

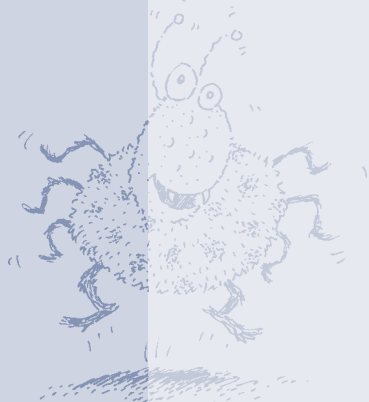
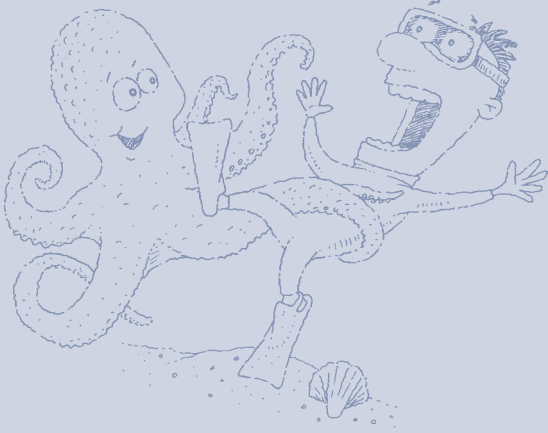


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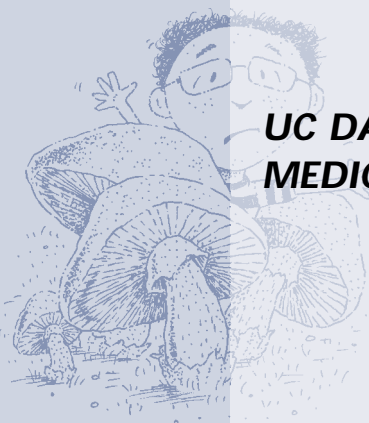
# CALIFORNIA POISON CONTROL SYSTEM

## ANSWER BOOK

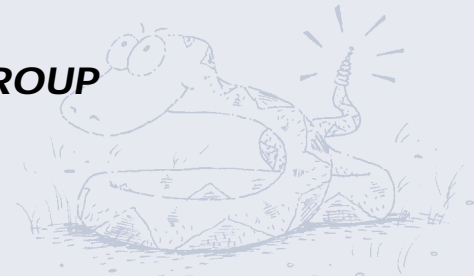
**Commonly asked questions about poisonings and prevention**



**UC SAN FRANCISCO  
SCHOOL OF PHARMACY**



**UC DAVIS  
MEDICAL GROUP**



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## Using This Book

**T**he world is filled with toxic substances, natural and man-made. At home, play or work, the chance for an exposure to poison is great. Chemicals, cleaners, houseplants, medications, bad food, spiders, insects, pesticides and fertilizers are some of the things that could result in an accidental poisoning.

The more we know about the sources of poison around us, the better prepared we can be. That is why this book has been written. It contains valuable advice about many of the common poisonous situations faced by the residents of California. Although this book can increase your knowledge about prevention and first aid, it is not intended as a substitute for a call to the Poison Center if you have a problem.

**Call the Poison Center without hesitation for every exposure.** The majority of the cases (about 78%) can be safely handled at home simply by following the advice of the trained poison center staff members. Keep this number handy for 24-hour a day emergency service.

**Statewide:  
1-(800) 876-4766**

The Poison Center staff is made up of specially trained clinical pharmacists, registered nurses and poison information providers. Physicians who are certified in medical toxicology provide medical consultation.

## What should I expect when calling the Poison Center?

Expect to be asked many questions. Poison Center staff must get a thorough and accurate account of what has occurred to determine the severity of the exposure and what treatment advice to give. Depending on the circumstances, you may be asked the following:

- ◆ To bring the container, if possible, to the phone. Poison Center staff will ask for the exact name of the substance and its ingredients. Many companies make dozens of similar products so the exact name of your product is essential for the staff to provide an accurate response.
- ◆ The amount involved.
- ◆ When the exposure occurred.
- ◆ How long the exposure lasted.
- ◆ If symptoms have occurred.
- ◆ If any first aid has already been done.
- ◆ Information about the person exposed to a toxic substance: name, age, weight and general health history. If the patient has asthma, seizures, diabetes, allergies or any other important health conditions, the Poison Specialist needs to know.
- ◆ Information about you as the caller: name, relationship to the victim, telephone number and zip code. Getting a phone number is critical because the Poison Center has many incoming phone lines. If the line is disconnected, Poison Center staff must be able to return the call. Also, the phone number is used so that the Poison Center staff can call back and check on the patient if necessary.

## Why do you ask all those questions?

Some callers might feel that asking all these questions is wasting crucial time. But only a careful evaluation of all the information will allow the Poison Center staff to determine if a case presents a serious risk. No well-trained staff member will ever ask needless questions.

Once the information is gathered, the Poison Center staff member will calculate the amount of the exposure compared to body weight or look up the substance in the computer for more information. This information will determine the toxicity of the case. Using that information, the staff person will make treatment recommendations. Each full-time staff person handles about 5,000 poisoning cases each year. They know, very quickly, if your case involves only a mild exposure or if it is potentially life threatening.



## What if I don't want to give my name and phone number?

Helping callers is the main concern of the Poison Center staff. There are no "bad parent" or "frequent caller" lists. Unless you tell the Poison Center staff that you have called before, they won't know, as there are over 300,000 poison calls per year to the California Poison Control System. However, there are callers who refuse to provide basic information such as names and phone numbers to the Poison Center staff. The Poison Center staff will suggest, to those callers, that they contact their physician for assistance. For legal reasons, medical or poison information advice cannot be provided to anonymous callers.

## What is the California Poison Control System?

For decades, there have been many poison centers in California, each with its own phone number and individual way of providing service for a small area.

In 1997, a new system for providing uniform poison services for the entire state was developed. The University of California San Francisco, School of Pharmacy provides administrative services for the California Poison Control System (CPCS). The CPCS combined the services of four existing poison centers: the Sacramento Division located at the University of California, Davis, Medical Center; the San Francisco Division located at San Francisco General Hospital; the Fresno Division located at Valley Children's Hospital; and the San Diego Division located at the University of California, San Diego, Medical Center.

Trained health care professionals, who have many years of valuable experience handling poison cases, staff all answering sites. The sites use identical telephones, computers, computer programs and databases, recording systems and automatic call distribution systems. They use uniform protocols and guidelines and have identical health education materials. The result is uniform quality poison information for the entire state.

## Are all the calls recorded?

Like 9-1-1 calls, all calls to the Poison Center are recorded. Poison Center calls, like medical records, are kept confidential. Information regarding the call is entered into a computer database. This provides general information for national statistics regarding age and sex of the victim, name of product, treatment and the zip code where the call originated. Callbacks are made to determine the outcome. Outcome information is provided to agencies that regulate consumer safety issues. No personal or confidential patient information, such as your name or phone number, is ever provided to the national database.

A single toll-free 800 number is now available to all areas of the state. By calling **1-800-876-4766** anywhere in California, you can obtain emergency information on:

- ◆ Swallowing poison
- ◆ Eye or skin irritation from toxic substances
- ◆ Inhalation of noxious fumes or vapors
- ◆ Animal, insect, snake and spider bites
- ◆ Food or mushroom poisoning
- ◆ Drug reactions
- ◆ Attempted suicides or drug overdoses
- ◆ Pet poisoning exposures

Calls are handled quickly, accurately, professionally and free-of-charge all over the state 24 hours a day, seven days a week.

## What Does “Poisonous” Mean?

**“One man’s medicine is another man’s poison.”**

Many callers to the Poison Center are afraid that if a substance is toxic or poisonous, it is deadly. This is not necessarily true. To Poison Center staff, a substance is toxic or poisonous if it can cause ANY negative symptom, even if only a mild rash.

There are degrees of toxicity, depending on the substance, the amount, the length of time of the exposure and type of the exposure (on the skin versus ingestion). Also, the age, weight, and health status of the patient need to be taken into account. All these factors determine the toxicity and the treatment needed.

For example, the heart medicine taken daily by grandmother is essential for her good health. But the same dose of medicine taken by her 13-month grandchild is dangerously high and is considered toxic. On the other hand, the one to two pellets of rat poison that may well be dangerous to a mouse will not be harmful to a three-year-old child because of the weight difference. Still, a large amount of anything is likely to be unsafe. In case of any exposure, call the Poison Center.

Every poisoning exposure is unique. Reactions may range from mild to moderate to severe. A minor exposure may not produce any symptoms. Even if some symptoms develop, they may not be considered serious enough to require emergency treatment. It is always best to have every poison exposure evaluated by the Poison Center staff. They can provide reassurance and

peace of mind. In case of any exposure, no matter how minor it may seem, always call the Poison Center at 1-800-876-4766.

***It will never be a waste of time.***

## Poisoning Prevention Tips

**“An ounce of prevention is worth a pound of cure.”**

Below are some general precautions that can decrease the chances for accidents involving poison. Following this section is a checklist to help you look for conditions around your house that may be dangerous.

- ◆ Keep all medicines and hazardous products locked up and out of reach when not in use. When choosing child care or visiting, make sure poisons are not within reach. Don’t rely completely on close supervision for prevention because accidents happen to children within the reach of parents or caretakers.
- ◆ Ask for *child-resistant* containers for all medications, but remember: child-resistant caps do not stop a child from opening lids — the caps only slow them down.
- ◆ Always call prescription or over-the-counter medicine by its proper name and begin early to encourage respect for all medications. Never suggest that medicine is “candy” in order to get children to take it. Too often, medication and candies look alike to young children, sometimes with serious consequences. Pediatric deaths have occurred due to the ingestion of iron supplement tablets.
- ◆ Avoid taking medications in the presence of young children because they learn by imitation.
- ◆ Make sure young children have access to safe snacks so they won’t be tempted to try poisonous substances.
- ◆ Safely dispose of old or unused medications and all hazardous materials through local government disposal programs.
- ◆ If you are called away when using a hazardous material, take the product with you. Make sure young children and pets are kept safely away from major projects such as painting, floor stripping, paint removal, pesticide applications or fertilizer use.

- ◆ Keep furniture, walls, windowsills and other painted surfaces in good repair. Keep children away from flaking or chipping paint.
- ◆ Never transfer hazardous substances into food or beverage containers. Each year, children are poisoned by drinking a toxic substance that was poured into a cup or a glass. Even adults have mistaken a glass of bleach for lemonade.
- ◆ Do not take medications from unlabeled containers. Always read labels before taking medications. Do not take or give medications intended for others or increase the dosage without checking with your physician or pharmacist.
- ◆ Do not mix chemicals! Read product precautions before use and take warnings seriously. Even common household cleaners, when mixed, can produce toxic gases.
- ◆ When using toxic products, wear protective clothing and work in well-ventilated areas.
- ◆ Learn proper names of plants in and around your home by visiting a reputable plant nursery or knowledgeable gardener. Check with the Poison Center to see if the plants are safe or dangerous.
- ◆ Consider installing a carbon monoxide detector.
- ◆ Keep syrup of ipecac on hand and have the Poison Control Center number on the telephone.
- ◆ Call 1-800-582-3387, the Poison Center health education line, for phone stickers and information on obtaining this book and other prevention materials

## Checklist for Poison Safety

Is your home poison-safe and poison-proof? Each year, millions of people are accidentally poisoned in their own homes. Although accidental poisonings happen to adults, the majority of poisonings happen to young children under the age of six years.

Annual call statistics show that over 90% of poisonings happen in the home. Over 75% of the poisonings are accidental and most happen to children between the ages of six months and five years. Normal, healthy, curious children have swallowed, inhaled or spilled household cleaning products, medicines, plants or personal care items, occasionally with tragic results.

Most of these accidental poisonings can be prevented with a little care. Don't let your child, your pet or yourself become a victim! Take this quiz to rate just how poison-safe your home is. Quickly fix all "NO" answers to prevent accidental poisoning problems.

### Poison safety in the kitchen and laundry area

- Y N Do all harmful products used or stored in the kitchen or laundry have child-resistant caps?
- Y N Do all storage cabinets easily reached by young children or pets have locks or safety latches?
- Y N Are all potentially harmful products such as drain cleaners or bleach still stored in their original containers with labels intact?
- Y N If interrupted while using a household cleaner, do you take it with you?
- Y N As soon as you finish using any product, do you cap it tightly and return it to a safe storage area?
- Y N Are all harmful products, such as insecticides, stored away from food?
- Y N Do you read product warning labels BEFORE using them?
- Y N Do you safely dispose of used household cleaning products and their containers?
- Y N Do you refrigerate cooked foods soon after serving?
- Y N Do you regularly disinfect counter tops and cutting boards with a bleach solution?
- Y N Are all gas cooking, heating and clothes drying appliances regularly safety checked?

In the first few months of life, infants learn to use their thumbs to grasp objects. From then on, whatever they can reach goes into their mouths. Later, when babies learn to crawl around and about on their own, they taste-test whatever they find. Infants and toddlers commonly swallow dog food, cigarettes, mushrooms and plants. Many household products are brightly colored, attractively packaged and they may look like food containers to young children. Remember, children under the age of five cannot read labels and can be confused by the packaging.

Strong smells or bad tastes do NOT stop children from drinking things such as bleach, pine-oil cleaners, gasoline, lamp oil, charcoal lighter fluid or toilet bowl cleaners.

**Anything dangerous left within reach of a young child is a potential accident!**

## Poison safety in the bathroom

- Y N Are all medicines stored safely out of sight and reach of young children?
- Y N Do you teach by example, as well as word, that medicines, vitamins and cleaning products are to be used with care and under adult supervision?
- Y N Do you give medicine only to the person for whom it was prescribed?
- Y N Are all medicines kept in their original containers with labels intact?
- Y N Do all medicines have child-resistant caps?
- Y N Do you always turn on the lights BEFORE taking or giving a medication?
- Y N Do you always read medication labels BEFORE giving or taking it?
- Y N Do you regularly and safely dispose of all out-of-date medications?
- Y N Are bathroom counters, windowsills and ledges free of beauty supplies, harmful cleaning products, rubbing alcohol, perfumes and antiseptics?
- Y N When using toilet bowl bleaches, cleansers, or drain openers, do you always open windows or turn on fans for good ventilation?
- Y N Are toothpastes and mouthwashes kept out of reach of young children?
- Y N Are all toxic cleaners stored out of reach of young children and pets?

Medicines are a leading cause of serious and sometimes fatal accidental poisonings. Many medicines look like candy to children. Children will eat 90 fluoride tablets, 50 chewable vitamins, or 30 pain reliever tablets. Children will drink an entire bottle of cough and allergy medicine because they like the taste.



To prevent accidents, leave safe snacks within reach of early rising children. Teach children that medicine is only to be taken for illness and that taking too much medicine at one time can make them very sick. Don't let children give other children medicine. Never give children medicine when it is not needed: crankiness is not a reason to medicate a child. Don't increase, decrease or stop medication before consulting with a physician or pharmacist.

Child-resistant caps are not childproof! The test for a child-resistant closure only requires that 80% of the 3- and 4-year-old children in the test group be unable to open the container within 10 minutes. That means the other 20% of the children could open the containers in less than 10 minutes. Even child-resistant containers must be locked out of reach of young children.

## Poison safety in the living room

- Y N Are all poisonous plants out of reach?
- Y N Are all tabletops kept free of cigarettes, ashtrays, matches, lighters, oil lamps and alcohol when there are young children in the home?
- Y N Are cigarette butts or chewing tobacco spit kept out of reach of young children and never placed in soda pop containers?
- Y N Do you clean up soon after parties where alcohol is served?
- Y N Are children and pets always kept out of the way of major projects, such as pesticide treatments, painting, carpet cleaning and floor stripping?
- Y N Do you use non-toxic holiday decorations?
- Y N Is mom's purse containing medications and cigarettes always kept out of reach of young children and pets?
- Y N Do you have a carbon monoxide detector?
- Y N Do you have a smoke detector?
- Y N If you use a fireplace or portable heater, do you have them regularly cleaned and safety checked?
- Y N Do you keep chocolate treats out of reach of dogs?

Plants are attractive to teething children and pets. While some plants are harmless, others can be dangerous. If you do not know which of your indoor and outdoor plants are toxic, take a cutting that includes the stem, leaves and flowers or berries to a reputable nursery for identification. When you have the proper plant name, call the Poison Center to see if the plant is safe or not.

### Poison safety in the family room, playroom, den or hobby workshop

- Y N Are all adult toxic arts and crafts materials, including paints containing such heavy metals as lead or cobalt, stored out of reach of children and pets?
- Y N Do you store paint thinners, brush cleaners, toxic glues or photo developing chemicals well out of the reach of curious children?
- Y N Do you always use good ventilation when working with toxic chemicals?
- Y N If pregnant, do you avoid skin exposure and inhalation of chemicals and pesticides?
- Y N Are all computer printer supplies, such as ink cartridges, stored safely?
- Y N Are tape head cleaners for stereos and VCRs stored safely out of reach?
- Y N Are all guns, ammunition and gun cleaning products locked up and away from all children?
- Y N Are young children's craft materials, such as crayons, paints, pencils and markers, all non-toxic?
- Y N Before buying, do you check all children's toys for toxic paints, toxic contents or potential choking hazards?
- Y N Do you closely supervise the use of older children's toxic craft materials, such as model glue or paints?
- Y N Are exotic pets that could bite or sting kept out of the reach of curious children?

### Poison safety in the garage or storage area



- Y N Are toxic pool chemicals kept safely out of reach of children and pets?
- Y N Are all hazardous products, such as paint thinner, weed killers, charcoal lighter fluid, antifreeze and pesticides, packaged in child-resistant containers?
- Y N Are all hazardous products locked up and kept in their original containers with labels intact?
- Y N Do you always read product labels and precautions BEFORE use and follow safety recommendations during and after use, regardless of how familiar with the product you think you are?
- Y N Do you wear protective gear and clothing, such as goggles and gloves, when working with toxic products?
- Y N Do you clean up thoroughly and quickly after projects such as furniture stripping, staining or car maintenance?
- Y N Do you regularly and safely remove hazardous materials through local government disposal programs?
- Y N Are gas appliances regularly checked for safety?
- Y N Do you store all hazardous materials away from any ignition source, such as a water-heater pilot light?

Hazardous products can be deadly if used, stored or disposed of improperly. Young children have been accidentally poisoned after taking toxic material containers from the trash and swallowing the residue. Pets, particularly young dogs, can chew up containers. Kittens have died after lapping up small amounts of antifreeze from the garage floor. Rinse used or "empty" containers before discarding them.

Never pour a product from the original container into another container, especially a container used to store food. Poisonings frequently occur when a dangerous substance has been poured into a soda pop can and not labeled.

## Poison safety in the bedroom

- Y N Are bedside tables and dressers free of medicines, alcohol, cigarettes, lighters and ashtrays?
- Y N Are colognes, aftershaves, perfumes, rubbing alcohol or nail polish removers kept out of the reach of young children?
- Y N Are walls, windowsills and woodwork free of flaking paint?
- Y N Are cribs, playpens, toy boxes and toys kept free of flaking paint?
- Y N Are toxic plants kept well out of reach of young children and pets?
- Y N Are all moth repellents in clothes closets or drawers non-toxic?

Young children learn by imitation. They practice grown-up things by trying on adult shoes, powdering their faces, and painting their nails. During the process, they might take a taste of the nail polish remover or your cologne.



## Poison safety in the patio, garden or out-of-doors

- Y N Do you regularly search out and remove lawn mushrooms?
- Y N Is the gas can for the lawn mower kept tightly capped and out of reach of young children?
- Y N If you use propane as a heating or cooking source, do you regularly check the tank and lines for leakage?
- Y N Do you routinely check for bee or wasp nests around your home and yard?

- Y N Do you check for black widow spider infestations in corners, storage areas, garages and woodpiles?
- Y N Do you use safe amounts of insect repellants on yourself and family members?
- Y N If you live in or near an area known for poisonous snakes, do you keep alert for their presence?
- Y N Do you teach young children NOT to pick up or even touch snakes, spiders, scorpions, jellyfish or insects?
- Y N Do you keep outdoor cooking supplies such as charcoal lighter fluid, charcoal briquettes and matches out of the reach of young children and pets?
- Y N Do you use fertilizers and pesticides with care?
- Y N Do you know the names of all the plants, trees, shrubs in your yard and if they are safe?

