



Emergency Preparedness
Tornadoes
 Keeping Safe in Severe Weather

Last year, these health tips covered Emergency Preparedness in honor of Emergency Preparedness Month. The tips contained in those health tips are applicable for most emergency situations, but were broad by design, as they contained tips for how to prepare an emergency kit for any emergency. This year, we'll be discussing how to keep yourself and others safe during specific emergency situations. Specifically, as the country is wracked with unprecedented heat waves, severe weather is becoming more common even in areas where it might not otherwise be common. Severe thunderstorms, and by extension tornadoes, are one of the most dramatic of these severe weather events. And while a common misconception is that tornadoes only appear on the open plains of the Midwest, they have been documented in all 50 states. The tips and tricks below will help you learn some basic tornado facts, and more importantly, what to do if a tornado warning sounds in your area. Let's dive in!

Tornado Basics

Tornadoes, like many other extreme weather events, are monitored by the National Weather Service (NWS). When the conditions are ripe for a tornado to form, NWS will notify state and local authorities and put out one of two different kinds of alerts:

- A Tornado Watch means that a tornado *might* form. The conditions are ideal for severe thunderstorms and tornadoes, and so anyone within the area of the watch should prepare to seek shelter. Tornado Watches usually cover a very broad area.
- A Tornado Warning means that a tornado has either touched down or is seen forming on radar. If a Tornado Warning is issued in your area, you should seek shelter immediately, as it is possible that the tornado may pass through your location.

Tornado and other weather alerts are put out on NOAA Weather Radios. Having a portable or hand-cranked radio may be wise in case the power cuts out. Pay attention to news updates regarding the status of the storm and prepare to move accordingly. Some communities might have reverse-911 capabilities or other means to communicate emergencies via smartphone. If these are opt-in in your area, be sure to sign up for these alerts. All tornadoes, regardless of strength, have the potential to be very dangerous. If a tornado warning is declared, stick with your emergency plan and seek immediate shelter. In addition, making sure you are CPR certified and trained to provide first aid is also a good idea, in case someone is injured during the storm.



Photo by Brad Goddard

During the Tornado

When a tornado is bearing down, your reaction should depend on your location. Here are some basic tips for how to increase your likelihood of survival during a tornado:

- Make an emergency plan and practice it often. Make sure to communicate the plan to family and housemates.
- Designate a room in your home as your safe room/shelter. Your shelter should:
 - Be on the lowest level of the building,



- Be away from windows or openings,
 - Can fit all of the home's occupants safely,
 - Is not directly beneath any heavy appliances or furniture (dressers, refrigerators) that could cave in through the ceiling and crush those sheltering beneath,
 - Be sturdy and/or well-reinforced (see the references section below for FEMA guidance on making a secure shelter).
- Make sure to move all the residents of the home into the shelter. Time permitting, don't forget your pets!
 - Once in the shelter, stay low to the ground with your face towards the floor and your hands over your head, as in the picture to the right. Wear a helmet if you can to reduce the risk of head injury.
 - Shelter beneath a sturdy, secured surface (like a workbench or heavy table). Alternatively, cover yourself with something padded, ideally a large mattress.
 - If you do not have a room that fits these criteria, shelter in any room with minimal or no windows as close to the ground floor as possible. Assume the same position as above and cover yourself as best as possible with a mattress or other heavy padding.
 - If you are in a mobile or manufactured home, exit immediately! Mobile and manufactured homes are not properly secured and are very vulnerable to severe windstorms and tornadoes. Seek shelter in the nearest permanent structure. Include this designated permanent structure into your emergency plan. If it is not a public area, such as a neighboring home, make sure to communicate with the owner of the home regarding your emergency plan, so there are no miscommunications when time is of the essence.
 - If you are outside when a tornado warning sounds, go to your nearest permanent structure for shelter. Do not attempt to seek shelter in non-sturdy buildings (such as barns, stables, outhouses, or tents) and **DO NOT** shelter under bridges!
 - If you are outside and cannot find shelter, find a low-lying area (like a ditch or ravine) away from the road and assume the safety position described above.
 - If you are in your vehicle, exit it and seek shelter in a permanent structure. If that is impossible, there are a number of options to reduce your risk:
 - Note that vehicles are very dangerous to be in during a tornado, so your first effort should be to exit if you have time and seek alternate shelter,
 - If you spot the tornado before it bears down on you, you could try to drive out of its path. As the tornado moves, observe its movement against a static object in the environment. If it's moving right or left of the object, it is not likely to be directly towards you. Drive away at right angles in the opposite direction. If it becomes larger, then the tornado is approaching you directly.
 - If you are caught in high winds or a tornado, park as safely as possible out of the traffic lanes. Put your head down below the level of the windows and cover yourself with any sort of padding, such as a coat or jacket.
 - If you are in an office building or school, there will usually be an emergency plan. Follow the instructions provided in a calm and timely manner to the designated shelter. If there isn't one: remember to avoid rooms with windows. Avoid large open spaces such as cafeterias and gymnasiums.
 - If in an office building or skyscraper, go to an interior room away from windows on the lowest level of the building. Interior stairwells are ideal in this regard because they are usually away from windows and can be used to reach lower levels quickly.
 - Avoid elevators, as you could get stuck if the power goes out.
 - If in a church or theatre, seek shelter in a bathroom or other windowless interior room, and assume the safety position described above. If you do not have time, you can shelter beneath the pews or seats in that same position.



After the Tornado

Tornadoes are prone to leaving significant property damage in their wake, and that can lead to their own dangers even after the threat of severe weather has passed. Follow these tips to help you stay safe:

- Watch for downed powerlines and avoid them. Contact emergency services if you find downed power lines.
- Avoid puddles that are in contact with wires, as they might be electrified and could injure you.
- When moving through debris-strewn areas, wear long pants, long-sleeved shirts, and sturdy shoes if possible.
- Watch your feet for unsteady ground, glass, bent nails, or other dangerous debris.
- Do not enter damaged buildings! They might have been weakened and could collapse if they are disturbed.
- If you see someone injured, and you are trained to do so, provide them with first aid until emergency services arrive.
- Let friends, coworkers, or loved ones know that you are safe. Social media and text messaging are preferred to phone calls, since phone service may have been interrupted by damage from the wind.
- Keep tuned in to the NOAA Weather Radio or other local emergency broadcasts in case the severe weather repeats.

References**FEMA Guidance for Safe Rooms –**

[fema.gov/emergency-managers/risk-management/building-science/safe-rooms](https://www.fema.gov/emergency-managers/risk-management/building-science/safe-rooms)

NWS Tornado Fact-Sheets - [weather.gov/safety/tornado](https://www.weather.gov/safety/tornado)

NOAA Tornado FAQs - [spc.noaa.gov/faq/tornado/](https://www.spc.noaa.gov/faq/tornado/)

NOAA Tornado Safety Fact-Sheet - [spc.noaa.gov/faq/tornado/safety.html](https://www.spc.noaa.gov/faq/tornado/safety.html)

Note: picture of tornado on page 2 courtesy of NOAA archives