is Neem?** Neem, a member of the *Meliaceae* family and a botanical cousin of mahogany, is a tall, fast-growing, evergreen tree which has an attractive crown of deep-green leaves and masses of honey-scented flowers and thrives even in nutrient-poor, dry soil. It tolerates high temperatures, low rainfall, long spells of drought and salinity, and can be propagated by seed. Because of its many benefits, neem has been worshipped as a goddess in India. Neem is bitter in taste. The bitterness is due to the presence of an array of complex compounds called “triterpenes” or more specifically “liminoids”. The most important bioactive principle is a terpenoid known as azadirachtin; however, at least 10 other neem limonoids also possess insect growth regulating activity. The tree’s scientific name is *Azadiractita indica*. Neem has been used for centuries primarily against household and storage pests, and to a limited extent against crop pests. Neem trees were the only green thing left standing during a ravaging locust plague in Sudan in 1959. Neem does not kill pests but affects their behavior and physiology and reduces the risk of exposing the pests’ natural enemies to poisoned food sources or starvation. Neem derivatives affect more than 200 insect species belonging to *Coleoptera*, *Diptera*, *Heteroptera*, *Homoptera*, *Hymenoptera*, *Lepidoptera*, *Orthoptera*, *Thysanoptera*, several species of mites and nematodes, and even noxious snails and fungi. Although neem oil can be used directly for pest control, semi-purified “bitters” and “neem rich” fractions can easily be standardized for biological properties and could satisfy even stringent quality requirements. Being water soluble, they also can be applied as systemic compounds which render them more photostable and nonphytotoxic. A garlic odor often present in other neem products is absent in “bitters”. Neem products are effective and relatively hazard-free. An added benefit of using semi-purified neem fractions, rather than pure compounds, is that pests will be less likely to develop resistance. Neem compounds act together on several different behavioral and physiological processes which also helps prevent insects from evolving resistance to the compound. Their effects include repellence, feeding deterrence, reduced ingestion and digestion of food, poor growth and development, reduced longevity and fecundity, mating disruption, oviposition deterrence, inhibition of egg hatchability, molting failures and direct toxicity. Reports suggest that by paralyzing the muscles in the insects’ mandibles neem induces starvation. At lower than lethal doses, azadirachtin also mimics juvenile hormone, preventing insects from maturing. Neem-based insecticides can be further fortified against dynamic pests by optimizing their use with microbials or other botanicals. Neem fruits, seeds, oil, leaves, bark and roots can be used as general antiseptics, antimicrobials for the treatment of urinary disorders, diarrhea, fever, bronchitis, skin diseases, septic sores, infected burns, hypertension and inflammatory diseases. Neem oil and its isolates - nimbidin, nimbidol and nimbin - inhibit fungal growth on humans and animals. Neem leaf extracts and teas are used to treat malaria; iquin tablets and injections containing neem extract are currently being formulated for treating chronic malaria. Exposing kissing bugs (*Rhodnius prolixus*), the major vector of Chagas disease in Latin America, to neem extracts or to azadirachtin “immunizes” them against their internal protozoan parasite *Trypanosoma cruzi*. We are trying it and enzymes on termites. Cattle leaf supplements containing neem leaf powder are used as worm killers. Creams containing neem oil are used for animal wound dressing and also act as fly and mosquito repellents. Neem oil in human bathing and laundry soap kills lice and neem in dog soaps and shampoos controls ticks and fleas. Neem twigs are used daily by millions in Bangladesh, India and Pakistan as disposable toothbrushes; extracts of neem bark are used in some toothpastes and mouthwashes. Neem plantings also serve as a refuge for honeybees, wasps, spiders, birds, bats and other beneficial organisms, and the litter of falling leaves can improve soil fertility. Neem overall as a relatively safe, natural (botanical) pesticide poison with numerous benefits. Neem nectar does not kill pollinating bees.

Noxema® - We have found that Noxema® or Ben-Gay® applied to the exposed skin of children and people repels mosquitoes and other pests. (Always check to see if you are sensitive before using any product.)

Invincible Herbal Insect Repellent from Great Garden Formulas by Joan Benjamin and Deborah L. Martin: “...before heading outdoors, I douse myself with an incredible repellent that my friend Marion Spear and I concocted, Tina Wilcox, head gardener at the Ozark Folk Center in Mountain View, Arkansas says. “It renders me almost invincible to both insects and poison ivy!”

Ingredients and Supplies:

- 1 large handful fresh jewelweed (*Impatiens capensis*)
- 1 large glass jar with plastic lid (vinegar corrodes metal)
- 1 strainer
- 1 quart apple cider vinegar
- ½ teaspoon pennyroyal oil
- 1 teaspoon eucalyptus oil
- 1 teaspoon orange oil
- 1 teaspoon citronella oil
- 1 plastic spray bottle

Directions:

1. Crush jewelweed in the jar and cover with vinegar.
2. Let steep for several days.
3. Strain out the jewelweed and mix essential oils into the vinegar.
4. Before applying all over, spray a small amount on the inside of your arm and monitor for 15 minutes for any allergic reaction.
5. To use, spray thoroughly on clothing and lightly on any exposed skin except your face. Reapply every ½ hour or so. (To keep insects away from your face, spray your hat or bandanna.)

Yield: About 1 quart of invincible spray. Note: This formula will keep indefinitely. **Caution: If you are pregnant, don't use pennyroyal, even topically, as it may increase the risk of miscarriage.**

How toxic are the venoms of stinging ants, bees and wasps? As Justin Schmidt noted: The sting of a tiny fire ant, which weights in at about three billionth of an ounce, can have a terrific impact on a huge person that weights about 10 million times as much as the ant. About 70,000 species of Hymenoptera (ants, bees, wasps, etc.) can sting. I like to note only the females can sting you. We are all different and unique so we may only experience a little pain, or we may experience extreme pain and allergic reaction. **Avoid being stung if at all possible!**

How many Texans have felt the “sting” of fire ants? A Winter 2000 poll conducted 2/9-25/00 by the Scripps Howard Data Center noted 79% of all polled Texans had been stung by fire ants and a majority of the residents had been treated for them in the past year. West Texans were least likely to have been stung (61%) as opposed to Central Texans (90%). Eastern Texans had been stung 89%, Southern Texans were stung 78% and 72% of Northern Texans that were polled noted they had been stung by fire ants. Of the Texans over 60 years old that were stung, 68% were treated, as compared to 37% of the 18 to 29 year olds that were stung by fire ants. Among those treated for fire ant stings, 51% were treated 4 or more times. The margin for error for the whole sample is + or - 3 percentage points, and slightly larger for the subgroups. **I would like to add the best repellent for fire ants I have found is baby powder with talcum. No matter how much volatile pesticide poison “they” spray, the spray ants continually are increasing in numbers and in infested territory!**

Never approach bees during a thunderstorm. The electricity in the air makes them more aggressive.

There are over 700 species of venomous arthropods with those in the order Hymenoptera (ants, wasps, hornets and bees) accounting for the greatest percentage of deaths, usually from an allergic reaction. Usually the only result is an unpleasant experience; even so, BEE CAREFUL! **If you feel an insect crawling on you, it should be brushed away and not crushed, slapped or pinched.** Remember to use mosquito netting, talcum powder, double-sided tape, duct tape (sticky side up), glueboards, Vaseline (petroleum jelly), food-grade DE, screens, caulk and vacuums; the best control is to avoid and/or exclude them.

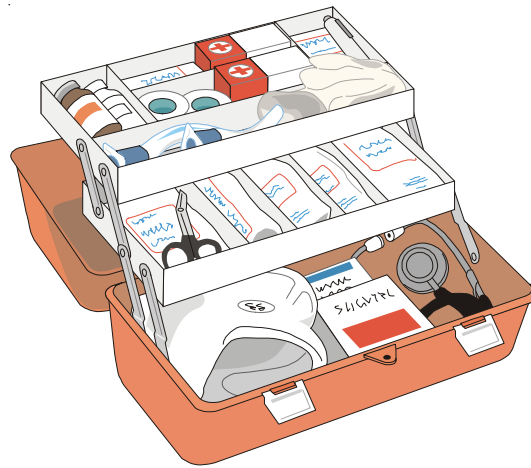
Vaseline - smeared lightly over all exposed skin will protect most people from mosquitoes and black flies.

NOTE: Not Nice to Lice® and Not Nice to Fleas® and Lice R Gone® shampoos and/or Safe Solutions, Inc. protease enzyme cleaners help relieve itching and irritations caused by poison ivy and/or insect bites and stings.

CAUTION: Remember, people may be allergic to numerous things, e.g., aspirin, zinc, thiamine chloride, milk and/or peanuts, so always treat a small area before using any product, herb, soap cleaner or material on your body. When in doubt, always see your health care professional!

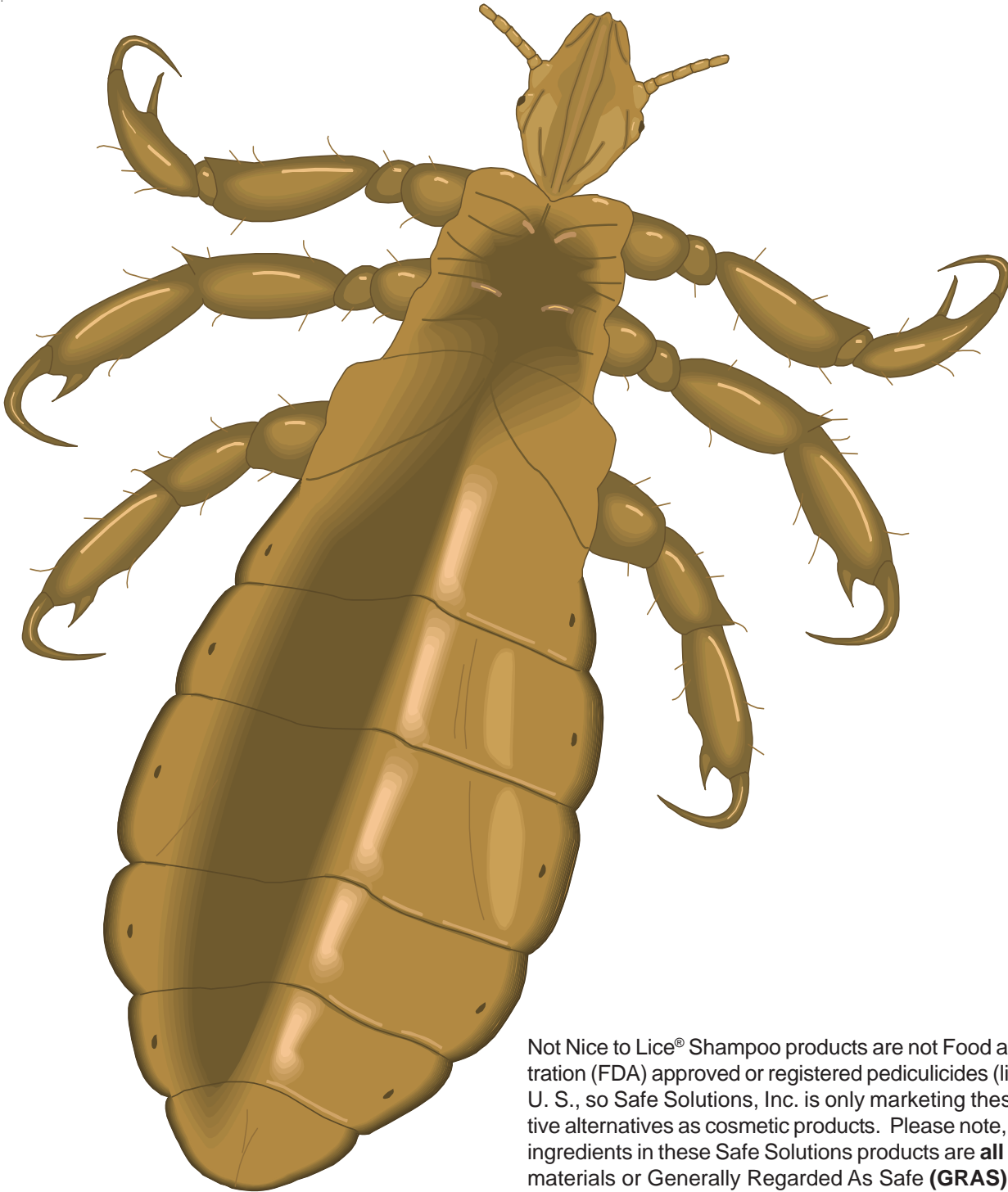
BE SURE TO READ THE APPROPRIATE SECTION FOR FURTHER COMMENTS, TREATMENTS AND/OR CONTROLS FOR SPECIFIC PESTS.

BEE CAREFUL!