### Score one point for each "YES" answer

71 – 66 points	Excellent!
65 – 58 points	Good — stay alert!
57 – 51 points	Room for improvement!
50 or less	Asking for TROUBLE!

## Emergency First Aid for Poisonings

In the United States, nearly two million poisonings are reported to poison control centers each year. Although survival rates for some types of poisoning have improved, many people still die. Knowing what to do in the first moments after a poisoning occurs can prevent these tragedies.

- ◆ Remove the poison from contact with eyes, skin or mouth, or remove the victim from contact with poisonous fumes or gases.
- ◆ Do NOT follow emergency instructions on labels. Some may be out-of-date and carry incorrect treatment information.

- ◆ Call the Poison Control Center at **1-800-876-4766** immediately for more instructions.
- ◆ If you are instructed to go to a hospital emergency department, take the poisonous substance or container with you.
- ◆ Keep syrup of ipecac in your home in case you are advised to use it to make the victim vomit. Although syrup of ipecac may be bought without a prescription at the pharmacy, **NEVER administer ipecac unless you have been advised to do so by a physician or by Poison Center staff.**

## Swallowed poisons

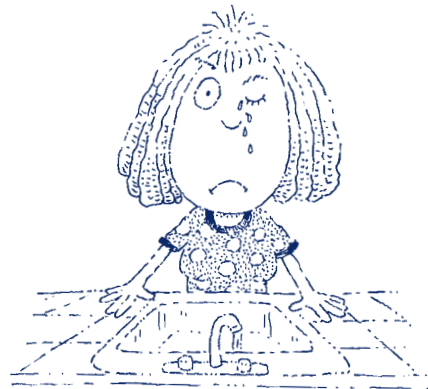
Call the Poison Center or your physician, even if you don't think the ingestion is serious.

**CAUTION:** *Some out-of-date product antidote labels or health information charts may carry incorrect treatment information. DO NOT give raw eggs, salt, vinegar or citrus fruit juices to induce vomiting or to neutralize the poison. DO NOT induce vomiting by sticking fingers or any other instrument down the victim's throat. These procedures are not only ineffective but potentially dangerous!*



## Poisons on the skin

Remove any contaminated clothing. Flood affected parts with lukewarm water, wash with soap and water, and rinse thoroughly. Then call the Poison Center or your physician.



## Poisons in the eye

To remove all foreign materials from the eyes, the eyes must be irrigated for a full 15 minutes timed by the clock. Remove contact lenses if worn. For adults, getting in the shower works best. Aim a gentle stream of lukewarm water on the forehead above the affected eye. If both eyes are affected, aim the stream at the bridge of the nose. Eyes do not have to be held open. Opening and closing the eyes repeatedly during the irrigation will help carry the water to all the surfaces of the eye.

For young children, use the sprayer hose at the kitchen sink or use a pitcher. Aim a gentle stream of water at the bridge of the nose or on the forehead above the affected eye. Do not pour water directly onto the surface of the eyeball. Eyes do not need to be held open unless the child refuses to open them at all.

Always irrigate all eye exposures for 15 full minutes. Do not apply any eye drops unless instructed by a health care professional. Call the Poison Center or your physician to see if more treatment is required after the eye irrigation.

## Inhaled poisons

Immediately carry or drag the affected person to fresh air. If necessary, give mouth-to-mouth resuscitation.

If the victim is not breathing easily, call 9-1-1. Evacuate the area. Remember to take along family pets, but do not delay your own escape from the area. Open doors and windows to improve ventilation. Then call the Poison Center or your physician.



## Do NOT Panic!

If you have a poisoning situation, do not panic. Panic is a very contagious emotion. If parents are upset, crying and screaming, a child can pick up on that very easily and will also start crying and become upset. When the entire family is upset, it becomes much harder to assess the situation and provide good care.

If you are the one with the poison problem, being scared and anxious will produce symptoms that many people mistake for symptoms of poisoning. Being very frightened can cause a dry mouth, dilated pupils, increased heart rate, fast breathing, nausea, vomiting, sometimes diarrhea, headache, dizziness and a feeling of being light-headed.

Most encounters with a toxic substance are not going to cause immediate symptoms. If you are very anxious and have symptoms immediately after an exposure, a majority of the times the symptoms are due to fear. But always call the Poison Center to make sure. Poison Center staff can reassure you if you are scared and can give you directions to help take care of your problem.

Many of the callers to the Poison Center start crying and that is OK. Poison Center staff know you may be afraid. But please don't scream at the Poison Center staff. They can't help you if you are screaming. Remember, most poisonings can be safely handled at home by following directions provided by the staff of the Poison Center. If you are very scared or panicky, you won't be able to listen and you won't be able to take care of the problem. Poison Center staff are happy to help, but you have to be calm.

## What You Should Know About Ipecac

Should a poisoning occur, you may need to induce vomiting. For that, you will need syrup of ipecac (pronounced i-pi-kak). The use of ipecac to induce vomiting can minimize the effects of some poisons.

**CAUTION:** Use ipecac only on the advice of the Poison Control Center or your physician.

Syrup of ipecac is the preferred method to induce vomiting at home. Other methods, such as giving salt water or mustard, are not effective and can actually be dangerous. Too much salt can cause an imbalance in the body chemistry that can cause seizures.

Syrup of ipecac is available at the pharmacy. Your pharmacist can sell you a one-ounce bottle without a prescription. If stored at room temperature, ipecac will keep for several years.

## Why isn't syrup of ipecac used for every poisoning?

The Poison Center should be called about any poisoning. A majority of the time, not enough was ingested to be a problem. In those cases, treatment by vomiting is not needed.

Vomiting should not be induced when a person has swallowed a caustic, such as a strong acid or an alkaline product like drain cleaner or lye. Substances that can burn the throat and stomach on the way down will burn on the way back up, increasing the injury.

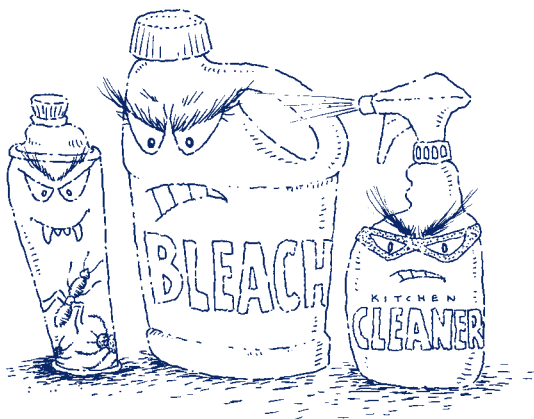
Petroleum products such as gasoline, lamp oil, or charcoal lighter fluid should not be vomited. These substances can easily enter the lungs during the vomiting process and can cause a chemical pneumonia.

Some poisons can cause the victim to fall asleep very quickly or can cause a seizure. Inducing vomiting in those cases would be dangerous.

## What About Activated Charcoal?

Activated charcoal is a very fine, special powder form of charcoal. It is very effective in absorbing or binding most poisons in the stomach so the poisons don't reach the blood stream. Activated charcoal is more effective than ipecac in the treatment of most poisonings.

Ask your pharmacist to order the pre-mixed bottles of activated charcoal with water. Have one bottle on hand for each child under the age of 5 years. Using activated charcoal at home may prevent a trip to the emergency room.



## Household Cleaners

**S**upermarket shelves are full of brightly-colored, good-smelling, super-power household cleaning agents. The average home contains at least a dozen different cleaning products. These products are found in the kitchen, bathroom, laundry area and the garage. Think of laundry detergent, toilet bowl cleaner, bleach, stain and mildew removers, floor cleaner, ammonia, oven cleaner, scouring powders, window cleaner, pine-oil cleaners, disinfectants and all-purpose cleaners that you probably have in your home. All of these products are advertised to clean better and faster to make your life cleaner, safer and more enjoyable.

On the down side, household cleaners are responsible for a large number of accidental poisonings. A majority of the cleaners are packaged in large, attractive containers. Most do not have child-resistant packaging.

### Why are children attracted to these cleaning products?

Think what cleaning products might look like to a young child who can't read. Pine cleaners look like apple juice. Infants and toddlers may not be able to tell the difference between a white bottle of bleach and a plastic container full of milk. The blue liquid in window cleaners may look like the blue mouthwash mommy and daddy use to rinse their mouths. The dark brown furniture polish and oils may look like cola soda pop.

Some lemon-scented cleaners have pictures of lemons on the label. The lemons can mislead small children into thinking that the cleaner is a lemon-flavored beverage.

### How dangerous are soaps and detergents?

Many cleaners contain a mixture of soaps and detergents, along with dyes, perfumes and water. Soaps and detergents are irritating to the stomach and bowels, causing nausea, vomiting and diarrhea. Generally the vomiting occurs within an hour after swallowing the substance. These products are irritating but not considered extremely dangerous.

### How dangerous is liquid bleach?

One of the most common calls to the Poison Center involves the ingestion of liquid chlorine bleach. Victims frequently gag and vomit after drinking bleach, resulting in a frantic call to 9-1-1 or the Poison Center.

An accidental swallow or two will cause vomiting, but rarely anything worse than that. Some young children, who get a small sip straight from the bottle, have no symptoms at all. Adults, who accidentally swallow even diluted bleach solutions, tend to have a harder time with a great deal of vomiting, retching and nausea. However, fear and anxiety probably play a big role in the symptoms adults have.

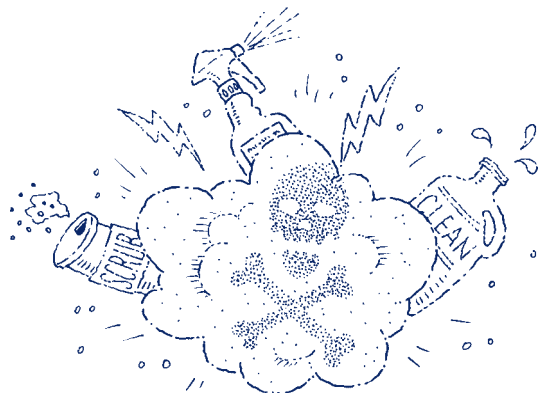
### What are caustics?

Caustics are powerful agents that can cause burns. Both acids and alkaline corrosives are caustic substances that can burn the skin, eyes, lips, tongue, mouth, throat and stomach. There is a difference between acid burns and alkaline corrosive burns. Acids will burn the top layers of the skin. Alkaline corrosives continue to penetrate the skin and cause deeper, more extensive burns that take longer to heal.

Unfortunately, there are several cleaning products that are sufficiently caustic and concentrated enough to cause severe and even permanent damage to your body. Toilet bowl cleaners, oven cleaners, drain openers, lye, mildew removers, and lime or rust stain removers contain strong acids or alkaline corrosives.

Some of these products have a skull and crossbones on the label. That, however, does not mean that exposure to these products will be immediately lethal. Swallowing a concentrated caustic, especially in large amounts, can cause severe lifelong injury. Caustics can burn and destroy the vocal cords and esophagus (the

tube from the mouth to the stomach). Extensive surgical repair involving numerous operations over a period of years is frequently required. Even so, the victim may never talk or swallow solid food again.



### Why is mixing cleaners dangerous?

A big problem with cleaning products occurs when people mix them together or use two or more products at the same time. They think the combination will be a stronger, more-effective cleaner. What often happens instead is that toxic fumes are formed.

Chlorine-containing cleaning products (liquid bleach, some scouring powders and some shower mildew cleaners) should never be mixed with any other cleaners unless the label says it is safe. When chlorine products are combined with acids, chlorine gas is released. When chlorine is mixed with ammonia containing products, chloramine gas is formed.

Even though chloramine is slightly less damaging, both chlorine and chloramine gases are dangerous. Fumes from both can cause immediate watering and burning of the eyes, a runny nose, sore throat, coughing, shortness of breath and difficulty breathing. Inhaling too much of these gases for too long can lead to a chemical pneumonia.

Some liquid hand dishwashing detergents contain ammonia compounds and others contain mild acids. Mixing bleach with these particular hand dishwashing detergents can result in an unpleasant surprise.

If one product doesn't do the job when you are cleaning, rinse thoroughly before using a second product. Always use cleaning products in a well-ventilated area and always wear plastic or rubber gloves. If strong fumes do develop, leave the area immediately. Open windows and turn on fans. Do not stay and continue to clean.

## How can poisonings with household cleaners be prevented?

Here's how to prevent most poisonings from household cleaners.

- ◆ Keep all cleaning agents out of the reach of young children. Lock up cleaners or store them on high shelves. Remember that as a child grows and begins to climb, no shelf is high enough.
- ◆ Read all safety labels before using.
- ◆ If the doorbell or the telephone momentarily distracts you, take the container with you. Children cannot be poisoned if they do not have access to the poisonous substance.
- ◆ Use only one cleaning product at a time. Rinse well before using a second product.
- ◆ Never pour a cleaning agent into a glass or a cup and walk away. Another person can easily think it is a beverage and drink from the container.
- ◆ Always store cleaners in their original containers. Don't borrow cleaning agents from friends or work. Don't keep cleaners (or any potentially toxic substance) in an unlabeled container.
- ◆ Store cleaning products separately from cooking and food items. The can of oven cleaner spray looks very much like the can of non-fat pan coating spray; oven cleaner has been accidentally used to fry eggs.

## Hydrofluoric Acid

### **What kinds of products contain hydrofluoric acid?**

Especially difficult stains, such as rust and water stains on glass and tar on car wheel covers, pose difficult cleaning problems. Many of the agents used to remove these tough stains contain hydrofluoric acid (HF). Hydrofluoric acid is also used in glass etching, dry cleaning (to remove very resistant stains) and in computer component manufacturing.

### **How dangerous is HF?**

Hydrofluoric acid is extremely potent and dangerous. It can penetrate thick, calloused skin and even fingernails, causing extensive skin burns and scarring. A major exposure to concentrated HF can bind the body's calcium stores from the bones, causing seizures, bone destruction and death. Inhaling HF fumes

can lead to pneumonia. A splash of HF in the eyes can cause destruction of the eye tissues and blindness.

**What symptoms does hydrofluoric acid cause?**

Pain is the major symptom. The onset of symptoms and the severity of the damage depend on the amount of exposure and the concentration of the HF. The stronger the concentration, the faster the symptoms appear. Strong solutions of the acid cause a quick onset of burning, redness and tissue damage. Symptoms may be delayed up to 24 hours after exposure to a less concentrated HF solution.

People using HF products while wearing leaking gloves can develop symptoms many hours later or even the next day. They have red, painful fingers with severe burning under the fingernails. The pain from the burn may be intense and treatment is difficult. Major exposures require treatment in an emergency room.

**How can exposure be prevented?**

Before you have a problem, check your supply of cleaning products for any rust removers, water spot stain removers, tar removers or mag wheel cleaners. Read these product labels carefully to see if they contain either **hydrofluoric acid** or **ammonium bifluoride**. Ammonium bifluoride is converted to hydrofluoric acid and can cause the same kind of problems.

Unfortunately, many labels are not clear and it may be difficult to determine the ingredients. If you are not sure, be safe and assume the worst. Treat these products with extreme respect and caution.

Because of the risk of an accidental spill or splash when using these products, take precautions: Wear protective clothing so bare skin is not exposed. Wear safety glasses or preferably, safety goggles. Wear good, heavy-duty rubber gloves that do not leak. Use these products only in a well-ventilated area. Keep children and pets away from areas where these products are stored or used.

The most obvious way to avoid exposure to HF is to avoid using or storing any HF cleaning products. Find safer cleaning substitutes or learn to live with the stains.

Get rid of old HF cleaning products through local toxic waste collection programs.

**What if I get a skin splash from hydrofluoric acid?**

Flood the affected area with large amounts of soap and water. Then call the Poison Center for advice. Call even if you aren't having any symptoms right away.

**Be safe, not sorry!**



## Bites and Stings

Every year, thousands of calls are made to the Poison Center regarding insect bite information or treatment advice. While all insects can bite or sting, some are more bothersome and dangerous than others. Bites from fleas, mosquitoes and the common horsefly can cause pain, itching and swelling at the site — an unpleasant experience but not necessarily dangerous, unless an infection occurs.

### What is the immediate treatment for bites or stings?

If breathing difficulties, difficult swallowing and/or body-wide itching develop, the patient is having a severe allergic reaction. Immediately call 9-1-1 for assistance. Otherwise, wash the bite or sting area well with soap and water to help prevent infection.

If stung or bitten on fingers or hand, remove any rings or jewelry in case of swelling. Your local pharmacist can help you select the best over-the-counter medications to help treat insect and spider bites.

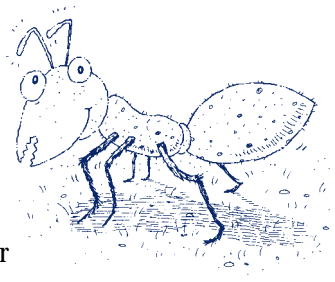
### How can stings and bites be prevented?

- ◆ Do not leave food, drinks or garbage out and uncovered. Many bees and wasps are attracted to the odor of rotting food.
- ◆ Bees are also attracted to the smell of fruit juices, soda pop, leather and perspiration.
- ◆ Avoid wearing perfumes and other floral scents (so you don't smell like a flower).
- ◆ Avoid wearing bright floral patterned clothes (so you don't look like a flower).
- ◆ Do not walk barefoot.
- ◆ Do not plant shrubs or flowers that attract bees, such as star jasmine or bottle brush, next to swimming pools, decks or patios.

- ◆ Shake all shoes, clothing, towels and bedding that have been sitting around. Insects and scorpions may crawl into the folds to hide.
- ◆ Wear a Medic-Alert bracelet if extremely allergic to bee or wasp stings.
- ◆ If you are allergic, ask your physician about prescribing an emergency bee-sting kit to have on hand.

## Ants

Fire ants and harvester ants bite first and then jab their stingers into the victim's wound. Because the stinger is not very sharp, it has difficulty puncturing moderately tough skin. Even so, as many as 20 separate stings may be produced by one ant. The sting causes swelling, bruising and blistering. The pain lasts for about 4-6 hours and the wounds may take days to heal. Watch for any sign of allergic reaction or infection.



## Bees, hornets, wasps

Stings from bees, hornets and wasps cause more deaths than bites and stings from all other insects and spiders. Death is usually a result of an allergic reaction.

Honey bees are the only stinging insects that leave a stinger in the wound. Other bees can sting repeatedly. If stung by a bee, check the wound to see if the stinger is still there. The stinger will be clearly visible. If the stinger is still there, scrape or flick it out with something stiff like a credit card. Do not try to pull the stinger out as squeezing injects more venom into the wound. Usual symptoms include a burning pain and swelling.

Unusual symptoms can signal the onset of an allergic reaction. There are two types of allergic

reactions. In the first type, the bite or sting site becomes excessively swollen and the patient may experience nausea, vomiting, dizziness and headache.

The second type of allergic reaction can be life-threatening. A severe reaction can cause body-wide skin itching, hives, or puffiness of the eyes, nose, lips, tongue and throat. Abdominal pain and vomiting may develop. Breathing difficulties are common. The patient may collapse and go into shock. ***This kind of reaction presents a true medical emergency. Call 9-1-1 immediately.***

Allergic reactions usually do not develop after the first sting. After a second or third sting, a reaction can develop. It is difficult to predict whether a person will have a life-threatening allergic reaction. If you or family members are very allergic or have asthma, you are more likely to be allergic to stings and should be careful around stinging insects.

## Africanized bees

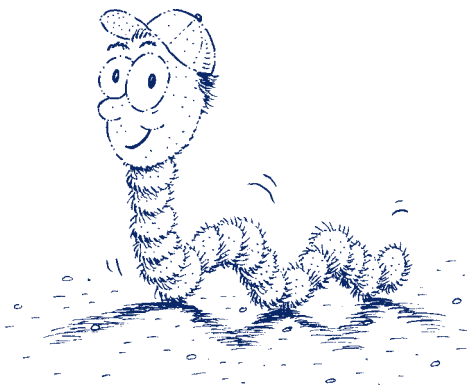
Africanized bees (sometimes called "Killer bees") are descendants of a wild strain of African bees that escaped from an agricultural experiment in Brazil in the 1950s. These bees are more aggressive in defending their hives, reproduce faster than regular bees and chase enemies farther than regular honeybees (European honeybees). Africanized bees have spread northward from South America to North America and some have been found in Southern California.

