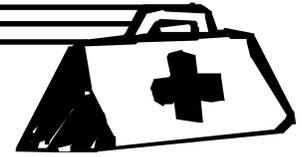


Be Safe: --- --- Stay Healthy after a Disaster



Natural Hazards Series: Recovery

Part 1

The forces of nature – wind, water, earthquake and extremes of temperature – can leave behind debris-strewn areas, contaminated water, spoiled food, displaced wildlife and conditions which, if not treated properly, may lead to health problems. In these pages you'll find information to help you avoid and recover from some of the hazards created by wind and water; severe winter weather is covered in a separate publication. Remember to take care of **yourself** and your family first, then deal with the **things** you may have lost to the disaster.

Safety in a Disaster Area

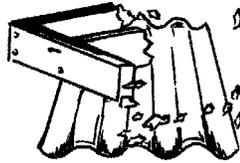
Tips --- ---

- Keep a radio on so you can hear bulletins and other announcements.
- Avoid riding, driving or walking through a flooded area. Flooded roads are weakened, ditches are hard to distinguish from roads and bridges may be washed out. Never go around a police barricade.
- Walk or drive cautiously. Debris-filled streets are dangerous. In flooded areas, washouts may have weakened roads and bridges, and they could collapse under the weight of your vehicle.
- Don't touch any building, car or other structure which has a fallen power line touching it. Call a professional electrician or power company representative to remove the line.
- Don't use flames or sparking devices until you're sure there is no natural gas leaking in the area.
- Be careful around damaged buildings and trees. These may fall if damaged severely.
- Wear protective clothing, sturdy shoes and gloves.
- Assume that water supplies are contaminated.
- Consider all foods that have been in contact with flood water to be contaminated.
- Be aware that snakes, rodents and other animals may have taken refuge in storm debris or even in your home. Use a poking stick to announce your approach and allow animals to flee.
- If you are bitten by a poisonous snake, don't try to treat the bite yourself. Go to the nearest hospital for treatment immediately. Make a mental note of the appearance of the snake for identification and treatment purposes.
- Keep small children, pregnant women and people with health problems away from the flooded areas until cleanup is complete.
- If children are in the area, be sure they are safe and being cared for at all times. Never leave young children alone or allow them to play in damaged buildings or areas strewn with debris.
- Learn to recognize and deal with stress.
- If you get a scratch, cut or brush burn from flood debris and have not had a tetanus booster in the last few years, consult your doctor immediately.



Dangers of Debris

Debris is hazardous. It often has sharp or rough edges; it may cause falls; it may contain hazardous material such as asbestos, lead or fiberglass; and it may have been contaminated with chemicals or germs by the flood or storm.



Contamination:

Flood water may have flowed through the local sewerage system before reaching your property. If it has come from upriver, it may contain contaminated runoff. Such water may have elevated levels of fecal coliform and chemicals. Flood waters may have picked up pesticides, herbicides, fertilizers, gasoline and other chemicals commonly held in household storage areas.

The bacteria which cause **tetanus**, or lockjaw, may lie dormant in soil. This is why cuts from tools or other objects that have been on the ground are particularly hazardous. Once the dormant forms (spores) of tetanus enter the body, they begin to multiply and form a powerful toxin that affects muscles. The most common symptoms are a stiffness of the neck muscles and painful spasms of the jaw muscles. Other muscle spasms may occur later. Tetanus frequently causes death. Symptoms of tetanus may appear from four days to three weeks after the wound is infected. About half the tetanus cases in the United States result from injuries considered trivial at the time they happen.

If you have not had immunization against tetanus and receive a scratch, cut or brush burn, consult a physician immediately. An immediate injection of tetanus antitoxin will last long enough to prevent infection from developing, if given in time.

Hazardous Materials:

Some of the debris on your property may contain asbestos (roofing, siding, flooring tiles) or be painted with lead-based paint (pre-1978 paint). Airborne asbestos and lead dust are dangerous to inhale or ingest (eat), but they are generally harmless when wet. They should be handled with gloves and bagged

while wet. Fiberglass fibers from insulation will irritate skin and lungs after contact or if inhaled; collect carefully and bag.

Burning:

In areas where burning is permitted, be particularly careful not to burn asphalt roofing, vinyl siding or any form of treated lumber. The smoke can cause eye and lung irritation or other problems. Don't burn wood with lead-based paint since the lead fumes are poisonous.