CHAPTER 16

THE BEST CONTROL FOR HUMAN LICE AND SCABIES



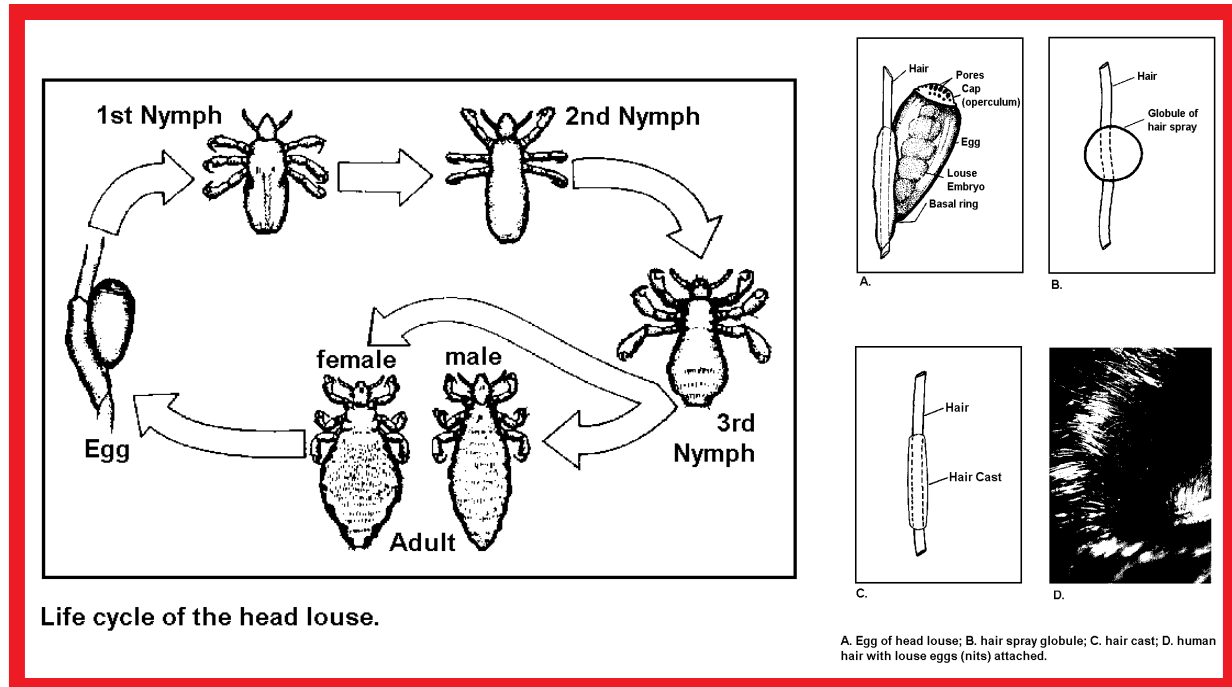
Not Nice to Lice® Shampoo products are not Food and Drug Administration (FDA) approved or registered pediculicides (lice poisons) in the U. S., so Safe Solutions, Inc. is only marketing these safe and effective alternatives as cosmetic products. Please note, however, that the ingredients in these Safe Solutions products are **all** either food-grade materials or Generally Regarded As Safe (**GRAS**) by the Food and Drug Administration and many other Government Agencies. **Lice R Gone®** is registered as a FDA Medical Device.

ORDER ANOPLURA

FAMILY PEDICULIDAE

Three Types of Human Lice

Are you having a lousy time?



The head louse (*Pediculus humanus capitis*) (DeGeer), **the body louse** (*Pediculus humanus humanus*) (Linnaeus) and **the crab louse** (*Phthirus pubis*) (Linnaeus) all occur on humans. All three cause considerable skin irritation as they feed on human blood or crawl on the body. Typhus, impetigo, trench fever and relapsing fever have all been transmitted by body and head lice. Scratching can lead to secondary bacterial infections leaving children feeling achy, feverish and/or lethargic. Human lice can establish and maintain themselves only on humans. A louse cannot hop or jump. They can, however, crawl fast. They are usually transmitted only through close personal contact. They are less frequently transmitted through the sharing of personal articles or toilet seats. For head lice, this includes combs, brushes and other grooming aids, hats, headbands, helmets, caps, headrests, wigs, curlers or other headgear, especially when these items are stored in shared lockers. They spread or infest by crawling, they live by biting and sucking blood from the scalp and can survive for up to 48 hours off a human head, and the nits on a hair shaft can survive from 4 - 10 days - so vacuum thoroughly and/or spray/clean with diluted enzyme cleaners or peppermint soaps. Head lice infestations have been a problem a long time - Pliny, a Greek naturalist (23-79 AD) suggested bathing in viper broth. Montezuma paid people to pick nits off his subjects, dried them and then saved them in his treasury. W. Coles in his 1657 book *Adam in Eden: or Nature's Paradise* noted that the oil from hyssop (*Hyssopus*) "killeth lice." Nicholas Culpeper in his 1681 *The English Physician Enlarged* recommended tobacco juice to kill lice on children's heads, a very early reference to the use of tobacco as an insecticide poison. Medical historians trace head lice infestations back 9,000 years! In the U. S. head lice are not "known" to spread disease or cause serious injury - they are only considered to be "repugnant". Like other U. S. public health agencies, the National Center for Disease Control and Prevention have never tracked head lice outbreaks, said official, Tom Skinner. Sometimes called "mechanized dandruff." **Head lice may be nasty, itchy and very contagious, but the poisons sold to get rid of lice are even worse.** Among the reactions to poison shampoo or lice "treatments" are seizures, mental retardation, many different allergies and respiratory problems, strange tingling, burning, itching, attention deficit disorders, brain tumors, leukemia, cancer and death. **We do not suggest the use of poisons to control lice.**

Head lice and body lice, which are different forms (subspecies) of *Pediculus humanus*, are very similar in appearance. Lice are wingless insects whose legs have claws that grip and hold onto hair shafts. Their abdomens are distinctly longer than they are wide. They have 6 pairs of breathing spiracles. Their color, which varies from dirty-white to rust to grayish-black, usually approaches the hair color of the host. Head lice almost always occur on the head where they attach their eggs (nits) to the hair; body lice prefer to live in the seams and linings of unwashed clothing, blankets and sheets from which they periodically crawl onto the skin to feed. Although body lice usually deposit their nits on unwashed clothing fibers, the nits are sometimes found on body hair as well. Head lice can change to become the color of the host's hair.

Crab lice live only on the hairy portions of the body. Their legs are adapted to grasp hairs which are rather widely spaced, and for this reason, these lice prefer the pubic and perianal regions. However, they can be found in eyelashes, head and arm pit hair.

Female head lice produce from 50 to 150 eggs (6 to 10 nits per day) which they usually attach to hair behind the ears, on the nape of the neck and occasionally to other body hairs. Nits may also be found in sports headgear, hats, combs, barrettes, scarves, brushes, etc. and other common means of infecting a host. The incidence of infestation is greater among persons with long or dense hair, particularly when regular and thorough grooming and washing is neglected. The eggs hatch in 5 to 10 days, and the young, which resemble the adults except for size, mature in 8 to 22 days during which time they undergo three skin molts to allow for their ever increasing body growth. Adults normally live only about 3 weeks or more, depending upon conditions. They do not resist starvation well - at 75° F. all head lice die after 55 hours without a blood meal.

HUMAN LICE - Three species of lice feed on man and both males and females (immatures and adults) require blood meals to complete their development. The antennae have no more than 5 segments; the head is narrower than the thorax and the thoracic segments are fused with the abdomen. The head louse or "cootie" is bluish-gray to whitish, wingless, up to 1/8" long, usually found among the hairs of the scalp. The eggs, or nits, are attached to hairs close to the skin. The body louse is similar to the head louse but is found mainly in seams of clothing, worn close to the body. Body louse eggs or nits are attached to unwashed clothing. The crab louse is a short, broad, thick-legged insect about 1/5" long is normally found in the crotch or arm pit or other body areas with pubic hair. The eggs or nits are also attached to these pubic hairs. Except for the common cold, head lice infestation is a more common infestation than all the other childhood communicable conditions combined (6 - 20 million people become infested each year with a *treatment* cost of approximately \$367 million dollars and untold contamination problems). All three lice suck human blood and are not found on birds, dogs, cats, farm animals or other hosts.

THE POISON RESISTANCE PROBLEM - Contemporary Pediatrics, Vol. 15, No. 11 noted: in the UK, children treated for head lice four years earlier with pyrethroid compounds (permethrin and phenothrin) needed at least 16 to 20 times the usual dose to eradicate another infestation. Laboratory-bred lice in this experiment died within two hours of exposure to 0.1% permethrin but lice from the heads of children who had been exposed to pyrethroid products took as long as 72 hours to die. In Israel, clinically significant resistance to permethrin occurred within 2.5 years of its introduction, a time span corresponding to approximately 40 generations of lice...Perhaps the most striking increase in resistance to permethrin has been recorded in the Czech Republic, where the concentration of permethrin required to kill 90% of head lice increased by some 500 times between 1981 and 1992!"

Christina Beckwith, Pharm D noted in her Head Lice: New and Improved?, "The Harvard School of Public Health (HSPH) is conducting a US study to determine the incidence and extent of resistance and plans to publish their results. Preliminary results, released by the NPA without the investigators' permission, appear to indicate some US lice are resistant. In a preliminary in vitro study with 209 lice from 57 children, 100% survived in petri dishes containing varying permethrin doses!"

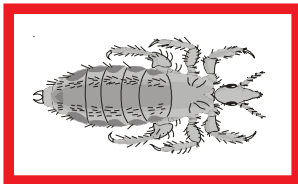
The Spring, 1996 issue of the National Pediculosis Association's (NPA) Progress noted that for the past year the NPA has been averaging 50 calls a day reporting commercial product treatment failure - in spite of this - the continued use of these toxins - dog flea and tick shampoos, lice sprays, kerosene and/or other dangerous alternatives including Lindane are (still) being used repeatedly. Lindane was the cause of at least 70% of the reported serious health reactions to lice poison shampoos. Lindane is described by its Manufacturer as a powerful contact and internal poison. Lindane has been banned in 18 countries and severely restricted in 10 others. The FDA recommends lindane only be used where other treatments are ineffective. The majority of treatment failures

involved Nix® and Rid®. Children still have live lice right after the poison shampoo. **In thousands of uses Not Nice to Lice® and Lice R Gone® have controlled resistant lice/nits safely.**

Historically, the disease typhus, with the causal agent, *Rickettsia prowazekii*, is transmitted by body and head lice, was common where people were confined together and could not wash or delouse their clothing. This disease became epidemic within confined populations such as cities under siege or armies limited to trenches or on the move and unable to simply wash and, thereby, delouse their clothes. Typhus is a fatal disease and was so pervasive it, more than wounds of war, determined who was victorious and who was defeated in wartime. Wide-spread louse epidemics actually ceased being a problem when DDT dust became available in World War II. Although body lice quickly became resistant to DDT when it was intensively and repeatedly used, other synthetic pesticide poisons were then tried. (Typhus epidemics are not known to be caused by crab louse infestations.) Even with the elimination of the large scale lice infestations, people are still puzzled and alarmed when small, persistent louse outbreaks occur. Common examples of small infestations are head louse infestations among elementary school aged children, body louse infestations on people who are unable to care for themselves, and pubic louse infestations resulting from sexual intercourse with an infested partner. Try washing with Safe Solutions, Inc. Lice R Gone® or Not Nice to Lice® Shampoo products (and if you have stubborn nits, with your favorite hair conditioner), diluted enzyme cleaners and/or peppermint soap or neem soaps, combs and saunas, or even plain soap with some borax, before using any synthetic poison shampoos. Neem extracts will also eliminate human lice. Caution: Before you apply any synthetic pesticide poison shampoos to people, first try a sauna (if your doctor permits) and/or wash the infested area with Lice R Gone® or Not Nice to Lice® enzyme shampoos - it goes farther; then comb out all nits with a metal lice or flea comb; allow wet enzymes to remain on the infested area and work for 10 - 15 minutes or until you feel the nits loosen and pull away from the hair shaft; thoroughly rinse and apply a good conditioner. If any nits remain, apply baby oil to hair and let soak overnight under a shower cap, or apply your favorite hair conditioner for 15 minutes. Then comb out remaining nits with a metal nit or flea comb. Repeat treatment(s) if necessary. You can be very helpful as a consultant on louse infestations and can provide a great service by discouraging any pediculicidal (poison) use other than as a last resort. Leaving decisions on pediculicide choices with parents, school medical personnel, physicians, or the infested individual strengthens everyone's confidence in the your technical understanding and discourages the application or spraying of any dangerous, volatile, synthetic pesticide poisons. However, it is not morally wrong to try to convince people to first try **Intelligent Pest Management®** nontoxic (personal) controls before using dangerous/useless poisons. Especially when entire families are washing everyone's hair with these poisons "just to be sure" they do not get a head louse infestation. Would you give everyone in your family penicillin as a "preventative" so they won't get strep throat? Note: Pyrethrum- or permethrin-based **pediculicides should not be used** by persons with asthma or that are sensitive to ragweed, should not be inhaled or swallowed or used near the eyes or allowed to come in contact with mucous membranes, e.g., the eyes, nose or mouth. Note: Pyrethrum and pipernoil butoxide are now considered to be carcinogenic. Lindane has been identified as both neurotoxic and carcinogenic and is already banned in 18 nations around the world. **No pediculicide poison should be used on infants, pregnant women or nursing mothers or on cut or abraded scalps.** No poison should ever be used to "treat" lice twice if it failed the first time, clearly indicating the lice may, at the very least, be resistant or immune to that particular product/poison. **There are no poisons in the Pestisafes® Not Nice to Lice® Shampoo, Lice R Gone® Shampoo or Safe Solutions, Inc. Enzyme Cleaners with or without Peppermint.**

HEAD LICE

Pedicululus humanus var capititis



Adult - Head lice spread easily and infestations often occur at all social and economic levels, especially among school children who are in close daily contact. At least 10 million children are infected each year. Infestations are called pediculosis, which is a communicable disease. They vary in color from dirty white to reddish-brown to rust to grayish black in color. If the nymphal stages are passed on a person of blonde or light coloration, the adult louse is light in color, but if they are passed on a person of dark hair coloring, then the resulting wingless adult is more

pronounced in coloration. They are small - about the size of a sesame seed. They need a warm, moist habitat. They spread by crawling. We have had some reports of a strain that appear to 'jump'. They live by biting and sucking blood from the scalp and **can not normally survive for more than 2 days unless they are on the human head. Head lice aren't nice.**

Egg - Eggs or nits (that look like tiny white or tan dots) are usually laid by the female close to the base of the hair near the scalp and they are firmly cemented to the hair. The eggs (and the empty shell) are known as *nits* and are always oval- or tear-shaped, and are glued at an angle to the side of the hair shaft. They are usually tan when alive and pearly or grayish white in color after dying. The nits usually occur near the scalp (clustered in groups), but can often be found nestled behind the ears and at the nape of the neck. The hatched egg is easily identified by its opalescent and translucent appearance. Just before hatching the eyes and other structures of the embryo can be made out through the translucent shell. On hatching, the top of the egg opens like a lid. Live nits may be occasionally found anywhere on the hair shaft, but normally they are found near the scalp and they are “super-glued” on and do not flake off like dandruff. They are so hard to remove we invented the term “nitpicking” to describe the difficulty. One louse can lay 150 nits a month (normal lifetime). They hatch in about 10 days, depending on the climate. Nits need at least 82° F.; and 70% humidity to incubate. During the incubation time the respiratory passages of the louse shut whenever the nits are immersed in water and they can survive under water for over 24 hours. Nuttall (1917) found 80% laid on hair and 20% laid on flannel. The top of the egg or operculum supplies air and humidity to the developing louse.