Africanized bees produce honey but are harder to handle. Africanized bees tend to be a bit smaller than common honeybees but are otherwise identical in appearance. Even experts can't tell Africanized bees from the common European honeybee just by looking at them. Genetic studies in a laboratory are needed to determine the type of bee.

The venom of the Africanized bees is not more dangerous than that of regular bees. But Africanized bees are more aggressive, more easily provoked and sting in greater numbers, causing more injury. There is a greater chance that an animal or person stung by Africanized bees will be stung dozens to hundreds of times by an angry hive of Africanized bees. Africanized bees may pursue people and animals for greater distances than regular bees. Even non-allergic people who receive multiple stings can develop life-threatening complications.

Fortunately, the Africanized bees are not traveling northward as quickly as was initially predicted. The slower they travel, the greater is the opportunity for Africanized bees to mate with the calmer European honeybees. The result is that the hybrid Africanized bees are becoming less dangerous. Still, be very careful around all hives or swarms of bees. Swarms of bees should be reported to the agriculture commissioner of your county.

If caught in a swarm of stinging bees, try to run away and find shelter. Do not swat at the bees. Crushed bees release a scent that incites the other bees to attack. If you are stung numerous times, especially around the face area, a trip to the emergency room for evaluation is a very good idea.



## Caterpillars

Just touching a hairy or spiny caterpillar can cause skin irritation. Other reactions include itching, redness, swelling and a raised rash. Wash well after contact with a caterpillar.

## Centipedes and millipedes

Centipedes have long, flattened, and segmented bodies. Each segment has one pair of legs. The number of body segments can vary from 15 to 181. They have three pairs of mouthparts and the venom fangs are on the first segment. Millipedes have two pairs of legs per segment and have cylindrical bodies, rather than the flattened bodies of centipedes.

Millipedes do not bite. However, millipedes have glands on the sides of their bodies which can secrete a brown or white liquid that smells like iodine. If a millipede is handled or crushed, this liquid can cause redness, burning and a rash. If the fluid is rubbed into

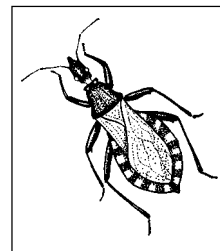
the eyes, significant eye irritation will result. Wash immediately after handling.

Although there are some dangerous centipedes, they are not native to California. Most of the venomous centipedes live in Japan. The venomous centipedes in the United States are found in the desert of the Southwest, especially in Arizona.

A bite from a California centipede may cause immediate burning pain, redness and swelling. The clawed tips of the feet may cause puncture wounds that can become infected.

## Kissing bugs

The kissing bug (*Triatoma*) has a large body, measuring one-half to one inch in length. It has a cone-shaped head and is dark brown with yellow or red markings on the abdomen. Kissing bugs have six legs. The kissing bug also has a pair of wings that are normally folded across its back while resting or crawling. The wings are generally not noticed unless you are specifically looking for them.



KISSING BUG (TRIATOMA)

Outdoors, they live in mice and rat nests as well as bird nests. They are most visible in the spring and early summer. Kissing bugs are attracted indoors by porch lights. Once indoors, they hide in and under furniture or closets during the days. A favorite hiding spot of the kissing bug is between mattresses.

Kissing bugs feed on blood. At night, the kissing bug goes out in search of a blood meal, which in the home, usually means a sleeping pet or a sleeping human. It takes about 10 minutes for the bedbug to obtain a full meal. If disturbed, the kissing bug may have to bite several times to get the full meal.

The bite is painless and generally occurs on the uncovered parts of the body. Victims usually wake up with itching, swelling and they can have a rapid heart beat. Depending on the victim's sensitivity, reactions to kissing bugs vary from mild to life threatening. A typical reaction is generally an intensely itchy, red-raised area that is more severe than a typical insect bite. It lasts about 1 to 2 days but may last as long as a week. Other reactions can include groups of small blister-like bites with moderate swelling and little redness; very large reddened areas like hives that can be two to six inches across; chills, fever, and nausea. Severe reactions include

swelling of the tongue and throat; swollen lymph nodes; small blood-filled blisters; anaphylactic reactions that cause breathing problems, a drop in blood pressure, and shock that can be lethal.

## Scorpions

Scorpions do not bite: they sting with their barbed tails. There are 37 species of scorpions in California and toxicity varies with the species. Scorpions native to Arizona and Mexico are the most dangerous. In California, dangerous scorpions are found only in the areas bordering the Colorado River.

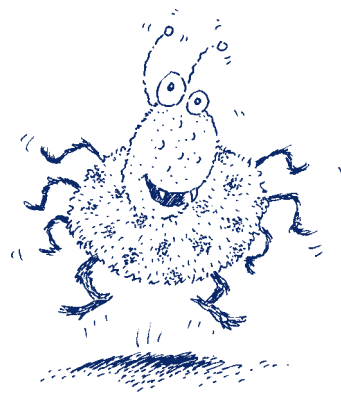
A sting from a scorpion in geographic areas other than around the Colorado River is not likely to be dangerous. Most people compare a scorpion sting to a bee sting as they both cause a burning pain. Some people also have some swelling. Unless symptoms of an allergic reaction appear, there is little to be concerned about. As with any wound, watch for infection.

## Mosquitoes

When a mosquito bites, it produces saliva that is irritating when injected into the wound. Mosquito bites cause pain, redness, swelling, and itching. Frequently a small blister or hive develops at the bite site. Allergy to mosquito bites is common.

Some people seem to be much more attractive to mosquitoes than others. Sensitive people can get covered with bites while others may get only one or two bites. If mosquitoes find you to be particularly tasty, wear insect repellent before venturing into mosquito country.

To reduce the mosquito population in your yard, look for any standing water that mosquitoes could use to breed. This might include watering cans, the dog's water dish, a wading pool, a bird bath, a tire, a tin can, wheel barrows, saucers under potted plants or anywhere that can collect water. It doesn't take a lot of water to grow a lot of mosquitoes.



## Spider bites

There are at least 50,000 spider species in the arachnid family. Spiders are defined as having eight jointed legs, no wings, no antennae and only two body sections: the thorax and the abdomen. Spiders spend their entire life span capturing and eating other insects (about 2,000 in a year). Even though spiders do a great deal of good for our environment, spiders are greatly feared by most of the population. Most spiders are killed only because they scare people, not because they are actually dangerous to humans.

All spiders have some amount of venom with varying degrees of potency. The fangs of a spider are hollow. The venom is injected through the fangs into the victim (usually an insect). The venom will rapidly paralyze the victim and aid in digestion. Fortunately, most spiders are not dangerous to humans because their fangs are either too short or too fragile to penetrate human skin.

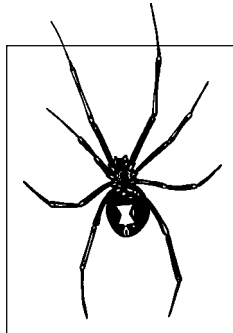
Spiders do not attack in herds. Spiders do not lay in wait and attack people. Spiders do not lift the covers at night and crawl into bed to bite people as they are sleeping. Some spiders can jump but they are not intentionally jumping at humans to attack them. A spider generally bites a human because it was scared and bites to defend itself. Spiders generally prefer to live in undisturbed areas such as corners of the house or the eaves or in the garden where they can catch insects in peace.

Killing spiders with pesticides is difficult. Spraying surfaces is usually ineffective because the spider has minimal contact with the sprayed area. The actual spider or egg sacs has to be sprayed with pesticide. The danger of a possible spider bite has to be weighed against the risk of over-using pesticides that probably will not work against spiders.

Bite marks from most spiders are usually too small to easily be seen. Frequently the patient will not recall being bitten. Many of the spider bites will result in pain, small puncture wounds, redness, itching and swelling that lasts a couple of days. Spiders rarely bite more than once, so multiple bites are usually caused by insects such as fleas, bedbugs, ticks, mites and biting flies.

## Black widow spider

Black widow spiders generally live in trash, closets, attics, woodpiles, garages and other dark places. They are found throughout California, especially in the warmer regions such as the Central Valley and Southern California. Only the female spider is dangerous to humans.



BLACK WIDOW SPIDER

### **What does a black widow spider look like?**

The black widow spider is a shiny, inky black spider with a large round tail segment (abdomen). Including its legs, the black widow generally measures from one-half inch to one inch in length. Red to orange-colored markings, usually in the shape of an hourglass, are found on the underside of the belly.

### **What are the symptoms of a bite?**

A black widow spider bite gives the appearance of a target, with a pale area surrounded by a red ring. Severe muscle pain and cramps may develop in the first two hours. Severe cramps are usually first felt in the back, shoulders, abdomen and thighs. Other symptoms include weakness, sweating, headache, anxiety, itching, nausea, vomiting, difficult breathing and increased blood pressure. Young children, the elderly and those with high blood pressure are at highest risk of developing symptoms from a black widow spider bite.

### **How dangerous are black widow spider bites?**

If a black widow spider bites a person, do not panic! No one in the United States has died from a black widow spider bite in over 10 years. Very often the black widow will not inject any venom into the bite and no serious symptoms develop. Wash the wound well with soap and water to help prevent infection.

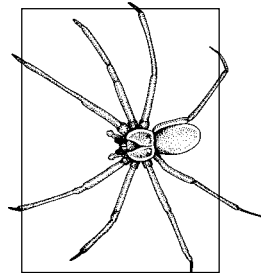
If muscle cramps develop, take the patient to the nearest hospital. Some victims, especially young children, may be admitted overnight for observation and treatment. There is treatment for a black widow spider

bite that can take care of the symptoms. Various medications are used to treat the muscle cramps, spasms and pain of a bite. Black widow spider antivenin is seldom necessary.

## Brown recluse spider

### **What does a brown recluse spider look like?**

Named for its habit of hiding in dark corners, the brown recluse spider (*Loxosceles reclusa*) is also known as the violin spider or fiddleback spider because of a violin-shaped marking. The brown recluse spider is about a half-inch long (including legs) and is a solid light brown color. The violin marking is configured with the base of the violin beginning at the eyes and the neck of the violin pointing toward the "waist." The violin marking is difficult to see clearly. Two other features can help identify the brown recluse: it has six eyes rather than the typical eight and the tail-end segment has no markings. If you see a brown spider with markings on the tail end, it cannot be a brown recluse spider. Any markings, patterns or spots on the tail end of a spider immediately eliminates the possibility that it is a brown recluse spider. It is, instead, one of dozens of brown spiders that live in houses and yards. They may bite, but they are not dangerous.



BROWN RECLUSE SPIDER

### **Where do brown recluse spiders live?**

Spider experts across the state agree that the true brown recluse spider does NOT live in California, but is native to Kansas, Texas, Oklahoma and Mississippi. There are some related species found in California. The *Loxosceles laeta*, imported from South America, has been found in eastern Los Angeles County. The *Loxosceles deserta* is found in the Mojave and Sonoran deserts, the foothills of the Central Valley up to Merced and Fresno counties, but not in Northern California.

In any case, the brown recluse is called a "recluse" because it hides and is not commonly found out in the open. The brown recluse will hide in dark, quiet, out-of-the-way areas where it will not easily be disturbed.

### **What are the symptoms of a brown recluse spider bite?**

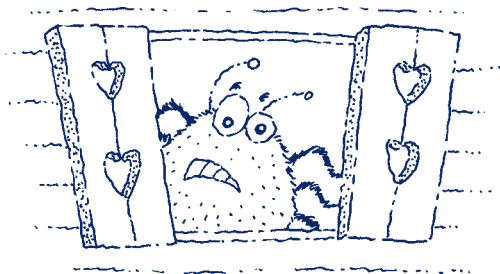
The brown recluse spider bite usually causes some pain or burning in the first 10 minutes, accompanied by itching. The wound takes on a bull's-eye appearance, with a center blister surrounded by an angry-looking red ring and then a blanched (white) ring. The blister breaks

open, leaving an ulcer that scabs over. The ulcer can enlarge and involve underlying skin and muscle tissue. Pain may be severe. A generalized red, itchy rash usually appears in the first 24-48 hours. Other symptoms include fever, chills, nausea, vomiting, muscle aches and hemolytic anemia (a condition where the red blood cells are destroyed).

People bitten by an unseen spider sometimes blame the brown recluse spider because their bite resembles a brown recluse spider bite. However, there are a number of other spiders and insects, as well as other medical conditions, that are capable of producing tissue wounds of similar appearance, but these are usually of a lesser severity.

#### **What is the treatment for a brown recluse spider bite?**

Treatment consists of washing the wound and applying an antibiotic ointment. The victim should seek medical attention if there are signs of an infection, an ulcer that does not heal, a bite accompanied by nausea, vomiting, fever or a rash. There is no special treatment or medication used to treat a brown recluse spider bite. If infection develops, antibiotics are used. If a wound becomes deep and infected, occasionally surgery is needed. Anytime there is a bite or a wound that is not healing and getting worse, see a physician for evaluation.



### Chronic arachnidism or necrotic arachnidism

While most spider bites are not dangerous, there is a group of spiders that can produce bite wounds that look similar to a brown recluse spider bite. Unless the spider was actually seen, captured and brought to the physician, the brown recluse spider is not likely to be the culprit. Some of the spiders in this group that can cause a nasty bite include the running spider, jumping

spider, wolf spider, tarantula, sac spider, orbweaver spider and the northwestern brown spider, also known as the hobo spider.

#### **What are the symptoms of a bite from these kinds of spiders?**

In most cases of bites from these spiders, there is pain or burning at the bite site in the first 10 minutes. The bite from this group is usually described as looking like a “target” or “bull’s-eye.” The center of the wound is usually a blister surrounded by a reddened area. A pale or blanched area may surround the discolored reddened area. The blister may rupture, leaving an open ulcer. In severe cases the ulcer can become deep and infected causing tissue breakdown or tissue death (necrosis).

Worsening pain, itching and a burning sensation develop. A patient may also have symptoms such as a red, itchy rash over the torso, arms and legs that is usually seen in the first 24-72 hours. Patients may have pain in the muscles and joints, fever, chills, swollen lymph nodes, headaches, and nausea and vomiting.

#### **How are these bites treated?**

Frequently, when people with spider bites call the Poison Center, they think there is some special treatment that is necessary for their bite. There is no specialized therapy other than treating the symptoms. Most importantly, keep the wound clean to prevent infection. If the wound does not heal or does develop an infection, see your physician. Do not wait days and weeks while the wound continues to get worse.

There are tales of people having limbs amputated after spider bites. These involve people who refused to see a physician even though they had massive wounds that did not heal and became grossly infected. A wound that may have been originally treated with simple oral antibiotics, but left untreated, may require surgical intervention in extreme cases.

#### **What else can cause a nasty looking wound?**

Kissing bugs, fleas, bed bugs, flies, mites, wasps, ants and blister beetles have produced lesions similar to a brown recluse spider bite. Many skin disorders and medical conditions can produce lesions that can also mimic a brown recluse spider bite. Some of these include infected herpes outbreaks, bedsores, diabetic ulcers, poison oak and Lyme disease. Again, use common sense: If there is a wound that is not healing as expected or getting worse, see a physician.

## Daddy longlegs spiders

Forty species of this family of spiders live in North America north of the Mexican border. They have long, thin legs with flexible ends. They are usually found hanging upside down in corners or cellars. Daddy long-legs spiders are very common and are found in most homes. They eat other insects and spiders. Bites to humans are very rare. Some say that the daddy long-legs spider has the most potent spider venom of all spiders. Fortunately, their fangs are not strong enough to inject sufficient venom into a human to cause problems. These spiders are not considered dangerous to humans.

## Jumping spiders

The jumping spider is probably the most common biting spider in the United States. People are caught by surprise and scared when they see the spider jump, especially if it jumps towards them. Bites from a jumping spider are painful, itchy and cause redness and significant swelling. Other symptoms may include painful muscles and joints, headache, fever, chills, nausea and vomiting. The symptoms usually last about 1-4 days.

## Wolf spiders

Wolf spiders are commonly found in California. They are large hairy spiders, up to 3-4 inches across. They are a mottled gray-brown color, which helps them hide in sand, gravel, leaves and other debris. Female wolf spiders carry their young on their backs. Except for one group, wolf spiders do not spin webs. They tend to burrow into the earth and hide. They are aggressive, come after their prey and are fast runners. Because of their impressive size and aggressiveness, wolf spiders can easily incite panic.

Bites from a wolf spider can cause pain, redness and swelling. The large jaws/fangs can cause a tear in the skin as they bite. Swollen lymph glands may develop. The skin area at the bite may turn black. Swelling and pain can last up to ten days.



## Tarantulas

Tarantulas are also large hairy spiders. In fact, some people call any large hairy or fuzzy spider a tarantula. Tarantulas are very hairy with sharp bristles. The hairs are easily shed or can be rubbed off. Handling a tarantula can result in irritation to the skin. If hands are not washed after handling a tarantula and eyes are touched, the sharp hairs can cause eye irritation that may require a trip to the physician.

Tarantulas are sensitive to vibrations and hunt at night by touch. If cornered, the tarantula will make a purring sound and may rear up on its back legs. Even though tarantulas are scary looking to most people, most bites do not produce any significant poisoning symptoms. However, the bites can be quite painful because of the large size of the spider.

Wash your hands well with soap and water after handling a tarantula.

## Northwestern brown spider or the hobo spider

The northwestern brown spider or hobo spider (*Tegenaria agretis*) is well known in Oregon and Washington and is also quite common in Utah. Spider bites by this spider are becoming recognized more often in California, which may be due to the fact that the spider is becoming better known. The hobo spider often causes a bite that leaves an open, slow-healing wound. Bites from this spider are frequently and mistakenly thought to be brown recluse spider bites.

Keep the wound clean and prevent infection. If the bite becomes infected or does not seem to heal, see a physician.

## Marine Creatures

**B**ecause California has many rivers and lakes, as well as an extensive coastline, water creatures can be a cause of poison problems. This means that swimmers, surfers, people who fish, boaters, divers, snorkelers, people who walk on the beach and owners of home aquariums can all be the victims of poisonous marine life.



### Fish

Sharks, salmon, sheephead, lingcod, and California halibut all have a mouthful of sharp teeth that can inflict a deep or serious wound. Usually the wound occurs when attempting to remove the hook from the mouth of the fish. Avoid placing fingers in the mouth of the fish. Sharks also have rough, abrasive skin made of scales called "skin teeth." Brushing against the skin can cause cuts and scrapes.

### Eels

Moray eels live in rocky holes, crevices and caves and look for food at night. They are often seen with their heads poking out of hiding places with their mouths open and teeth bared. They open and close their mouths to pump water over the gills. They look scary, but they aren't that dangerous.

Moray eels do not attack humans unless provoked. Frequently divers looking for abalone or lobsters place their hands in a moray eel's home and get bitten as a result. California moray eels are not venomous but the bite can hurt and bleed.

Wolf eels also look more dangerous than they are. When provoked, they can produce a large tear-wound that can bleed a lot. If an eel is hooked while fishing, cut the line or use extreme care to prevent a severe bite.

### Lionfish/sculpin/scorpionfish/ stonefish/zebrafish/rockfish

Painful encounters with these exotic specimens frequently result when aquarium store workers and home aquarium owners touch the fish while cleaning the tank or attempting to move the fish. The fish have

poison glands at the base of the fins. A sting from the spines inflicts an intensely painful, burning, throbbing pain, usually with swelling at the site. Severe stings can result in nausea, vomiting, delirium, sweating, pale skin and shock.

The venom is destroyed by heat. Treatment is to immediately soak the affected area (usually a hand) in water as hot as the victim can tolerate without causing burns. The wounded area must be kept in hot water for 30-60 minutes. Call the Poison Center for more information.

