

## HOW CAN LIGHTNING HURT US?

Lightning can hurt us with thousands of amperes of current, tremendous heat, and a thunderous blast from the rapidly expanding air. People hit by lightning can have trauma, burns, neurological problems, cardiac arrest, concussion, long-term disabilities, PTSD and other health issues. Here are a few ways lightning can hurt or kill us.

**GROUND CURRENT** injury can occur when lightning current enters the ground and then radiates outward along the ground. This can injure nearby people or animals.

**SIDE FLASH** injury can occur when lightning hits a taller object such as a tree or a power line and then jumps off that object onto a person.

**UPWARD STREAMERS** are weaker cousins of the lightning flash. If the current of an upward leader flows through a person, that person is at risk of a serious injury, even if they are not struck by the main lightning flash.

**CONTACT** injury can occur when lightning hits a long conductor like a railing, a cable, a wire fence or a pipeline and a person is touching the conductor at the same time.

**DIRECT STRIKE** is the direct contact of lightning with the body. It causes about 3-5% of lightning deaths.

The chances of being hit by lightning may seem rare, but if you talk to your friends and family, you may be surprised at the number of people who have a story.



The impact of every encounter with lightning is unique. **There is no known “cure” for lightning injury.**

## Some Lightning Resources

Lightning Data Center  
[www.lightningdatacenter.org](http://www.lightningdatacenter.org)

Nat'l Weather Service - Lightning Safety:  
[www.weather.gov/safety/lightning](http://www.weather.gov/safety/lightning)

NWS - Medical Aspects of Lightning:  
[www.weather.gov/safety/lightning-medical](http://www.weather.gov/safety/lightning-medical)

Colorado Lightning Resource Page:  
[www.weather.gov/pub/lightning](http://www.weather.gov/pub/lightning)

Lightning Safety Council:  
[lightningsafetycouncil.org](http://lightningsafetycouncil.org)

Lightning Strike & Electric Shock  
Survivors International:  
[www.lightning-strike.org](http://www.lightning-strike.org)



For reprints, please visit:  
[www.milehighretac.org](http://www.milehighretac.org)

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# LIGHTNING CAN STRIKE WITH LITTLE OR NO WARNING!

## RESPECT IT!



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So how can I be safe when lightning is in the area? First of all, please understand that no place outside is safe when thunderstorms are in the area. That said, the inside of this brochure shows some simple steps you can take to reduce the chance of being hurt or killed by lightning.

**IN MOST CASES, INJURIES  
AND DEATHS BY LIGHTNING  
ARE EASILY PREVENTABLE!**

# WHEN THUNDER ROARS, GO INDOORS!

30 MINUTES SINCE THUNDER ROARS, NOW IT'S SAFE TO GO OUTDOORS!

**I. BE PROACTIVE!** Check the weather forecast. If you are planning an outdoor activity, try to schedule it during the morning if possible or on a different day if storms are forecast. If the activity is still planned and storms are forecast, plan in advance your evacuation and safety measures, should lightning threaten. Think about where you will go (your house or car, a restaurant, etc.) and how long it will take to get there. Keep the timing in mind as you continue with your activities.

While engaged in your activities, keep an eye in the sky and know what to look for. Clouds with dark, flat bottoms are an indication of thunderstorm development. A storm at any stage of development can produce lightning. You don't have to be under a storm to get hit by lightning. Most strikes are within 10 miles of a storm, but some hit much farther away.

**II. AVOID LIGHTNING!** Stay indoors. When indoors and a storm is overhead or nearby, avoid using running water such as toilets, sinks, showers, tubs and swimming pools. Avoid touching corded and/or cabled electrical/electronic devices such as computers, appliances, power tools, landline phones, etc. Cordless phones/cellphones are safe to use when not plugged in. Stay away from windows.



**III. IF OUTDOORS** and you see lightning or hear thunder, you are in danger of being hit by lightning.

- Seek shelter immediately. Go indoors to a building with plumbing and/or electric service or to a fully enclosed metal vehicle with the windows rolled up. When inside the vehicle, avoid touching metal parts and electronics inside the vehicle while the storm is overhead.
- If you are on the water, e.g. boating, fishing, swimming, get out of the water immediately and head to proper shelter.
- If outdoors and shelter is not immediately available, keep moving towards your shelter. While doing so, try to avoid areas that are open, exposed or high. Avoid standing under individual or small groups of trees. Avoid small structures such as sheds, outbuildings, lean-tos, gazebos, tents, rock overhangs, etc. If you are in a wooded area, seek temporary shelter in a large, dense stand of trees until the storm passes. When doing so, avoid standing next to the taller trees. Do not lean against trees. Avoid metal objects such as wire fences, railroad tracks, pipelines, power lines, etc. Avoid bodies of water such as streams, lakes, etc.
- If you are in a group of people, spread out to a minimum of 10 to 15 feet apart from one another while moving towards shelter. That way, if a member of the group is hit by lightning, another group member can render first aid and/or seek help.
- **LAST RESORT** – If you are outdoors and you feel a tingling sensation or your hair stands on end or you hear buzzing, static or crackling sounds, you are in a very dire situation and in immediate danger of being hit by lightning in the next few seconds. Start moving immediately towards shelter.

**IV. IF LIGHTNING hits someone**, call 911. Give first aid and/or CPR if you are qualified. A person who has been struck by lightning is safe to handle as the body does not hold a charge after being hit.

**V. HOW FAR away is that lightning?** The distance of lightning from you can be roughly estimated by noting the time, in seconds, from its FLASH to the BANG of associated thunder. For every 5 seconds from FLASH to BANG (F-B), lightning is approximately one mile away. Do not waste time calculating the distance. It is more important to keep moving towards shelter.