Nymphal stages - There are three nymphal stages, all of which resemble the adult except in size and possession of sexual organs, but they do have some change in color. During the first stage the nymph is a pale straw color and has no central nervous system (CNS) and, therefore, can not be killed using volatile, synthetic pesticide neurotoxins or by poisons that attack the CNS. The poisons and the “inerts” in these volatile pesticides can and do, however, attack your CNS! The gut of the nymph is clearly visible through the almost translucent cuticle, and when the first-stage nymphs have taken a meal of blood they are shining red in color, like *rubies*. Afterwards the blood darkens and thereafter the gut appears purplish-black. The young nymph is able to feed almost immediately after emergence and after this feeds regularly, at least twice daily. The nymphs and adults feed by pressing the front of their heads against the skin of their hosts; a series of curved teeth around their mouths then fasten on to the skin and the piercing stylets are released from a pouch where they are normally invisible, to pierce the skin. Saliva from the salivary glands lubricates the stylets and they begin to feed on you. Enzymes create an extra “molt” they weren’t anticipating and will quickly destroy live lice and help remove nits/glue. **Lice can not become resistant (immune) to Pestsafes®, e.g., Lice R Gone® or Safe Solutions, Inc. enzyme cleaners with peppermint or salt or borax or heat.**

Length of life cycle - The egg hatches within 8 - 9 days and the nymphal stages take approximately the same length of time. The life cycle takes place, therefore, every 18 days. The length of the adult stage in the male is about 10 days and in the female can vary from 9 - 22 days. A maximum of about 6 to 10 nits/eggs are laid each day by each female and the maximum hatch rate has been found to be 88%. All lice feed on blood every 3 - 6 hours and can only survive about 20 - 48 hours without a blood meal. Nits are the size of the period at the end of this sentence. At cooler temperatures (50° - 68° F.) eggs may hatch up to 30 days later.

***Pediculus humanus capitus* (DeGeer)** - Adult head lice are gray and about 1/8 inch long about the size of a sesame seed. They often have a tiny dot on their backs. They thrive only on human hair and scalps. Hatching occurs about one week after attachment. Since lice go through a gradual/simple metamorphosis, the tiny nymphs resemble adults. They grow to maturity in about 10 days. Adult lice mate and the female can lay about 50-150 eggs, but often falls short of that in her life of only several weeks. Wetting the hair and rubbing the scalp with a towel irritates the adult lice and makes them move about, aiding in their detection. You may wish to simply shave off the hair and thus remove the infestation, or you may soak the hair with baby oil until you feel the nits “move” or loosen and then use a lice comb and then shampoo, or sauna and/or wash your hair with Lice R Gone® Shampoo, diluted Safe Solutions, Inc. enzyme cleaners, peppermint or neem soap or salt water and vinegar and/or borax laundry powder before trying anything more toxic. Wash your hair with Lice R Gone®; leave on for 10 minutes or until you feel the nits move freely off the hair shaft, then rinse or comb with a metal lice or flea comb if you wish. If any nits remain, then use your favorite hair conditioner and comb them out. Then go to your public health practitioners for an examination. In the United States, lice live in the head hair of pre-schoolers and of children of elementary school age (only rarely on adolescents or adults). This could simply be because little children hate having their hair shampooed with soap. Lice scuttle about on the scalp between hairs with much more speed than expected of a small, soft, wingless insect with slender hair grasping claws on the end of blunt legs. They are very sensitive to dry heat, so we advise saunas and/or hair dryers rather than poison head/hair treatments. They are sensitive to oil, so we also advise adding a conditioner and/or soaking the hair with olive, coconut or baby oil to kill the lice and help remove the nits. Pestsafes® such as Safe Solutions, Inc. Enzyme Cleaner with Peppermint or Lice R Gone® contain basically dish soap, peppermint oil and meat tenderizer, all things to which lice are sensitive. (Be sure you

are not sensitive too!) Salt water will also kill lice, but will not remove the nits.

Close adaptation locks head lice into the human scalp in several ways. First, louse claws grasp human hair so firmly that they do not fall or wander out of it and yet they can crawl fast. Second, head lice suck blood by grasping the scalp with tiny hooks that surround their mouth, and painlessly pierce the skin with slender stylets. (Head lice feed several times a day but do not engorge themselves.) Most importantly, head lice neatly glue their eggs (called nits) to the hair shaft, usually within ¼ inch of the scalp. The tiny, pearl-like eggs (they look like miniature wax tear drops) stick alongside the hair so tightly that they can be dislodged only by being torn from their neat sleeve of biological glue by fingernails or a metal lice comb or enzyme cleaners. Usually nits found further away from the scalp than ½ inch will have already hatched; what is found is the empty shell which remains attached. The easiest way to remove cemented eggs is to cut them out or try to soak the hair in vinegar or baby oil or in diluted Lice R Gone® for 10 - 30 minutes; then comb out with a metal nit or flea comb. If any nits still remain, apply your favorite hair conditioner and recomb. How head lice are spread from child to child other than crawling is not well known, but they do not jump off or freely wander onto coat collars or hats, since they are restricted to humans with a scalp surface temperature of around 80° F. or a little more, but head-to-head contact and sharing of clothing, hair ornaments and grooming materials are thought to be the normal routes of invasion. Temperature preference and perhaps humidity is so critical that lice easily die at elevated temperatures and from excess perspiration - so sauna! Conversely, at lower surface temperatures (about 50° F.) lice become torpid and do not move or feed. A reasonable speculation is that head louse nymphs hatch from nits on hair shafts snatched by brushes and deposited on knit hats. The tiny nymphs then move toward the warmth of the next head covered by the cap or brushed by the brush. This normally limits transmission to siblings that have their hair brushed with a "family brush" or children who share knit hats or hair brushes of friends. Get your own brush and cap and become "selfish".

Louse infestations are often discovered by school teachers who are watching for the signs of itching heads and/or frequent scratching, but classroom neighbors are not as likely to be infested as are brothers and sisters or close friends that sleep over with head-to-head contact or share combs and hair brushes and/or head gear. (American) head lice have been shown by surveys in several large eastern cities to infest the heads of Caucasian and Oriental children but they very seldom infest those of African Americans (whose hair may be more oily and flattened). If you are using Lice R Gone® - wash your hair again in 5 - 10 days with the same protocol, if necessary. Be sure not to confuse nits with hair debris such as irregularly-shaped clumps of dandruff stuck to the hair shaft or elongated segments of dandruff encircling the hair shaft - that are easily dislodged. **You have to get rid of all the nits on the hair shafts to prevent a reinfestation; use a bright light, a magnifying glass and metal (nit/flea) comb.**

South Florida kids have been kept out of school 68 days at a time per Terry Meinking, B. A. at a Hyatt Regency meeting in Tampa on 5/4/99. For every 4 children found to be infested with head lice by the comb method, only 1 child was found to be infested by the visual method. The punctures the lice make while feeding and people make by scratching will transfer bacterial infections, which explains the statement "feeling lousy." Vaseline, which is a mix of mineral oil and wax, can be applied 5 times a day for a week to eyelashes if eyelashes are found to be infested with head or crab lice, **but Vaseline is very flammable!**

Head Louse Control - The diagnosis can be difficult as the insects tend to hide among the hair shafts in response to light or disturbance. Use a comb with parallel teeth spaced 0.3 mm or less apart and examine under a bright light or in sunlight. A study in Israel found 70% of infested children had only 1 - 10 lice. The real control problems are the nits that remain on the hair shaft (even if no longer on the head) and can hatch and "reinfest" for up to 10-20 days later, so soak your head with olive oil or baby oil overnight and cover with a shower cap; then use a metal nit comb and then shampoo with a conditioner in the a.m. or simply wash your hair with Lice R Gone® Shampoo for 10 minutes or until the nits pull away, and then rinse off the enzymes, lice and nits. If any nits remain, apply your favorite hair conditioner and recomb. When combing out nits, work with small sections (1" or smaller) of hair. Keep the metal comb's teeth deep into the hair from the scalp to the end of the hair. Clean your louse comb after each stroke in dilute enzyme cleaners or hot soapy water. Keep the hair moist (use a spray bottle of diluted enzymes). Adding baby or olive oil or vinegar and/or a hair conditioner may make the combing of nits out of the hair easier. Only after trying all of the alternatives, and then only as a **last** resort, there are several over-the-counter (OTC) poison preparations that can be used to **try** to eliminate louse infestations, but we believe they are all equally ineffective and dangerous even when used according to label directions. Look at your over-the-counter head lice shampoo warnings and ingredients very closely. The Rid® 0.5% permethrin spray says, "**THIS PRODUCT IS NOT FOR USE ON HUMANS OR ANIMALS.** Avoid breathing spray mist. Avoid contact with skin. Use only in well ventilated areas. Avoid spraying in eyes. In case of contact wash immediately with soap and water. Vacate room

after treatment and ventilate before re-occupying.” The Nix 1% permethrin shampoo (which is twice as strong) says leave on the (child’s) hair for 10 minutes but no longer and notes, “This product may cause breathing difficulty or an asthmatic episode in susceptible persons, etc.” The 1995 Physician’s Desk Reference notes that in all 3 mouse studies there was an increased incidence of pulmonary alveolar - cell carcinomas and benign liver adenomas in female mice at a concentration of 5000 ppm of the active ingredient permethrin in their food. This shampoo also has several interesting “inert” ingredients including isopropyl alcohol, propylene glycol, etc. The propylene glycol MSDS says, “**Avoid skin contact**”; it is used in industry as antifreeze, airplane de-icer and brake fluid. It can cause skin irritation, dermatitis, erythematous plaques, CNS depression, stupor, seizures, nausea, stinging, irritation, redness, etc. The isopropyl alcohol MSDS notes it can enter into people through inhalation, skin and/or ingestion and may cause irritation to eyes and to the respiratory tract, is an anesthetic and may also cause CNS depression. Both MSDS sheets for these “inerts” require respirators or air supplied masks in confined areas and goggles and protective gloves! Propylene glycol suggests impervious clothing and equipment! The California Department of Health Sciences warned in a 1996 report there is “circumstantial evidence” of increased head lice resistance to poisons. School health workers all over the U. S. have been saying for years the pesticide poisons “registered” for scalp use were not working any more. Prescription poison preparations, e.g., lindane, may permanently harm the patient in the attempt to kill the eggs as well as live lice. **The poison “cure”, obviously, is far worse than the “disease”.**

We do not believe any of the over-the-counter **poison** preparations are safe or that they even control lice - recently some “health” directives, e.g., The Children’s Hospital Oakland Highlight Nov. 1996 - also said these poisons do not work as directed and they have mislead people by saying you must leave these poisons on for 3 - 8 hours (under a shower cap)! **See Chapter 13 and Chapter 1 on Permethrin as a poison.** An Israeli study published in the British journal “Medical and Veterinary entomology” in 1995 noted that Israeli scientists blamed permethrin in particular for the head lice resistance they found. “The results suggest that resistance to pyrethroids has developed rapidly among head lice since permethrin was introduced (in Israel) in 1991.” The first application supposedly *kills* all of the live lice. Viable nits hatch in 6 - 10 days and the second application supposedly *kills* that *new* population. These lousicides (poisons) are applied to wet hair and after a short waiting period they are shampooed out. (Remember, most researchers and health officials will tell you virtually **any** olive oil or soap shampoo, or peppermint soap or natural soap without these poisons will kill or wash away the lice, so simply wash your head with any shampoo daily for 2 weeks.) Advise family members they should first try: hand removal with a metal nit or flea comb, a baby oil treatment, washing their hair with salt water and vinegar, a sauna, (if your doctor permits) and/or washing with natural soap, neem soap or diluted peppermint soap, or with diluted Safe Solutions, Inc. enzyme cleaners, or (better yet) with Lice R Gone® Shampoo (it goes farther) and a metal lice or metal flea comb and then rinse off and apply your favorite hair conditioner. Repeat the same process in 10 days at least be careful to not get any Lice R Gone® Shampoo in the eyes - **even natural soap burns the eyes.**

- Wash bedding and towels in hot water and knit caps in cold water and diluted enzyme cleaners and borax and dry at least 20 minutes in a clothes dryer to be sure any nits on fallen hairs are killed or removed.
- Vacuum all surfaces where children lie or play (including stuffed toys). (In day care centers and kindergartens, napping mats should be wiped with diluted enzyme cleaners and/or routinely vacuumed.) Discard the bag. Routinely mop and clean with diluted enzyme cleaners and/or borax.
- Daily vacuum and clean rugs or simply quarantine them for 10 - 14 days after vacuuming. Remember, never apply synthetic pesticide poisons to rooms, toys, or furniture surfaces. Store all other exposed items in bags for 2 weeks or dry clean. Don’t forget to vacuum the car and all (upholstered) furniture.
- Try hand or manual removal of nits using Lice R Gone® Shampoo, bobby pins, hair-clips, grooming combs, nit/flea removal combs, safety scissors, tweezers, scotch tape and a magnifying glass and a bright light, etc. Then disinfect by soaking these items and all other hair ornaments, brushes and combs in 130° F. hot water (or diluted Safe Solutions, Inc. enzyme water) for 15 minutes.
- Thoroughly check all family members at the same time and treat only those who are infected.
- It is very interesting that usually only young children get head lice and that even regular soap shampoos have removed head lice (but not their nits). Little children hate to wash their hair and cry when the soap gets in their eyes; as we get older and wash our hair more often, the incidence of head lice declines dramatically. **Even if they cry, thoroughly and routinely wash the children’s heads with diluted peppermint soap, soap with anise oil, neem soap, salt water with vinegar, natural soap or Lice R Gone® Shampoos. Be careful to keep all such materials out of the eyes!**

Safety is the most important factor in your choice of lice removal techniques because the infestation

does not present a real (USA) health risk to the host. Pediculicides are all classified as neurotoxin agents. There are no pediculicide poisons in the Lice R Gone® Shampoo and/or Safe Solutions, Inc. enzyme products.