### Jellyfish

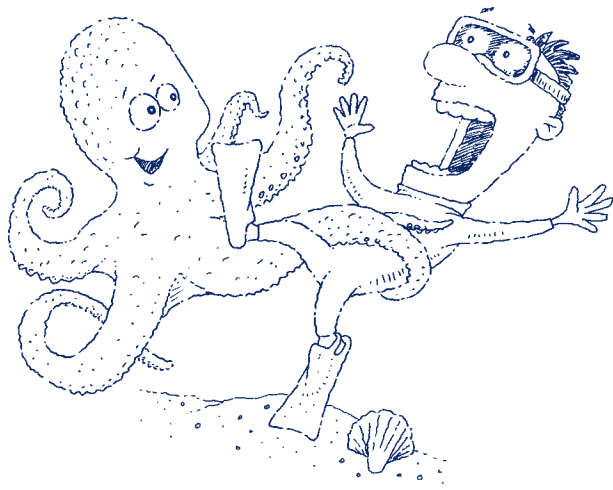
There are many species of jellyfish. They are usually almost colorless and therefore difficult to see. The bodies consist of a bell and many trailing tentacles. Jellyfish are poor swimmers and usually are found drifting in the water. In a strong current, jellyfish can be washed onto the shore, causing problems for barefooted people who aren't watching where they are walking.

Jellyfish have stinging cells usually found on the tentacles, but sometimes in the bell. When the jellyfish encounters an "enemy," the stinging cells explode. Injury can result from skin contact with any part of the jellyfish. Exposure causes pain, redness, itching, swelling, skin irritation and blisters.

If exposed to a jellyfish, do not rinse the area with fresh water and do not rub the area. These measures will cause stinging cells to fire further, causing more pain. Apply vinegar or rubbing alcohol (isopropyl alcohol) to the wound to deactivate the stinging cells. Call the Poison Center for more advice.

### Stingrays

Stingrays have a barbed spine on their long tails that can cause painful and dangerous stings. Stingrays can thrash their tails side to side and up and down, causing glancing blows as well as actual stings. Because the stinging spine has jagged edges, the wounds can be ragged, deep and bleed extensively. A stingray does not attack but will sting if surprised or provoked. Once stung, the pain is intense. There may also be nausea, vomiting, abdominal pain, difficulty breathing and shock. Treatment for a stingray sting is to immediately immerse the affected area in water as hot as the victim can tolerate without causing burns. The wounded area must be kept in hot water for 30-60 minutes. Then call the Poison Center for more information.



## Octopus

If frightened, large octopuses can grab divers, wrap their tentacles around them and cause them to drown. Octopuses have a parrot-like beak that can bite, leaving deep puncture wounds that can bleed profusely. They have salivary glands that can secrete a poison that can stun and kill their prey. Octopuses around the California coast rarely bite, even when handled. Only the blue-ringed octopus (found in Southeast Asia and Australia) has been fatal to humans.

## Sea urchins

Sea urchins look like pincushions filled with sharp needles. Stepping on a sea urchin or handling one can result in an intensely painful puncture wound. The spines are strong enough to penetrate a wet suit or puncture the soles of tennis shoes. If a spine breaks off in the wound, the wound can fester and become badly infected. Frequently a patient will have to have the spines removed surgically.

While some sea urchins can also inject venom through fang-like jaws, California sea urchins are not venomous. Some sea urchins produce a toxin during mating season that makes sea urchins dangerous to eat. Unless you know what you are doing, leave sea urchins alone.

## Other Bites

### Turtles and lizards

Only the Gila monster and beaded Mexican lizard are poisonous. Bites from all other lizards are not venomous. All bites from turtles are non-venomous. Salmonella is found in the feces of lizards and turtles. Handling the animals and their contaminated surroundings and not washing hands afterwards may cause salmonella infections. Salmonella is not transferred from lizard or turtle bites.

### Bird bites

Birds with strong beaks can inflict a painful wound resulting in injury or infection. All bites from California birds are non-toxic. There is only one venomous bird in the world, called a pitohui. The pitohui lives in New Guinea. Its skin and feathers contain a dangerous venom, so simply handling the bird can cause symptoms.

## Bites and Rabies

### How do you get rabies?

Rabies is caused by a virus that is transmitted by bites or scratches contaminated with saliva of an infected animal. A rabid animal licking an open wound is considered a possible source of exposure. Inhalation of dried feces from an infected animal can also be a source of rabies exposure. (An example is exploring areas like caves that have large amounts of bat feces.)

Petting a rabid animal or skin contact with the blood, urine or feces of a rabid animal is not considered a rabies exposure and does not require treatment. But to be safe, if there is any chance that an animal may have rabies, keep away and do not handle it with bare hands. Bats are especially prone to be carriers of rabies. After any exposure with a bat, contact your physician.

**What is the incidence of rabies?**

Only 0-5 people a year contract rabies in the entire United States, making rabies in humans a very rare condition. Rabies is not common in California due to an aggressive vaccination program in domesticated animals.

**What animals are likely to be rabies carriers?**

Bites from skunks, bats, foxes, coyotes, bobcats, raccoons and unvaccinated cats are sources of rabies. In California, skunks are the most likely to have rabies. In fact, about 38% of skunks, 31% of raccoons, 14% of bats and 4% of foxes carry rabies. In Northern California, raccoons are the main source of rabies. In



Southern California, along the United States-Mexico border, rabies is common in dogs. Mice, rats, squirrels, groundhogs, guinea pigs, gerbils, chipmunks, hamsters and rabbits are unlikely to transmit rabies. Contact your county public health department to determine which animals are high incidence carriers of rabies in your area.

**What should we watch out for in animals that may have rabies?**

If an animal is showing unusual or aggressive behavior and bites without being provoked, rabies should be considered. Animals sick enough to bite people usually die within 10 days. If a healthy animal bites as a result of being fed, teased or abused, the bite is in self-defense and rabies is unlikely to result. An unprovoked bite or attack from a vicious dog in non-rabies areas can cause serious injury but is not likely to result in rabies.

**What are the symptoms?**

The incubation period for rabies averages 20-40 days, but may be as short as 12 days. Rabies in humans is a three-stage disease.

**Stage One:** Symptoms include fatigue, lack of appetite, vomiting, low-grade fever, headache, irritability. These symptoms last a couple of days to two weeks.

**Stage Two:** In this stage, the nervous system is involved. Symptoms last two to seven days and include restlessness, agitation, difficulty swallowing, difficulty speaking and hallucinations.

**Stage Three:** The final phase lasts 7 to 10 days. In this stage, the patient has painful muscle contractions in the throat, which causes a fear of swallowing. In the past, this was interpreted as a fear of water and rabies was called "hydrophobia." As the disease progresses, seizures, paralysis, breathing problems, coma and death occur.

**How is rabies treated?**

Because rabies is a life-threatening disease, treatment is essential for any questionable exposure. Treatment of rabies no longer consists of painful injections administered by long needles into the stomach every day for 14 days. The new vaccine is more potent and causes fewer side effects. The new rabies treatment only requires a total of five injections that are given on days 0, 3, 7, 14 and 28. Vaccine shots are given in the arm to adults and in the thigh to small children.

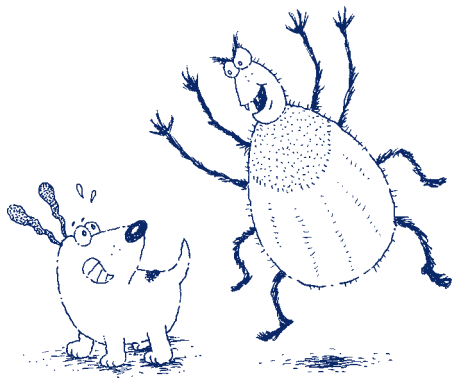
After a bite from a wild animal, call your physician. Rabies is not the only danger: If the wound is deep or large, stitches may be needed. Infection prevention and wound care is essential as well. A tetanus shot may be needed if the bite victim hasn't had a tetanus shot in the past 10 years.

**How soon do you need to start treatment?**

Treatment should be started as soon as possible after the bite. But there is no specific time limit for the treatment to be started. Obviously, the sooner treatment is started, the better. Domestic animals such as dogs and cats, if caught, can be observed for 10 days to see if symptoms of illness develop. If symptoms do not develop, it is unlikely that the animal had rabies. When there is a bite from an uncaptured wild animal with a high incidence of rabies, treatment should be started right away.

**NOTE:** Cat bites are unlikely to be a source of rabies but they do cause a high incidence of infection. Up to half of bites from cats can result in an infection due to the puncture wound. In case of a cat bite, it is a good idea to contact your physician for possible antibiotics.

Human bites are also a cause of infection. The human mouth is filled with bacteria and a bite can result in a nasty infection as well as a deep bite wound. Always see your physician after a human bite that breaks the skin.



## Lyme Disease

### How do you get Lyme disease?

Lyme disease is caused by the bite of the western blacklegged tick carrying a spirochete called *borrelia burgdorferi*.

The adult female tick is reddish brown with black legs and is about one-eighth inch long. The male tick is slightly smaller and a darker brownish black color. Both male and female ticks are tear-drop shaped. Ticks in their nymph stage cause frequent bites to humans. In the nymph stage, they are only the size of a poppy seed.

### How common is Lyme disease?

The western blacklegged tick has been reported in 50 of California's 58 counties. It is most commonly found in the humid coastal areas and on the western slopes of the Sierra Nevada mountain range. However, the number of ticks infected with the organism is very low in California. In Connecticut, 30% to 60% of the ticks carry Lyme Disease. (In fact, the disease is named after Lyme, Connecticut.) In contrast, the percentage in California is only 1% to 2%. Humboldt, Sonoma and Mendocino counties traditionally have the highest number of Lyme Disease cases. But even in those counties, only 6% of the ticks are carriers of Lyme Disease. The damp, mild climate and shaded brush-filled fields of these counties provide an excellent home for the ticks carrying Lyme disease.

Connecticut leads the nation in numbers of people infected with Lyme Disease at 95 cases per 100,000 people. The national average is 6.58 cases per 100,000 people. In comparison, there are only 0.2 cases per 100,000 people in California. Each year, fewer than 100 Californians are infected with Lyme Disease.

Adult ticks are most commonly found from December to June when the humidity is high. The primary danger season is late spring and early summer. Ticks do not fly, jump or drop from trees. They live on vegetation beside paths about knee level. When a host brushes by, the tick hitches a ride. Instinctively, the ticks crawl upwards until they find a patch of skin. They prefer warm, moist skin areas where they can hide in patches of hair.

Ticks have to be attached for quite a long period as it takes time for the tick to transmit the Lyme Disease organism into the bloodstream of the host. If the tick is attached for less than 48 hours, the chances of transmission are low. Some say that the tick must be attached for 72 hours to infect the host.

### What are the symptoms?

#### **Lyme disease has three stages.**

**Stage one:** Symptoms can occur at any time from three to 30 days after the bite of an infected tick. The first sign is a distinctive spreading rash known as erythema chronicum migrans (ECM). ECM is a red blotchy circular rash that may be several inches in diameter. The center of the rash is usually unaffected, giving a ring or bulls-eye appearance. The rash is not necessarily at the site of the tick bite but may be anywhere on the body. One or more rashes may be present. Flu-like symptoms may appear before, during or after (usually after) the ECM rash.

**Stage two:** Weeks to months after the initial symptoms, severe long-term complications may develop. These symptoms include heart disorders, meningitis, encephalitis, facial palsy, and other conditions that involve the nervous system. Traveling pains in the joints, muscles and bones, frequently without redness or swelling, may occur at this stage.

**Stage three:** Months to years later, patients may develop arthritis that appears and disappears for several years. Large joints, especially the knees, are most often affected.

### How is Lyme disease treated?

If you find a tick attached to your skin, or if you were in an area where ticks are known to live and you are experiencing any symptoms, see your physician. Treatment with antibiotics during the early stages of Lyme disease can cure the infection and prevent complications.

## How can Lyme disease be prevented?

Because of the severity of Lyme disease symptoms and the unreliability of testing procedures, prevention is the key.

- ◆ Try to avoid narrow trails, brush and areas with high grass when in tick-infested areas.
- ◆ Wear long pants tucked into hiking socks or boots so it will be harder for the tick to find bare skin.
- ◆ Wear a light colored shirt tucked into the waistband of the pants. Light colored clothes make it easier to see ticks as they travel.
- ◆ Use insect repellents, labeled as effective against ticks, on pant cuffs, socks and shoes. Do NOT saturate clothing. Do not use on bare skin unless the label says it is safe.
- ◆ Repellents with a 30% or greater concentration of DEET will be effective against ticks. **Caution: use DEET very sparingly and carefully on young children, if at all. Children are more sensitive to the effects of this chemical.**
- ◆ Permethrin-containing insecticides are effective against ticks but are not to be used on bare skin. Tent flaps can be sprayed with permethrin as a deterrent. Caution: People with asthma, hayfever and allergies may be sensitive to permethrin products.
- ◆ Frequently check yourself, children and pets for ticks. It best to have a partner to check you for ticks so hard-to-see areas are not overlooked.
- ◆ At the end of the hike or the end of the day, do a very thorough tick inspection, remembering that ticks like warm, moist hairy areas.

## If You Are Bitten

- ◆ Prompt removal of the tick may prevent Lyme disease.
- ◆ If possible, have someone else remove the tick for you.
- ◆ Use tweezers. Grab the tick by the mouthparts as close to the skin as possible. Gently and steadily, slowly pull the tick straight out. Do not jerk or twist the tick out.

- ◆ If possible, do not use your fingers. If you must touch the tick, use a tissue. If the tick is crushed, exposure to the “juice” may cause disease.
- ◆ If the tick’s mouthparts or head break off or remain in the wound, contact or see your physician.
- ◆ You may wish to save the tick to show to your physician. But remember that the number of infected ticks in California is very low. Otherwise, flush the tick down the toilet.
- ◆ Wash your hands and bite area with plenty of warm water and soap. Apply an antiseptic.
- ◆ Use the same technique to remove ticks from animals.

There are specially made tick-tweezers and tick-removal pliers available at sporting goods stores. If you live or frequently hike in known tick-infested areas, you may want to investigate these products.

Old-fashioned methods of tick removal include smothering it with petroleum jelly, burning it with a match or cigarette, dousing it with gasoline, and unscrewing it like a corkscrew. None of those methods are effective and none of them are recommended, not even in an emergency. They are all dangerous as they usually result in the tick leaving its mouthparts embedded in the skin. They may also induce a tick to regurgitate (vomit) into the tick bite and into your blood stream. Remove the tick correctly or don’t attempt tick removal at home at all.

Some physicians want to see all cases of tick bite. Many feel that antibiotics should be started for all cases, even though the incidence of Lyme Disease is low in California. Call your physician for more advice about bites in your area.

For more information on Lyme disease in your area, call your local public health department or the California Department of Health Services, Division of Communicable Diseases, in Berkeley.

## General Pesticide Safety Rules

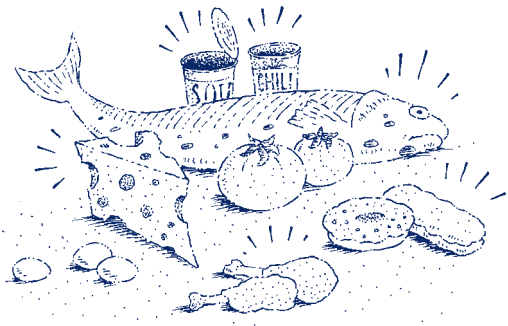
- ◆ Newborns, young children, the elderly, pregnant women and those with many allergies or medical problems are at higher risk for developing problems following pesticide exposure.
- ◆ Decrease your exposure risk as much as possible because a larger exposure will produce more symptoms.
- ◆ Read the product label **before** use and follow all recommended safety precautions during and after use.
- ◆ Wear gloves and protective clothing when applying pesticides.
- ◆ Avoid breathing pesticide fumes or vapors.
- ◆ Do not use pesticides on windy days where the chemicals can blow back and cause skin exposure or inhalation.
- ◆ Wash hands or shower well immediately after applying pesticides.
- ◆ **Never put pesticides into any other container but the original container!** Too many life-threatening poisonings have been caused by an accidental ingestion of a pesticide put into an unlabeled soda pop bottle or some other food or drink container. Treatment has been delayed and complicated because there was no label to identify the poison.
- ◆ After showering, put on clean clothing and wash contaminated clothing immediately.
- ◆ Leather boots, shoes, belts, or jackets splashed with pesticides **cannot** be decontaminated and must be discarded.
- ◆ Do **not** use more than the recommended number of indoor pesticide foggers. It is extremely dangerous. Sparks from the water heater have ignited vapors from excessive fogger use, resulting in a house-destroying explosion.
- ◆ Do **not** mix pesticides with other pesticides or chemicals to create your own blend. Pesticides should be used only as indicated by the directions.
- ◆ Only use pesticide products in vegetable gardens and on fruit trees if the label says it is safe.
- ◆ Keep children and animals off treated areas until the areas are dry for 24 hours.

- ◆ Concentrated pesticides are more likely to cause problems than ready-to-use products. Always follow the directions and dilute concentrates appropriately before use.
- ◆ Based on size, it takes a lot more pesticide to be dangerous to a human than it takes to kill an ant.
- ◆ Keep snail baits, ant bait and rat bait well away from curious children and pets.

If you are accidentally exposed, do not panic. Call the Poison Center for emergency assistance at 1-800-876-4766.

## Professional Pesticide Extermination

- ◆ Legitimate professional extermination companies will discuss what chemicals they plan to use on your property.
- ◆ If you are not home at the time of the pesticide treatment, legitimate professional extermination companies will leave a list with the name of the chemicals used and the concentration.
- ◆ After an indoor pesticide extermination, high-risk people (infants, elderly, pregnant, sickly) should stay away for 12-24 hours to be safe. Low-risk people should stay out for a minimum of 4-6 hours.
- ◆ If a strong pesticide smell is still present on your return home, ventilate by opening windows and turning on fans. Stay out of the house until the smell is gone. If the smell persists, contact the pesticide company.
- ◆ All food, including pet food and the water bowl, should be wrapped or stored away from sprayed areas.
- ◆ Children's toys, clothing and bedding should be covered or stored away from sprayed areas.
- ◆ Wash all tables, counter tops and linoleum/tile surfaces after pesticide application.
- ◆ Vacuum carpets well before allowing babies and children to crawl and play on floors.
- ◆ Keep animals out of homes during extermination and away from sprayed areas until surfaces are dry and odors are negligible.



## Food Poisoning

**T**he California Department of Health Services gets close to 27,000 reported cases of food poisoning each year. Because there are many more cases of food poisoning that are never reported, the actual number of food poisoning cases per year is unknown. The annual incidence of food poisoning nation wide is estimated to be as high as 80 million cases.

An estimated 55% of food poisoning cases are caused by improper cooking and storage of foods, and 24% by poor hygiene (not washing hands before handling food). Only 3% of cases are from an unsafe food source. Keeping your hands clean while working with food is the single most important thing you can do to prevent food poisoning.

About 20 organisms can cause food poisoning. After eating food contaminated with bacteria, the bacteria multiply in the stomach and the bowels. Some bacteria give off a toxin when they multiply. As a result, nausea, vomiting, abdominal cramps and diarrhea occur. Vomiting and diarrhea are the body's way of eliminating the toxin. Although the experience is unpleasant, most common cases of food poisoning run their course without needing medical attention.

Most cases of gastrointestinal symptoms (nausea, vomiting, abdominal cramps and diarrhea) are due to viral infections and are not true cases of food poisoning. Diagnosis of true food poisoning is difficult because the many organisms are found in different kinds of food and all have different incubation periods.

In California, three main bacteria cause the majority of food poisoning cases: campylobacter, salmonella and shigella. The dangerous *E. coli* 0157:H7, found in undercooked, contaminated ground beef and in contaminated fruits and vegetables, causes a very small number of cases. But because this strain of *E. coli* can cause kidney failure in children, each case is important.

Eating a substance and getting sick immediately afterwards is not the typical course for food poisoning. Most people are not aware that food eaten several days previously can be the cause of food poisoning.

Not all food poisoning organisms cause vomiting as a symptom but almost all organisms cause diarrhea. Blood in the stool is seen in several types of food poisoning and is considered a serious symptom. Abdominal cramps are common, even if vomiting is not present. Fever is infrequent but may be seen. Contact a physician if a fever or bloody stools are present.

