UNDERSTANDING LIGHTNING!

A guide to understanding lightning, and it's dangers!

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Lightning 101

Lightning appears majestic and beautiful, but also is very dangerous. On average, more people are killed by lightning each year, then from any other elements. At any given moment, some 1,000 thunderstorms are in progress somewhere around the world. This amounts to 16 million storms a year! Scientists who study lightning today, have a far better understanding of the processes which produces lightning. However, much is still to be learned about the roles of solar flares on the upper atmosphere, the earth's electromagnetic field, and the ice within a thunderstorm. We know the cloud conditions which generates lightning, but we can't predict the location or timing of the next bolt of lightning. There are many lightning detection systems across the country, which monitors about 25 million flashes of lightning from cloud to ground every year. Lightning has been observed in volcanic eruptions, extremely intense forest fires, surface nuclear detonations, heavy snowstorms, and large hurricanes. However, lightning is most common with thunderstorms. So then, just what is lightning? By definition, lightning is a static spark or "bolt" of visible electrical discharges from a thunderstorm. There are many ways lightning is discharged from a thunderstorm, including "cloud to ground", "cloud to cloud", and "ground to cloud". Each volt can easily reach a temperature of 50,000 degrees Fahrenheit, and contain 100 million volts of electricity. If your caught outside during a thunderstorm, there is little you can do to reduce your risk of being hit by lightning. The only real thing to do is get inside a safe building or vehicle. If all else fails, and you cannot reach safe shelter, you can *slightly* reduce your chances of being hit by following these tips. But don't kid yourself! You are not safe outside in a storm!

1. Avoid open fields, the tops of hills, or ridge tops. 2. Stay away from tall isolated trees, and other tall objects. If your in a forest, stay near a lower stand of trees. 3. If you are part of a group of people, you should spread apart. This will the current from traveling between members. 4. If you are camping, be sure to set up in low lying areas, such as valleys or ravines. Keep in mind that tents offer zero protection from lightning! 5. Stay away from all bodies of water, including wet items or ropes, and metallic items such as fences and poles. Water and metal do not attract lightning, but are excellent conductors of lightning. The current from a bolt of lightning will easily travel for long distances.

Medical Impacts of Lightning

Being struck by lightning causes a primary injury to the nervous system, with brain injury and/or nerve injury. Serious burns seldom occur. Those who do not suffer cardiac arrest at the time of the incident may experience lessor symptoms, which clears up in a few days. Those who are struck by lightning receive a severe electric shock, and may be burned. However, they carry no electrical charge, so they can be handled easily. Those apparent "dead" victims should be treated first. Remember, if you observe anyone struck by lightning, don't wait! Call 911 at once!

Lightning is dangerous!

When a person who is struck by lightning impacts their brain, many different complications can result, such as short term memory, coding new information, accessing old information, multitasking, distractibility, irritability, and personality changes. According to "*Storm Data"* a NOAA weather publication, over the past 30 year period, there were an average of 49 reported lightning fatalities across the county. About 10 percent of those struck by lightning are killed, and the remaining 90 percent left with varied degrees of disabilities. If you see someone hit by lightning, don't wait! Get help at once! Lightning knows no boundaries and strikes very quickly and without warning. Lightning is one of the top three (3) storm-related killers in the United States. Just as there is lightning safety tips for being outdoors, there are also safety tips for being indoors as well.

A safe shelter is a building with electricity and/or plumbing or a metal-topped vehicle with windows closed. Picnic shelters, dugouts, small buildings without plumbing or electricity are not safe. Below are some key safety tips for you, your pets and your home. There are three main ways lightning enters structures: a direct strike, through wires or pipes that extend outside the structure, and through the ground. Once in a structure, lightning can travel through the electrical, phone, plumbing, and radio/television reception systems. Lightning can also travel through any metal wires or bars in concrete walls or flooring.

1. Stay off corded phones. Cellular and cordless phone are safe to use.
2. Don't touch electrical equipment like TV's or computers, or even cords. You can use remote controls safely.
3. Avoid plumbing! Don't wash your hands, take showers, or wash dishes.
4. Stay away from windows and doors which may have small leaks around the sides to let in lightning. Stay off of porches.
5. Do not lie down on concrete floors, or lean against concrete walls.
6. Be sure to protect your pets. Dog houses are not safe. Dogs chained to trees or on metal runners are particularly vulnerable to being struck by lightning. Keep cats away from windows.
7. Protect your property. Lightning generates electric surges that can damage electronic equipment some distance from the actual strike. Typical surge protectors will not protect equipment from a lightning strike. Do not unplug equipment during a thunderstorm as there is a risk you could be struck.

So the bottom line is - "*When thunder roars, go indoors!"*

Lightning Fast Facts..

- Lightning strikes the United States about 25 million times a year.
- A single bolt of lightning can reach a temperature of 50,000 degrees Fahrenheit, and contain 100 million volts of electricity.
- Lightning can strike the same spot repeatedly.
- Lightning can strike from up to 10 miles from the main thunderstorm. These bolts are known as “bolts from the blue”.
- Lightning kills an average of 49 people each year, with hundreds more injured.

It’s a tragic reality when a friend or loved one is hit by lightning, and taken from our lives so suddenly. We will miss all the good things he/she did to enrich and inspire our lives, But the plain truth is, many of these deaths could have been prevented. If they would have known basic lightning safety, they all could still be here today. There’s little question about it, lightning is very majestic and awesome to watch. But, it’s also very dangerous and even lethal if it strikes a close friend or loved one. Be safe this year, and get familiar with basic lightning safety. It could mean the difference between life and death!

For more information about lightning, and other forms of severe weather, please contact our office during regular business hours, or your local office of the National Weather Service.

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