Infestation:

Proper cleanup and disposal of debris will reduce the potential for nesting by rodents, snakes and insects. If your debris will not be disposed of quickly, be sure to pile it as far from the building as possible to keep infestations in a concentrated area away from the home. Don't let children play on or around debris.

Approaching and Entering a Damaged Building

Before entering a damaged building, check for structural damage. Make sure the building is not in danger of collapsing. Look for leaning walls, sagging roofs and ceilings, and weakened support columns.



- Turn off any outside gas lines, and let the house ventilate for several minutes to remove escaping gas.
- Be sure all electric service is turned off before entering for the first time. If the main disconnect is inside the house, it would be wise to call your utility company for assistance. Even if power is out in your neighborhood, disconnect the main switch, fuse or circuit breaker at your home, and disconnect all circuits.
- When entering the building, don't use an open flame as a light source; use a battery-operated flashlight. DO NOT SMOKE.



Enter carefully. Walking surfaces may be slippery or uneven. Check for a sagging ceiling; wet insulation or pocketed water can cause ceilings to fall. Once in, unplug all appliances that have been flooded. Remember that some appliances can shock you even after the power is turned off.

Part 3 of this series deals with determining and stopping structural damage.

Food and Water Safety



Water

After a major storm or flood, you must assume all water sources are contaminated until they are proved safe. Purify all water used for drinking, cooking and for washing eating and cooking utensils. Also purify the water used for washing hands, body and kitchen and bathroom surfaces. Do NOT try to use or purify water that has a dark color, an odor or contains floating material. Note that the purification procedures outlined here reduce biological contamination only; if you suspect chemical contamination, do not use the water.

Choose **ONE** of these methods to purify water that has biological contamination.

- Boil at a rolling boil for 5 minutes. To freshen the taste of boiled water, pour the water back and forth several times between two clean containers.
- Add 1/4 teaspoon unscented liquid chlorine bleach per 1 gallon of water. Make sure the bleach contains 5.25% sodium hypochlorite as its only active ingredient. If water does not have a slight bleach odor, repeat treatment.
- Add 12 drops of tincture of iodine per gallon of water.
- Add water purification tablets according to directions on the package. Tablets can be bought at some drug and sporting goods stores.

Thoroughly mix the purifying agent in the water, and let stand for at least 30 minutes before using.

Water Well Purification

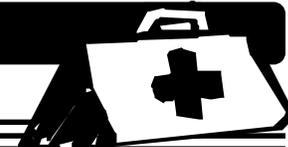
If you suspect flood waters have reached into your water well systems, purify the system before you use it for your family. The Louisiana State Board of Health recommends treating a contaminated well as if it were a new well just going into operation. Mix household laundry bleach in the proportion of 2 cups bleach to 3-5 cups water. Pour the thoroughly mixed solution down the walls of the well so the mixture will be in contact with all well surfaces. Let it sit in the well for about 30 minutes before starting the pump. Allow water to run out of each outlet inside and outside the house until you smell the bleach solution coming from each outlet. Close the faucets, and let the disinfectant remain in the lines and the well system for at least 4 hours. After that, open the outlets and run water until you no longer smell the bleach solution.

Foods Contaminated by Flood Water

Undamaged canned goods and commercial glass jars of food are generally safe if you sanitize the containers. To do this, mark contents on the lids of cans or jars with indelible ink, and remove the paper labels. Wash the jars and cans in a strong detergent solution with a scrub brush. Immerse these containers for 15 minutes in a solution of 2 teaspoons of chlorine bleach per quart of room temperature water. Air dry before opening. Sanitize dishes and glassware the same way.

These items should be DISCARDED if they have come in contact with flood waters:

- Meat, poultry, fish and eggs
- Fresh produce
- Preserves sealed with paraffin
- Jars with waxed cardboard seals, such as mayonnaise and salad dressing
- All food in cardboard boxes, paper, foil, cellophane or cloth
- Spices, seasonings and extracts
- Home-canned foods
- All opened containers and packages
- Flour, sugar, grain, coffee and other staples in canisters
- Cans dented, leaking, bulging or rusted
- Wooden spoons, plastic utensils, baby bottle nipples and pacifiers



Foods flooded while “on the vine”

Discard any fruits and vegetables you did not harvest before a flood. This applies to any food product which was maturing or mature at the time of the flood, both above and below ground. Examples include squash, cabbage, broccoli, tomatoes, potatoes and carrots. Most home garden plants will die from the flood. In the absence of specific research on the safety of produce from a plant which was exposed to flood water before fruit set, and given the uncertainty of what may have been in the flood water, Extension recommends pulling up and discarding a flooded garden and replanting it.

