Tornado Safety

Tornadoes can be the most violent and destructive of storms, causing fatalities and destroying an area in mere seconds.

A tornado is a rotating, funnel-shaped cloud extending to the ground from a thunderstorm with spiraling winds that can reach up to 300 miles per hour. They could potentially destroy paths over 1 mile wide and 50 miles long, resulting in catastrophic damage.

Although states east of the Rocky Mountains are more common to have tornados, **every state is at risk**.

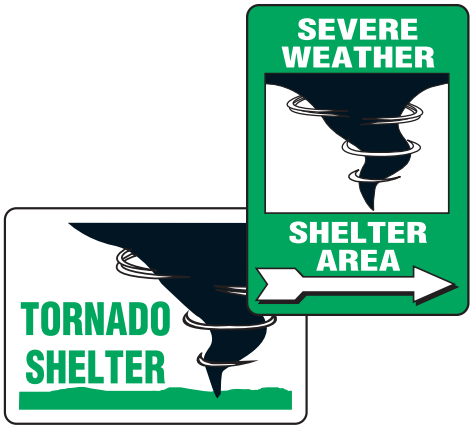
ometimes, tornadoes progress so quickly that a **warning may not be possible**. Tornados occur most often during the spring and summer and are most likely to occur between 3 p.m. and 9 p.m.

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. Tornadoes generally form near the edge of thunderstorms. It isn't unusual to see clear, sunny skies behind a tornado.

How to prepare before a tornado:

- First and foremost, you should create an emergency kit and family communications plan.
- Be alert to changing weather conditions. Look for approaching storms.
- Be aware of danger signs such as:
  - **Dark, at times greenish sky**
  - **Large sized hail**
  - **A large, dark, low-hanging cloud, often rotating**
  - **A loud roar, that sounds similar to a freight train.**

  If you become aware of any of these signs, prepare to take shelter immediately.
- If there are signs of a possible tornado, listen to information from NOAA Weather Radio All Hazards (NWR), the news, or online for area information and instructions.



Quick facts you should know about tornadoes:

- They can strike rapidly, with almost no warning.
- They could appear almost transparent, until a cloud is formed in the tunnel or dust and other debris is lifted up.
- Tornadoes generally move southwest to northeast, but they are able to move in any direction.
- The average forward moving speed of a tornado is 30 mph, but can range from static to 70 mph.
- Tornadoes can form along with hurricanes or tropical storms as they travel onto land.

Familiarize yourself with these terms to help identify a tornado hazard	
Tornado Watch	Tornadoes are potential. Remain alert for approaching storms. Watch the sky and stay tuned to NOAA Weather Radio, commercial radio or television for information.
Tornado Warning	This means a tornado has been sighted by weather radar and you should take shelter immediately

How to react during a tornado:

If you are in an area under a tornado warning, take shelter immediately. Most injuries that occur because of high winds are debris related, so be sure to protect your head.

If you are located:	Then:
In a structure (e.g. small building, school, nursing home, hospital, factory, shopping center, high-rise building)	• Go to a pre-determined tornado safety area such as a safe room, basement, storm cellar, or the lowest building level that is possible. If you are in a low level, but not in a basement, find the center of a small interior room with no or few windows and doors such as a closet. The goal is to have as many walls between you and the outside, or as much protection, as possible. Place yourself under a sturdy table if there is one and use your arms to protect your head and neck. • If you have safety equipment quickly available such as sturdy shoes, put them on. • Do not open windows or doors to look outside.
In a home or office	• Get to a safe shelter immediately, homes and small offices provide little protection against tornadoes. • Head to a pre-determined location such as a storm shelter or a sturdy building nearby, then proceed to a safe area inside. • If this is not possible, go into your basement and protect yourself with whatever you have available to you.
Outside with no shelter	**Although there are many factors that could affect this decision, and no research has concluded of the best solution, possible options include:** • Immediately get into your vehicle, buckle your seat belt and attempt to drive to the nearest shelter. If your vehicle is struck by debris while driving, pull over and park. • You could also take cover in a vehicle. Put on your seat belt and protect your head with your arms and a blanket, coat, cushion, or other protection if it is available. • Lie down in an area preferably lower than the level of the road and protect your head and neck with your arms, a blanket, cushion, coat, or other protection if possible. **In all scenarios:** • Do not move under an overpass or bridge. • Never attempt to outrun a tornado in a congested or urban area in a vehicle. Leave your vehicle immediately for safe shelter. • Look out for flying debris; it causes the most injuries.

How to build a safe room:

Although your residence may be built to code, it does not ensure it is able to withstand winds from tornadoes or major hurricanes. Safe rooms or wind shelters are designed to provide an area where you and your family can seek refuge that offers a great level of protection. Safe rooms can be built in several places in your home such as:

- Your basement
- On top of a concrete slab-on-grade foundation or garage floor.
- An interior room on your first floor.

Safe rooms that are built below ground level will provide the greatest protection, but a safe room built in a first-floor interior room also will provide necessary protection during a tornado. If the room is below ground level, it must be designed to prevent water accumulation from heavy rains that occur during these sever windstorms.

A safe room must be built to withstand incredibly high winds and remain strong against flying debris, regardless of whether the other areas of your residence or building is severely damaged or destroyed. Contemplate the following while constructing your safe room:

- The safe room must be effectively fastened to resist upending and lifting.
- The walls, door and ceiling of the shelter must be able to withstand powerful wind pressure and resistpenetration by debris.
- All parts of the safe room must be constructed durably enough to resist winds.
- Separate the sections of the residence or building from the areas used as walls of the safe room so damage to the building will not cause damage to your safe room.

Additional information about Safe Rooms available from FEMA:

- Taking Shelter from the Storm: Building a Safe Room Inside Your House. FEMA L-233. Brochure providing details about obtaining information about how to build a wind-safe room to withstand tornado, hurricane and other high winds.
- Taking Shelter from the Storm: Building a Safe Room Inside Your House. FEMA P-320. Manual with detailed information about how to build a wind-safe room to withstand tornado, hurricane and other high winds.

Find additional information on planning and preparation for tornadoes from these websites:

- Federal Emergency Management Agency
- NOAA Watch
- American Red Cross

Listen to Local Officials:

Learn about emergency plans that have been established in your area by your state and local government.