## Botulism

### **What causes botulism?**

Botulism is caused by the organism *Clostridium botulinum*, a spore-forming bacteria. **Spores** release a toxin that caused the illness. Although widely spread throughout our environment, botulism spores only become dangerous after producing a toxin in an oxygen-free environment of low acidity. Botulism food poisoning is very rare, but it can be life-threatening.

Botulism may result from eating improperly processed, low-acid foods such as green beans, mushrooms, spinach, olives and beef or fish. Improper home canning methods account for many botulism cases. But, improperly processed commercial products can cause botulism too.

### **How can botulism be destroyed?**

Spores are highly resistant to destruction. They can survive hours of boiling at 212° F (100° C). Pressure cooking at 240° F (120° C) for 30 minutes can kill spores. The toxin (not the spores) is readily destroyed by boiling at 212° F (100° C) for 10 minutes or heating to 176° F (80° C) for 30 minutes.

### **How do I avoid botulism risks?**

- ◆ Use only proper methods for canning low-acid foods. Follow directions for home canning exactly.
- ◆ Avoid commercially canned low-acid foods with leaky seals or deep dents in the seams of the can.
- ◆ Avoid all bent, bulging or broken cans.
- ◆ Discard any food that explodes from a can when it is being opened. If canned food contents spray across the kitchen or hit the ceiling when the can is being opened, it is potentially dangerous.
- ◆ Never, never taste a suspicious food product.

- ◆ Don't count on cooking to kill the botulism spores.
- ◆ When in doubt, throw it out. (Don't give it to pets either!)

**Not even a taste: foods to avoid!**

Avoid tasting canned food that is soft, deteriorating, fermenting, or doesn't smell right. Even a taste is enough to cause illness. Throw the food away: It is not worth a life-threatening illness. Never taste suspicious foods for any reason.

**What are the symptoms of botulism?**

Botulism symptoms are not like those of ordinary food poisoning. Instead of stomach symptoms associated with other types of food poisoning, botulism causes toxic effects to the muscles and the nervous system.

Generally, victims experience symptoms 12-36 hours after eating, although symptoms have started as long as 96 hours after an exposure. The effects of botulism include blurred or double vision, dilated pupils, droopy eyelids that are difficult to open, dry, sore mouth and throat, a weak grip, and muscle weakness. Other symptoms can include difficulty swallowing and speaking, difficult breathing, major muscle weakness and paralysis.

**Is there treatment for botulism?**

Botulism can become life-threatening as the muscles used in breathing become paralyzed. Victims who expect the nausea, vomiting and diarrhea typical of ordinary food poisoning often wait too long to get medical help and consequently suffer a more severe illness. If you suspect botulism, get medical help as soon as possible. Antitoxin and good supportive care in a hospital setting have saved many lives.

## Infant botulism

Infant botulism is more common in the spring and the summer and is rare in the winter. Infants younger than one year of age, particularly between the ages of two to four months, are at highest risk. Symptoms include muscle weakness, a weak cry, a poor suck (difficulty in feeding), feeble crying, constipation, head lag, increased heart rate and a decreased gag reflex. A baby with infant botulism is described as a "floppy baby," as the baby will have weak muscles, especially in the arms, legs and neck.

Infant botulism has been associated with the ingestion of honey. The United States Center for Disease Control suggests that honey should not be given to

infants under the age of 6 months. The Honey Industry Council extends that limit to one year of age to be extra safe. Honey is not an essential food for infants and should not be given.

## E. coli 0157: H7 food poisoning

**What are the sources of this food poisoning?**

E. coli 0157: H7 produces a powerful toxin that causes an estimated 25,000 cases of food poisoning each year in the United States. Most cases are associated with undercooked, contaminated ground beef. The organism lives in the intestines of healthy cows. Meat can become contaminated during slaughter when intestinal fecal matter is mixed with beef that is ground into hamburger. Contaminated meat looks and smells normal so it is not readily detectable. Bacteria on cow udders or milking machines can contaminate raw milk.

Unpasteurized apple juice and apple cider made from fallen apples contaminated with feces caused an outbreak of E. coli 0157: H7. Alfalfa sprouts, radish sprouts and lettuce have become contaminated when watered or grown in sewage-contaminated water. Swimming in or drinking sewage-contaminated water can also cause disease.

**What symptoms does E. coli 0157: H7 cause?**

The onset of symptoms occurs one to seven days after ingestion of a contaminated food. Typical symptoms include watery diarrhea and severe abdominal pain that can progress to bloody diarrhea. Little or no fever is seen.

A small portion (2%-7%) may go on to develop hemolytic uremic syndrome (HUS), where red blood cells are destroyed and kidney failure develops. This is particularly dangerous in children under the age of 5 years and in the elderly. HUS is treated with blood transfusions and kidney dialysis. Some patients who recover may need to be on long-term dialysis. The death rate is 3%-5%.

**How do I prevent E. coli 0157: H7 food poisoning?**

Cook all ground beef thoroughly. Make sure the meat is cooked throughout with no pink. Make sure all juices are clear, not pink or red. Make sure the inside of the meat is hot. If served an undercooked hamburger in a restaurant, send it back. Consume only pasteurized milk and milk products. Drink only water treated with chlorine or other disinfectants.

## Campylobacter Food Poisoning

### **What is campylobacter?**

Campylobacter is the leading cause of bacterial food poisoning in the United States, causing 2 million to 8 million cases a year with 200-800 deaths. Eating undercooked chicken or food that has been in contact with raw chicken causes campylobacter. The Center for Disease Control estimates that up to 70%-90% of chickens are infected with campylobacter.

### **What are the symptoms?**

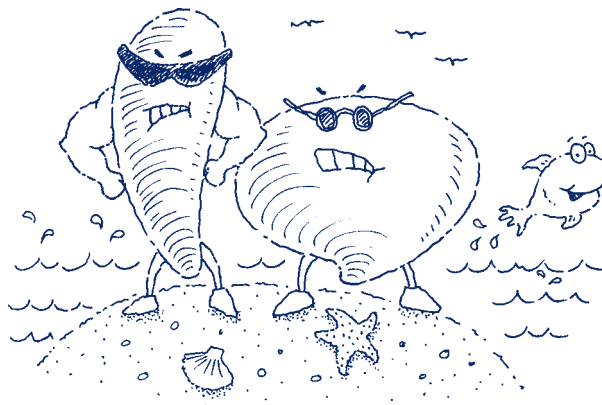
Symptoms include abdominal cramps and pain, bloody diarrhea and fever. The symptoms last about a week. Researchers believe that campylobacter can cause a rare neurological disease called Guillain-Barre syndrome, which can cause paralysis.

### **How can I prevent campylobacter food poisoning?**

To prevent the disease, make sure all chicken is thoroughly cooked with no pink remaining. Wash your hands frequently while working with raw chicken. Use paper towels to dry your hands. If you are using a sponge or dish-cloth to clean the counters, use a fresh one after working with raw chicken. Wash your cutting board with a diluted bleach solution before using again. Any utensils or dishes that had contact with raw chicken need to be washed well with soap and water before using again.

## What is "ptomaine food poisoning" ?

The dictionary defines ptomaine poisoning as "food poisoning caused by bacteria or bacterial products." Ptomaine poisoning is not a special kind of food poisoning and it is not a deadlier type of food poisoning. Ptomaine is an old-fashioned general term for any type of food poisoning caused by bacteria. The term "ptomaine food poisoning" is not used medically anymore.



## Food poisoning from the sea

Poisoning from eating toxic fish is very uncommon. If you become ill after eating fish, call the Poison Center for more information.

## How is food poisoning treated?

Do not induce vomiting, as it will NOT prevent food poisoning. Bacteria and other microscopic organisms cause food poisoning. There is no way that vomiting will remove every bad organism in the stomach. Food poisoning can still occur even if vomiting was induced. Unfortunately, there is no way to prevent food poisoning once bad food has been eaten. That is why prevention is the key.

Vomiting and diarrhea are how the body rids itself of tainted food. The best treatment is to let food poisoning run its course. In most cases, once the body is emptied of the bad food, the food poisoning is over.

It is essential to prevent dehydration (loss of body fluids). Replace lost fluids with small but frequent sips of liquids, such as Gatorade®, 7 UP®, apple juice, broth, bouillon or Pedialyte®. Report all cases of restaurant food poisoning to your county public health department.

## When should you see a physician because of food poisoning?

Young children, elderly people and people with severe medical conditions are at a highest risk of dehydration due to food poisoning. Contact your physician if there is:

- ◆ Diarrhea lasting longer than 24 hours
- ◆ Vomiting lasting longer than 12 hours
- ◆ Blood in the stool
- ◆ Fever
- ◆ Vomiting and diarrhea that are so intense that severe muscle cramping occurs
- ◆ An inability to keep down any liquids at all for 12 hours.

***If botulism, infant or adult, is suspected, immediately contact a physician. If unusual symptoms occur after eating fish, contact a physician.***

## How can food poisoning be prevented?

Following these rules can prevent most food poisoning cases:

- ◆ Wash your hands! Wash them before, during and after food preparation. Use soap and warm water and wash for 20 seconds. Wash after touching raw meat, fish or poultry. Wash your hands after every trip to the bathroom. Washing is the most important thing you can do to prevent food poisoning.
- ◆ Use hot, soapy water to wash cutting boards, utensils and anything else that was used to prepare food.
- ◆ Use a diluted bleach solution to clean cutting boards and countertops after food preparation.
- ◆ To clean kitchen sponges and dishcloths, rinse them in water, squeeze out the excess water and microwave at full power for 60 seconds. Be careful in removing hot items from microwave so you don't burn yourself.
- ◆ After handling raw meat, fish or poultry, do not reuse the same utensil or plate. Bacteria from the raw juices will contaminate other food.
- ◆ Do not use a sponge or dishcloth to clean surfaces that have touched raw meat, fish or poultry. Use soap, water and a disposable paper towel.

- ◆ Wash all fruits and vegetables well before eating.
- ◆ Cook all food thoroughly.
- ◆ Taste food only when it is thoroughly cooked. Use a clean spoon each time.
- ◆ Keep hot foods hot and cold foods cold. If food is allowed to remain at room temperature for two hours or longer, bacteria can multiply and cause food poisoning.
- ◆ Refrigerate all leftovers soon after meals.
- ◆ Hot food does not have to be cooled before placing it in the refrigerator.
- ◆ After shopping, refrigerate frozen food as soon as possible. If thawed, use immediately. Do not refreeze.
- ◆ Defrost meats and poultry in the refrigerator or the microwave.
- ◆ When camping, don't drink stream water. No matter how clear the water looks, it can still contain dangerous bacteria and other organisms.
- ◆ Don't buy or use food from dented, bulging or rusted cans. If you have a can with a dent on the seam, throw it away. Don't even open it.

Contaminated food may or may not smell, taste or look bad. Don't taste suspicious foods. Don't ask anyone else to taste it either.

Even a tiny amount of contaminated food can cause severe illness. If you have any doubt about the safety of the food, throw it out! Don't give possibly spoiled food to pets: They can get sick from bad food, too. Not even the most expensive food is worth a case of food poisoning, human or animal. Dispose of potentially tainted food by placing it down the garbage disposal or wrapping tightly and placing in the trash.

## How long can foods be stored?

- ◆ Refrigerated steaks and roasts should be used within three to four days after purchase.
- ◆ Ground meats, fresh poultry and raw fish should be used within one to two days after purchase.
- ◆ Milk, cream, cottage cheese and cream cheese are good for a week after opening.
- ◆ Hard cheeses that are tightly wrapped are good for two to three months.
- ◆ Eggs are good for three to four weeks. Keep them refrigerated.
- ◆ Cooked or uncooked vegetables are good in the refrigerator for three to five days.

- ◆ Berries are only good for about three to five days in the refrigerator before they mold or rot.
- ◆ Bread, cake and cookies (or anything made from a batter with yeast or wheat) should be used within a week to avoid mold.
- ◆ Baked goods will last longer (two weeks) if refrigerated.
- ◆ Deli meats should be used within four days after opening the package.
- ◆ Leftover meats are good for three to five days.
- ◆ Leftover chicken, gravy, sauce, chicken or tuna salads and turkey pies are only good for one to two days.
- ◆ Mustard, soy sauce, Worcestershire sauce and other condiments should be used within a year of opening the container.
- ◆ Mayonnaise, once opened, is good for two months.
- ◆ Open bottles of salad dressing are good for three months.
- ◆ Ketchup, jams, jelly and peanut butter are good for six months.
- ◆ Opened jars of salsa should be discarded after a month.
- ◆ Frozen food is good for a year if tightly wrapped and stored consistently at 0° F.
- ◆ If you cannot remember when a food was placed in the refrigerator, throw it out.

Many people do keep their food longer than the above guidelines. If you keep your food longer, make sure you check it each time to see that it has not turned moldy, slimy, stinky, rancid or otherwise rotten. Always check the food BEFORE you taste it.

### Is all moldy food dangerous?

Food poisoning is caused by various bacterial organisms. Mold is not a bacteria and will not cause food poisoning. Mold does not cause botulism unless the product was already contaminated with the botulism organism.

Mold can cause illness, especially if the person is allergic to molds. Usually though, the main symptoms from eating moldy food will be nausea or vomiting from the bad taste and smell of the moldy food.



### How can I keep food stored safely?

- ◆ Keep refrigerator temperature between 35-40° F and freezer temperatures at 0° F or lower.
- ◆ Space food items in your refrigerator and freezer so cold air can freely circulate.
- ◆ Wrap raw meat, fish or poultry in separate plastic bags. Place them on a plate or tray on the lowest shelf in the refrigerator to keep leaking juices from dripping on other foods.
- ◆ Freeze fresh meat, fish or poultry if they are not going to be used in the next couple days. Rewrap meat packages in aluminum foil or freezer paper to keep the meat airtight.
- ◆ Pack perishable foods in coolers with ice or ice packs when cleaning or defrosting your refrigerator or freezer.
- ◆ Use plenty of ice in the picnic chest to keep foods such as egg salad, potato salad, macaroni salad or any dishes made with mayonnaise or cream cold. Don't leave these foods in the sun.
- ◆ After holiday meals, remember to place the leftover turkey in the refrigerator. Do not leave the turkey on the counter or in the oven overnight.
- ◆ Do not leave stuffing in the turkey when you refrigerate it.

## How do I know if foods are cooked thoroughly and properly?

- ◆ Red meat should be cooked to 160° F.
- ◆ Large cuts of red meat can be cooked to medium rare, 145° F.
- ◆ Ground meat and hamburgers should be cooked all the way through until the center is at least 160-165° F.
- ◆ Cook fish to 130-140° F, until the center looks opaque when tested with a fork.
- ◆ Cook pork to 155° F with no pink.
- ◆ Cook chicken to 170-180° F or until the juices run clear.
- ◆ Eggs should be cooked until both the yolk and the white are firm.
- ◆ Heat left-overs to 165° F.
- ◆ When reheating sauces, soups and gravies, bring them to a boil.
- ◆ Never drink unpasteurized milk or dairy products.
- ◆ Do not eat raw cookie dough that contains eggs.
- ◆ Do not use leftover marinades as they contain raw meat juices.

## Food safety questions

### ***Is it safe to store food wrapped in aluminum foil?***

Acidic foods, such as dishes with tomato sauce, wrapped in aluminum foil and stored in the refrigerator can “eat” or “corrode” little holes in the foil wrap. This is a reaction of the food acids with the foil but it is not dangerous. The food may have a slight metallic taste but it has not turned poisonous. If the food tastes metallic, you may wish to discard it because many find the taste unpleasant. If the food tastes normal, it is safe to eat.

### ***What is detinning?***

Many people are surprised, after opening tomato sauce or other acidic foods, to discover dark discolorations on the can lining or can lid. Acid in these foods interacts with the tin can lining to cause these spots. This process is called “detinning” and is not dangerous. The foods can still be used.

### ***What if there are worms/weevils in the food?***

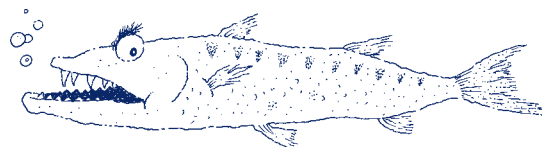
Many people have had the unpleasant surprise of finding live creatures wiggling in their food. Food or candy containing peanuts is commonly found to contain worms. Oatmeal, cereals and other grain products frequently have little weevils. People who have already

tasted the food and then find the live creatures tend to vomit immediately. While the idea is disgusting, there is no danger. The bugs and worms are destroyed by the stomach acids and will not turn into parasites.

Actually, insects are full of protein and are low-calorie. They are considered survival food by the military. If you were stranded in the wilderness without food, you could eat bugs, grubs, worms and other insects to prevent starvation. Most people who have accidentally eaten a bug do not find that particularly reassuring. No real treatment is needed. Inducing vomiting is not necessary.

### ***Are fish worms dangerous?***

Fish that live close to the shore are most likely to have parasites. These include flounder, rockfish, salmon and sole. Light cooking is sufficient to kill the parasites and bacteria that are found in fish. These flat fish should not be eaten raw.



### ***What does it mean if the fish smells?***

Fish that is not fresh can smell and taste like ammonia. The fish is NOT dangerous but will not taste pleasant. When you buy fish or seafood, look for no smell or a very mild fish smell. A strong smell indicates fish that is not fresh.

### ***Can food be safely stored in metal containers?***

Leaving fruit juices, tuna fish or other canned fruits and vegetables in the original metal can is not recommended. Acidic foods can interact with the metal, imparting a metallic taste to the food. To avoid this unpleasant experience, transfer leftover foods or juices to sealable glass or plastic containers. If a product stored in a can is accidentally tasted or eaten, the food may taste bad but it will not be dangerous.

### ***What happens if the freon leaks in the refrigerator/freezer?***

When the freon line leaks or bursts, the food in the refrigerator or freezer becomes contaminated with freon. The food may not taste as good, if it was not well wrapped, but will not be dangerous to eat. The food does not have to be thrown away, unless it becomes warm due to refrigerator failure. Freon is mainly dangerous when large amounts are inhaled in a small, enclosed area.

**What do the various dates on food mean?**

**“Expiration”** or **“Exp”** is the last date on which a product should be used. If the date has passed, throw it away.

**“Sell by”** indicates the last day on which the product should be sold. You can keep the food two to three days longer than that if it is well-refrigerated.

**“Best if used by”** is the date by which the manufacturer guarantees the freshness and quality of the food. It is not dangerous to use the food after that date, but the food may not have top quality or top nutritional value after that date.

**“Packed on”** dates are sometimes found on canned and frozen food. This is not useful information unless you know when the food was picked and processed before the freezing or canning. As a rule of thumb, frozen foods can be kept for three to four months after that date. Canned goods can be stored for up to a year beyond that date. Foods stored and kept longer may lose their flavor and nutritional value. But they are not dangerous.

Products may not necessarily be unusable after the date on the package. Examine the food carefully before using. To be safe, use common sense: If the food looks or smells unusual, don't use it.

**If you leave a spoon in the mayonnaise jar, does it turn the mayonnaise bad?**

The metal of the spoon does not react with the mayonnaise and form a poisonous substance. The problem with leaving a spoon in the foods like mayonnaise depends on the cleanliness of the spoon. If the spoon was used with other food or used for eating, the spoon is considered to be dirty as it harbors bacteria. Placing the dirty spoon in the mayonnaise places all that bacteria in the mayonnaise as well. Food poisoning can develop from the bacteria growing in the mayonnaise. That is why only clean utensils should be used in food.

**Is it true that shrimp can glow in the dark?**

If shrimp eat large amounts of luminescent organisms, they can glow in the dark. Although it can be surprising and alarming to see the remains of your dinner glowing in the dark in the night, it is not radioactive and it is not dangerous.

**How long can food be left out before it is dangerous?**

Food left out at room temperature for two hours or longer is at risk for causing food poisoning.

# Carbon Monoxide

## What is it?

You can't smell it, you can't see it, and you can't taste it, but deadly carbon monoxide might be making you sick. Carbon monoxide is absorbed through the lungs and transported by the bloodstream to all parts of the body. Carbon monoxide prevents the blood from carrying oxygen to the tissues of the body. The brain and the heart are especially sensitive to lack of oxygen.