Caution: 90% of all commercial soap shampoos use a detergent called sodium dodecylsulfate (SDS) or sodium laureth sulfate (SLES) and/or sodium laurel sulfate (SLS) that can be retained in tissues up to 5 days even after a single drop. Dr. Keith Green noted (SLS) causes improper eye development in children. SLS has a tendency to react with other ingredients to form NDELA, a nitrosamine and potent carcinogen. Researchers actually estimate the nitrate absorption of one soap shampoo is equal to eating a pound of bacon! The FDA has recently warned shampoo manufacturers of unacceptable levels of dioxin in products containing SLES. SLS is a skin irritant that can penetrate and impair the skin barrier. SLS can also enhance the allergic response to other toxins and allergens per “Dangerous Beauty” by David Lowell Kern.

Remember, decisions on the formulation/use of dangerous lousicide, treatment of head infections from extensive infestations, and so forth, are decisions that still should be made by parents and physicians. If you suspect a personal infestation, first try Lice R Gone®, Prell and/or salt water with vinegar before going to the doctor. All reported louse infestations of adolescents and adults should then be investigated by a physician; if live lice are not seen, the nits (if any) should be examined through a microscope to verify that they are not symptoms of other scalp conditions. Spend most of your time vacuuming and working on the infested person - not on cleaning or spraying the area with toxic poisons. If you clean, thoroughly vacuum and then use diluted enzyme cleaners or diluted peppermint soap. We do not recommend **any** volatile pesticide poisons. **Caution: when the “normal” poison treatments don’t work, some physicians prescribe stronger doses of permethrin, a synthetic pyrethroid, a 5% solution rather than the 1% in Nix®. But, if lice become resistant to the weaker solution, it is likely they will also resist the stronger dose (eventually) as well...and remember...the warning on the box of Rid® and/or Brite-Life® regarding “their” synthetic pyrethroid, “Not for use on humans or animals!”** Some over-the-counter poison shampoos warn you not to put these poisons on scalps that have been cut or scratched, yet virtually everyone scratches their head when they are infested with head lice. If you want some interesting reading, read the MSDS for all of the unregistered, untested “inerts” in these poisons.

BODY LICE

Pediculus humanis var corporis

Appearance - The body louse is very similar to the head louse; the body louse is usually 10% - 20% larger, has thinner antennae, not as deep abdominal indentations, with better developed abdominal muscles than the head louse.

Life Cycle

Egg - This again is generally similar to that of the head louse. The eggs are glued to fibers of clothing and are sometimes found stuck to body hairs. Most eggs are usually found in the seams of clothes which come in contact with the skin where the adults and the nymphal stages are to be found. The body louse lays about twice as many eggs as the head louse and the nits can remain dormant for a period up to 30 days.

Nymphs - Body louse nymphs spend the greater part of their time in the clothing, and feeding on the host only takes place when the host is resting or sleeping. All stages of the body louse congregate together, being attracted to each other by smell, e.g., the odor of the excrement. Body lice crawl about the clothing, generally keeping close to the host’s body, although in heavy infestations they may be seen crawling outside on the outer garments.

Length of life cycle - The body louse adults live about twice as long as head lice, are more resistant to starvation and exhibit less mortality during development.

Body lice females may deposit 200 or more eggs, usually attaching them to clothing fibers. The development period is similar to that of head lice, but they may remain dormant for up to 30 days. The life history of crab lice is



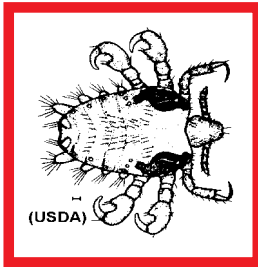
also similar except that the young require 2 to 2-½ weeks to mature and the adults normally live about a month.

Human lice usually cannot survive for long when separated from their host. Head and body lice leave the host or clothing voluntarily only when the host has died or becomes hot with fever or has gone into a sauna, or when they try to avoid strong light or to transfer to another host in close personal (sexual) contact. Human lice are completely dependent upon human blood for sustenance. Lice feed frequently, usually every 3 to 6 hours, and can not usually survive more than 48 hours away from the human body. Their bites cause bad itching and red spots about the size of a mosquito bite - but remember it may take as long as 2 - 3 weeks (or even more) for some people to experience the intense itching associated with an infestation of pediculosis.

CRAB LICE

Phthirus pubis (Linnaeus)

Appearance - This insect is easily differentiated from the head louse and body louse by the strong thick claws of the mid and hind legs, while the claws of the fore legs are long and fine. The body is broader than long, contrasting with both other species of *Pediculus humanus*.



Life cycle - The egg is slightly smaller than that of *Pediculus* and it is glued to a body hair with more cement. The egg hatches in 7 - 8 days. The three nymphal stages do not wander far from the hair, which is grasped with the tarsal claws. Several hours are usually taken to complete each bloodsucking meal. They occasionally are found on eye lashes and eye brows.

The nymphs become adults in from 13 - 17 days and it seems probable that the length of adult life is not more than one month. Fewer eggs are laid than *Pediculus*. The adult is thought to be unable to survive longer than 24 hours when removed from its host.

Crab lice usually die within 24 hours if separated from their host. This short survival and their sluggish movement inhibit the spread of crab lice, except through intimate (sexual) personal contact or in extremely crowded living and sleeping conditions where they can and do spread readily. Crab lice may be (but rarely are) spread by nits on loose hairs left on bedding, towels and toilets by infested persons.

Head Lice Overview

Many diseases affect our children today, but few are as communicable and as wide spread as head lice (*Pediculosis humanus capitis*) and few involve the repeated direct exposure of young children to dangerous, synthetic pesticide poisons - that do not even control resistant lice - some *health* departments and physicians have been misled to believe children should keep these toxins on their heads - under a shower cap - for 3 - 8 hours!

Head lice attach each nit (egg) to the hair shaft at the scalp with a waterproof cement-like substance. Although lice and nits are most commonly found at the nape of the neck and behind the ears, they can be found anywhere on the scalp or hair shafts. The grayish-white nits are shaped like an elongated football with a cap at one end to admit air and allow the young insect to escape. The young nymphs have a head plate with sharp toothlike spines (the egg-burster) they use to open the egg shell. Head lice can sometimes be found on pubic hair, eye lashes and eye brows. They can normally move about 9" in a minute at room temperature. Nuttall (1917) noted lice can survive under water for 24 hours at room temperature. People say a lot of things that are lice related, e.g., "nitpicking", "gone over with a fine-toothed comb", "a lousy time", "the nitty gritty", and "wash or get it out of your hair". Hopefully, they will soon be saying they are easily removed with a good hygiene program and/or Lice R Gone® Shampoo.

The presence of nits does not always mean that a person still has a current infestation. The nits may be left from a past infestation that no longer needs to be treated. To determine whether a person is currently infested with head lice, there must be a louse visible or usually there must be nits attached to the hair shaft 1/4" or less from the scalp. **If there is no evidence of live infestation, do not treat with any poison! Simply wash with a nit remover, e.g., Lice R Gone® Shampoo and/or a good hair conditioner. The position of nits on the hair**

shaft usually can distinguish between current and past infestation because female lice attach their eggs to the hair shaft at the scalp. In 1 week, the time it takes for a louse egg to hatch, the average human hair grows about 1/4", carrying the egg with it. Therefore, nits more than 1/4" from the scalp usually either have already hatched or will never hatch. They may remain attached to the hair shaft for months, but play no role in the transmission of head lice. Simply cut out or remove these dead or empty nits with a lice comb and/or wash with Lice R Gone®, Prell and vinegar and/or salt and/or baby oil or olive oil.

Itching is the most common symptom (caused by the blood sucking and bacterial infections, e.g., impetigo), but many people with very light infestations may experience no initial symptoms at all. Therefore, you cannot always rely on itching or frequent head scratching to detect head lice. A thorough examination of the hair and scalp is necessary to detect head lice and/or nits. Persons infested with pubic lice should be examined for accompanying venereal diseases, because there is a strong possibility that one is present with the other. Persons who think they are infested with lice should seek assistance from a physician, the health department or the school nurse and follow their instructions. These instructions may include a regular scheduled use of non-toxic Lice R Gone® Shampoo, the regular use of a sauna, daily bathing, the routine laundering of bedding, clothing and towels in hot water; and the daily washing of combs and brushes in diluted Safe Solutions, Inc. enzyme cleaners and/or borax. The entire family and all close school contacts should be routinely inspected and undergo simultaneous treatment(s) if necessary. **Try every non-toxic control including metal nit or flea combs and Lice R Gone® Shampoo products first.**

A home or school should never be sprayed, dusted or otherwise treated with insecticide poisons even when an occupant has an active head lice infestation. Lice live on their host and do not hide in wall crevices and floor cracks like cockroaches and other household pests. Treatment of homes, schools or any other dwelling with insecticide poisons would, therefore, be useless and dangerous. Cleaning of carpets, furniture, drapes, floors, etc. should be limited to simple vacuuming, or you can rinse-and-vac with enzyme or borax. Vacuuming is the safest and easiest way to remove lice or fallen hair shafts with attached nits from upholstered furniture, rugs, stuffed animals, (child) car seats, mattresses, carpets, bedrooms, mats, cots, and anything else that might have had contact with an infested child, when done - when finished vacuuming, put the vacuum cleaner bag outside in the trash. Even soap and water or borax will kill lice in bed linens, pillows, blankets and clothing if the water is hot enough (130° F.). All clothing and bedding used during the 2-day period prior to treatment should be laundered and dried in a hot dryer. Such high temperatures may be suitable for laundering purposes, but not for shampooing the head or for bathing the body. Dry heat, steam cleaning or pressing with a hot iron will also destroy all lice because they can survive only a few minutes at 130° F. Most home water heaters supply water at sufficient temperatures to kill lice and their nits. Washing in cold or lukewarm water will not harm them. An alternative method (if you can not wash or dry clean some items) is to seal clothing and other articles, e.g., stuffed animals, hats, and helmets etc. in a plastic bag for 2 weeks. Place the plastic bags outdoors on a porch or deck or in the garage even if the lice hatch in the bag - they can not survive if they are not fed. This will also kill all lice and their nits or you can simply wash all infested articles with diluted enzyme cleaners and borax. Combs, brushes and similar items can also be treated by soaking for 1 hour in Lice R Gone® Shampoo or by soaking them for 5 to 10 minutes in a pan of water heated on the stove to 130° F., or by soaking and/or washing in diluted enzyme cleaners, or diluted Safe Solutions, Inc. peppermint soap and/or borax. **Isn't it interesting** that the EPA *registered* .5% permethrin Rid® label for lice control on bedding and furniture warns "avoid contact with skin, eyes or clothing. **"This product (poison) is not for use on humans."** Vacate room after treatment and ventilate before reoccupying. Do not allow children or pets to contact treated area until surfaces are dry." While the Nix® FDA *registered* lice treatment with 1% permethrin (twice as much poison) says "Saturate hair and scalp (especially behind the ears and nape of the neck) and leave (the poison) on for 10 minutes!" **Do you really want to use poison on your kids?**

Least-Toxic Head Lice Control

- **To help identify a lice infestation,** Jennifer Campbell, LPN of Bad Axe, Michigan has the following suggestion for identifying a lice infestation. Place a piece of cellophane tape, sticky side out, on the index finger of your dominate hand. Taking a comb and gently lift up sections of hair checking for any movement. If you seen anything unusual on the hair or in the section, gently press the tape on the object and lift off. Then remove the tape and stick it on itself, trapping the object/lice and write with a ballpoint pen on the back of the tape where and when and on whom you collected it. This should assist many in identifying whether the object is a piece of dandruff or a louse.
- **To avoid becoming infested with head lice,** family members should daily shampoo with soap and

then everyone should be regularly inspected and be taught not to share other people's combs, brushes, scarves, etc. At school, children's clothing and other personal articles should be kept separate from those of other students, e.g., on pegs, in separate lockers or storage areas or on the backs of chairs). A school screening program can help keep head lice from becoming an epidemic. To help avoid personally becoming infested when you examine and/or shampoo someone else, make a cuff of duct tape (sticky side out) on each arm 7" - 9" above the wrist.

