

## Tornadoes

Tornadoes are nature's most violent storms. Spawned from powerful thunderstorms, tornadoes can cause fatalities and devastate a neighborhood in seconds. A tornado appears as a rotating, funnel-shaped cloud that extends from a thunderstorm to the ground with whirling winds that can reach 300 miles per hour. Damage paths can be in excess of one mile wide and 50 miles long. Every state is at some risk from this hazard. Some tornados are clearly visible, while rain or low-hanging clouds obscure others. Occasionally, tornados develop so rapidly that little, if any, advance warning is possible. Before a tornado hits, the wind may die down and the air may become very still. A cloud of debris can mark the location of a tornado even if a funnel is not visible. Tornados generally occur near the trailing edge of a thunderstorm. It is not uncommon to see clear, sunlit skies behind a tornado.



### **Before a Tornado**

- To begin preparing, you should build an emergency kit and make a family communications plan.
- Listen to NOAA Weather Radio or to commercial radio or television newscasts for the latest information. In any emergency, always listen to the instructions given by local emergency management officials.
- Be alert to changing weather conditions. Look for approaching storms.
- Look for the following danger signs:
  - Dark, often greenish sky
  - Large hail
  - A large, dark, low-lying cloud (particularly if rotating)
  - Loud roar, similar to a freight train.
- If you see approaching storms or any of the danger signs, be prepared to take shelter immediately.



### **During a Tornado**

**If you are under a tornado warning**, seek shelter immediately! Most injuries associated with high winds are from flying debris, so remember to protect your head. If available, put on a bicycle or motorcycle helmet to protect yourself from head injuries.

**If you are in a structure** (e.g. residence, small building, school, nursing home, hospital, factory, shopping center, high-rise building) **you should:**

- Go to a pre-designated shelter area such as a safe room, basement, storm cellar, or the lowest building level.
- If there is no basement, go to the center of an interior room on the lowest level (closet, interior hallway) away from corners, windows, doors, and outside walls.
- Put as many walls as possible between you and the outside.

- Get under a sturdy table and use your arms to protect your head and neck.
- **In a high-rise building**, go to a small interior room or hallway on the lowest floor possible.
- **If available**, put on a bicycle or motorcycle helmet to protect yourself from head injuries.
- Put on sturdy shoes.
- Do not open windows.

**If you are in a vehicle, trailer, or mobile home you should:**

**Get out immediately** and go to the lowest floor of a sturdy, nearby building or a storm shelter. Mobile homes, even if tied down, offer little protection from tornadoes

**If you are outside with no shelter you should:**

**Lie flat** in a nearby ditch or depression and cover your head with your hands. Be aware of the potential for flooding. **Do not** get under an overpass or bridge. You are safer in a low, flat location. **Never** try to outrun a tornado in urban or congested areas in a car or truck. Instead, leave the vehicle immediately for safe shelter. **Watch out** for flying debris. Flying debris from tornadoes causes most fatalities and injuries.

**After a Tornado**

Injury may result from the direct impact of a tornado or it may occur afterward when people walk among debris and enter damaged buildings. A study of injuries after a tornado in Marion, Illinois, showed that 50 percent of the tornado-related injuries were suffered during rescue attempts, cleanup and other post-tornado activities. Nearly one third of the injuries resulted from stepping on nails. Because tornadoes often damage power lines, gas lines or electrical systems, there is a risk of fire, electrocution or an explosion. Protecting yourself and your family requires promptly treating any injuries suffered during the storm and using extreme care to avoid further hazards.

**Injuries**

Check for injuries. Do not attempt to move seriously injured people unless they are in immediate danger of further injury. Get medical assistance immediately. If someone has stopped breathing, begin CPR if you are trained to do so. Stop a bleeding injury by applying direct pressure to the wound. Have any puncture wound evaluated by a physician. If you are trapped, try to attract attention to your location.

**General Safety Precautions**

Here are some safety precautions that could help you avoid injury after a tornado:

- Continue to monitor your battery-powered radio or television for emergency information
- Be careful when entering any structure that has been damaged
- Wear sturdy shoes or boots, long sleeves and gloves when handling or walking on or near debris
- Be aware of hazards from exposed nails and broken glass
- Do not touch downed power lines or objects in contact with downed lines. Report electrical hazards to the police and the utility company.

