

Lightning Facts and Preventive Actions

Skymont Scout Reservation, Cherokee Area council, Boy Scouts of America

Take time NOW to learn and understand the hazards of lightning, and the basic safety rules.

Lightning occurs with all Thunderstorms, in the storm area and out in front of the storm. It causes the thunder we hear. If you can hear thunder before the storm, you are close enough to the storm to be struck by lightning.

Lightning Facts:

- Causes an average of 93 fatalities in the USA each year, and over 300 serious injuries.
 - Causes several hundred million dollars in damage to property and forests each year.
 - Results from the buildup and discharge of electrical energy between negatively charged areas (bottom of cloud) and positively charged areas (items on earth). It is static electricity on a huge scale.
 - Your chances of being struck by lightning are estimated to be 1 in 600,000 each year, but that can be greatly reduced by knowing and following lightning safety rules.
 - A lightning flash is estimated to carry 30,000 to 300,000 Amps. at 15 million to 125 million Volts, for less than 1 second. This is why such awesome and often bizarre stories are told of the results.
 - The air near a flash is heated to 50,000°F - 5 times hotter than the surface of the sun. The rapid heating and cooling of this air causes the shock wave we hear as thunder.
 - Most lightning casualties occur in the summer months, during afternoon or early evening, when people are caught outdoors.
 - A strike begins as channels of negatively charged air (invisible "leaders") move **downward** from the cloud toward the ground. When one channel nears an object on the ground, a powerful surge of positively charged particles (skin and hair tingle) moves **upward** toward the cloud, connects, and produces the flash. Three or four strikes may occur within one-tenth of a second, makes the flash appear to flicker.
 - To estimate the distance in miles between you and the lightning, count the seconds between the flash and the sound of the thunder, and divide by five.
 - In recent years, people have been killed by lightning while boating, fishing in a boat, swimming, golfing, bike riding, standing under a tree, riding on a lawnmower, talking on the telephone, loading a truck, playing soccer, and mountain climbing.
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Myths and Facts:

- Myth:** *If it's not raining, then there is no danger from lightning.* **Fact:** Lightning often occurs as far as 10 miles away from any rainfall, in or around the future path of the storm.
- Myth:** *Rubber shoe soles and auto tires will protect you from being struck.* **Fact:** These provide NO protection. The steel frame of a hardtop vehicle provides some protection, if you are not touching metal inside.
- Myth:** *After being struck by lightning, a person carries an electrical charge, and should not be touched.* **Fact:** Not true. Attend to the victim without delay, CPR may be needed immediately.
- Myth:** *"Heat lightning" without sound poses no threat, it simply occurs after very hot summer days.* **Fact:** This is from a thunderstorm too far away for the thunder to be heard. It may be moving in your direction.
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Here is what you can do:

- Before the storm: Check weather forecasts ahead of time. Know the area you're in. Watch the sky. Listen to NOAA broadcasts for "watches"(stormy conditions likely), or "warnings"(actual storms).
- If you are boating or swimming, get to land and find shelter right away.
- Best shelter is in a sturdy building or hardtop vehicle.
- Outdoors, shelter is in a low area under shorter trees when tall trees are nearby. Take off a metal frame pack. Put on your rain gear.
- Do not take shelter in small sheds, under isolated trees, or under tall trees when shorter trees are nearby.
- Stay away from metal items like pipes, fences, telephone poles and lines. Use the telephone only in an emergency. Do not take a bath or shower, and don't hold an electrical appliance.
- If you feel your skin tingle or your hair stand on end, Do the "**Lightning safe crouch**": Squat low to the ground on the balls of your feet. Place your hands on your knees with your head between them. Make yourself the smallest target possible, and minimize your contact with the ground. Stay this way until the storm passes, perhaps 15 to 45 minutes.