- **Do not panic and spray the school or home with any synthetic pesticide poisons.** Try washing with Lice R Gone® Shampoo and your favorite hair conditioner, oil of balsam, olive oil or Peppermint Soap or Safe Solutions, Inc. Enzyme Cleaner with Peppermint, neem soap, dish soap and/or borax. Note: Lice R Gone® not only removes the nits - it also safely removes the lice; wash again in 5 - 10 days and/or use shampoo as a (non-poison) prophylactic treatment. Note: freezing and even moderately elevated temperatures are lethal to body lice and their nits, e.g., lice die at 115° F. or 1 hour, 121.1° F. for 30 minutes, or 124.5° F. for 5 minutes, eggs less than 5 days old are killed in 5 minutes at 128.3° F. So take a sauna. Black people in the U. S. are rarely infested with head lice. This is thought to be because their hair is more oily. So, an alternative treatment is to saturate hair with baby oil at night to kill lice and nits. Wrap your head in a towel to prevent staining bed clothes. Wash hair thoroughly in the morning. Use a metal nit or flea comb to remove dead lice and nits. Routinely treat/inspect every member of the family. Daily shower with soap shampoo and practice proper personal hygiene. Avoid using other individuals' combs, hats, towels or hairbrushes, and wash or sanitize these items frequently. Bedding and clothing should be changed and washed at temperatures at least 130° F. with soap and borax and dried in a dryer frequently. Daily vacuuming of carpeting, rugs and floors and routine sanitation of locker rooms with diluted Safe Solutions, Inc. enzyme cleaners and/or borax and proper laundering can help reduce the incidence of lice.
- **Educate yourself**, your child and others about the biology of head lice, the probability of infestations and appropriate nontoxic methods for eliminating the problem. Watch for head scratching. When head lice infestations are common at school, check your child's head nightly with a bright light and comb. Begin treatment with Lice R Gone® Shampoo and/or even regular soap shampoos with hair conditioner and olive oil while combing with a specially designed metal head-lice (nit) comb as soon as infestations are detected.
 - A. **If schools have a "no nit" policy.** It would be better if children with nits could simply undergo weekly scalp exams to make sure they have no lice. The May 2001 Issue of Pediatrics noted: "Most children with nits alone will not become (lice) infected." Students should be sent home immediately with a letter explaining their infestation, the school policy and suggested controls, e.g., Lice R Gone® Shampoo and/or metal nit combs. They should be re-examined by the school nurse **before** re-admission - if still infested they should be sent home again with a second note. Upon the third notation the lice and/or nits have not been removed, we advise you direct follow-up to the local health department and/or simply have the entire family treated with Lice R Gone® Shampoo. Remember schools do not get lice - people do.
 - B. **Remove all nits** - this assures total lice control. Shave the head or give a really good G.I. or brush haircut or wash with Lice R Gone® Shampoo and then with your favorite hair conditioner; separate hair into small sections and remove any remaining attached nits with a metal flea or lice comb, baby safety scissors, or your fingernails. **Repeat every 7 days until all the lice and nits are gone.**
- **Provide each child with separate storage area for head coverings or other clothing at home and at school. Don't share towels, combs, brushes, head phones, scarves, hair ornaments, etc.**
- **Do not use any volatile, synthetic pesticide poisons** in locker areas or other places. Vacuum and mop daily with diluted Safe Solutions, Inc. enzyme cleaner and borax.
- **Daily wash all of the bedding and clothing** of the infested child in diluted enzyme cleaners and/or borax and place them in a clothes dryer at the hottest setting for 30 minutes at the same time the treatment of the hair and scalp is undertaken. Dry-clean garments that cannot be washed or store in plastic bags for at least 4 weeks.
- **Follow a program** that combines daily soap or salt water and vinegar shampoos or Lice R Gone® Shampoo and/or regular soap and/or oil of balsam or olive oil and/or peppermint or neem soaps and combing out lice at least once a week for at least 3 weeks. Have the child lie on the kitchen counter with their head in the sink with their face up. This allows you to spend sufficient time and to be comfortable as you work and helps keep the material out of their eyes. You can also use the sink's spray hose to rinse. Soak combs and brushes for an hour in dish soap and ammonia in water or a in salt water or heat in a pan on the stove, or better yet, diluted Safe Solutions, Inc. enzyme solution. The NPA had serious concerns about using boiling water and/or Lysol 2% or better because they have had reports of 3rd degree burns and/or of adverse reactions from people who have done this.
- **Use insecticidal poison shampoo preparations only as a last resort (never preventively) only after**

combing and shampooing with non-poisons, e.g., regular soap and olive oil or Lice R Gone® Shampoo or salt water and vinegar and metal flea or lice combs and saunas have proven ineffective. Remember, there are no safe pesticide poisons!

- Pyrethrin-based pediculicides active ingredients may be less hazardous to humans than those containing lindane, **but no pesticide poison is safe and they can be considered to be carcinogenic.**
- It is best never to use lindane or any other volatile, synthetic pesticide poison.
- On Tuesday 11/05/96 we were told another IPM success story - one of our schools had a teacher who unsuccessfully tried 3 different head lice poison "treatments" on her own children and continually changed and/or bought new bed linens, etc. - all of which was dangerous and/or expensive and did not work, because her children **still** had head lice. The superintendent's secretary, who had been at one of our in-service meetings, told her to wet her children's heads and shampoo for 10 - 15 minutes with ½ oz. of enzyme cleaner - she did, and of course, Safe Solutions, Inc. (nontoxic to people) enzyme cleaner - not only removed the lice, it removed the nits - now everyone in that school district is very excited about "alternative" pest control. Remember, enzyme cleaners, e.g., Lice R Gone®, especially those that contain protease enzymes, will quickly and safely destroy insect exoskeletons - when insects molt they inject protease enzymes into the "seam" of their exoskeletons to naturally open the exo-skeleton up - so they can "step out". Obviously, protease enzymes like those in Lice R Gone® Shampoo will never create immune or resistant insects like volatile, synthetic pesticide poisons do and they are virtually nontoxic to people and pets. So, we suggest you shampoo with Lice R Gone® Shampoo - that "makes the hair so slick they can not stick."
Cover the eyes with a towel in order to protect them. The last ingredient in Lice R Gone® Shampoo and in Safe Solutions, Inc. products is "peace of mind".
- If you really want a shock - compare just the active ingredients in several over-the-counter (commercial) head lice (poison) shampoos with a can of Raid® - the Raid can that warns you not to let the contents touch the skin - usually has less active ingredients/poisons! (Note: Both pyrethrin and piperonyl butoxide are now considered to be carcinogenic!) There is twice as much piperonyl butoxide (PBO) in the head lice shampoo as the Raid. There is only 0.4% pyrethrins in the Raid® poison can and the can cautions you not to get **any** of the spray on you or your clothing, but the head lice poison shampoo tells you to put it **all** on your child's head! Pyrethrin poison formulas with 5% concentrations of permethrin are now being prescribed with some physicians recommending leaving the **entire** permethrin poison shampoos on your child's head for 1 - 2 hours instead of the 10 minutes suggested on most labels. **Stronger poisons and increased exposure time makes toxic reactions far more likely!** Would you spray your child's head with Raid? Then, why would you use an even stronger poison with which to soak your child's head? for 10 minutes, 3 - 8 hours or longer? **Will that really give you peace of mind?**
- Be sure you routinely clean all bedside furniture, classrooms, ambulances, and school buses with diluted Safe Solutions, Inc. enzyme cleaners. You can spray the furniture and floors with Not Nice to Bugs™, an EPA exempted formula.

Note: Confusing nonviable eggs with living nits is common, as is prescribing insecticide poisons over the phone without any inspection of the scalp or eggs with a lens or microscope. Both situations may result in unnecessary exposure to a toxic pesticide poison and should not be tolerated.

Crab or Pubic Lice Overview ***Phthirus pubis* (Linnaeus)**

Adult crab lice are only a little over half the size of body or head lice, rarely more than 1/12" long; their last two pairs of legs terminate in hooked mitts that resemble crab claws. These lice are confined to coarse pubic hair and sometimes armpits, eyebrows and eyelashes. Pubic lice move very little in the pubic region and produce few eggs. The most common method of transmission of crab or public lice is by sexual intercourse. When infested pubic hair detaches, lice can hatch on underwear, towels, in beds, or on toilet fixtures. If their immediate environment is above 50°F., a pair of public lice could infest another person without personal contact.

Crab or Pubic Lice Control

Accurate, calm communications are invaluable in explaining pubic louse infestations and making recommendations for their control.

- Use diluted Safe Solutions, Inc. Enzyme Cleaner with Peppermint to clean and Lice R Gone® Shampoo or neem soaps, or borax and/or sauna. Tide soap pastes and thyme pastes have also been used successfully.

- Routinely wash bedding and underwear. Use 2 oz. Safe Solutions, Inc. Enzyme Cleaners with Peppermint and ½ cup of borax.
- Use detergents, diluted enzyme cleaners, ammonia and/or disinfectants in bedside furniture, toilets, seats, floors and/or general clean-up.
- Daily vacuum and then mop with diluted Safe Solutions, Inc. Enzyme Cleaner and borax.

Least-Toxic Crab or Pubic Lice Control

- **If your pubic area itches, seek diagnosis immediately;** there is no reason to suffer unnecessarily. Moreover, if you wait, you may infect others. Note, however, that itching does not necessarily indicate pubic lice - there are other, noninfectious causes of itching in this area, including heat.
- **If pubic lice are diagnosed,** wash bedding and clothing in diluted enzymes and/or borax and/or place them in a hot clothes dryer. If you apply an insecticide poison to your pubic area (very dangerous) do so only as a last resort, or because your doctor has prescribed them. Simply going into a sauna or shaving the affected area and then washing the skin vigorously each day with plain old hot soapy water will usually eliminate the lice. Coconut- or olive-oil-based soaps, e.g., diluted peppermint soaps, have natural insecticidal properties and should be used first. Small infestations may also be cut or shaved off and/or combed out and/or try Lice R Gone® Shampoo, neem soaps, diluted Safe Solutions, Inc. enzyme cleaners and/or oil of balsam or oil of anise and/or some diluted peppermint soap with salt and/or borax laundry powder or simply salt water.
- Pyrethrin pediculicides or the pyrethroid NIX are supposedly more effective than lindane (gamma-benzene hexachloride) and are less toxic. Pyrethrins are available over the counter in local drug stores; NIX with permethrin is only available by doctor prescription. **Use “registered” poisons only as a last resort.**
- **Make sure your sexual partner(s) are alerted to the problem,** educated about the infestation, examined and treated, if necessary.

BODY AND HEAD LICE OVERVIEW

Pediculus humanus (Linnaeus) and/or *Pediculus humanus capitus* (DeGeer)

Body and head lice are virtually indistinguishable in appearance and life cycle; however, their behavior is very different: Both suck blood, but body lice engorge themselves, feeding to the point that their abdomens become purple and distended. Body lice are easily reared on rabbit blood after a period of assimilation but head lice can only be successfully reared on humans. Body lice harbor on clothes, hiding along seams and moving to the body to engorge. They do not usually deposit their eggs on body hair or head hair but on clothing. While body louse epidemics can be controlled on humans by emergency applications of dangerous synthetic pesticide poisons (dusts usually), we believe control is best maintained by daily baths and daily cleaning and washing of clothes using diluted enzyme cleaners and/or borax and (if your doctor permits) saunas. Try using diluted enzyme cleaners and/or borax to wash infested clothing. Note: Safe Solutions, Inc. enzyme cleaners and shampoo products may “eat” some natural dyes.

Body lice, historically the most common human louse, are now very rare in the United States. Infestations appear on those who cannot take care of themselves like homeless individuals who can not or choose not to daily bathe and to daily remove their clothes for cleaning and washing. Infested clothing passed from one individual to another also is a common method of transmission. Wash with Lice R Gone® or enzyme cleaners or peppermint soap with borax. The body louse’s preference for tight places in clothing earns it the nickname “seam squirrel.”

Body Louse Control

Some general application volatile, synthetic pesticide poison formulations are labeled for spraying but are of little value and very dangerous. Try using borax, salt, diluted Safe Solutions, Inc. Enzyme Cleaner with Peppermint and/or Lice R Gone® Shampoo first.

- Clean or wash clothing, bedding, etc., with detergents or diluted enzyme cleaners and/or borax to kill lice.
- Daily bathe with diluted Safe Solutions, Inc. enzymes to detach and kill moving lice on the body.
- Use detergents, Safe Solutions, Inc. Enzyme Cleaner or shampoos and/or disinfectants and/or borax to clean bed frames, bedside furniture, ambulances, ambulance and hospital equipment.
- Counsel occupants carefully to control emotionally-charged situations and prevent louse reinfestations.

Least-toxic Body and Head Lice Control

To control body lice daily change into clean underwear and clothing - remember, simple laundering kills lice in 5 minutes, eggs or nits in 10 at 130° F. With daily showers and frequent changes of properly laundered clothing, a body lice infestation will eventually end without any pesticide poison treatment. For head lice: Never borrow and use anyone's hat, helmet, wig, scarf, comb or brush. Use diluted Safe Solutions, Inc. enzyme cleaners and/or oil of balsam or oil of anise, and/or borax and/or peppermint (especially with enzymes) or neem soap and/or Lice R Gone® Shampoo. **Be sure you are not sensitive to any of the above-mentioned products.**

Scabies

Scabies is a contagious (catching) disorder of the skin caused by very small, wingless insects or mites called the Human Itch mite or Scabies itch mite *Sarcoptes scabiei* var. *hominis* (Hering). The female mites burrows into the skin where she lays 1 - 3 eggs daily. A very small, hard to see, zig-zag blister usually marks the trail of the insect as she lays her eggs. Other more obvious symptoms are an intense itching (especially at night) and a red rash that can occur at the area that has been scratched. The most common locations for scabies are on the sides of fingers, between the fingers, on the backs of the hands, on the wrists, heels, elbows, armpits, inner thighs and around the waist (belt line). They also infest various body orifices including noses, ears, etc. Anecdotal comments have noted they are more visual between 4 - 6 p.m. If untreated, the female will continue to lay eggs for about five weeks. The eggs hatch and the new mites begin the cycle all over again. The mites themselves are too small to be seen without magnification. One of the great problems with scabies always has been misdiagnosis. Scabies is spread by personal contact, e.g., by shaking hands or sleeping together or by close contact with infected articles such as clothing, bedding or towels. It is usually found where people are crowded together or have frequent contact, and is most common among school children, families, roommates, and sexual partners. Scabies can be spread by the mite itself or by the egg. Prompt action is required to rid a person of the mites and eggs. Sulfur has been used (6 - 10% in lotion or cream) since Roman times as a scabicide, but you might be allergic. Castor oil continually applied for 8 hours may suffocate the females. Take Not Nice to Toxins®.

If you think your child or someone else in the family has scabies - Try a sauna and/or try bathing, washing or soaking in diluted Lice R Gone® Shampoo or diluted Safe Solutions, Inc. enzyme cleaners, sulfur and/or borax - then call your medical provider to be sure you are no longer infected.

- Try Lice R Gone® Shampoo and/or Not Nice to Skin Irritations™ and/or Safe Solutions, Inc. Enzyme Cleaners with Peppermint and borax or salt or a sauna first.
- We have anecdotal testimonies that taking Not Nice to Toxins® along with diluted Safe Solutions, Inc. enzyme treatments speeds the control of scabies.
- Carefully make any application of any poison lotion only according to the doctor's specific written instructions.
- Examine all other family members carefully for the presence of scabies - use a magnifying glass.
- To avoid reinfestation, all clothing, towels and bedding should be thoroughly laundered once all those with scabies begin their treatment. Use hot water over 120° F. (equal to hot tap water in most homes). Try washing in diluted Safe Solutions, Inc. enzyme cleaners or 2 oz. of Lice R Gone® and ½ cup of borax.
- Combs, brushes, barrettes and anything with which your child has had contact should be soaked in hot water (over 120° F.) and Safe Solutions, Inc. enzyme cleaners or shampoos or borax for at least 15 minutes.
- Periodically check your child for symptoms which may indicate reinfection. Expect the rash to take at least two weeks to clear up.
- In most cases your child can return to school after the first treatment and after all clothing, towels and bedding have been washed.