- Use battery-powered lanterns, if possible, rather than candles to light homes without electrical power. If you use candles, make sure they are in safe holders away from curtains, paper, wood or other flammable items. Never leave a candle burning when you are out of the room.
- Never use generators, pressure washers, grills, camp stoves or other gasoline, propane, natural gas or charcoal-burning devices inside your home, basement, garage or camper - or even outside near an open window, door or vent. Carbon monoxide (CO) - an odorless, colorless gas that can cause sudden illness and death if you breathe it - from these sources can build up in your home, garage or camper and poison the people and animals inside. Seek prompt medical attention if you suspect CO poisoning and are feeling dizzy, light-headed or nauseated.
- Hang up displaced telephone receivers that may have been knocked off by the tornado, but stay off the telephone, except to report an emergency
- Cooperate fully with public safety officials
- Respond to requests for volunteer assistance by police, firefighters, emergency management and relief organizations, but do not go into damaged areas unless assistance has been requested. Your presence could hamper relief efforts and you could endanger yourself.

### **Inspecting the Damage**

After a tornado, be aware of possible structural, electrical or gas-leak hazards in your home. Contact your local city or county building inspectors for information on structural safety codes and standards. They may also offer suggestions on finding a qualified contractor to do work for you.

- In general, if you suspect any damage to your home, shut off electrical power, natural gas and propane tanks to avoid fire, electrocution or explosions.
- If it is dark when you are inspecting your home, use a flashlight rather than a candle or torch to avoid the risk of fire or explosion in a damaged home.
- If you see frayed wiring or sparks, or if there is an odor of something burning, you should immediately shut off the electrical system at the main circuit breaker if you have not done so already.
- If you smell gas or suspect a leak, turn off the main gas valve, open all windows and leave the house immediately. Notify the gas company, the police or fire departments, or State Fire Marshal's office and do not turn on the lights, light matches, smoke or do anything that could cause a spark. Do not return to your house until you are told it is safe to do so.

### **Safety During Clean Up**

- Wear sturdy shoes or boots, long sleeves and gloves.
- Learn proper safety procedures and operating instructions before operating any gas-powered or electric-powered saws or tools.
- Clean up spilled medicines, drugs, flammable liquids and other potentially hazardous materials.

## Tornado Facts

Quick facts you should know about tornadoes:

- They may strike quickly, with little or no warning.
- They may appear nearly transparent until dust and debris are picked up or a cloud forms in the funnel.
- The average tornado moves Southwest to Northeast, but tornadoes have been known to move in any direction.
- The average forward speed of a tornado is 30 mph, but may vary from stationary to 70 mph.
- Tornadoes can accompany tropical storms and hurricanes as they move onto land.
- Waterspouts are tornadoes that form over water.
- Tornadoes are most frequently reported east of the Rocky Mountains during spring and summer months.
- Peak tornado season in the southern states is March through May; in the northern states, it is late spring through early summer.
- Tornadoes are most likely to occur between 3 pm and 9 pm, but can occur at any time.

## Know the Terms:

Familiarize yourself with these terms to help identify a tornado hazard:

**Tornado Watch** - Tornadoes are possible. Remain alert for approaching storms. Watch the sky and stay tuned to NOAA Weather Radio, commercial radio or television for information.

**Tornado Warning** - A tornado has been sighted or indicated by weather radar. Take shelter immediately.

### BUILD A KIT

A disaster supplies kit is simply a collection of basic items your household may need in the event of an emergency.

Try to assemble your kit well in advance of an emergency. You may have to evacuate at a moment's notice and take essentials with you. You will probably not have time to search for the supplies you need or shop for them.

You may need to survive on your own after an emergency. This means having your own food, water and other supplies in sufficient quantity to last for at least 72 hours. Local officials and relief workers will be on the scene after a disaster but they cannot reach everyone immediately. You could get help in hours or it might take days.

Additionally, basic services such as electricity, gas, water, sewage treatment and telephones may be cut off for days or even a week, or longer. Your supplies kit should contain items to help you manage during these outages.

Go to [www.ready.gov](http://www.ready.gov) for details on disaster kits and more Tornado and Disaster information.