You May Run into Critters in Unusual Places

Many animals in the path of a major storm are displaced and left homeless. It’s common to find these animals seeking shelter and food in areas close to people — in houses, storage sheds, barns and other buildings — and under debris. Structures damaged in a storm are particularly attractive and provide easy access for wildlife.

Outdoors:

- Watch where you place your hands and feet when removing or cleaning debris. If possible, don’t place your fingers under debris you intend to move.
- Wear snake-proof boots at least 10 inches high or snake leggings in heavy debris areas where snakes are likely to be found.
- Never step over logs or other obstacles unless you can see the other side.

As soon as possible after a storm, remove from around houses and buildings all debris that provides protective cover for displaced animals. Keep the lawn and field vegetation mowed at a low level to eliminate protective cover. Remove any potential food source such as household trash, waste grain or other foods that might attract mice and rats and the snakes which prey on them.

Seal all openings around the house a quarter-inch and larger to exclude snakes and other animals. Check weatherstripping at corners of doors and windows. Use expanding foam sealant around water pipes and electrical service entrances. Holes in masonry foundations should be sealed with mortar. Holes in wooden buildings can be sealed with fine 1/8-inch mesh hardware cloth or sheet metal.

To prevent squirrels from jumping onto roofs, trim trees near the house. You can stop squirrels traveling on wires to houses and buildings by installing 2-foot sections of lightweight plastic pipe 2 or 3 inches in diameter. Slit the pipe lengthwise, spread it open and place over the wire. The pipe will rotate on the wire and cause traveling squirrels to fall. Close openings to attics and eaves of houses and buildings with heavy 1/2-inch wire mesh or soffit vents.

In closed attics, naphthalene (moth balls), methyl nonyl ketone crystals or paradichlorobenzene (moth crystals) may work temporarily as a repellent. Use 1 to 2 pounds spread evenly throughout the attic.

Rats, mice and squirrels are unwelcome post-storm guests. They can damage property and, in extreme cases, pose a potential health problem. It’s a good idea to get rid of them.

Tips on rodent traps and baits:



- Poison baits registered for rat and mouse control contain anticoagulant and nonanticoagulant toxicants. All rodent baits are effective in controlling these pests.
- nism include bacon skin, peanut butter, oatmeal and cotton balls. Check traps each day.

Traps, including No. 0 or 1 leghold traps, box traps and cage traps, will catch squirrels. Regular rat traps will catch flying squirrels. Good baits are apple, cracked corn and pecans removed from the shell, peanut butter and sunflower seeds.

Where firearms are permitted, shooting reduces squirrel numbers. Check with local law enforce-



- ment officials and wildlife conservation officers in your area.

Snakes:



In the South, there are many more species of nonpoisonous snakes than poisonous snakes.

It's important to realize both poisonous and nonpoisonous snakes are beneficial to people by keeping rodent populations down. Since rodents are also displaced by storms, this is especially important.

Learn to identify nonpoisonous and poisonous snakes. Information on snake identification can be obtained from books such as field guides on amphibians and reptiles, from the state wildlife department or from your local Extension office.

If you encounter a snake outdoors, step back and allow it to proceed on its way. Snakes usually move slowly, and a person can easily retreat from a snake's path. If you find a snake in your house, try to isolate the snake within a small area of the house. Nonpoisonous snakes can be captured by pinning them down with a long stick or pole, preferably forked at one end, and then scooping them up with a flat-blade shovel. If you are uncomfortable removing the snake yourself, seek someone within the community who has experience handling snakes to do it for you. A good starting point is your local animal control shelter or sheriff's department.

As a last resort, you may need to kill a poisonous snake. Club it with a long stick, rod or other tool such as a garden hoe. Never try to kill a poisonous

snake with an instrument that brings you within the snake's striking range (usually estimated at less than one-half the total length of the snake).

