WILLIAMSBURG YOUTH BASEBALL LEAGUE

LIGHTNING POLICY

BACKGROUND

Lightning is the most consistent and significant weather hazard that may affect athletic events. Within the United States, National Oceanographic and Atmospheric Administration (NOAA) estimates that 60-70 fatalities and about 10 times as many injuries occur from lightning strikes every year. While the probability of being struck by lightning is low, the odds are significantly greater when a storm is in the area and proper safety precautions are not followed.

On average, lightning causes more casualties annually in the US than any other storm related phenomena, except floods. Many people incur injuries or are killed due to misinformation and inappropriate behavior during thunderstorms. A few simple precautions can reduce many of the dangers posed by lightning.

The seemingly random nature of thunderstorms cannot guarantee the individual or group absolute protection from lightning strikes, however, being aware of, and following proven lightning safety guidelines can greatly reduce the risk of injury or death. The individual is ultimately responsible for his/her personal safety and has the right to take appropriate action when threatened by lightning. Adults must take responsibility for the safety of children in their care during thunderstorm activity.

EMERGENCY ACTION PLAN

An umpire on each field will be equipped with a Strike Alert II Lightning Detector when thunderstorms are forecast for the area.

If lightning is detected within 6 miles of the field by any of the umpires, play will be suspended. This follows the "Flash-Bang" method recommended by the National Severe Storms Laboratory where the observer begins counting when a lightning flash is sighted. Counting is stopped when the associated bang (thunder) is heard. Divide this count by 5 to determine the distance to the lightning flash (in miles). For example, a flash-to-bang count of 30 seconds equates to a distance of 6 miles. This is also the basis for the 30/30 rule which requires that games be suspended when the flash-to-bang count is less than 30 seconds (6 miles) and play is only resumed after 30 minutes following the last lightning strike.

The umpires will clear the fields and notify the teams and spectators that the game is suspended until lightning passes.

The umpires will proceed to the concession building and sound the air horn with one long blast.

All players and spectators will need to proceed to the concession building or their vehicles. No one should remain at the field or in the dugouts.

The primary choice for a safe location from the lightning hazard is any substantial, frequently inhabited building. The electric and telephone wiring and plumbing pathways aid in grounding a building, which is why

buildings are safer than remaining outdoors during thunderstorms. It is important not to be connected to these pathways while inside the structure during ongoing thunderstorms.

The secondary choice for a safer location from the lightning hazard is a fully enclosed vehicle with a metal roof and the windows enclosed. Convertible cars and golf carts do not provide protection from lightning danger. It is important not to touch any part of the mental framework of the vehicle while inside it during ongoing thunderstorms.

Avoid being in or near high places and open fields, isolated trees, unprotected gazebos, rain or picnic shelters, baseball dugouts, communications towers, flagpoles, light poles, bleachers (metal or wood), metal fences, convertibles, golf carts, or water (ocean, lakes, swimming pools, rivers, etc.).

Avoid taking showers and using plumbing facilities (including indoor and outdoor pools) and land-line telephones during thunderstorm activity. Cordless or cellular telephones are safer to use when emergency help is needed.

Once games have been suspended, play will resume only after a 30 minute period following the last detected lightning strike within 6 miles of the field. The umpires will notify the players and spectators that it is safe to resume the games by sounding the air horn with 3 short blasts.

FIRST AID RECOMMENDATIONS FOR LIGHTNING VICTIMS

Individuals who feel their hair stand on end or skin tingle or hear crackling noises should assume the lightning-safe position (i.e., crouched on the ground, weight on the balls of the feet, feet together, head lowered, and ears covered). Do not lie flat on the ground.

Most lightning victims can actually survive their encounter with lightning, especially with timely medical treatment. Individuals struck by lightning do not carry a charge and it is safe to touch them to render medical treatment. Follow these steps to try to save the live of the lightning victim:

First:
Call 911 to provide directions and information about the likely number of victims.

Response:
The first tenet of emergency care is “make no more casualties”. If the area where the victim is located is a high risk area (mountain top, isolated tree, open field, etc.) with a continuing thunderstorm, the rescuers may be placing themselves in significant danger.

Evacuation:
It is relatively unusual for victims who survive a lightning strike to have major fractures that would cause paralysis or major bleeding complications unless they have suffered a fall or been thrown a distance. As a result, in an active thunderstorm, the rescuer needs to choose whether evacuation from very high risk areas to an area of lesser risk is warranted and should not be afraid to move the victim rapidly if necessary. Rescuers are cautioned to minimize their exposure to lightning as much as possible.