Prevention

- Try routinely using a sauna - try bathing in salt water, soaking or washing in diluted enzyme cleaners and/or borax and/or sulfur. Try Lice R Gone® Shampoo or Not Nice to Skin Irritations™.
- Regularly change and wash all clothing, bedding, towels and under wear with borax and enzyme cleaners.
- When laundering towels, clothing and bedding use hot water and enzyme cleaners and/or borax.
- Children should not share clothing or other personal articles such as hair brushes, combs or towels with one another.

- When an outbreak of scabies is reported be alert for symptoms in member of your family.
- If your child has scabies, please notify the school authorities so the school will be alerted to check for any outbreak.

Please also see Chapter 20 for more on scabies.

The above measures are suggested to help prevent reinfestation. However, even the medicated (poison) lotion treatment for scabies does not provide long-term protection and resistance and/or reinfestation is always possible. So watch and practice proper prevention - Remember to try to avoid the use of poison on your person or child at all costs. There has been some discussion of using ivermectin (orally) to control scabies. Try Not Nice to Toxins® first.

Testing - According to the American Academy of Dermatology the most common test involves applying a drop of sterile mineral oil to the suspected lesion. The site is then scraped with a scalpel and the scrapings are transferred to a slide. Under a microscope, the doctor should be able to find scabies mites, their eggs and/or feces. Another option is an ink test, in which the doctor applies a blue or black felt-tipped pen to the suspected areas. Then the skin is cleaned. Mite burrows can be revealed if the ink sinks into them.

Spot Treatment(s) - Take ½ oz. of Safe Solutions, Inc. Enzyme Cleaner or ½ oz. of Lice R Gone® and dilute in a cup of water. Put a (1" x 1") gauze pad over the infested area(s) and keep the pad(s) moist (using an eye dropper) for at least one hour (or spray as needed). Use this technique on the infested area(s) daily for at least 2 weeks and/or as needed.

Bathing - If you decide to use Lice R Gone® or diluted Safe Solutions, Inc. Enzyme Cleaner, use no more than 2 oz. per bath (You can also add 1 cup of borax or kosher salt to your bath water.), add body temperature water (not hot) up to your hips and soak for at least 30 minutes. Use a wash cloth and keep the entire body wet. **Keep out of eyes.** Bathe in solution at least once a week for 2 - 3 weeks and/or as needed.

SEVERAL "LAST" TOXIC CONTROL CAUTIONS/WARNINGS

Resistant lice infestations are so common now that people are using these dangerous over-the-counter poison shampoos for far longer periods or more frequently than they should and if you think this is "bad" - on 11/1/96 Warner Lambert manufacturer of the product Nix® received FDA approval to market this poison as a prophylactic agent! - Lice are already resistant to permethrin poison as reported in the U. S., Canada, the U.K., Israel and Czechoslovakia - but children are not resistant to these poisons. In the Winter/Spring/1997 issue of NPA's Progress a mother who lost her son to leukemia after she repeatedly shampooed his hair to "prevent" lice found an issue of Chemical Engineering News (in order to find a correlation with Nix® and Lindane) which had an article on the phasing out of chlorinated hydrocarbons. It included a specific chart which included a listing of endocrine disrupters. Synthetic pyrethroids such as permethrin found in Nix® were included in the chart with different herbicides, fungicides and pesticide poisons. **They were all in the same category in terms of the health effects - and the negative effects were many!**

"Treating" actual lice or scabies infestations with lindane can cause many adverse health problems including permanent seizure disorders and severe mental retardation. In February, 1993, Barre National, a generic lindane lotion manufacturer, settled the Santiago family's Massachusetts lawsuit for severe brain injury. Previously the pharmacy that sold the poison had settled with the family. In 1986, a pediatrician prescribed 2 ounces of Kwell (1% lindane) lotion to treat Jose Santiago's scabies infestation. (The Kwell brand product has been withdrawn from the market.) The pharmacist sold Mrs. Santiago 4 ounces of a generic brand. Mrs. Santiago applied it to her baby nightly for a week. Today, 9 year old Jose has a permanent seizure disorder and has only developed to the level of a 3 year old. Lindane is an organochlorine pesticide poison in the same family as the banned carcinogens DDT and chlordane. Lindane has been linked to serious brain injury and seizure disorders, and it is suspected of causing cancer, birth defects, fetal toxicity, developmental neurotoxicity, blood dyscrasias and reproductive disorders. In 1983, Public Citizen's Health Resource Group petitioned the FDA to ban all medicines containing lindane, as more seizures and brain damage kept being reported.

The National Pediculosis Association (NPA) had an article in the spring 1994 NPA's Progress written by a school nurse, Judy Magee. In 1992 she conducted a survey of 27 families with 119 children. She found: (1) 23% of the

children had been “treated” with (doctor-prescribed) lindane. Only one of the six families said they used the lindane as prescribed. Most used this dangerous carcinogen more frequently, left it on longer or incorrectly used it with an oil based product. (2) Over the counter lice control products containing pyrethrins or pyrethroids were used on over 90% of the children during the past year. Only 18% of the families surveyed used the poisons according to label direction. (3) 32% of the children were “treated” with dangerous “home remedies.” One mother rubs Black Flag Roach Killer into her children’s hair every day. Raid, flea soap, kerosene and/or the illegal roach product Chinese Chalk were also used. (4) The label directions on common lice poison products are written at a ninth or tenth grade reading level. One-third of U.S. adults read at or below the eighth grade level. One-quarter of the families Judy Magee surveyed could not read English.

The June 1998 issue of the *Landsculptor* noted: **6 year old girl serious after hair washed in pesticide**
Oklahoma City (AP) — A six-year-old girl whose hair was washed in an agricultural-strength pesticide was in serious condition Friday in the hospital. The man who washed the child’s hair Wednesday told police he didn’t realize the potency of the Diazinon he used to try to kill head lice. The chemical was intended for licensed commercial use only. It has a neuromuscular paralyzing agent that is extremely toxic to humans. The child went into cardiac and respiratory arrest after her mother’s friend washed her hair at the kitchen sink. The man called 911 when she stopped breathing and police used CPR on the child until they could reach paramedics. The doctor who treated the girl said it could be weeks before they can assess any permanent damage. “The girl had CPR very quickly and that is beneficial,” he said. “But she received a very large dose on an absorptive surface, so it will take a while until the poison runs its course. We washed her hair over and over again and she still smelled strongly of the chemical.” The detective investigating the case said the girl’s mother told him she got the container of Diazinon while cleaning an empty real estate property. The container was clearly marked with poison warnings.

In May, 1994, the federal German Environmental Protection Agency issued a warning about the indoor use of any insecticide sprays containing pyrethroids. Pyrethrins are derived from a chrysanthemum flower; 2000 years ago the Chinese use dried flowers containing pyrethrum to kill fleas and lice. Synthetic pyrethroids were initially developed to be synthetic analogs to pyrethrins, but molecularly their structures have greatly diverged. Pyrethroids kill by affecting the nervous system, and their mode of action appears to be similar to DDT’s. Many pyrethroids contain halogens, e.g., chlorine, bromine or fluorine atoms and as the German EPA warns they also attack human health. Permethrin, resmethrin, allethrin, tetramethrin, cyfluthrin, fluvalinate, fenvalerate and phenothrin are all synthetic pyrethroid poisons. The unregistered roach killer Chinese Chalk appears to contain a very toxic pyrethroid called deltamethrin. **We never advise using any volatile, synthetic pyrethroid or lindane or malathion shampoos on your child. We also advise not to use any enzyme product that contains over 1% protease enzyme.**

Even the least-toxic, over-the-counter pesticide poison shampoos or lotions containing pyrethroids (e.g. permethrin) or pyrethrins can cause many health reactions in many humans, e.g., many different allergic and respiratory problems (especially severe in asthmatics) and a strange tingling, itching and/or a burning skin sensation called paresthesia are common health complaints. **That is why they have so many health warnings on them.** Piperonyl butoxide (PBO) is a synergistic toxin added to many insecticide poisons, especially to pyrethrin and pyrethroids, to make them more lethal “to insects.” PBO makes it harder for insects to detoxify (and anything else to detoxify, including you.) The Eleventh Edition of the Merck Index on page 1266 under Pyrethrin has this caution: Can cause severe allergies, dermatitis, systemic allergic reactions. Large amounts may cause nausea, vomiting, tinnitus, headache and other CNS (Central Nervous system) disturbances. (Note: Both pyrethrin and piperonyl butoxide are now considered to be carcinogenic.) In Shirley A. Briggs’ “Basic Guide to Pesticides” she notes that acute (one time) oral exposure to permethrin has a low to high toxicity, that nothing was known about acute dermal toxicity and that acute inhalation toxicity was also low to high and that long-term or chronic toxicity could cause blood damage. There is a Washington Post article that quotes Cheston Berlin Jr. a pediatrician and pharmacologist as saying “many doctors are recommending to their patients several different lice shampoos that are available without prescription. Most rely on the chemicals permethrin and pyrethrins as active ingredients, which are (supposedly) “nontoxic” in humans because they are so rapidly metabolized.” Someone ought to tell the good Doctor what piperonyl butoxide does - it stops this metabolizing process and is twice as strong in these shampoos than it is in a can of Raid®! The eighth edition of SAXS Dangerous Properties of Industrial Materials notes, “Piperonyl Butoxide (C₁₉H₃₀O₅) Safety Profile: Poison by skin contact. Moderately toxic by ingestion and intraperitoneal routes. An experimental teratogen. Experimental reproductive effects. Many glycol ether compounds have dangerous human reproductive effects. Questionable carcinogen with experimental tumorigenic data. Mutation data reported. Combustible when exposed to heat or flame; can react with oxidizing materials” SAXS also noted,

“Pyrethrins Safety Profile: Moderately toxic to humans by ingestion. Poison experimentally by ingestion, intraperitoneal and intravenous route. Experimental reproductive effects...can cause gastrointestinal, respiratory and central nervous system effects. A dose of 15 grams (only a little more than ½ ounce) has caused the death of a child. Chronic exposures can cause liver damage.” A 37-year old woman developed severe shortness of breath five minutes after beginning to wash her family dog with D-Flea® insecticide shampoo containing pyrethrin. Her death shortly after her arrival at the nearest hospital was attributed to sudden, irreversible, bronchial spasm from exposure to the pyrethrin shampoo. According to a report by Paul M. Wax of Rochester, New York - Clinical toxicology (32:4, 1994) - NPA noted that while this report was not associated with head lice, the NPA has had reports that are using pet (poison) shampoos on children - because of all the “treatment” failures they have been having with commercially available lice treatments/poisons. If you think the Raid® example was bad, I noticed an advertisement from FMC® in the May 1998 Service Technician/PCT that proudly proclaims the termiticide (poison) they sell to use against termites is the same active poison ingredient used as a lice shampoo for children! Then FMC® notes that in soil degradation studies conducted all across the country this termiticide poison (permethrin) has been shown to be the longest lasting soil poison! - Implying that if your children get lice you can simply have the termite man spray their heads with the longest-lasting soil poison on the market today! Amazing! **Many thousands of people have safely gotten control of resistant head lice and nits with Lice R Gone® Enzyme Shampoo and Nit Remover.**

“Our” Environmental Protection Agency (EPA) is not expected to make a decision on the re-registration of PBO until at least 1996. “Our” Food and Drug Administration (FDA) **still** maintains that lindane products are “safe and effective when used as directed!” This in spite of all of the contrary health evidence **and** the federal law that clearly states it is illegal to say any pesticide poison is “safe”. On March 16, 1994, “our” EPA stated that lindane will remain on the market while it (slowly) compiles more health data on its risks. Note: way back in 1977, EPA initiated a special review of lindane due to all of the known and suspected health problems and negative environmental effects **then** — yet no serious action has yet been taken. Prescription lindane lice and scabies poisons are **still** being used on children by family members and in hospitals, schools and other institutions. Lindane is **also still** being used to *treat* Christmas trees, agricultural seeds, livestock, pecans, logs and lumber, ornamentals, forest trees, pets, households and other buildings and assorted fruits and vegetables! Bon appetit!

Propylene glycol is used as an “inert” in many over-the-counter shampoos. The Spectrum® Material Safety Data sheet notes propylene glycol’s potential acute health effects as: very dangerous in case of ingestion. Slightly dangerous to dangerous to dangerous in case of skin contact (irritant), of eye contact (irritant), of inhalation. Very slightly to slightly dangerous in case of skin contact (permeator). This product may irritate eyes and skin upon contact.

Intelligent Pest Management® Lice - Typical First Strikes by Housekeeping & Maintenance

1. Thoroughly vacuum each room daily wherever lice have been a problem and spray carpets and floors with Not Nice to Bugs® or 1 oz. of Safe Solutions, Inc. Enzyme Cleaner with Peppermint (per quart of water) or mop floors with 1 oz. Safe Solutions, Inc. enzyme cleaners and borax.
2. Give parents and teachers a copy of this entire chapter on Lice.
3. Give whoever asks 2 packets of Lice R Gone® Shampoo for each child and this chapter. This non-poisonous shampoo makes the hair so slick they can’t stick and lice can not live off the body for very long. You only need to give one bottle of Lice R Gone® to treat an entire family. (Only ½ oz. of Lice R Gone® will remove the lice and nits on a long-haired person in 5 - 10 minutes.) **If you have been using other pediculicides, this “treatment” may have literally welded the nits to the hair shaft and it may take several more minutes and/or shampoos to remove these “treated nits.**
4. Assign each child his/her own locker or hook.
5. Read the entire chapter.

