

Lightning Safety!

CCIA Safety Moment - June 1, 2015

Lightning Safety:

- Lightning strikes the United States about 25 million times a year.
- Lightning kills an average of 49 people in the United States each year, and hundreds more are severely injured.





Odds of Being Struck by Lightning

Odds of Becoming a Lightning Victim based on averages for 2004-2013

Estimated U.S. population as of 2014				318,000,000
Annual Reported Lightning Deaths	33	Annual Injuries Reported	234	267
Estimated number of U.S. Deaths	33	Estimated number of actual Injuries	297	330
Odds of being struck by lightning in a given year (reported deaths + injuries)				1/1,190,000
Odds of being struck in a given year (estimated total deaths + injuries)				1/960,000
Odds of being struck in your lifetime (Est. 80 years)				1/12,000
Odds you will be affected by someone struck (10 people for every 1 struck)				1/1,200

Injury from Lightning Strikes:

- Heart damage or **cardiac arrest** may occur.
- Up to two-thirds of the seriously injured people struck by lightning have keraunoparalysis - a **temporary paralysis** unique to lightning strike.
- Various types of **broken bones** and dislocations.
- **Skull fractures** and **cervical spine (neck) injuries** may result from associated blunt trauma.



Injury from Lightning Strikes:

- ◉ **Lungs** may be damaged, causing shortness of breath.
- ◉ **Eye injury** may cause immediate visual problems or delayed cataract formation.
- ◉ The **eardrum is commonly ruptured**. This causes pain, **hearing loss, and dizziness**.
- ◉ Victims may experience **superficial burns**. Contrary to common belief, deep burns are rare.



Superficial Burns from Lightning Strikes:

- They are sometimes called “lightning flowers” or “skin feathering” but the medical terms are “arborescent (tree-like) erythema” or “keraunographic markings.”



The Most Important Lightning Safety Tip:

- There is no safe place outside when thunderstorms are in the area!
- If you hear thunder, you are likely within striking distance of the storm.
- Just remember, ***When Thunder Roars, Go Indoors!***
- Too many people wait far too long to get to a safe place when thunderstorms approach. Unfortunately, these delayed actions lead to many of the lightning deaths and injuries in the United States.



Other Lightning Safety Tips:

- Know the weather patterns of the area you plan to visit. For example, in mountainous areas, thunderstorms typically develop in the early afternoon, so plan to hike early in the day and be down the mountain by noon.
- Listen to the weather forecast for the outdoor area you plan to visit. The forecast may be very different from the one near your home. If there is a high chance of thunderstorms, stay inside.

Spring Has Sprung! Get Ready for Some of America's Wildest Weather



Plan Ahead!

- Your best source of up-to-date weather information is a [NOAA Weather Radio \(NWR\)](#). Portable weather radios are handy for outdoor activities.
- If you don't have NWR, stay up to date via internet, smart phone, radio or TV.
- If you're in a group, make sure the group has a lightning safety plan and are ready to use it. If you're in a large group, you'll need extra time to get everyone to a safe place.
- The National Weather Service recommends having proven professional lightning detection equipment that will alert your group when lightning is nearing the event site.

PLAN AHEAD

If You **Absolutely** Cannot Get to Safety...

- ◉ Avoid open fields, the top of a hill or a ridge top.
- ◉ Stay away from tall, isolated trees or other tall objects. If you are in a forest, stay near a lower stand of trees.
- ◉ If you are in a group, spread out to avoid the current traveling between group members.
- ◉ If you are camping in an open area, set up camp in a valley, ravine or other low area. Remember, a tent offers NO protection from lightning.
- ◉ Stay away from water, wet items, such as ropes, and metal objects, such as fences and poles. Water and metal do not attract lightning but they are excellent conductors of electricity. The current from a lightning flash will easily travel for long distances.



Lightning Safety on the Job

- Some workers are at greater risk than others. People who work outdoors in open spaces, on or near tall objects, with explosives or with conductive materials such as metal have a greater exposure to lightning risks.
- Workers in these occupations face the most risk:
 - Logging
 - Explosive handling or storage
 - Heavy equipment operation
 - Plumbing and pipe fitting
 - Construction and building maintenance
 - Farming and field labor**
 - Telecommunications field repair
 - Power utility field repair



Lightning Safety on the Job (cont.)