Resuscitation:
If the victim is not breathing, start mouth to mouth resuscitation. If it is decided to move the victim, give a few quick breaths prior to moving them. Determine if the victim has a pulse by checking the pulse at the carotid

artery (side of the neck) or femoral artery (groin) for at least 20-30 seconds. If no pulse is detected, start cardiac compressions as well. In situations that are cold and wet, putting a protective layer between the victim and the ground may decrease the hypothermia that the victim suffers which can further complicate the resuscitation.

SOURCES

National Lightning Safety Institute. Multi-Agency Recommendations for Lightning Safety. American Meteorological Society Conference, Phoenix, AZ 1998.

National Severe Storms Laboratory. Updated Recommendations for Lightning Safety. 1999

National Athletic Trainers' Association. Position Statement: Lightning Safety for Athletics and Recreation. 2000

National Collegiate Athletic Association. Guideline 1d Lightning Safety. 2006

Virginia High School League. Policy Manual – Lightning Safety Report. 2006

Safer locations during thunderstorms and locations to avoid

*No place is absolutely safe from the lightning thread, however, some places are safer than others.

*Large enclosed structures (substantially constructed buildings) tend to be much safer than smaller or open structures. The risk for lightning injury depends on whether the structure incorporates lightning protection, construction materials used, and the size of the structure (see NFPA 780, Appendix E & H).

*In general, fully enclosed metal vehicles such as cars, trucks, buses, vans, fully enclosed farm vehicles, etc. with the windows rolled up provide good shelter from lightning. Avoid contact with metal or conducting surfaces outside or inside the vehicle.

*AVOID being in or near high places and open fields, isolated trees, unprotected gazebos, rain or picnic shelters, baseball dugouts, communications towers, flagpoles, light poles, bleachers (metal or wood), metal fences, convertibles, golf carts, water (ocean, lakes, swimming pools, rivers, etc.).

*When inside a building AVOID the use of the telephone, taking a shower, washing your hands, doing dishes, or any contact with conductive surfaces with exposure to the outside such as metal doors or window frames, electrical wiring, telephone wiring, cable TV wiring, plumbing, etc.

Safety guidelines for individuals

*Generally speaking, if an individual can see lightning and/or hear thunder he/she is already at risk. Louder or more frequent thunder indicates that lightning activity is approaching, increasing the risk of lightning injury or death. ***If the time delay between seeing the flash (lightning) and hearing the band (thunder) is less than 30 seconds, the individual should be in, or seek a safer location*** (see Safer Locations during Thunderstorms and Locations to be Avoided). Be aware that this method of ranging has severe limitations in part due to the difficulty of associating the proper thunder to the corresponding flash.

*High winds, rainfall, and cloud cover often act as precursors to actual cloud-to-ground strikes notifying individuals to take actions. Many lightning casualties occur in the beginning, as the storm approaches, because people ignore these precursors. Also, many lightning casualties occur after the perceived threat has passed. ***Generally, the lightning threat diminishes with time after the last sound of thunder, but may persist for more than 30 minutes.*** When thunderstorms are in the area but not overhead, the lightning threat can exist even when it is sunny, not raining, or when clear sky is visible.

*When available, pay attention to weather warning devices such as NOAA weather radio and/or credible lightning detection systems, however, do not let this information override good common sense.

First aid recommendations for lightning victims

Most lightning victims can actually survive their encounter with lightning, especially with timely medical treatment. Individuals struck by lightning do not carry a charge and it is safe to touch them to render medical treatment. Follow these steps to try to save the live of the lightning victim:

1) First:
Call 911 to provide directions and information about the likely number of victims.

2) Response:
The first tenet of emergency care is "make no more casualties". If the area where the victim is located is a high risk area (mountain top, isolated tree, open field, etc.) with a continuing thunderstorm, the rescuers may be placing themselves in significant danger.

3) Evacuation:
It is relatively unusual for victims who survive a lightning strike to have major fractures that would cause paralysis or major bleeding complications unless they have suffered a fall or been thrown a distance. As a result, in an active thunderstorm, the rescuer needs to choose whether evacuation from very high risk areas to an area of lesser risk is warranted and should not be afraid to move the victim rapidly if necessary. Rescuers are cautioned to minimized their exposure to lightning as much as possible.

4) Resuscitation:
If the victim is not breathing, start mouth to mouth resuscitation. If it is decided to move the victim, give a few quick breaths prior to moving them. Determine if the victim has a pulse by checking the pulse at the carotid artery (side of the neck) or femoral artery (groin) for at least 20-30 seconds. If no pulse is detected, start cardiac compressions as well. In situations that are cold and wet, putting a protective layer between the victim and the ground may decrease the hypothermia that the victim suffers which can further complicated the resuscitation. In wilderness areas and those far from medical care, prolonged basic CPR is of little use: the victim is unlikely to recover if they do not respond within the first few minutes. If the pulse returns, the rescuer should continue ventilation with rescue breathing if needed for as long as practical in a wilderness situation. However, if a pulse does not return after twenty to thirty minutes of good effort, the rescuer should not feel guilty about stopping resuscitation.