Note: Lice are host specific; there are lice that attack goats that will not attack cattle. There are lice that are common external parasites affecting cattle, sheep, goats, swine, poultry and other livestock. Many organic farmers are looking for safe ways to control these pests without using dangerous, synthetic, chemical insecticide poisons. **They should first try a fine-toothed metal lice or flea comb, Lice R Gone® or Not Nice to Fleas® Shampoos or diluted Safe Solutions, Inc. Enzyme Cleaner.** Vigorously shampoo with Lice R Gone® Enzyme Shampoo for 10 - 15 minutes and then, while still wet, comb with a regular comb to detangle the hair and then a fine-toothed metal flea or lice comb should be used to comb 1” sections of hair in order to remove the loosened nits.

Then manually inspect the hair for any remaining nits before you rinse.

There are two kinds of lice that affect cattle/cows: biting lice and sucking lice. Lice are passed between animals as they feed or crowd together. Biting lice move along the topline (spine) and are about the size of a pin head, straw-colored and soft-bodied. Biting lice feed on dead skin and hair follicles. They are very common on cattle, sheep, goats and swine. Sucking lice are blue-black and very small; they are attached to the skin. Inspect for them by scraping the skin with a knife and shaking the scrapings onto a stiff piece of white paper. Wash or (better yet) dip each animal from nose to tail with Basic H[®] or another natural soap or diluted enzyme cleaners or the veterinary put-up of Lice R Gone[®] Shampoo and borax. Repeat treatment in 2 - 3 weeks. The enzyme cleaner wash should still be effective in a dip tank and should control many other ectoparasites. Mix at a rate of 1 quart of Safe Solutions, Inc. Enzyme Cleaner with Peppermint to 50 gallons of water.

The word "lice" in Hebrew is "kinim" - one of the plagues God sent to punish Egypt was lice - even to this day parents and farmers respond to lice like they are truly plagues. Exod. 8:16-18

A staggering 20 million Americans find out each year we live in a lousy world - when they become infested or plagued with lice! The really lousy part of this is many are *treated* repeatedly with dangerous, volatile, synthetic pesticide poisons that no longer control the lice; some people have *treated* their children 10, 20 and even 30 or more times with over-the-counter poison shampoos without getting rid of the lice!

Caution: Before "treating" with any volatile pesticide poison shampoo or lotion or even a regular soap shampoo, read the Material Safety Data Sheets (MSDS) for not only the active poison ingredient, but also for all of the "inerts." Never apply any pesticide poison shampoo in the shower. **Be sure to cover the eyes with a towel to protect them.** The warm, close environment can allow a dangerously high amount of the poison to be absorbed. Observe all warning labels. Do not use a shower cap. These "registered" poisons are especially dangerous for pregnant or nursing women, children younger than 2 months, or anyone with asthma.

Start combing - Once lice are detected, plan on spending one full day for each initial treatment, then daily for at least 2 weeks. Give yourself at least an hour per head - and with long hair, as much as two hours per head. Make sure your child is comfortable and occupied. Use an entertaining video, arts and craft project or coloring book to keep your child entertained and engrossed. Use a bright light, magnifying glass and metal (flea/nit) comb. Comb through each strand from top to bottom, removing nits with fingernails, combs, blunt scissors or tweezers. If the nits will not budge, snip off the hair. **Recheck your child's head every 3 - 4 days for several more weeks.**
Start cleaning - Everything that has been in direct contact with the infected child - bedding, clothing, towels, toys, dolls, cars, furniture, hats, combs, brushes - must either be vacuumed, laundered or dry cleaned daily; any items that can not go through the washer or the dryer or be thoroughly vacuumed should be placed in sealed plastic bags and kept isolated for at least 2 weeks. **Be sure to remove all nits!**

The 1997-1998 head lice season had been particularly bad. Even in February, 1998 school nurses and parents were still telling us that children had their head lice "treated" with poisons 10 - 20 or more times! Some children's parents were using over-the-counter poison treatments virtually daily to treat" the resistant lice, even though the poison shampoo labels clearly warn people not to use these toxins more than once every 2 weeks! Never use any volatile, synthetic pesticide poison more than twice after it fails the first time! Lice R Gone[®] Shampoo does not contain any registered pesticide poisons and has safely controlled even pesticide resistant lice.

Enzyme Cleaner/Shampoo Caution: Enzyme cleaners are also used to clean contact lenses; after rinsing, the contacts are put directly into the eyes. This is the safest way to clean contact lenses. Occasionally someone will have a sensitivity to enzymes and should avoid contact with all enzyme cleaners or shampoos. Enzyme cleaners are very efficient cleaners; before using them on anyone else I washed my own hair with the concentrate (not diluted Not Nice to Lice[®], which has been improved and is now called Lice R Gone[®]) for over 5 years and even though I am chemically sensitive I never got any reaction. At the time I rewrote this Chapter 16, I personally saw that thousands of children in our schools (over 60,000) had used Not Nice to Lice[®] (and over 20,000 had used the vastly improved Lice R Gone[®]) and had safely removed all of their nits and lice and never got any reaction; only a few times I have heard of there have been stinging eyes from the Not Nice to Lice[®], but flushing with water solved the slight eye irritation. Pediculicides or poison shampoos can kill people and do not control lice or nits and comparing these dangerous, useless poison shampoos with Not Nice to Lice[®] or Lice R Gone[®] Enzyme Shampoos makes no sense

at all. Not Nice to Lice® and Lice R Gone® not only safely clean away lice and nits, but they also clean the hair shafts and follicles and loosen dirt, grease, soap, makeup, previous poison shampoos, lotion, hair spray, hair conditioners, dead skin, perspiration salts, dyes and other residue material and debris that have accumulated on the head and hair. **If you get any soap or enzyme cleaner or shampoo and other debris in your eyes, flush them with cold water per the label directions. If your eyes still burn, have your doctor order Lacralube or Bacitracine for your eyes.**

When you allow all of the above debris to get in your eyes, these materials may cause a eye irritation or burning - but not the enzymes (less than 1% protease) in Lice R Gone®; the entire ingredient list has had ocular testing. The only things that could possibly cause any eye irritation are the surfactants as they are simply in regular soap shampoos. Soap shampoos can also burn the eyes; usually people simply rinse them out with water. If you get Lice R Gone® or Not Nice to Lice® or any cleaner in your eyes, immediately flush with copious amounts of cold water. **If you have previously used poison shampoos, hair spray or rinse, do not use these very effective cleaners/shampoos in a shower.** We recommend you use the Critter Cap™.

Lice R Gone® is the newest enzyme shampoo (<http://www.licergone.com>) with which I have worked. (Note: This product is called Safe Solutions, Inc. Not Nice to Lice® in the U.K.) Only ½ oz. is needed to wash away the lice and nits in a few minutes on a long-haired person. These products are considered a FDA medical device in the U. S. and U. K. **To view a video of Lice R Gone® at work, click here.**

The Critter Cap™ - At the time of this writing, the Critter Cap™ was being developed so that the entire Lice R Gone® shampoo process could safely and effectively take place under a simple disposable “shower cap.”

Borax Caution: Do not use on damaged or unhealthy skin. Do not use on children under the age of three. Avoid ingestion and rinse thoroughly.

Correctly Prescribed Drugs Take Heavy Toll — On Wednesday, April 15, 1998 Rick Weiss wrote in The Washington Post, “More than 2 million Americans become seriously ill every year because of toxic reactions to **correctly** prescribed medicines taken **properly**, and 106,000 die from those reactions, a new study concludes.”

If you decide to use the dangerous poison shampoos or pediculicide poisons, you won't get control because the lice are already immune or resistant to these poisons; if you doubt this check out <http://www.safe2use.com/lawsuit/california/newspaper.htm>.

HOW TO USE THE OLD GINESIS NOT NICE TO LICE® SHAMPOO

Wet the hair with warm water. Have the child lay face up on the sink counter or have the person to be treated upright in a straight chair with a clean towel over their eyes for protection and cover their shoulders with a towel or blanket. Add 2 ounces of Not Nice to Lice® to hair and massage for 10 minutes. **Do not rinse.** Add 2 more ounces and massage for 10 more minutes. **Do not rinse.** Continue to add 2 ounces of Not Nice to Lice® and massage for 10 minutes until contents of entire 8-ounce bottle is on the hair and scalp. **Do not rinse.** Let set for 10 more minutes. Rinse with warm water. (Another way to do this shampoo is to wet hair, add the contents of the bottle or package of Not Nice to Lice® Shampoo and then cover with the Critter Cap™ and externally massage for 20 minutes; leave on for another 10 minutes and then rinse.) If there have been any previous pediculicide treatments, or there are any remaining nits, massage in a small amount of hair conditioner. With one hand under a 2 to 3 inch strand of hair, carefully insert the teeth of a fine-toothed Not Nice to Lice® comb or steel-toothed nit comb between your hand and the scalp. Keep the comb's base tight against the strand of hair, and gently pull both hands to the end of the strand. Hair conditioner should help make the comb glide through each strand of hair easily. After combing each strand, clean the lice and the nits from the comb between your thumb and finger into the sink under the hottest water you can comfortably handle. Repeat this procedure until all the hair has been combed and nits removed. Rinse hair, dry and style as usual. If all the nits and lice are not gone in 30 to 45 minutes, you can immediately treat again. Safe Solutions, Inc. improved Not Nice to Lice® Shampoo (you will use a lot less of this product) can be safely used as often as needed. Not Nice to Lice® Shampoo is gone after the first rinse. **Always remember to keep enzyme cleaners, shampoo products out of the eyes.**

How to use Safe Solutions, Inc. Lice R Gone® (and their vastly improved Not Nice to Lice® - Directions: Wet hair with warm water. Use a small amount of product (about ½ oz.) to make a lather. **Keep any shampoo out**

of the eyes to prevent eye irritation. Massage for 5 - 10 minutes; then rinse. This bottle contains enough material for multiple shampoos. If any nits remain after your rinse, please apply some hair conditioner and comb with a fine-tooth comb. Repeat as often as needed.

Will protease enzymes harm the hair? While hair is made of protein, it is covered with several overlapping layers of cuticle that protect it from being destroyed by protease enzymes. The saliva in your mouth also contains enzymes. You are also made of protein, yet you do not dissolve. A short treatment using Lice R Gone® Shampoo actually helps the hair by serving as a clarifying treatment for the hair. A clarifying agent will also serve to remove harmful residues, **but make sure you are using a product that contains 1% or less protease enzymes or you may have serious health problems.**

Final Lice Notes: At several conventions I have repeatedly heard that (resistant) lice are living for many weeks in plastic Ziploc bags and/or for months in plastic bags. If this is true, it is vital that people with infested children greatly improve their housekeeping.

Final Nit Notes: If you have previously used poison shampoos, you may have “welded” some of the nits on your hair shafts. It is believed the poisons negatively impact the nit glue. Lice R Gone® effects the nits in a very dramatic way; when you pinch the nits after the shampoo they “pop” and a “cold cream” type material comes out of the nit, **but if they are still hard to remove, simply put some hair conditioner on the wet hair; wait 10 minutes and then comb - it will help remove the nits. Cider vinegar will also help loosen nits. Simply keeping the hair wet 30 minutes expands the hair shaft and cracks the glue.**

Isopropyl Alcohol Caution: Some “safe and effective, non-toxic” lice shampoos contain essential oils that can create allergic responses and rubbing alcohol which is highly flammable. Isopropyl alcohol should never be applied to irritated skin or allowed to come in contact with eyes or mucous membranes. We do not advise using this “safe” product on children’s heads.

Class Action Lawsuits: The Associated Press noted: The FBI is investigating a \$225,000 “payment/settlement” by Warner Lambert Co. to two lawyers hired to sue the pharmaceutical company over whether its head lice (poison) shampoo (Nix®) works. The agreement dated August, 1997 specified the pharmaceutical company would pay the two lawyers \$225,000 to drop the class action suit and turn over the names of the 90 people who asked to be plaintiffs. Warner Lambert specified the only relief for the would-be plaintiffs who said Nix® didn’t work (even when they followed package directions to the letter) consisted only of refunds, and Warner Lambert specified it would pay no more than \$10,000 total in refunds.

FINAL CAUTION: There have been some recent reports of head lice that have not only become resistant to pesticide poisons, but actually have mutated and are now living under the scabs with their nits. No amount of combing will remove these pests. Only Lice R Gone® shampoo products will remove these resistant pests. Head lice normally must pass through 3 instars or molts in about 18 days before they are able to reproduce. If you suspect mutant lice, wash with Lice R Gone® at least every 2 weeks until the condition improves and your scalp is healed. Lice R Gone® is an extremely efficient shampoo and can lift pediculicide shampoos, pesticide poisons, hair spray glues, rinse-in hair color and other debris and irritants from your hair and scalp. If you use these shampoos and you have previously used hair spray or hair color or have used previous pesticide (poison) lice shampoos, it is advised you do not use this product in the shower. **Always keep Lice R Gone® and the debris it loosens and cleanses out of your eyes and off your face, especially if you have used hair spray, hair color and/or lice (poison) shampoos. If you get anything in your eyes, flush with copious amounts of water. If your eyes still burn, have your doctor order Lacralube or Bacitacine for your eyes. Spanish instructions can be found at <http://www.safe2use.com/nntl/s-nttl.htm>.**

On 12/22/98 at 5:27 p.m. another class action lawsuit was filed in Harris County, TX - Civil Action No. H-99-0238 (Removed from 125th District Court of Harris County, Texas, Cause No. 1998-59797) against several pediculicide (poison) manufacturers, including Rid®, Pronto®, Nix® and many other sprays, treatments and/or shampoos and against the sellers of these lice “treatment” products. The lawsuit was filed on the behalf of the Plaintiffs, who

purchased said products in the United States in reliance upon Defendants' false, misleading and unsubstantiated claims concerning the effectiveness of their products, who followed Defendants' prescribed instructions and whose lice infestation was not cured. Lice R Gone® and Not Nice to Lice® were not included in this lawsuit either.

On September 19, 1999, the CNN.com web page noted that Harvard University researchers last week announced they had found head lice that were not susceptible to permethrin, the active "registered" poison ingredient found in most popular lice treatments. A 1995 Israeli study had found lice resistant to similar pediculicide poisons.

