

Thunderstorms

Thunderstorms affect fairly small areas when compared with hurricanes and winter storms. Despite their small size, **ALL** thunderstorms are dangerous! The typical thunderstorm is 15 miles in diameter and lasts an average of 30 minutes.

Of the estimated 100,000 thunderstorms that happen each year in the US, about 10 percent are classified as severe. The National Weather Service (NWS) considers a thunderstorm severe if it produces hail at least ¾-inch in diameter, winds of 58 miles per hour or stronger, or a tornado.

Every thunderstorm needs:

- Moisture – to form clouds and rain
- Unstable air – warm air that can rise rapidly
- Lift – cold or warm fronts, sea breezes, mountains, or the sun's heat are capable of lifting air to help form thunderstorms

Straight-line winds and downbursts associated with thunderstorms can be very dangerous. They can produce winds of 100 to 150 miles per hour – enough to flip cars, trucks, and vans. The resulting damage can equal the damage produced by a tornado.

Lightning

Lightning is a major threat during a thunderstorm. Being outside is the most dangerous place to be during a lightning storm. If you can hear thunder, lightning is close enough that it could strike where you are at any moment. Many deaths from lightning happen **before** the storm because people try and wait to the last minute before finding shelter. Keep an eye on the sky.

Watch for darkening skies, lightning flashes, or increasing winds, all of which may be signs of a coming storm.

In recent years, people have been killed by lightning while:

- Boating
- Swimming
- Golfing
- Bike riding
- Standing under a tree
- Riding on a lawnmower
- Talking on a telephone
- Loading a truck
- Riding a horse
- Playing soccer
- Fishing in a boat
- Mountain climbing

Lightning Fast Facts

- Lightning causes an average of 80 fatalities and 300 injuries each year.
- Lightning happens in all thunderstorms; each year lightning strikes the Earth 20 million times.
- The energy from one lightning flash could light a 100-watt bulb for more than three months.
- Most lightning fatalities and injuries happen when people are caught outdoors in the summer months during the afternoon and evening.
- Lightning can occur from cloud-to-cloud, within a cloud, cloud-to-ground, or cloud-to-air.
- The air near a lightning strike is heated to 50,000° F – hotter than the surface of the sun! The rapid heating and cooling of the air near

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the lightning channel causes a shock wave resulting in thunder.

Safety Rules for Lightning and Thunderstorms

- **Don't wait for the rain.** Find shelter at the first sign of bad weather. Go inside a completely enclosed building. Avoid sheds, carports, open garages, baseball dugouts, or covered patios. If no building is available, get inside a hard-topped vehicle with the windows closed.
- **Stay away from trees.** If there is no place to take shelter, stay twice as far away from a tree as it is tall. Crouch down low to the ground. Place your hands on your knees with your head between them. This will make you a smaller target. **Do not lie flat on the ground. This will make you a larger target.**
- **Get out of the water.** It's a great conductor of electricity. Avoid taking a bath or shower during a thunderstorm. Stay off the beach and out of small boats or canoes. Swimming and wading are NOT safe. Lightning can strike the water and travel some distance beneath and away from its point of contact. Don't stand in puddles of water, even if wearing rubber boots.
- **Avoid leaning against vehicles.** Get off bicycles and motorcycles.
- **Avoid metal.** Don't hold on to metal items such as tools, golf clubs, or fishing poles.
- **Move away from a group of people.** Keep several yards between you and other people. Don't huddle in a group.

Additional Resources

- American Red Cross
www.redcross.org
- National Weather Service
www.nws.noaa.gov
- Federal Emergency Management Agency www.fema.gov
- Centers for Disease Control and Prevention www.bt.cdc.gov