RECOMMENDATIONS

1. Formalize and implement a comprehensive, proactive lightning-safety policy or emergency action plan specific to lightning safety. The components of this policy should include the following:
   A. An established chain of command that identifies who is to make the call to remove individuals from the field or an activity.
   B. A designated weather watcher (ie, a person who actively looks for signs of threatening weather and notifies the chain of command if severe weather becomes dangerous).
   C. A means of monitoring local weather forecasts and warnings.
   D. A list of specific safe locations (for each field or site) from lightning hazard.
   E. The use of specific criteria for suspension and resumption of activities (refer to recommendations 4, 5, and 6).
   F. The use of the recommended lightning-safety strategies (refer to recommendations 7, 8, and 9).
2. The primary choice for a safe location from the lightning hazard is any substantial, frequently inhabited building. The electric and telephone wiring and plumbing pathways aid in grounding a building, which

is why buildings are safer than remaining outdoors during thunderstorms. It is important not to be connected to these pathways while inside the structure during ongoing thunderstorms.

3. The secondary choice for a safer location from the lightning hazard is a fully enclosed vehicle with a metal roof and the windows enclosed. Convertible cars and golf carts do not provide protection from lightning danger. It is important not to touch any part of the mental framework of the vehicle while inside it during ongoing thunderstorms.
4. Seeking a safe structure or location at the first sign of lightning or thunder activity is highly recommended. By the time the flash-to-bang count approaches 30 seconds (or less thank 30 seconds), all individuals should already be inside or should immediately seek a safe structure or location. To use the flash-to-bang method, the observer begins counting when a lightning flash is sighted. Counting is stopped when the associated bang (thunder) is heard. Divide this count by 5 to determine the distance to the lightning flash (in miles). For example, a flash-to-bang count of 30 seconds equates to a distance of 6 miles (9.66km).
5. Postpone or suspend activity if a thunderstorm appears imminent before or during an activity or contest (regardless of whether lightning is seen or thunder heard) until the hazard has passed. Signs of imminent thunderstorm activity are darkening clouds, high winds, and thunder or lightning activity.
6. Once activities have suspended, wait at least 30 minutes after the last sound of thunder or lightning flash before resuming an activity or returning outdoors. A message should be read over the public address system and lightning-safety tips should be placed in game programs alerting spectators and competitors about what to do and where to go to find a safer location during thunderstorm activity.
7. Extremely large athletic events are of particular concern with regard to lightning safety. Consider using a multidisciplinary approach to lessen lightning danger, such as integrating weather forecasts, real-time thunderstorm data, a weather watcher, and the flash-to-bang count to aid in decision making
8. Avoid being in contact with, or in proximity to, the highest point of an open field or on the open water. Do not take shelter under or near trees, flag poles, or light poles.
9. Avoid taking showers and using plumbing facilities (including indoor and outdoor pools) and land-line telephones during thunderstorm activity. Cordless or cellular telephones are safer to use when emergency help is needed.
10. Individuals who feel their hair stand on end or skin tingle or hear crackling noises should assume the lightning-safe position (ie, crouched on the ground, weight on the balls of the feet, feet together, head lowered, and ears covered). Do not lie flat on the ground.
11. Observe the following first-aid procedures, in order, to manage victims of lightning strike.
    A. Survey the scene for safety. Ongoing thunderstorms may still pose a threat to emergency personnel responding to the situation.
    B. Activate the local emergency management system
    C. Move the victim carefully to a safer location, if needed.
    D. Evaluate and treat for hypothermia shock.
    E. Evaluate and treat for hypothermia and shock.
    F. Evaluate and treat for fractures
    G. Evaluate and treat for burns.
12. All persons should maintain current cardiopulmonary resuscitation (CPR) and first-aid certification.
13. All individuals should have the right to leave and athletic site or activity, without fear of repercussion or penalty, in order to seek safe structure or location if they feel they are in danger from impending lightning activity.

NCAA
GUIDELINE 1d
Lightning Safety

Lightning is the most consistent and significant weather hazard that may affect intercollegiate athletics. Within the United States, National Oceanographic and Atmospheric Administration (NOAA) estimates that 60-70 fatalities and about 10 times as many injuries occur from lightning strikes every year. While the probability of being struck by lightning is low, the odds are significantly greater when a storm is in the area and proper safety precautions are not followed.