- ◉ When thunderstorms threaten, **don't start anything you can't quickly stop**. If you can hear thunder, lightning is close enough to strike.
- ◉ Stop what you are doing and **seek safety in a substantial building or a hard-topped metal vehicle**.
- ◉ **Stay off and away from anything tall or high**, including rooftops, scaffolding, utility poles, ladders and large equipment such as bulldozers, cranes, backhoes, track loaders and tractors.
- ◉ **Do not touch materials or surfaces that can conduct electricity**, including metal scaffolding, metal equipment, utility lines, water, water pipes and plumbing.



If Someone is Struck by Lightning:

- ◉ Lightning victims **do not** carry an electrical charge and are safe to touch.
- ◉ They need **urgent medical attention**.
- ◉ **Cardiac arrest** is the immediate cause of death for those who die.
- ◉ Some deaths can be prevented if the victim receives the **proper first aid immediately**.
- ◉ **Call 9-1-1 and perform CPR** if the person is unresponsive or not breathing.
- ◉ Use an **Automatic External Defibrillator** if one is available.



Scenarios Where You Might Encounter Lightning:

● Coach of Outdoor Sports Team

- Your little league team has an evening game at the local recreational park. The weather forecast calls for partly cloudy skies, with a chance of thunderstorms by early evening. When you arrive at the park, you notice the only safe buildings are the restrooms.
- Shortly after sunset, the sky gets cloudy and you see bright flashes in the sky. **What should you do?**
- Get everyone into vehicles or the restrooms. Do NOT stay in the dugouts; they are not safe during lightning activity. Once in a safe place, wait 30 minutes after the last rumble of thunder before resuming play.



Other Possible Scenarios:

◉ At the Beach or Lake

- Your family plans to go to the beach today. The weather forecast calls for a nice morning followed by a 30 percent chance of afternoon thunderstorms. When you get to the beach, you see that the only nearby structures are open-sided picnic shelters. The parking lot is a 5 minute walk from the beach.
- By early afternoon skies are darkening and hear distant thunder. **What should you do?**
- **Go to your car!** Do NOT seek shelter under the beach picnic shelters. Wait 30 minutes until after the last rumble of thunder before going back to the beach.



Other Possible Scenarios:

● Camping, Climbing and Other Wilderness Activities

- You're cooking dinner on the camp stove when you hear distant rumbles of thunder.
- Your tent and a large open sided picnic shelter are nearby. Your vehicle is about quarter of a mile away parked at the trail head. **What should you do?**
- **Go to your vehicle!** The tent and picnic shelter are NOT a safe places. Wait 30 minutes until after the last rumble of thunder before going back to the campsite.



Lightning Facts & Myths

- ◉ **Myth:** If outside in a thunderstorm, you should seek shelter under a tree to stay dry.
- ◉ **Fact:** Being underneath a tree is the second leading cause of lightning casualties. Better to get wet than fried!



Lightning Facts & Myths

- **Myth:** Rubber tires on a car protect you from lightning by insulating you from the ground.
- **Fact:** Most cars are safe from lightning, but it is the metal roof and metal sides that protect you, NOT the rubber tires. Remember, convertibles, motorcycles, bicycles, open-shelled outdoor recreational vehicles and cars with fiberglass shells offer no protection from lightning. When lightning strikes a vehicle, it goes through the metal frame into the ground. Don't lean on doors during a thunderstorm.



Lightning Facts & Myths

- **Myth:** If you are in a house, you are 100% safe from lightning.
- **Fact:** A house is a safe place to be during a thunderstorm as long as you avoid anything that conducts electricity. This means staying off corded phones, electrical appliances, wires, TV cables, computers, plumbing, metal doors and windows. Windows are hazardous for two reasons: wind generated during a thunderstorm can blow objects into the window, breaking it and causing glass to shatter and second, in older homes, in rare instances, lightning can come in cracks in the sides of windows.



Lightning Facts & Myths

- ◉ **Myth:** Lightning never strikes the same place twice.
- ◉ **Fact:** Lightning often strikes the same place repeatedly, especially if it's a tall, pointy, isolated object. The Empire State Building is hit nearly 100 times a year.



The Take Home Message: *When Thunder Roars, Go Indoors!*