**Where does carbon monoxide come from?**

Carbon monoxide is a byproduct of combustion. Fuels that can cause carbon monoxide poisoning include natural gas, kerosene, propane, heating oil, wood and charcoal. Fireplaces, gas stoves, wood burning stoves, water heaters, space heaters, room heaters, furnaces, or any other appliance that burns fuel are all potential sources of carbon monoxide. When fuel is not burning cleanly, carbon monoxide can result. That is why it is essential to properly maintain your appliances, fireplace and vehicle.

New homes are being built with an emphasis on better insulation, resulting in homes that are almost airtight. When the weather gets cooler, furnaces are turned on and people stay indoors more. With less ventilation in the house, the risk of carbon monoxide poisoning increases.

Frequently a person will leave the house for work or school and feel better, but then get sick again upon returning home. If the car exhaust is bad, a person is ill when driving for distances, especially if the windows are closed. Once they get out of the car and into fresh air, they start to feel better again.

Other sources include structural fires, car exhaust and cigarette smoke. People who smoke already have measurable amounts of carbon monoxide in their blood. Smokers develop problems with smaller exposures to carbon monoxide.

**What are the symptoms of carbon monoxide poisoning?**

The initial symptoms are much like the flu and include headache, dizziness, drowsiness, fatigue, shortness of breath, nausea and vomiting. Symptoms may progress to fainting, unconsciousness, heart problems and even death. Many people die in their sleep, never realizing that carbon monoxide levels have risen to a dangerous level.

The severity of the symptoms depends on the concentration of the carbon monoxide, the duration of the exposure and the size of the area. If a person is in a small, enclosed area without ventilation, they are more likely to have a more severe case.

#### **How is carbon monoxide poisoning diagnosed?**

Infants, small children, pets, pregnant women (more specifically the unborn baby) and people with heart disease are at greatest risk for carbon monoxide poisoning. If a pregnant woman is exposed to carbon monoxide, the baby absorbs more carbon monoxide from mom's blood than mom does herself. Mom may not have many symptoms but the baby may be seriously affected. Pregnant moms must be very careful to prevent exposure.

Carbon monoxide is diagnosed by a special blood test. It is not detected by routine blood tests. If you suspect carbon monoxide poisoning, you need to be tested while you are ill. Carbon monoxide does not stay in the blood stream long. If you are tested when you do not have symptoms, chances are that the carbon monoxide will not be detected. Treatment depends on the amount of carbon monoxide found in the blood and the symptoms.

#### **How is carbon monoxide poisoning treated?**

Oxygen is the antidote for carbon monoxide. Fresh air is the main treatment for very mild cases of carbon monoxide in healthy people. As you breathe in fresh air, you are also breathing out carbon monoxide. For more serious cases, oxygen is administered at the hospital to increase the elimination of the carbon monoxide from the body. People with heart disease or serious exposures need heart monitoring or an electrocardiogram to make sure the heart has not been injured. Hyperbaric oxygen may be used in critical cases.

### Prevention Tips

- ◆ Have your heating system inspected and serviced once a year. Utility workers can diagnose problems but do not fix them.
- ◆ Have your chimney and vents checked regularly.
- ◆ Have your fireplace or wood stove inspected and cleaned once a year.
- ◆ Have appliances installed and serviced by professionals.
- ◆ Have your car exhaust checked routinely.

- ◆ Never burn charcoal indoors, in the garage or in a tent or van while camping. Burning charcoal indoors can kill you.
- ◆ Never use a gas range or oven for heating a room.
- ◆ Never operate unvented gas-burning appliances in a closed room.
- ◆ Never leave a car running in a garage.
- ◆ Install a quality carbon monoxide detector in your home.

### A note on carbon monoxide detectors

Carbon monoxide detectors can be purchased at most home centers and hardware stores. Make sure the product is listed by the Underwriters Laboratories standard. Get a detector that is easily self-tested and easy to reset. Install it on a wall where it is easily accessible: not in the ceiling. There are battery operated and hard-wired detectors. If you have a hard time remembering to replace batteries, consider getting a detector that is installed as part of the house's electrical system. If you have a detector and the alarm sounds, pay attention to it and ventilate the house. Leaving the house is better. Call your utility company and have them confirm the carbon monoxide level and check your house for possible sources.

## Iron Poisoning

Iron is important for good nutrition because it is used in blood and muscle tissue. However, it is also very poisonous if too much is taken. Each year, there are over 3,500 iron poisonings in children under the age of 6 years. It is also one of the most frequent causes of poisoning death in children.

### Why is iron poisoning common?

First, iron supplements are found in many homes with small children. Iron is available in numerous over-the-counter and prescription tablets and liquids, such as ferrous sulfate, ferrous gluconate and ferrous

fumarate. It is also found in many multivitamin preparations for both children and adults. Finally, pregnant women are often prescribed prenatal vitamins that have high amounts of iron. Prenatal vitamins are often kept around the house after the pregnant woman stops taking them.

Second, many people are not aware that iron can be dangerous. It may be regarded as “just a vitamin” or as a nutritional product instead of a medicine.

Third, iron tablets may be attractive to a young child. This is certainly true of the chewable children’s vitamins with iron that are often in cartoon shapes with various colors and fruit flavors. The much more dangerous adult formulations contain more iron and often look like brightly colored candies to young children.

### What happens in an iron overdose?

When someone takes too much iron, the first effect is irritation and ulceration of the stomach lining. This results in nausea, abdominal pain and vomiting as early as 20 minutes after the ingestion. This can be followed by an apparent recovery, which is very deceptive because a few hours later the person can go into profound shock with a severe blood chemistry imbalance. When too much iron gets into the bloodstream, it goes to all the organs and can damage the stomach, liver, kidneys, lungs, blood vessels and brain.

### What should I do in case of an iron poisoning?

If there is a possibility that a child (or anyone) took too much iron, **immediately contact the Poison Control Center**. This is very important, even if the patient seems to be doing fine. The poison specialist will determine if treatment is necessary. You will be advised what to do for the child at home or, if necessary, you will be directed to take the child to a nearby hospital. Treatment for iron poisoning may include removing iron from the stomach, checking a blood level and, when needed, giving a chelating agent to bind up the iron in the bloodstream and help eliminate it from the body.



## Lead Poisoning

### What is lead poisoning?

Lead is a neurotoxic metallic element that can be absorbed by the body, primarily through the lungs and stomach. Lead poisoning occurs only when too much lead accumulates in the body. Generally, lead poisoning occurs slowly, resulting from the gradual accumulation of lead in bone and tissue after repeated exposure. However, it is important to note that young children absorb 50% of a lead ingestion while adults absorb only 10%.

### Why is lead poisoning dangerous?

Left untreated, lead poisoning can damage many internal organs, including the kidney, nervous system and brain. Because of the possibility of permanent impairment, lead poisoning is particularly dangerous during the critical development periods of infants and young children under the age of 7 years.

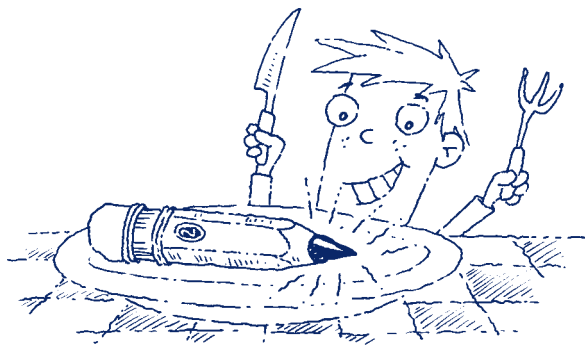
### Who is at risk for lead poisoning?

It is commonly believed that lead poisoning affects only the urban poor. While exposure risk is higher in deteriorating inner-city neighborhoods, this disease occurs in all social and economic groups. Middle-class children can become exposed to lead dust during renovations of older homes. In any case, children under the age of 3 are especially at risk because they crawl or play at ground level. They also put everything into their mouths and their small bodies absorb and accumulate toxic lead amounts more quickly than adults.

## Some common myths about lead

### ***“I’ve heard that eating a single paint chip causes lead poisoning.”***

**False:** Lead poisoning develops after repeated exposures to substances containing small amounts of lead, such as paint chips, dust, soil or eating from lead-glazed dishes. Since 1977, paints produced in the United States do not contain lead.



### ***Doesn’t eating pencil lead cause lead poisoning?***

**False:** Pencil “lead” is now made of graphite, which contains no lead.

## Common sources of lead exposure in children

### **High Amount Sources**

- ◆ Lead-based paint chips, interior and exterior paint (before 1977)
- ◆ Old window glaze

### **Medium Amount Sources**

- ◆ Soil, especially in dense urban areas
- ◆ Dust and debris from older building renovation

### **Low Amount Sources**

- ◆ Drinking water
- ◆ Playground soil
- ◆ Household dust

## Uncommon sources of lead exposure in children

### **High Amount Sources**

- ◆ Water boiled in leaded pots and pans
- ◆ Foreign cosmetics: Kohl, Surina
- ◆ Foreign cold medicines: Azarcon 93.5%, (also Rueda, Coral, Alarcon, Liga, Maria Luisa); Pay-loo-ah 90% lead with arsenic; Yogran Guggulu

### **Medium Amount Sources**

- ◆ Soil from smelter area
- ◆ Ceramics

### **Low Amount Sources**

- ◆ Old newsprint
- ◆ Leaded crystal

## Other sources of lead exposure

- ◆ Leaded gasoline fumes
- ◆ Leaded soldering fumes
- ◆ Leaded foil wine bottle caps
- ◆ Leaded residue from tainted soil or air in some fruits and vegetables
- ◆ Certain inks
- ◆ Heroin
- ◆ Bootleg whiskey
- ◆ Bone meal or dolomite supplements
- ◆ Auto battery storage casings
- ◆ Home smelting of lead shot and bullets

## Common symptoms of lead poisoning in adults

- ◆ Fatigue
- ◆ Depression
- ◆ Heart failure
- ◆ Abdominal pain
- ◆ Gout
- ◆ Kidney failure
- ◆ High blood pressure
- ◆ Wrist or foot weakness
- ◆ Reproductive problems
- ◆ Anemia

## Common symptoms of lead poisoning in children

- ◆ Decreased appetite
- ◆ Stomach ache
- ◆ Sleeplessness
- ◆ Learning problems
- ◆ Constipation
- ◆ Vomiting
- ◆ Diarrhea
- ◆ Tiredness
- ◆ Lowered I.Q.
- ◆ Anemia

## Who should be tested for possible lead poisoning?

- ◆ Children who are anemic
- ◆ Children with learning or behavioral problems
- ◆ Children who have been treated with foreign folk-medicines that contain high lead content
- ◆ Children who have a sibling, housemate or playmate being followed or treated for an elevated lead level.
- ◆ Children who live in or regularly visit a house with peeling or chipping paint built before 1960. This also includes day-care, pre-school or the babysitter's house.
- ◆ Children living with an adult whose job or hobby involves exposure to lead. Lead dust can be brought home on the adult's clothes and contaminate a child's environment.
- ◆ Children living near environmental sources of lead, such as battery manufacturing plants, lead smelters, battery recycling plants or other lead industries

## How do I get my children tested for lead?

Contact your physician to request a blood test specifically for lead levels. According to a statement released by the Center for Disease Control, data indicate some adverse effects have been documented in children with blood levels as low as 10 mcg/dl of whole blood. Call your local health department to see if your child is eligible for free testing through your local Child Health and Disability Program (CHDP).

## Is treatment available for lead poisoning?

**Yes**, effective treatments to remove lead from the body are available through your physician. First, the blood is tested and, if the levels are too high, treatment can be started. A recent study demonstrated that a child's I.Q. could improve if blood lead levels are lowered by medical treatment.

## What is the incidence of lead poisoning in California?

Fortunately, the incidence is low. Compared to the East Coast, California is a relatively new state. Most of the buildings are relatively new, thanks to the new home building trends of the last 20-25 years. California does not have the areas of concentrated industry that is seen on the East Coast. But we can never have false confidence that lead poisoning does not exist. If you have concerns, speak to your physician.

## What should I do if I suspect there is lead in my home?

Have your home checked by a qualified inspector. Several kits that test for the presence of lead in various sources are now available. Local public health departments, government agencies and water quality agencies may offer programs, recommendations or additional information.

## Can I remove lead paint from my home myself?

Lead paint removal should be done only by trained, certified professionals who are experienced in working with hazardous materials and special equipment.

## How can we reduce our risk of lead exposure?

- ◆ If lead paint has been found in your house, eliminate contaminated dust by using a solution of TSP (trisodium phosphate) and water. Damp-mop floors and clean other surfaces with a cloth or sponge that will not be re-used on dishes, eating, drinking or cooking utensils.

- ◆ Block painted windowsills and moldings with heavy furniture to keep children away.
- ◆ Install vinyl siding over exterior lead painted surfaces.
- ◆ Plant grass for dust control.
- ◆ Reduce children's contact with soil if your house was built before 1978 or is near a major highway.
- ◆ Plant bushes near exterior walls to keep children away.
- ◆ Test your water for lead safety through recommendations from local water suppliers or government agencies.
- ◆ Run tap water for 60 seconds before using it whenever the water may have been standing awhile.
- ◆ Use cold water for drinking, cooking and making infant formula because it carries less lead. (Boiling the water concentrates the lead.)
- ◆ Check pottery, china and leaded glassware for lead content.



## Mercury and its Many Forms

**B**roken thermometers are the cause of numerous calls to the Poison Center. Thermometers with a silver line contain elemental mercury. Thermometers with a red or blue liquid do NOT contain mercury.

There is much misinformation about mercury, its various forms and its dangers. Three different types of mercury exist, varying in their levels of toxicity. They are elemental mercury, inorganic mercury and organic mercury.

## Elemental mercury

Mercury is an extremely heavy, odorless, silver colored liquid. Mercury exists as a natural element in the earth's crust. Elemental mercury is also known as metallic mercury, liquid mercury, liquid silver and quicksilver.

### What are sources of exposure to elemental mercury?

Sources of elemental mercury in the home include broken mercury thermometers, broken fluorescent light bulbs, dental amalgam fillings, mercury containing latex paints, extraction of gold from ore using mercury, and contaminated clothing from workers in thermometer making plants. Elemental mercury is also used as a Mexican folk medicine to treat "empacho," a chronic stomach disorder.

### How toxic is elemental mercury?

Of all the forms of mercury, elemental mercury is the most commonly swallowed form of mercury, usually from a broken thermometer. Fortunately, elemental mercury from a thermometer is not absorbed from the stomach and will not cause any poisoning in a healthy person.

In a healthy person, the slippery swallowed mercury will roll into the stomach, out into the bowels and will be quickly eliminated without causing any symptoms. A person with severe inflammatory bowel disease or those with a fistula (hole or opening) in their gut may have problems with mercury if it is not all cleared out, resulting in prolonged exposure.

Handling liquid mercury for a very short period of time usually does not result in any problems. An allergic rash is possible, though. Mercury is not well absorbed across the skin so skin contact is not likely to cause mercury poisoning, especially with a brief one-time exposure. Even if a person has cuts in their skin, mercury is too heavy to be contained by a cut. Merely washing the wound well will wash the mercury out of the wound.

## Can elemental mercury be dangerous?

Inhalation of elemental mercury vapors is the main cause of toxicity, as mercury is well absorbed by the lungs. To develop problems by inhalation you need either a large one-time exposure or a long-term exposure. A small, one-time exposure is not likely to cause problems.

### **What are the symptoms?**

After a large, one-time inhalation exposure of mercury vapor, the lungs are the main target of mercury poisoning, although other symptoms develop as well.

Symptoms may develop within a few hours and include chills, metallic taste, mouth sores, swollen gums, nausea, vomiting, abdominal pain, diarrhea, headache, weakness, confusion, shortness of breath, cough, chest tightness, bronchitis, pneumonia and kidney damage.

### **How does long-term exposure differ from a short-term exposure?**

Long-term exposure (usually work-related) of inhaled vapors is generally more dangerous than a one-time short exposure. After long-term inhalation exposure, the nervous system is the main target of toxicity. Symptoms may occur within weeks but usually develop insidiously over a period of years.

Neurologic symptoms include tremors, headaches, short-term memory loss, incoordination, weakness, loss of appetite, altered sense of taste and smell, numbness and tingling in the hands and feet, insomnia, and excessive sweating. Psychiatric effects are also seen after long-term exposure.

Acrodynia can result from repeated exposures to mercury-containing latex paint fumes. Acrodynia is usually seen in younger children. The symptoms include chills, sweating, body rash, irritability, sleeplessness, leg cramps, swelling of the cheeks, nose, hands and feet, light-sensitivity to the eyes and peeling skin layers on the palms of the hands and soles of the feet.

## Inorganic Mercury

Inorganic mercury compounds are known as “mercuric salts.” Some of the mercuric salts include: mercuric chloride, mercuric iodide, mercuric nitrate, mercuric sulfide, yellow mercuric oxide, red mercuric oxide, ammoniated mercury, mercurous chloride and mercurous acetate.

### **What are sources of inorganic mercury compounds?**

Some folk medicines from outside the United States contain high amounts of mercury that can cause mercury poisoning. Two common mercury compounds are **calomel** and **cinnabar**.

### **Chinese herbal drugs with measurable amounts of mercury include:**

- ◆ Tse Koo Choy
- ◆ Qing Fen
- ◆ Zhu-Sha
- ◆ Chen-Fen

### **Chinese herbal ball preparations containing both mercury and arsenic include:**

- ◆ An Gong Niu Huang Wan
- ◆ Da Huo Luo Wan
- ◆ Dendrobium Moniliforme Night Sight pills
- ◆ Niu Huang Chiang Ya Wan
- ◆ Niu Huang Chiang Hsin Wan
- ◆ Ta Huo Lo Tan
- ◆ Tsai Tsao Wan

### **Indian and Mexican folk medications containing mercury include:**

- ◆ Creme de Belleza-Manning
- ◆ Tainan
- ◆ Ping-tong
- ◆ Sin-chu

## What are the symptoms of inorganic mercury poisoning?

Inorganic mercuric salts are corrosive and they damage the kidneys. Following ingestion, symptoms include nausea, vomiting blood, burns and tissue death in the throat and stomach, abdominal pain, bloody diarrhea, decreased urination and kidney failure.

Long-term application of mercury-containing substances causes skin redness and staining of the skin. More severe symptoms include nerve damage resulting in weakness, numbness and tingling.

## Organic Mercury

### **What are sources of organic mercury?**

Organic mercury compounds are found in a variety of products. They are used medically as fungicides and antibacterials. The most common organic mercury compounds in the home may well be mercurochrome (merbromin) and merthiolate (thimerosal), two common antiseptics. Fortunately, small ingestions by children rarely cause major problems.

### **What is the most common source of organic mercury poisoning?**

In the general population, the main source of mercury poisoning is the ingestion of mercury-contaminated food, usually fish. When lake, river or ocean water is contaminated with methyl-mercury compounds, the mercury accumulates and magnifies in the flesh of the fish. Organic mercury concentrations can be more than 1,000 times greater in the fish than in the surrounding water. People who eat fish as a main component of their diet may be at risk. If a river or lake is known to be polluted with mercury, fish eaters are warned to decrease their weekly intake of fish.

### **What are the signs and symptoms of organic mercury poisoning?**

Organic mercury compounds are very damaging. They are toxic by ingestion, inhalation, and skin and eye contact. These mercury compounds can attack all body systems. They can cause nausea, vomiting, lack of appetite, weight loss, abdominal pain, diarrhea, kidney failure, skin burns and irritation, respiratory distress, swollen gums and mouth sores, drooling, numbness and tingling in the lips, mouth, tongue, hands and feet, tremors and incoordination, vision and hearing loss, memory loss, personality changes and headache. Allergic reactions can also occur.

Methyl-mercury, usually from contaminated food, is very dangerous to pregnant women. Methyl-mercury causes profound mental retardation, cerebral palsy, seizures, spasticity, tremors, and incoordination, along with eye and hearing damage in the unborn baby as a result of the mother's exposure. Organic mercury passes into the breast milk as well.

## How is mercury poisoning diagnosed and treated?

Because the number of symptoms is so great and the variety of symptoms is so wide, anyone could pick out at least 2 or 3 symptoms at any given time. If you have any doubt and if you have been or are exposed to mercury compounds, see a physician and get tested. Testing is the only definite way to determine if mercury is the cause of the symptoms.