Enzyme Caution: Be sure you do not create your own "mix" of enzyme cleaners. There are various stabilizers used in Safe Solutions, Inc. Enzyme Cleaners and/or Lice R Gone® to keep each formula from spoiling. Changing, diluting and/or adulterating the formula may harm the product and/or you. It is not good to use more product than you need. Follow the label directions carefully. Note: Only Safe Solutions, Inc. products are covered by U. S. Patent No. 6,663,860.

HOW TO PURCHASE

Lice R Gone®, Not Nice to Bugs™ and/or Not Nice to Skin Irritations™, Safe Solutions, Inc. Enzyme Cleaner with Peppermint products and the Critter Cap™ can be purchased from:

1. Safe Solutions, Inc. at 1-888-443-8738; web site: <http://www.safesolutionsinc.com>, <http://www.licergone.com>
2. Safe2Use at 1-800-931-9916; web site: <http://www.safe2use.com>

These safe and effective products are also currently available at many retail locations. If you are a drug store and need to order Lice R Gone®, call any drug wholesaler or Safe Solutions, Inc. at 1-888-443-8738.

Critter Cap Note: Simply leaving the hair wet (especially with vinegar or hair conditioner) under a Critter Cap for 30 minutes and then combing will remove nits. The hairshaft expands after that time and cracks the glue that encompasses the hairshaft.

Salt - Simply swimming or bathing in the ocean or simply bathing and/or shampooing with salt water once a week on a routine basis will control all lice infestation, but not the nits.

Cider Vinegar - Helps loosen/dissolve nit glue so the nits can be combed out.



My Grandfather told me there are two kinds of people: those who do the work and those who take the credit. He told me to be in the first group - there is less competition there.
– Indira Gandhi

How to inspect for head lice/nit infestations:

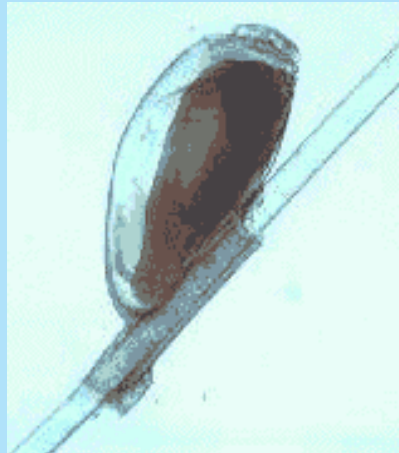
The Sonoma County Health Services has posted these pictures on their web site on what to look for:



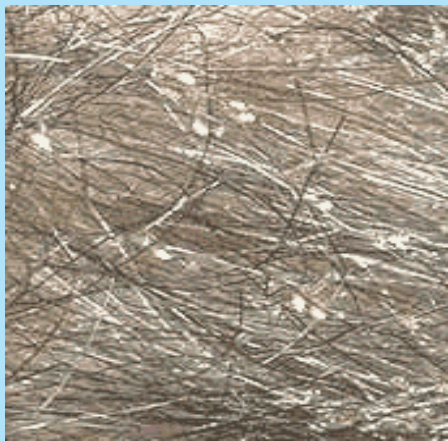
Adult head lice are about the size of a sesame seed.



Head lice have strong claws to hold on to hair strands.



Louse eggs are tightly cemented to the hair strand.



Nits or eggs look a little like dandruff. Note: In temperate climates nits can be laid anywhere on the hair shaft.



Adult head louse on hair shaft.

Inspect each head very carefully (for about one hour) under a bright light using a comb, a wooden probe and a magnifying glass. Capture any lice you find on a piece of scotch tape rolled on the finger, sticky-side out. Then carefully unwrap the tape and fold it in on itself so the louse is securely trapped inside. You can then write on the outside of the tape with a ball point pen. Be sure to include the date, child's name and time authenticating what you found.

Here are the results of a study showing how any school system can reduce the number of days absent due to head lice infestation. **Absenteeism was reduced over 50% by using even the old formula Not Nice to Lice.***

Study conducted by Cheri Porter Redway Elementary School, Redway, CA

STUDY OF REDWAY SCHOOL HEAD LICE ERADICATION PROGRAM

Table 1: Redway School's Rate of Head Lice Infestation

| School Year | 1996-1997 | 1997-1998 | 1998-1999 | 1999-2000 | 2000-2001 |
|--------------------|------------|------------|------------|------------|-----------|
| Enrollment | 376 | 425 | 400 | 352 | 347 |
| Infested | 39 | 43 | 41 | 36 | 49 |
| Days Absent | 185 | 261 | 130 | 118 | 91 |
| % Infested | 10% | 10% | 10% | 10% | 14% |

Table 2: Product Distributed to Parents

| | 1996-1997 | 1997-1998 | 1998-1999 | 1999-2000 | 2000-2001 |
|------------------------------|-----------|-----------|-----------|-----------|-----------|
| Metal Combs | No | No | Yes | Yes | Yes |
| NIX | No | No | Yes | Yes | No |
| Lice Free | No | No | No | Yes | No |
| Lice Off | No | No | No | Yes | No |
| Not Nice to Lice | No | No | No | Yes | Yes |
| Not Nice To Lice House Spray | No | No | No | No | Yes |

*Note: This was the original Not Nice to Lice® formula and required 8 oz. and 30 minutes to do what the new formula in Lice R Gone® does with ½ oz. and 5 minutes.

The National Pediculosis Association's PROGRESS

Vol. 13 No. 1

Winter/Spring 1997

THE HAZARDS OF TREATING HEAD LICE

When treating my child for head lice, I never thought about the harm I could be bringing to him. I thought about the anxiety all mothers feel when they find bugs in their child's hair. Never imagined that I might actually be causing Jesse's death. If I had only known or even had a clue.

In telling my story, I have decided to remain anonymous because talking about what happened is so difficult. It requires me to confront my demons, and I don't know if I will ever be able to do that. These memories remain vivid nightmares that haunt me through the night. If I think about my role in Jesse's pain and suffering, I'll never make it through the day. I fought so hard to help him live, it's hard to confront the fact that I may have contributed to his death.

The nightmare began in 1984 when there was an outbreak of head lice in the elementary school. Several children were discovered to have head lice, including my second son. Our pediatrician prescribed Kwell® shampoo never telling me anything other than the fact that it could cause eye or skin irritation. I used the Lindane shampoo on my family, sprayed the house, and had it exterminated. I had a refill of the Lindane so I used it twice that first time on all of my children. I did all of the shampooing myself. About two months later, I watched Jesse playing "Superman" as he jumped from the couch to the love seat. When he was in midair he caught himself in the stomach and appeared to be in a lot of pain. My husband, realizing that I was worried, told me to take him to the emergency room. After being examined, the doctors told me that Jesse had an enlarged spleen which I thought had been caused by his accident. The doctors decided to do some blood work and found that his lymphocytes and white blood cell count was irregularly high.

One Mother's Story



Jesse's Story

Not knowing the cause, they decided to keep him overnight to do a liver and spleen scan. The next morning they sent us home with some iron drops for an iron deficiency. When the drops didn't bring his hemoglobin up, they scheduled Jesse for a bone marrow biopsy. By that time, I already suspected the worst. I had researched the possible diagnoses and knew his symptoms pointed to

leukemia - acute lymphoblastic leukemia. Jesse was hospitalized for six weeks until he went into remissions through chemotherapy. I stayed with him the entire time. The doctors asked a lot of questions about our background. Had there been a history of leukemia? Was there chemical exposure? There were no questions about pesticides or treatments for head lice so I didn't make the connection. It never crossed my mind. Never.

Jesse responded well to chemotherapy. He never looked sick. He was resilient and the entire family pulled for

him. Our entire focus was on getting Jesse well. He was only two at the time. Eventually, things got back to normal as Jesse ingested chemotherapy orally once a week for three years. The doctors told us that if he relapsed it would happen within six months after coming off chemotherapy. We were excited to pass the six month and then ninth month marks. We were finally feeling more at ease about his recovery and Jesse's entry into the first grade. Prior to the start of

Also in this issue

- pg. 3* Dealing with Head Lice
- pg. 6* Childcare Provider's Guide to Controlling Head Lice
- pg. 8* Symbol of the People
- pg. 9* A Call to Pharmacists

that school year in 1987, I shampooed all of the kids' hair. We always hear about increased cases of head lice when children go back to school and it always strikes a chord with me because I am very hygiene conscious. So I went to the store and bought NIX® over the counter and used it on all of us - including Jesse. It was nine months after his remission.

About six-to-eight- weeks after, Jesse's cancer came back. The doctors were shocked because his type of cancer had such a high cure rate and he had passed the none month mark typically indicating a complete recovery. It boggled everyone's mind. Because there was no perfect match for a bone marrow transplant, he was put on a new two year protocol for chemotherapy with new drugs. The doctors believed he had a 70% chance of remission. Jesse did well. When he came off the second protocol he was doing well. About six-to-eight months later I shampooed the kids' hair again for back-to-school. Six-to-seven weeks later Jesse relapsed again. We took him to a prominent medical facility on the East Coast for a bone marrow transplant. My daughter, who was now 16 months old, was an identical genetic match. It was in 1991 and we lived there for long periods of time while the transplant was conducted., Jesse skated through the entire procedure and the doctors felt it went well.

We came home and everyone felt good about things. Jesse had stayed out of school for five months so that his immune system could get back to normal. It was mid-August 1992, and I again shampooed the kids' hair with NIX® because it was once again back-to-school time. We went on vacation for a week and when we returned we took Jesse in for lab work to find that he had relapsed again and this time he was completely full of leukemia. In a "normal relapse" after a bone marrow transplant experts usually find that they missed some of the original chromosomes from the leukemia patient. They resurface, multiply and divide and create leukemia again. Jesse was one of the twelve documented cases in the world where the patient had relapsed even though the tainted cells had been completely removed. This was a red flag to me. When I received the news, I panicked that my daughter's marrow was leukemic, but the doctors told me her marrow was perfectly clean. Jesse's relapse indicated that there is something in the environment that may be triggering transformation.

It was at this time that I began to make the connection between Jesse's relapses and the head lice treatments. The week before we went for the lab work, I found two lumps at the back of Jesse's neck. That's when it hit me. Every time I used head lice treatments, Jesse relapsed. I broke into a cold sweat and started to panic. I was eaten up with guilt so I talked to my sister who is a nurse midwife in the area, as well as the doctors at the bone marrow unit. They told

me that thousands of children use head lice shampoo each year and that not many get leukemia. But I am close to these people and they **know me all good** well. Even if they believed my theory, they would never admit it to me because they know it would destroy me. I went to the library to research in the hope that I could prove that my suspicions were wrong. What I found devastated me. I found an EPA pesticide fact sheet which defined Lindane as an isomer of benzene hexachloride. I also found that there was sufficient evidence to support the dangers of exposure to benzene and that many reports associated leukemia with benzene exposure. That explained the Lindane I used, but I also used so much NIX® after which Jesse consistently went into relapse. So, I looked to find a correlation with NIX® and Lindane and found an issue of Chemical Engineering News which had an article on the phasing out of chlorinated hydrocarbons. It included a specific chart which included a listing of endocrine disrupters. synthetic pyrethroids such as Nix® were included in the chart with different herbicides, fungicides and pesticides. They were all in the same category in terms of their effects. And the negative effects were many.

I had never heard about the National Pediculosis Association or the concept that it teaches. I was born in a time when you pulled out a can of RAID® or OFF® spraying it freely to avoid bugs and mosquitoes. I never considered those chemicals as dangerous. They were just part of everyday life. I never considered it until this nightmare happened to me. I now understand that everything is in balance in your body until something knocks that balance starting a chain reaction. Lindane knocked the balance in Jesse's body. I just didn't have a clue. Why didn't I figure it out before it was too late?

Jesse went in for another transplant and he did very well. Soon after he went into seizures and they never understood why. He even pulled out of that. He was amazing. On the 4th of July he had trouble breathing and we took him to the hospital. It was the beginning of the end. The chemotherapy has caused his lungs to harden and he had trouble breathing. They gave him oxygen but he wasn't getting better. They did a lung biopsy and found pneumonitis, a hardening of the lung tissue. He ended up on a respirator. When he began moving air in the bottom part of his lungs, they turned down the respirator but his lung tissue was still sore and fragile. As he took his breath his lung tissue tore. Soon after he had a heart attack. His blood pressure dropped. They put in a pacemaker. finally, his blood pressure was so low that I was told that even if his blood pressure rose, Jesse would never be the same. That was when I knew he was gone. That was when I stopped praying he would live. Jesse died on September 11, 1993.

Jesse was my soul mate. There has never been, and will never be, another person in my life with whom I connected as I did with Jesse. I go through life like a robot now, feeling betrayed and existing only for my other children so they will have a Mom, even if her spirit is broken. I will never be the same. I'll never smile again, not inside anyway.

Today, the Leukemia Society's brochure states the only two known causes of leukemia are radiation and benzene. I have learned that there isn't a system that's out there to protect mothers and children like Jesse and me. People need the facts. If I had done this knowing the facts, that would be a different story. But that isn't the case. I believe the lice sprays, the Lindane and the NIX® contributed to Jesse's illness and death. I feel the same about my husband's leukemia which was diagnosed in 1992. The kind he has takes five-to-ten years to appear, supporting my contentions. He has been given the same prognosis as Jesse. Fearful for where this will all end, I can only hope that my story will help others.

The End

"A Mother's Story" is only one of many tragedies associated with the hazards of treating head lice. Since May 1994, the NPA's National Reporting Registry has received hundreds of adverse reaction reports associated with all the commercially available lice and scabies pesticidal treatment products.

Each year hundreds of thousands of poorly informed parents apply potentially harmful pesticides to their children's scalp or skin to kill head lice or scabies. Education is vital. There are too many families yet to be reached and too many children unnecessarily put at risk. Help us to reach parents before they treat their families.

"The dramatic threat of ecological breakdown is teaching us the extent to which greed and selfishness...are contrary to the order of Creation." — Pope John Paul II

"Humanity now stands biologically between the alternatives of suicide and worship." — Pierre Teilhard de Chardin, Catholic Priest and Scientist

Remember, Safe Solutions, Inc. does not sell any of its products as pesticides.