No legal toxicants or fumigants are registered to kill snakes. Repellents are available, but they have limited success.

Avoiding Sick-house Syndrome



A flood-damaged building requires special attention to avoid a population explosion of mildew, molds and other fungi, algae and bacteria. The offending organisms may have been brought in flood waters, or they may have been residing in the building in a dormant stage, just waiting for an increase in humidity to spur their growth.

Mold and mildew are bad for the house and bad for the occupants. Recent studies have linked deaths of children to a strain of mold growing in areas of houses which flooded and stayed wet. Other molds can cause allergies and other health problems. Decay-causing fungi will grow in wood that is allowed to stay wet for an extended period. As the wood decays, it loses its strength; a wet house is soon a rotting house.

The solution to mildew, molds and decay problems can be summed up in two words: disinfect and dry. Water held in walls must be released, insulation removed and the cavity disinfected and thoroughly dried before being closed. Vinyl wallpaper and flooring must be taken off to allow substrates to be disinfected and dried. Carpeting and other wet materials should be removed or dried within 24 hours to avoid growth of mold and mildew. Carpeting, if not discarded, must be pulled back and thoroughly dried; the slab must be disinfected. These procedures are discussed in detail in Part 3 of this series, *"Determining and Stopping Structural Damage."*

Be aware that some materials are porous and contaminated water may penetrate deep into the material. Although the surface may appear to be dry, organisms may continue to grow and be released back into the indoor air. Cleaning the surface of such materials is not adequate. If you can't clean and dry an item thoroughly, discard it.

Reduce the humidity in the house. If you have no power, keep curtains, rooms and closets open to get maximum air circulation and sunshine. If you have



power, fully air condition or heat all rooms and open closets for a few days. Air conditioners remove moisture from the indoor air. In winter, heaters reduce the relative humidity of indoor air. In any season, remove excess moisture by using exhaust fans during and 30 minutes after cooking and bathing.

Dirt and grease are food for mildew, so clean surfaces are more mildew resistant. When mildew appears, act promptly. Once mildew takes over, it's much harder to control. To avoid adding mold spores to indoor air, take mildewed items outside for cleaning. Sunning damp items will also help to kill mildew.

Disinfectants themselves, while destroying unhealthful germs and fungi, may produce indoor air problems. Be sure to read and follow label directions, be careful about mixing cleaners and disinfectants, and use plenty of ventilation.

These are Trying Times

A natural disaster leaves more than a trail of property destruction in its wake. Many times it leaves thousands of victims with a destroyed sense of balance. In addition to avoiding physical hazards, restoring buildings and replacing material possessions during the recovery period, you need to be aware of stress and how to reduce it. During the recovery period, devote some time to getting your stress level under control.

Start by being patient with yourself and others. Don't expect things to restore themselves instantly. Focus on the big picture instead of the little details. Determine what's really important, and keep in mind that different people, even in your own household, will have different priorities. Be tolerant of mood swings and expressions of disbelief, anger, sadness, anxiety and depression. Don't overlook the feelings of children.

Tips for handling stress:

- Try to keep your body healthy and strong. Keep your family's diet as nourishing as possible.

- Talk with friends, family, ministers. In crisis situations, a supportive network is essential. Provide help to other families when possible; it will make both of you feel better.
- Resist the temptation to resort to bad habits. Alcohol, blaming, denial, smoking, overeating and revenge eventually cause more problems than they solve.
- Think positive. Develop a sense that things will work out.
- Make time for rest and relaxation.

Helping Your Child Cope

Children cope with stress every day. One of their biggest stressors is fear. Children's four major fears are **death, darkness, animals and being abandoned**. Children have a variety of fears: being afraid of the dark or the doctor or the vacuum cleaner, for instance. Disasters are somewhat different for children because they affect entire communities. Disaster is highly publicized and children sense that adults, too, seem to be afraid. So, it is normal for children to remain stressed and have a hard time coping for a long time after a disaster.

Even children who have not been in the disaster may be afraid and worried that it will happen to them. Young children are usually worried because they don't understand what is happening. They can't always tell the difference between what is real and what is pretend. School children are worried for a different reason. They can tell the difference, but don't yet fully understand the laws of probability. They understand what causes a storm but may expect disasters or storms to reappear soon and often.