Education and prevention are the keys to lightning safety. The references associates with this guideline are an excellent educational resource. Prevention should begin long before any intercollegiate athletics event or practice by being proactive and having a lightning safety plan in place. The following steps are recommended by the NCAA and NOAA to mitigate the lightning hazard:

1. Designate a person to monitor threatening weather and to make the decision to remove a team or individuals from an athletics site or event. A lightning safety plan should include planned instructions for participants and spectators, designed of safer places for shelter from the lightning.
2. Monitor local weather reports each day before any practice or event. Be diligently aware of potential thunderstorms that may form during scheduled intercollegiate athletics events or practices. Weather information can be found through various means via local television news coverage, the internet, cable and satellite weather programming, or the National Weather Service (NWS) homepage at http://www.weather.gov.
3. Be informed of National Weather Service (NWS) issued thunderstorm "watches" or "warnings," as well as the warning signs of developing thunderstorms in the area, such as high winds or darkening skies. A "watch" means conditions are favorable for severe weather to develop in the area; a "warning" means that sever weather has been reported in an area and for everyone to take the proper precautions. A NOAA weather radio is particularly helpful in providing this information.
4. Know where the closest "safer structure or location" is to the field or playing area, and know how long it takes to get to that location. A safer structure or location is defined as:

    A. Any building normally occupies or frequently used by people, i.e., a building with plumbing and/or electrical wiring that acts to electrically ground the structure. Avoid using the shower or plumbing facilities and contact with electrical appliances during a thunderstorm.
    B. Small covered shelters are not safe from lightning. Dugouts, rain shelters, golf shelters, and picnic shelters, even if they are properly grounded for structural safety, are usually not properly grounded from the effects of lightning and side flashes to people. They are usually very unsafe and may actually increase the risk of lightning injury. Other dangerous locations include areas connected to, or near light poles, towers, and fences that can carry a nearby strike to people. Also dangerous is any location that makes the person the highest point in the area.
    C. In the absence of a sturdy, frequently inhabited building, any vehicle with a hard metal roof (neither a convertible, nor a golf cart) with the windows shut provides a measure of safety. The hard metal frame and roof not the rubber tires is what protects occupants by dissipating lightning current around the vehicle and not through the occupants. It is important not to touch the metal framework of the vehicle. Some athletics events rent school buses as safer shelters to place around open courses or fields.
5. Lightning awareness should be heightened at the first flash of lightning, clap of thunder, and/or other criteria such as increasing winds or darkening skies, no matter how far away. These types of activities must be treated as a warning or "wake-up call" to inter-collegiate athletics personnel.

Specific lightning safety guidelines have been developed with the assistance of lightning safety experts:

A. As a minimum, lightning safety experts strongly recommend that by the time the monitor observes 30 seconds between seeing the lightning flash and hearing its associated thunder, all individuals should have left the athletics site and reached a safer structure or location.
B. Please note that thunder may be hard to hear if there is an athletics event going on, particularly in stadia with large crowds. Implement your lightning safety plan accordingly.
C. The existence of blue sky and the absence of rain are not guarantees that lightning will not strike. At least 10 percent of lightning occurs when there is no rainfall and when blue sky is often visible somewhere in the sky, especially with summer thunderstorms. Lightning can, and does, strike as far as 10 (or more) miles away from the rain shaft.
D. Avoid using landline telephones, except in emergency situations. People have been killed while using a landline telephone during a thunderstorm. Cellular or cordless phones are safe alternatives to a landline phone, particularly if the person and the antenna are located within a safer structure or location, and if all other precautions are followed.
E. To resume athletics activities, lighting safety experts recommended waiting 30 minutes after both the last sound of thunder and last flash of lightning. If lightning is seen without hearing thunder, lightning may be out of range and therefore less likely to be a significant threat. At night, be aware that lightning can be visible at a much greater distance than during the day as clouds are being lit from the inside by lightning. This greater distance may mean that the lightning is no longer a significant threat. At night, use both the sound of thunder an seeing the lightning channel itself to decide on re-setting the 30-minute "return-to-play" clock before resuming outdoor athletics activities.
F. People who have been struck by lightning do not carry an electrical charge. Therefore cardiopulmonary resuscitation (CPR) is safe for the responder. If possible, an injured person should be moved to a safer location before starting CPR. Lightning-strike victims who show signs of cardiac or respiratory arrest need prompt emergency help. If you are in a 911 community, call for help. Prompt, aggressive CPR has been highly effective for the survival of victims of lightning strikes.

   Automatic external defibrillators (AED's) have become a common, safe and effective means of reviving persons in cardiac arrest. An AED should be considered as part of your sideline equipment. However, CPR should never be delayed while searching for an AED.

   Note: Weather watchers, real-time weather forecasts and commercial weather-warning devices are all tools that can be used to aid in decision-making regarding stoppage of play, evacuation and return to play.