Mercury poisoning can be diagnosed by special blood and urine collection tests. If levels are high, there is treatment. Medication can be administered to help bind the mercury and increase elimination. Symptoms do not always correspond to blood mercury levels: Many patients with high levels do not have severe symptoms.

If mercury blood levels are going to be tested, it is important NOT to eat any seafood products for at least 30 hours before testing. Even a single meal of seafood can elevate mercury blood levels for as long as 20 to 30 hours after eating. Eating seafood will cause misleading high levels.

## How do I clean up a small spill of elemental mercury?

Many people have called the Poison Center asking how to clean up the mercury from a broken thermometer. There are several different ideas on how and how not to clean up the mercury beads. Experts agree on the ways NOT to clean up a spill:

- ◆ Do not sweep the area with a broom. Sweeping breaks the mercury into smaller droplets, further contaminating the room and the broom.
- ◆ Vacuuming vaporizes the mercury and increases the concentration of mercury in the air.

**NOTE:** If you are wearing gold jewelry, either remove the jewelry or wear good protective gloves. If the liquid mercury contacts the gold jewelry, the mercury bonds permanently to the gold and ruins it.

## How to safely and correctly clean up a small spill is more complicated

**Step One:** Using a playing card, credit card or stiff piece of paper, gather up, scrape up or roll up the beads of mercury into one big bead or ball.

**Then, several cleanup options are available:**

**Option A:** Using an eyedropper or other squeeze-bulb dropper, carefully suck the mercury droplets up.

**Option B:** Using a common penny, dip the penny into the mercury and let the mercury adhere or bond to the penny. This may require more than one penny.

**Option C:** Using duct (duck) tape, place the tape over the mercury ball or beads and lift the mercury off the surface.

**Step Two:** Place the mercury beads, mercury-coated pennies, or tape with the mercury beads into a zip-lock plastic bag. Seal the bag securely, tape it shut, wrap it in newspaper and dispose properly.

Two other, more complicated ways for cleaning up small spills require the use of granular zinc or sulfur powder. Granular zinc can be obtained from scientific supply houses and sulfur powder can be obtained at garden supply shops.

**NOTE:** It is important to know that using zinc granules will permanently stain carpets a dark gray that cannot be removed. Sulfur may stain carpets black, but this can often (but not always) be removed with carpet stain cleaners.

**Step One:** Dust on the zinc or sulfur powder and rub in well with a disposable whisk broom.

**Step Two:** Sweep up as much of the mixture as possible with the whisk broom.

**Step Three:** Vacuum up the residual matter with a vacuum cleaner and immediately discard the vacuum cleaner bag.

**Step Four:** If any mercury beads remain, repeat the process until none is present.

**Step Five:** Discard the whisk broom after use.

Regardless of the method used for cleanup, there is very little risk of danger if the area is well ventilated. A spill of a large amount of mercury that is not immediately cleaned up can present a problem as the mercury vaporizes and is breathed in by family members.



## Pet Poisoning Prevention Tips

**P**ets are not immune from poisonings, accidental or intentional. Dogs are especially prone to poisonings as they can and do eat almost anything. Head off potential pet dangers with some preventive measures.

- ◆ Feed pets only pet food. The fat content from table scraps can cause pancreatitis in dogs. Never give pets human food that you think might be spoiled. Animals can get sick from bad food as easily as humans.
- ◆ Lock up dangerous garage or storage area items such as insect killers or fertilizers before confining your pet in these areas.
- ◆ Choose a snail bait (metaldehyde) that does not look like pet food. The pellet formulation is responsible for many serious poisonings each year. Snail bait in the sawdust/powder formulation scattered in flowerbeds is safer.
- ◆ Some mouse and insect killing products use peanut butter as an attractant. The peanut butter is also attractive to dogs. Keep pets in mind when placing these products around your home.
- ◆ Clean up immediately after using household and automotive products. Antifreeze has a sweet taste that is attractive to animals. Even a small amount lapped up from the floor or driveway can cause kidney failure or death.
- ◆ Use pesticides, such as flea repellent sprays or shampoos, with care. Read warning labels before use. Never use dog products on cats, as cats are much more sensitive to the toxic effects of products. Discontinue use immediately if any unusual symptoms appear.

- ◆ Never transfer toxic products into jars or bowls from which pets can drink.
- ◆ Don't leave medications within reach of pets. If you drop a pill, pick it up before your pet finds it and eats it.
- ◆ Always check with a veterinarian before medicating pets. Many of the common over-the-counter medications (acetaminophen, aspirin, ibuprofen) can cause severe toxicity in both dogs and cats, even with just one tablet. Instead of treating your pet, you could be poisoning it.
- ◆ Don't allow your dog to eat chocolate. Chocolate contains an ingredient called theobromine, which acts very much like caffeine. Too much theobromine can cause vomiting, diarrhea, nervousness, restlessness, excitement, tremors, seizures, and even coma.
- ◆ Don't feed your pets alcohol or illicit drugs. It is dangerous. Many pets have had to be treated at an emergency vet clinic because of the folly of their owners.
- ◆ If you live in a tick-infested area, check your pets frequently, especially if they have been out for an extended period of time. Refer to the Lyme disease section to learn proper removal of ticks.
- ◆ Select houseplants with care. Some plants considered non-toxic to humans can be toxic to pets. See the plant section for more information.
- ◆ Make sure curious, young pets have safe, non-toxic chewable toys and snacks available. When young pets are teething, they will eat or chew on almost anything.
- ◆ Have the phone number of your veterinarian and the emergency vet number posted. Keep the Poison Center number handy. If you suspect a pet poisoning, do not wait to call. Prompt attention may make a crucial difference to your pet.
- ◆ To vomit dogs at home (under the direction of a health professional), 3% household hydrogen peroxide is used. Have a bottle on hand and always call before using it.

The three most common causes of serious poisonings in dogs are snail baits containing metaldehyde, rat poisons containing blood thinners, and ethylene glycol antifreeze. Only a little can cause life-threatening poisoning. Treatment is prolonged and expensive! With care, you can prevent poisoning your pet.



## Skunks and Pets

If your pet meets up with the wrong end of a skunk, the resulting smell can be hard to handle and harder to remove. Some have recommended bathing the pet in tomato juice. This will require a large quantity of tomato juice and will result in a big mess.

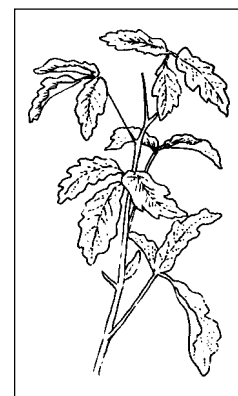
Another method of removing skunk smell from dogs and cats uses common household products. Combine 1 quart of household 3% hydrogen peroxide, 1/4-cup baking soda and 1 teaspoonful liquid soap. Wearing gloves, bathe the animal thoroughly and rinse well with copious amounts of warm water.

If a skunk sprays a pet in the eyes, the animal's eyes must be well irrigated for at least 15 minutes. Skunk "juice" left in the eyes can cause eye inflammation. In severe cases, the cornea may be affected, resulting in blindness.

## Poison Oak

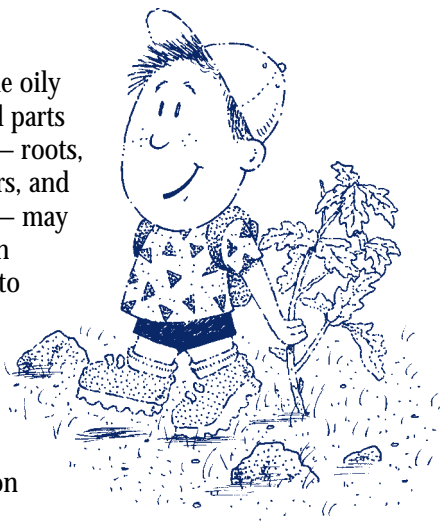
### What does poison oak look like?

Western poison oak, in the form of a bushy shrub or a climbing vine, can be found from Western Canada to Mexico. Poison oak grows from sea level to 5,000 feet of elevation. Characterized by alternate leaves with three or occasionally five veined, shiny leaflets, poison oak thrives throughout California. In the autumn, the leaves turn a deep red color.



POISON OAK

Exposure to the oily sap contained in all parts of the poison oak — roots, stem, leaves, flowers, and the fruit (berries) — may cause skin irritation ranging from mild to severe. Between 50% and 85% of the population is allergic to poison oak, resulting in a more severe reaction when exposed.



Primary contamination results from contact with bruised or broken plant parts that release toxicodendrol, an oily resin containing the toxic chemical urushiol. Because the lacquer-like resin does not dissolve in water, it is difficult to wash off and its toxicity persists for a long time. Poison oak branches left on a garage roof for 18 months were found to be toxic. Twigs kept in water for 16 months were still active. Unwashed contaminated clothing retained toxicity for more than one year.

## What symptoms does poison oak cause?

Severity of poison oak skin reaction depends on the degree of patient sensitivity, the amount of exposure, and on which body parts are exposed. Eyes, lips, genitals and other sensitive body parts exposed to poison oak sap will experience a more severe reaction.

Skin irritation characterized by redness, blistering, swelling and severe itching generally develops 24-48 hours after the exposure. Some victims experience symptoms after as little as 30 minutes. Others may not have symptoms until two weeks after their exposure.

In typical cases, the reaction is most severe five days after the exposure. Mild cases of poison oak last from seven to 10 days. Severe cases may last up to three weeks or longer. Fair-skinned people are more susceptible than dark-skinned people and younger people are more susceptible than older people.

**CAUTION:** Burning poison oak can result in a dangerous smoke that can cause severe symptoms to the eyes, nose, throat and lungs.

## How contagious is poison oak? How is it spread?

Fluid in the blisters does not contain the toxic poison oak chemical, urushiol. If the blisters break, the fluid will not cause the poison oak to spread.

Scratching other parts of the body with contaminated fingernails can spread poison oak. The toxic chemical can remain under the nails for several days unless carefully removed by thorough cleaning of the nails.

A person who has washed thoroughly and has changed into clean clothing cannot spread poison oak. The only way to become a victim of poison oak is to make direct contact with the toxic resin. This is possible by coming in contact with a contaminated person who has not washed properly or changed into clean clothes.

Other secondary exposures may result from simply handling garden tools, hunting or sports equipment, or camping gear exposed to poison oak. Thick fur protects most pets that run through poison oak patches from developing symptoms. But people who touch contaminated animals can come directly in contact with the toxic resin and can develop poison oak.

## How do you treat poison oak?

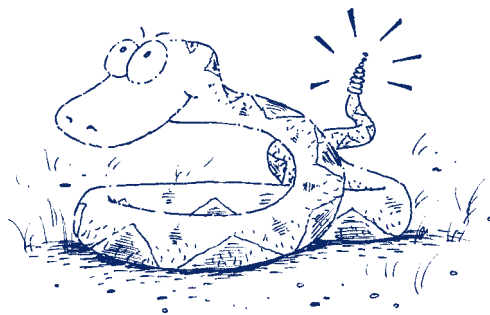
Treatment consists mainly of protecting the damaged skin, preventing infection and relieving the itching. The pharmacist at your local pharmacy will be happy to help you select the best over-the-counter medications to treat poison oak. Store-brand or generic versions of these medications also work and are usually available.

If the case of poison oak is severe, the patient should see a physician for more extensive treatment with stronger steroid medications.

Avoid the use of older Caladryl® that contains the ingredient “diphenhydramine,” unless directed by your physician. Applying diphenhydramine to open sores and taking diphenhydramine by mouth can cause a build-up of the drug leading to toxic symptoms.

## Prevention

- ◆ Learn to recognize poison oak and teach children at an early age to recognize it as well. **Leaves of three, let it be.**
- ◆ Wear protective clothing when out in the wild.
- ◆ Keep pets from running through poison oak areas.
- ◆ As soon as possible after an exposure, thoroughly wash the affected areas with soap and cool water. Rinse with copious amounts of cool water. (Warm water supposedly enhances the penetration of the oily sap.)
- ◆ Using rubbing alcohol (isopropyl alcohol) on affected skin areas and rinsing with copious amounts of cool water is said to prevent skin irritation.
- ◆ Unfortunately, urushiol binds so strongly to the skin that washing more than 15 minutes after exposure does little to remove the chemical from the skin.
- ◆ Change clothing as soon as possible after exposure and handle contaminated clothing carefully to avoid spreading the poison oak.
- ◆ Launder clothes several times before re-wearing.
- ◆ Never burn poison oak.
- ◆ Apply cool soaks or compresses to reduce itching and decrease heat from inflamed areas. Exposure to hot water increases itching.
- ◆ Do NOT wash the body with liquid bleach after a poison oak exposure. Bleach is not helpful and the vapors can be irritating to the eyes, nose, throat and lungs. Bleach will irritate inflamed skin even more, causing redness and pain to sensitive body parts.
- ◆ Be prepared for an exposure by including hydrocortisone cream and oral antihistamines in your first aid kit when hiking or camping. Check with your pharmacist for selection and use of these products.



## Rattlesnake Bites

### **Which rattlesnakes live in California?**

California is the home for several species of rattlesnakes. In Northern California, the Northern Pacific rattlesnake is the only native venomous species. Southern California has several types of rattlesnakes. These include the Western Diamondback, Sidewinder, Speckled rattlesnake, Red Diamond rattlesnake, Southern Pacific, Great Basin rattlesnake and the Mojave rattlesnake. In Southern California, the Western Diamondback is most commonly involved in bites. Unfortunately, the Western Diamondback is also the most venomous by weight.

Rattlesnake bites cause damage by destroying the tissue at the bite and causing blood clotting problems. The Mojave rattlesnake is different from the other California rattlers in that its venom affects the nervous system and can lead to paralysis.

### How can rattlesnakes be Identified?

Although rattlesnakes have several distinctive features, many people are not sure how to identify one. Using the snake's color or pattern is NOT a reliable method of identification. Looking for the characteristic rattle on the tail is a good method, but sometimes these rattles are lost.

Rattlesnakes have a powerful body, thin neck and a well defined triangular or arrow shaped head. Their eyes are hooded and the pupils of the eyes are oval (like a cat) rather than round. BE SAFE: Do NOT get close enough to a rattlesnake to see what shape pupils it has unless it is safely captured. Getting that close is a good way to get bitten in the face.

## How are non-poisonous snakes different from rattlesnakes?

In comparison, non-poisonous snakes have round pupils in their eyes. A non-poisonous snake tends to look more like a snake a child rolls out of clay: the head, neck and body have more-or-less the same diameter. They do not share the distinct skinny neck of the rattlesnake. This is true only of snakes native to California and does not apply to exotic snakes or snakes imported into California from elsewhere.

The Pacific Gopher snake and the common Bull snake have markings that are similar to a rattlesnake. These rattlesnake-like markings are a protective defense against enemies. But neither the Gopher Snake nor the Bull snake has the distinctive skinny neck that a rattler has. Still, many people are fooled into thinking that a Gopher or Bull snake is a rattlesnake. Bull snakes and Gopher snakes can cause a painful bite but they are not dangerous like a rattlesnake.

**Be safe, be smart: Leave snakes alone and avoid a bite.**

## What do I do for initial first aid?

Because most Californians live in rattlesnake country, a snakebite emergency plan should be developed before it is needed. If you are less than one hour from the nearest emergency room, initial treatment is relatively simple:

- ◆ Try to calm the victim.
- ◆ Gently wash the area with soap and water.
- ◆ Apply a cold, wet cloth over the bite.
- ◆ Transport to the nearest emergency facility for further treatment.

### **What should NOT be done after a rattlesnake bite?**

Several DON'Ts are very important to remember:

- ◆ DON'T apply a tourniquet.
- ◆ DON'T pack the bite area in ice.
- ◆ DON'T cut the wound with a knife or razor.
- ◆ DON'T use your mouth to suck out the venom.
- ◆ DON'T let the victim drink alcohol.
- ◆ DON'T apply electric shock.

The preceding treatments will NOT help the victim and are dangerous. Applying ice or a tourniquet can block circulation, which can result in gangrene and eventual loss of the limb due to amputation. Cutting the wound can cause excessive bleeding. Because human mouths are full of bacteria, sucking the venom from the wound can cause infection, making treatment more difficult.

### **Have an emergency plan**

If you will be more than one hour from an emergency facility, your emergency snakebite plan becomes more complicated. You need to know the following information:

- ◆ Where is the nearest hospital emergency room?
- ◆ How long will it take 9-1-1 emergency responders to arrive on the scene?
- ◆ How close will you be to a fire department, park ranger, highway patrol, sheriff or Coast Guard station?

**If you will be a great distance from emergency assistance, you should:**

- ◆ Always hike or camp with a buddy who will be able to go for help.
- ◆ Take along a portable phone.
- ◆ Notify people where you will be and check in with them.

If you are going to be in the wilderness, it is a good idea to carry a Sawyer Extractor® snakebite kit. These snakebite kits can be bought at most sporting goods stores. Each kit contains a syringe-like device that exerts one atmosphere of reverse pressure. The device extracts the venom from the wound without the complications or bleeding or wound contamination. It is important to know that the Sawyer Extractor® removes less than half the venom injected into the wound. Using a Sawyer Extractor® kit is definitely NOT a substitute for treatment in an emergency room. Read the kit directions BEFORE a snakebite occurs.

## What kinds of symptoms develop after a rattlesnake bite?

A rattlesnake may strike without injecting venom, inflicting what is called a “dry bite.” Even though the victim is not poisoned, the painful bite can still become infected. All rattlesnake bites require medical attention in an emergency room.

If a rattlesnake injects venom into the wound, a variety of symptoms develop: swelling, pain, bleeding at the site, nausea, vomiting, sweating, chills, dizziness, weakness, numbness or tingling of the mouth or tongue, and changes in the heart rate and blood pressure. Other symptoms can include excessive salivation, thirst, swollen eyelids, blurred vision, muscle spasms and unconsciousness. Rattlesnake venom also interferes with the ability of the blood to clot properly.

## What is the treatment for a rattlesnake bite?

Severe symptoms can be life-threatening and must be treated with antivenin, a prescription medication. Antivenin is given intravenously with fluids. Other therapy may include numerous laboratory tests, antibiotics and an update on the tetanus shot, if needed.

## Is a rattlesnake bite always deadly?

Nationwide, there are over 800 cases of rattlesnake bites reported annually to the American Association of Poison Control Centers. Of these reported bites, only one to two cases per year result in death of the patient. Although complications such as possible blood clotting problems, allergic reactions to treatment, infection and shock may develop, the majority of rattlesnake bites are successfully treated with as little as two to three days of hospitalization.

## What can be done to prevent a bite?

Hands, feet and ankles are the most common sites for rattlesnake bites. Using some common sense rules can prevent most snakebites.

- ◆ Never go barefoot or wear sandals when walking in the rough. Always wear hiking boots.
- ◆ Always stay on paths. Avoid tall grass, weeds and heavy underbrush where there may be snakes.
- ◆ Use a walking stick when hiking. If you come across a snake, it can strike the stick instead of you.
- ◆ Always look for concealed snakes before picking up rocks, sticks or firewood.
- ◆ Always check carefully around stumps or logs before sitting.
- ◆ When climbing, always look before putting your hands in a new location. Snakes can climb walls, trees and rocks and are frequently found at high altitudes.
- ◆ Never grab “sticks” or “branches” while swimming. Rattlesnakes are excellent swimmers.
- ◆ Baby rattlesnakes are poisonous! They can and do bite. Leave them alone.
- ◆ Never hike alone. Always have a buddy to help in case of an emergency. Learn basic life-saving methods.
- ◆ Don’t handle fresh killed snakes. You may still be bitten.
- ◆ Never tease a snake to see how far it can strike. You can be several feet from the snake and still be within striking distance.
- ◆ Don’t keep rattlesnakes as pets. The majority of rattlesnake bites occur when people (usually intoxicated young men in their 20s) tease or play with their “pet” rattlesnake.
- ◆ Teach children to respect snakes and to leave snakes alone. Curious children who pick up snakes are frequently bitten.
- ◆ **Always give snakes the right of way!**

If you, a family member or a friend gets bitten by a rattlesnake, remember your emergency plan. Calm the victim and transport to the nearest emergency facility. There is treatment available once you arrive.