It's hard to predict which children will be most affected and how. Research indicates children's fears vary according to age, maturation and previous learning experiences. In a disaster, children may have encountered three of the four major fears. Undoubtedly, this will have an impact on their ability to cope for quite some time.



Another important aspect about children's fears indicated in research is that fears may be intensified when adults back away from discussing painful topics with children. Many families ban all painful topics from family conversation. Such strategies reap high costs in terms of intensified despair and negativity among children. Talk to the children about the disaster and their fears.

After a disaster, some children may

- be upset at the loss of a favorite toy, blanket, teddy bear, etc.
- be angry. They may hit, throw, kick or act out in other ways.
- become more active and restless. They may wander about and not be able to settle down.
- be afraid of the disaster recurring. This is especially true if there is another storm or heavy rain soon. They may ask repeatedly, "Will it come again?"
- be afraid to be left alone or afraid to sleep alone. Children may want to sleep with a parent or another person. They may have nightmares.
- behave as they did when younger (sucking the thumb, wetting the bed, asking for a bottle, wanting to be held).
- have symptoms of illness such as nausea, vomiting, headaches, not wanting to eat, running a fever.
- be quiet and withdrawn, not wanting to talk about what happened to them.
- become upset easily - crying and whining.
- feel guilty that they caused the disaster because of something they did.
- feel neglected by parents who are busy trying to clean up and rebuild their lives and homes.

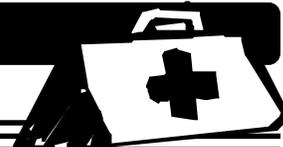
- refuse to go to school or to child care. The child may not want to be out of the parent's sight.
- become afraid of loud noises, rain, storms.
- not show any outward sign of being upset. Some children may never show distress because they do not feel upset. Other children may not give any evidence of being upset until several weeks or months later.

What parents and other adults can do to help children cope with feelings:

Talk openly about what is going on. Give simple, direct answers to questions. Children have radar. They know when adults are afraid or worried and not telling them the truth. They hear other adults talk. It doesn't help to tell a child "not to worry" yet show all the signs of worrying yourself. Take time to talk openly, honestly and often.

Listen to your child. Watch your child at play. Often children express fear and anger when playing with dolls, trucks or friends after a major disaster. Acknowledge the child's feelings, and encourage conversation.





- Reassure your child, “We are together. We care about you. We will take care of you.”
- Hold your child. Provide comfort. Touching is important for children during this period. Close contact helps assure children that you are there for them and will not abandon them
- Spend extra time putting your child to bed. Talk and offer assurance. Leave a nightlight on if that makes the child feel more secure.
- Help “act out” with books, art, toys and drama. Work with claydough, paint, water play. If children need something to kick or hit, give them something safe like a pillow, ball or balloon.
- If your child lost a special toy or blanket, allow him to mourn and grieve (by crying, perhaps). It is all part of helping the young child cope with feelings about disaster. In time, it may be helpful to replace the lost object.

For more information, contact your local Cooperative Extension Service office listed under local government in the telephone directory.

“This material is based upon work supported by the Cooperative State Research, Education, and Extension Service, U.S. Department of Agriculture, under special project numbers 92-ESNP-1-5184 and 96-ESNP-1-5219.”

Contributors:

Robert Mills, Ph.D., Specialist, Forestry

Claudette Reichel, Ed.D., Specialist, Housing

Donna Montgomery, Specialist, Consumer Food and Nutrition Education

Beth Reames, Ph.D., Specialist, Nutrition and Health

James F. Fowler, Ph.D., Specialist, Forestry and Wildlife

Patricia M. Skinner, Extension Associate, Environmental Programs

Fred E. (Gene) Baker, Ph.D., Associate Vice Chancellor for Information Technology

Raye T. Neely, Extension Associate, Rural Health

Visit our website: www.lsuagcenter.com

Louisiana State University Agricultural Center, William B. Richardson, Chancellor
Louisiana Cooperative Extension Service, Jack L. Bagent, Vice Chancellor and Director

Pub. 2668-A

7/99 Rev.

Issued in furtherance of Cooperative Extension Service work, Acts of Congress of May 8 and June 30, 1914, in cooperation with the United States Department of Agriculture. The Louisiana Cooperative Extension Service provides equal opportunities in programs and employment.