



Just the Facts...

Lightning Kills - Play it Safe

In the United States alone, lightning hits the ground about 40 million times a year. For the last 40 years, it has been the second largest storm killer in the United States. According to the National Weather Service Publication, *Storm Data*, approximately 100 people are killed by lightning each year and another 300 injuries are documented. About one-third of the people is struck at work, one-third during recreational or sports activities, and another one-third in diverse situations. According to the book "Understanding Lightning" farmers, golfers, and fisherman are killed most frequently by lightning.

Lightning occurs with all thunderstorms although it is not always visible and is most common in the summer months and in warm moist climates. Wondering exactly what causes lightning and why it is so dangerous? Lightning is created as a discharge of built-up energy due to the separation of positive and negative charges which are generated inside a thunderstorm. Lightning occurs when the difference between the positive ground charges and negative charges in the lower portion of the cloud becomes great enough to overcome the insulating resistance effects of the air. This forces a current to flow between the two charges – with an electrical potential of as much as 100 million volts!! Thunder is the sound of the shock wave produced by the rapidly expanding gases that surround the lightning bolt where air is instantly heated to temperatures near 10,000 degrees Celsius.



When is a thunderstorm dangerous? Lightning can strike 5 to 10 miles away from the center of the storm. Whether or not a person is in the path of the lightning discharge determines if the particular flash could be deadly or injurious. Many victims are struck as the current moves in and along the ground. To determine the location of the thunderstorm, count the number of seconds between the flash and the rumble of a clap of thunder, and then divide the number by five. This is approximately the number of miles away the thunderstorm is centered. A person that can hear thunder is in the lightning-strike zone and precautions should be taken immediately.

Many injuries can be prevented with proper education, lightning protection systems, appropriate shelters for safety, and lightning safety plans for coaches, parents, and referees at sporting events. While adults are responsible for their own safety and injury prevention, adults are always responsible for the children in their care.

Lightning Safety Tips:

- Find shelter, with the best place being a building. Contrary to popular belief, a car is not safer than a building.
- If caught outside, get into a low-lying area without water.
- Have the least contact with the ground as possible - squat low to the ground with head between the knees and hands on knees.
- Don't crouch next to anything tall, i.e., a tree or fence, since lightning hits objects that rise up from the ground.
- Stay away from anything metal, including small metal objects like golf clubs, bats, fishing rods, or umbrellas.
- If indoors – stay away from windows and doors; do not use telephones, shower or bathe, or wash dishes – water, electrical wires, and metal pipes conduct electricity!
- Wait at least 30 minutes after the last clap of thunder before leaving shelter.

If a person is struck by lightning, medical care may be needed immediately, including CPR. Cardiac arrest and irregularities, burns, and nerve damage are common. Injuries can also include memory loss, attention deficits, sleep disorders, numbness, dizziness, intense headaches, tinnitus, stiff joints, irritability, fatigue, weakness, muscle spasms, and depression. These symptoms can be debilitating and long-term. An organization to help survivors, families, and health care providers is at [Lightning Strike and Electric Shock Survivors International \(LSESSI\)](#). Founded by a lightning survivor, it offers printed materials, support, networking, and an annual meeting for knowledge sharing.

To lower lightning death and injury rates, the National Weather Service has designated June 20-26 as Lightning Safety Awareness Week. The following websites provide more information about lightning, its dangers, prevention guidance and educational resources:

[National Weather Service Lightning Safety](#)
[Lightning Safety Awareness Week](#)
[Lightning Injury Research Program, University of Illinois](#)