## Know Your Plants

Indoor and outdoor plants are responsible for a rising number of accidental poisonings. Plant ingestions are among the top five causes of accidental poisonings in children younger than 5 years. Pets are also frequent victims of plant poisonings.

### Did you know?

- ◆ Young children and pets will often chew and eat anything within reach, no matter how it tastes.
- ◆ Eating a small amount of a plant may not always be a problem, but large or repeated doses may be extremely harmful.
- ◆ There is no easy test for knowing poisonous plants from those that are safe.
- ◆ Many plants cause nausea, vomiting, abdominal cramps and diarrhea.
- ◆ Some plants have substances that are very irritating to the tongue, mouth and skin. Immediate burning pain in the mouth along with swelling is common.
- ◆ Some plants can cause a skin rash. Sometimes the rash only occurs after being in the sun or gets worse with exposure to sunlight.
- ◆ Don't assume a plant is safe for humans just because animals or birds eat it without harm.
- ◆ Heating and cooking do not necessarily destroy the toxin in a mushroom or a plant.

### Are all herbal products safe?

Scientific studies have not been done on most herbal products. Herbal products are not regulated by the Food and Drug Administration for purity, potency and effectiveness. Long-term effects are rarely known. Drug interactions between herbal preparations, prescription and over-the-counter medications may occur. Use at your own risk.

Pregnant women, breast-feeding moms, infants and young children should not use herbs unless approved by a physician. Older people with serious medical conditions and those taking prescription medications should also seek approval from a physician before using herbs.

## How do I prevent poisoning from plants?

Everyone should be aware of the potential danger of plants. Although most plants are poisonous because they can cause some kind of harm, only a small number of plants are actually deadly. Usually a large quantity of berries, pods, leaves, flowers or seeds must be eaten to cause symptoms. Be aware of plants treated with pesticides or fertilizers. Non-toxic plants treated with toxic chemicals become dangerous because of the chemicals.



- ◆ If you have small children or curious pets, keep all plants out of their reach.
- ◆ Before buying a new plant, have the store label the plant with the common and Latin name.
- ◆ Know the names of all your plants both inside and outside the house. Show grandparents and babysitters where to find the plant names. **Poison Center staff cannot identify a plant from a plant description given over the phone.**
- ◆ Grandparents and babysitters who care for your child away from your home should also know the names of the plants in their homes.
- ◆ Mushrooms and berries are very attractive to children.
- ◆ Teach children not to put any part of a plant in their mouth. This means leaves, berries, stems, bark, seeds, flowers, nuts, pods and bulbs.
- ◆ Teach children that sucking the nectar from flowers is not safe.
- ◆ Never let children chew on jewelry made of decorative seeds or beans. Some are very dangerous.
- ◆ Store labeled bulbs and seeds safely out of the reach of children and pets. Do not confuse bulbs with onions or shallots.
- ◆ Never use anything prepared wild from nature as a "natural" medicine or tea. The result could be very dangerous or even lethal.

- ◆ Wear gloves and protective clothing when handling plants that can be irritating to the skin. Wash hands and clothes well afterwards.
- ◆ Smoke from burning poisonous plants (especially poison oak) can irritate the eyes, nose, throat and lungs.
- ◆ When you are camping, hiking, picnicking or traveling with young children, take syrup of ipecac with you. If an ingestion occurs, you will be prepared.

### Which plants are most commonly involved in calls to the Poison Center?

Thirty types of plants account for the majority of plant calls to California Poison Centers. They are listed below in descending order of frequency of calls. Most plant calls to the Poison Center (almost one in 10) involve an unidentified plant.

Plant name	Toxicity
Unidentified plant	unknown
<i>Philodendron</i> family	oxalates
Pyracantha species	non-toxic
Oleander ( <i>Nerium</i> )	dangerous to the heart
Dumb cane ( <i>Dieffenbachia</i> )	oxalates
Pothos ( <i>Epipremnum aureum</i> )	oxalates
Weeping fig ( <i>Ficus benjamina</i> )	dermatitis
Poinsettia ( <i>Euphorbia pulcherrima</i> )	non-toxic
Poison oak ( <i>Toxicodendron</i> )	dermatitis
Ornamental peppers ( <i>Capsicum</i> )	irritant to mouth/eyes/skin
Heavenly bamboo ( <i>Nandina domestica</i> )	non-toxic
Jade plant ( <i>Crassula argentea</i> )	non-toxic
Holly ( <i>Ilex</i> )	vomiting
Eucalyptus	vomiting
Calla lily ( <i>Zantedeschia</i> )	oxalates
Peace lily ( <i>Spathiphyllum</i> )	oxalates
Schefflera ( <i>Brassaia actinophylla</i> )	dermatitis
Asparagus fern	non-toxic
Rhododendron	dangerous to the heart
Chrysanthemum	dermatitis

Plant name	Toxicity
Silver king/Silver queen ( <i>Aglaonema</i> )	non-toxic
African violet ( <i>Saintpaulia ionantha</i> )	non-toxic
Nephthytis ( <i>Syngonium</i> )	oxalates
Geranium ( <i>Pelargonium</i> )	dermatitis
Oak ( <i>Quercus</i> )	dangerous to liver/kidney
Ivy ( <i>Hedera helix</i> )	dermatitis
Jimson weed ( <i>Datura</i> )	dangerous to heart/hallucinogen
Indian hawthorn ( <i>Rhaphiolepis indica</i> )	non-toxic
Rose ( <i>Rosa</i> )	non-toxic
Dandelion ( <i>Taraxacum officinale</i> )	non-toxic

### What are oxalate-crystals and how dangerous are the plants that contain them?

Of the calls about plants to the poison center, one in five involves plants containing oxalate crystals. Oxalate-containing plants have microscopic crystals in the juice or sap. These crystals look like tiny needles or splinters of glass. When these plants are chewed, intense mouth pain and irritation can result.

Young children with only a few teeth do not have as much of a problem with these plants as do older children or adults. When a person with a full set of teeth chews or grinds these plants, the crystals are released and pain results. Young children cannot do enough damage to the plant to cause themselves harm.

### What if I don't know the name of the plant?

Remember, Poison Center staff cannot identify plants over the phone based on a description. A very common poison center call is a call asking if the shrub in the back yard that has shiny green leaves and white flowers in the spring is dangerous. The Poison Center staff always advise that the plant be taken to a reputable nursery for identification. There is time for identifica-

tion. Plants are not digested quickly so immediate symptoms are rarely seen.

Some parents or caregivers either cannot or will not get the plant identified. The caregiver is then faced with making an unpleasant and risky treatment decision: wait to see if anything dangerous occurs or treat even though the plant might be non-toxic. Statistics show that one out of ten plant ingestions in California involves a plant that is never identified.

## What plants are dangerous?

The following is a list of plants that can be highly toxic:

- ◆ Angel's trumpet (*Brugmansia arborea*)
- ◆ Azalea (*Rhododendron*)
- ◆ Black locust (*Robinia pseudoacacia*)
- ◆ Cardinal flower (*Lobelia cardinalis*)
- ◆ Carolina jasmine (*Gelsemium*)
- ◆ Castor bean (*Ricinus communis*)
- ◆ Christmas rose (*Helleborus niger*)
- ◆ Common nightshade (*Solanum nigrum*)
- ◆ Daphne
- ◆ Deadly nightshade (*Atropa belladonna*)
- ◆ Delphinium
- ◆ Gopher plant (*Euphorbia lathyris*)
- ◆ Foxglove (*Digitalis purpurea*)
- ◆ Heliotrope (*Heliotropium arborescens*)
- ◆ Jimson weed (*Datura stramonium*)
- ◆ Lantana (*Lantana camara*)
- ◆ Larkspur (*Delphinium*)
- ◆ Lily-of-the-valley (*Convallaria majalis*)
- ◆ Mistletoe
- ◆ Mushrooms
- ◆ Nicotiana
- ◆ Oleander
- ◆ Poison hemlock (*Conium maculatum*)
- ◆ Pokeweed (*Phytolacca americana*)
- ◆ Rosary bean (*Abrus precatorius*)
- ◆ Stinking nightshade (*Hyoscyamus niger*)
- ◆ Water hemlock (*Cicuta maculata*)
- ◆ Wisteria

For a more complete plant list, contact the Poison Center Health Education line at (800) 582-3387.

Most of the preceding toxic plants grow outdoors. If you have curious children and pets that chew, do not plant these potentially dangerous plants in your yard. If these plants are already in your garden or on your property, consider removing them or fencing them.

If neither is an option, do not leave children or pets unsupervised in those areas. Remember, it takes only the second you turn your back for a poisoning to occur.



## Can pets get poisoned from plants?

As a general rule, plants that are listed as toxic to humans should also be considered toxic to animals. There are a few cases of plants considered non-toxic or mildly toxic to humans causing problems to animals.

Dogs	Cats	Birds
Onion	Calla Easter lily	Avocado
Garlic	Philodendron	
Heavenly bamboo	Pothos	
Schefflera	Scindapus	
	Dracaena	

## What to do for a plant poisoning

- ◆ Remove any remaining plant parts from the mouth.
- ◆ If the victim is choking and cannot breathe, call 9-1-1.
- ◆ Otherwise, call the Poison Control Center.
- ◆ If you are advised to go to an emergency room for treatment, take the plant or a part of the plant with you. Do not take a single leaf or a single berry.
- ◆ If you are advised to go to a nursery to get the plant identified, keep in mind that plants are usually not very quickly digested, so there is time to get a correct identification. The correct name can result in the proper treatment to prevent symptoms from occurring if the plant was poisonous. If the plant was not dangerous, knowing the name can prevent needless treatment and worry.



## Mushrooms

### **How frequent are mushroom ingestions?**

Every year across the United States, more than 9,000 cases of mushroom ingestions are reported to the American Association of Poison Control Centers. Many hundreds of cases of mushroom ingestions occur each year in California. Children under the age of 6 years account for a majority of these cases. The consequences of mushroom poisoning can be severe.

### **What is the difference between a mushroom and a toadstool?**

Because there is so much misinformation about toadstools and mushrooms, the terms need definition. Some people mistakenly believe the word “mushroom” means an edible or safe variety and the word “toadstool” means a poisonous or bad mushroom. This is incorrect. Many mushrooms are poisonous and some toadstools are edible or safe.

### **How poisonous are mushrooms?**

Medically speaking, “poisonous mushroom” means any mushroom or toadstool that causes an adverse or negative reaction when eaten. Symptoms can range from 6 hours of vomiting to lethal liver or kidney failure.

### **How many poisonous mushrooms are there?**

In the United States, there are about 5,000 types of mushrooms. Of these, about 100 are responsible for most of the cases of mushroom poisoning. Less than a dozen species are considered deadly. However, death from other species, even so-called “safe” mushrooms, has occurred in very young children or in very ill adults. Some of the mushrooms that can cause death in healthy adults are the Death Cap, the Destroying Angel, the False Morel and mushrooms in the *Galerina* species. Almost every year, someone in California dies from eating the wrong mushroom.

**“There are old mushroom hunters and bold mushroom hunters. But there are no old, bold mushroom hunters.”**

## What are the facts and fiction about mushroom identification?

**FACT:** There are no non-scientific tests or rules that can accurately determine the safety or toxicity of a mushroom. Using the following “rules” could prove to be a deadly mistake!

**FICTION:** A mushroom is considered poisonous if:

- ◆ The mushroom stains when bruised
- ◆ The mushroom secretes a milky sap
- ◆ The mushroom turns garlic blue or black when cooked together
- ◆ The mushroom turns a silver coin black when rubbed against it
- ◆ The mushroom tarnishes a silver spoon when cooked with it
- ◆ The mushroom has scales, warts or other types of rough surfaces

**FICTION:** A mushroom is considered safe if:

- ◆ The mushroom grows on wood
- ◆ Slugs or other insects eat the mushroom
- ◆ Squirrels, rabbits, or other wildlife eat the mushroom
- ◆ The mushroom is dried, boiled, salted or pickled in vinegar
- ◆ The mushroom does not have a ring or skirt on the stalk
- ◆ The mushroom is pure white in color

**FACTS:**

- ◆ Some people can eat mushrooms with no problems, while other people eating the same mushroom will experience severe vomiting and diarrhea.
- ◆ Some people can have allergic reactions to eating “safe” mushrooms.
- ◆ Some mushrooms are only poisonous if eaten in large quantities.
- ◆ Some mushrooms are poisonous when raw but become harmless when parboiled and thoroughly cooked.
- ◆ Some mushrooms are poisonous regardless of how they are cooked or prepared.
- ◆ Some mushrooms are poisonous only if eaten with alcoholic beverages.
- ◆ Some mushrooms are classified as poisonous because they are hallucinogenic.

**MORE FACTS:**

- ◆ Some mushrooms that are edible when fresh and young become poisonous when they are old, hit by frost or if they decay.
- ◆ Some mushrooms, for unknown reasons, are poisonous in one part of the country and are not poisonous in another.
- ◆ Some mushrooms that are poisonous to animals do not cause major problems in humans.
- ◆ Most mushrooms are more dangerous to young children, the aged and the very ill.

Ideally, people and animals should never eat mushrooms that have not been identified by an expert or bought at the store. Unfortunately, many mushrooms are difficult to identify even for a trained mycologist, a biologist trained in the study of mushrooms.

## How ARE mushrooms identified? Is it easy to do?

Identifying mushrooms is an exact art that is very difficult and time-consuming. Before making a positive identification, mycologists look closely at the color, gills, spores, stalks and base portion of the mushroom. Spores are examined under a microscope to detect differences. The mycologist will also consider where the mushroom was growing, such as in the woods, on a lawn or on a tree before making an identification. Because of the involved process required to accurately identify a mushroom, it is impossible to identify a mushroom from a description over the phone.

Gourmet cooks who have harvested wild mushrooms have been poisoned. To be safe, avoid all mushrooms not purchased at a store.

## What symptoms do poisonous mushrooms cause?

There are a variety of mushrooms, divided into categories or groups. Each category causes different symptoms.

**Group 1. CYCLOPEPTIDES:** The first signs and symptoms may not develop for six to 24 hours, usually 10-14 hours after the ingestion. Symptoms begin with sharp abdominal pains, followed by violent vomiting and persistent diarrhea, often containing blood and mucus. In three to four days, the patient begins to

worsen with symptoms of kidney and liver failure. Death is very possible.

**Group 1A. ORELLANINE:** Symptoms begin 36 hours to 11 days after ingestion. They include nausea, lack of appetite, headache and, most importantly, a severe burning thirst and kidney failure.

**Group 2. IBOTENIC ACID-MUSCIMOL:** A state resembling alcohol intoxication develops 30 to 60 minutes after ingestion. Confusion, muscle spasms, delirium and visual disturbances, which last for about four hours, develop following the intoxicated state. Vomiting usually does not occur. Drowsiness and sleep follow and recovery is usually rapid.

**Group 3. MONOMETHYLHYDRAZINE:** After six to eight hours, the patient experiences a feeling of fullness in the stomach followed by vomiting and watery diarrhea. Headache, fatigue, cramps and intense pain in the liver and stomach regions occur, followed by jaundice. Seizures occur in severe cases.

**Group 4. MUSCARINE-HISTAMINE:** Within 30 minutes to two hours after ingestion, symptoms include sweating, drooling, diarrhea, watery eyes, blurred vision, pinpoint pupils, decreased heart rate and blood pressure, and asthmatic breathing. (The sweating, drooling, diarrhea and watery eyes do NOT occur with other types of mushroom poisonings.)

**Group 5. COPRINE:** Symptoms will occur if this mushroom is eaten by a person who drinks alcohol within the next 5 days. Flushing of the face and neck, a metallic taste in the mouth, numbness of the hands and feet, palpitations, and an increased heart rate are the symptoms.

**Group 6. PSILOCYBIN-PSILOCYN:** These are the hallucinogenic mushrooms that alter consciousness. An intoxicated or hallucinogenic condition begins between 30 and 60 minutes after ingestion. The mood may be apprehensive (anxious) or pleasant. The person may experience compulsive movements and uncontrolled laughter. In children, a high temperature (102-106° F) with seizures may develop.

**Group 7. GASTROINTESTINAL:** Within 30 to 90 minutes of ingestion, sudden severe vomiting and mild to severe diarrhea with abdominal cramps occurs. Symptoms generally last six hours. In children, this may lead to dehydration severe enough to require hospital treatment.

## Can we just wait to see if symptoms appear?

**DO NOT WAIT FOR SYMPTOMS TO APPEAR!** Just because a victim does not have any symptoms right away does not mean that everything is OK. Symptoms may not develop until several days later. Not all mushrooms are poisonous. But several people have developed complete liver failure after eating the wrong mushrooms. They received liver transplants and will be taking anti-rejection drugs for the rest of their lives. If no liver is available for an emergency transplant, the patient could die.

## But aren't there antidotes to treat mushroom poisoning?

*There is NO antidote for mushroom poisoning!* All mushrooms not bought at the grocery store are considered to be potentially dangerous.

Call the Poison Center as soon as you even suspect a mushroom ingestion. If a significant amount of time passes after the ingestion, treatment at a hospital will be required. Mushroom ingestions can be very serious and emergency treatment may be required.

Spring and autumn seasons with cool, damp evenings encourage mushroom growth. Check your yard for mushrooms before letting young children and pets out to play. Teach children not to taste or even touch ANY outdoor mushrooms.

Don't add mushrooms from the wild to your gourmet dishes unless you are absolutely positive that the mushroom has been accurately identified and is safe. The life you save may be your own.

## Conclusion

**W**e hope this booklet has been interesting and educational for you. Make your home safe and protect your loved ones from accidental poisoning. But if an accident does happen, call the Poison Center right away. We are California's Poison Control System and we are here 24 hours a day to help you with your poison emergency.

Call:  
**1-800-876-4766**  
*anytime, anyplace in California.*

## Babysitter's Guide

**O**n some occasion, almost every child will be cared for by a relative or a sitter. An emergency may occur when you are not available to answer important questions. In an emergency, it is essential that the person caring for your child has quick access to vital information. To prepare, fill out the following information for each child in your household. Use pencil and update this information each month for each child.

Many parents do not know how much their own children weigh and do not have scales to weigh

them. A sitter will only be able to guess at important health issues if information is not written down and easy to find. Make an effort to weigh each child regularly.

Also, make sure that your own phone number is on the telephone or written down. If the sitter cannot find the phone number, the Poison Center staff will not be able to call back and make sure everything is fine.

Child's full name, including last name: \_\_\_\_\_

Date of birth: \_\_\_\_\_ Weight: \_\_\_\_\_ Date weighed: \_\_\_\_\_

Allergies: \_\_\_\_\_

Medical conditions (asthma/seizures/diabetes): \_\_\_\_\_

Any current medications: \_\_\_\_\_

Insurance/medical record number: \_\_\_\_\_

Physician name/phone number: \_\_\_\_\_

Hospital name/phone number: \_\_\_\_\_

Veterinarian name/phone number: \_\_\_\_\_

The address here is: \_\_\_\_\_

This phone number is: (            ) \_\_\_\_\_

I/we will be at: \_\_\_\_\_

I/we can be reached at phone number: (            ) \_\_\_\_\_

I/we will return at : \_\_\_\_\_ a.m./p.m.

In an emergency, call: name \_\_\_\_\_

Emergency contact phone number: (            ) \_\_\_\_\_

The syrup of ipecac is located: \_\_\_\_\_

***In an emergency, call 9-1-1 for ambulance, fire, police.  
For a poison emergency, call 1-800-876-4766.***

# Acknowledgments

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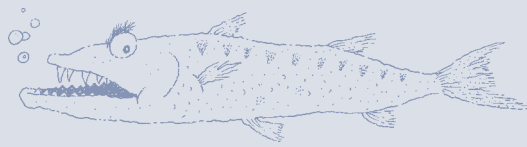
*The California Poison Control System, managed by University of California  
San Francisco, School of Pharmacy, consists of four answering sites:*

*UC Davis Medical Center  
San Francisco General Hospital  
Valley Children's Hospital  
UC San Diego Medical Center*

*In a poisoning emergency, the Poison Control System can be reached throughout  
California by using a single toll-free number.*

Call:  
**1-800-876-4766**  
*anytime, anyplace in California.*

*Health education services are available throughout the State.  
For brochures, phone stickers or other educational materials or information call: 1-800-582-3387.  
Central Administrative Office: 415-502-8600*



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