

Fort Worth Christian School Athletics Department & Sports Medicine

SPORTS SAFETY POLICY AND PROCEDURE HANDBOOK

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INTRODUCTION

The following policies and procedures were specifically designed for Fort Worth Christian School's athletic department and its facilities. This manual cannot guarantee the safety of any individual. This manual was created to help provide FWC employees and our student athletes written guidelines and protocols to help reduce the chances of a serious injury occurring on Fort Worth Christian School's athletic facilities.

Please feel free to contact the head athletic trainer with any questions or concerns regarding the contents of the manual. Coach Karlen can be reached by phone at 817-281-6504 ext. 189 or by email at ckarlen@fwc.org. If contacting by email, please include "FWC" in the subject line.

-Corry Karlen ATC, LAT

ROLE OF THE CERTIFIED / LICENSED ATHLETIC TRAINER

The National Athletic Trainers Association (NATA) defines the certified athletic trainer as:

*Health care professionals who specialize in preventing, recognizing, managing, and rehabilitating injuries that result from physical activity. As part of a complete health care team, the certified athletic trainer works under the direction of a licensed physician and in cooperation with other health care professionals, athletic administrators, coaches, and parents.

Minimum Requirements to practice as a Certified/Licensed Athletic Trainer

1. Bachelor's degree from an accredited university with an approved athletic training curriculum.
2. Pass a licensing examination provided by the Texas Department of State Health Services.
3. Pass a certification examination provided by the NATA Board of Certification.
4. Complete 75 hours of continuing education classes every 3 years.
5. Maintain current CPR/AED certifications.

Duties of the FWC Athletic Trainer

1. Maintain copies of all current FWC student athlete physicals and medical release forms.
2. Maintain record of treatments provided to FWC student athletes.
3. Assist coaches with equipment needs within the scope of athletic training. Examples include braces, supports, protective equipment, tape, drinking water, injury ice, and medical supplies deemed necessary by the head athletic trainer. These items will be available during most FWC practices and home games.
4. Educate and supervise student athletic trainers.
5. Report to the athletic director (in writing) problems, violations, or negligent actions of coaches or student athletes regarding the policies and procedures of this manual or of the athletic department and its facilities.
6. Evaluate and treat injuries that occur during FWC middle school and high school athletic practices and events. Due to time restraints and limited resources, injuries that occur during non-FWC sports or extra-curricular activities (club sports) are not covered within the scope of responsibilities of the FWC athletic trainer. For the protection of the athletic trainer and the student athlete, female athletes should be accompanied by another female, team manager, parent, or coach during evaluation and treatments. An injury report can be made available to the head coach verbally or by email any time an athlete receives treatment or evaluation.
7. Provide medical coverage to FWC middle school and high school practices and home events. The athletic trainer will also travel to varsity football road games; other sports will be at the discretion of the head athletic trainer. Priority of medical coverage provided by the athletic trainer will be given first to home varsity events and then to the sport with the higher level of risk. For example, football will take precedence over volleyball and cross-country, soccer and basketball will take precedence over baseball, softball, and track. The athletic trainer will not be in attendance during golf, tennis, or swimming events due their off campus practice and event locations. These sports may receive medical attention from FWC coaches or on campus by the athletic trainer. Cheerleaders may also receive medical attention from the athletic trainer. If applicable, student athletic

trainers will be provided to coaches when possible in the absence of the athletic trainer.

8. Tournaments: If FWC is the host site, the athletic trainer is required to be on campus only when a FWC team is currently playing. Injury ice and drinking water will be made available throughout the tournament in the absence of the athletic trainer. If additional medical coverage is needed, the athletic trainer is entitled to charge an additional fee of \$20 per hour of coverage needed. This fee will be charged to the tournament director at the end of the tournament.
9. Summer Camps: Camps are considered extra and outside the normal duties of the athletic trainer. If medical coverage is needed, a minimum fee of \$25 per hour will be charged to the head coach for each camp being held on FWC facilities.

RESPONSIBILITIES OF THE COACH TO THE ATHLETIC TRAINER

1. Recognize that the head athletic trainer has the ultimate authority regarding the safety and health of all student athletes during scheduled practices and competition. Once a student athlete is evaluated by the athletic trainer, that athlete is now under the direction of the athletic trainer. All physician referrals should be conducted by the head athletic trainer. This will enable good communication between the physician, athletic trainer, coach, student athlete, and parent. The student athlete will not return to activity until an official release is made by the treating physician or by the athletic trainer. Practice or game modifications needed for the injured athlete to participate will be communicated daily to the head coach by the athletic trainer.
2. All coaches must maintain current CPR certification. AED training will be provided by the athletic trainer and/or school nurse during a designated time.
3. All coaches should carry a working cell phone during all practices and games in case of an emergency.
4. The head coach must submit to the athletic trainer either verbally or by email a weekly schedule for all practices and games. These schedules should be submitted 48 hours prior to the next week's practices or games (Fridays). If a schedule has not been received 48 hours prior to the next week, then that practice or event may not receive athletic training coverage. Holiday schedules regarding practices and games must be submitted 1 week prior to the last day of school before each holiday break.
5. Coaches with keys to the training room and storage closet must keep the doors LOCKED at all times. For inventory and security purposes, if a coach removes an item from the training room or storage closet, then that item should be written on the provided dry erase board or clip board for the head athletic trainer to see (i.e. coolers, cups, tape, towels, medical kit, etc.).
6. Coaches should treat all student athletic trainers in the same manner as you would the head athletic trainer. Student athletic trainers are under the supervision of the head athletic trainer and are receiving HS credit each semester as a 7th period class. Student athletic trainers are responsible for carrying out the normal duties (within their capabilities) of the sports medicine department in the absence of the athletic trainer. Student athletic trainers are not licensed, but may assist you with basic first aid and equipment needs such as practice set-up, applying heat or ice, minimal taping, and minor wound care. If there are any questions regarding the seriousness of an injury, contact the head athletic trainer ASAP. Per the request of a head coach, student athletic trainers may travel with FWC teams to road games if deemed feasible by the head athletic trainer.

EMERGENCY ACTION PLAN FOR LIFE THREATNING INJURIES

The primary concern of administering emergency aid to an injured athlete is to maintain cardiovascular function and central nervous system function – the failure of either of those systems may lead to permanent injury or death. To provide the best possible care to our student athletes, coaches and athletic trainers must work together as a team. In most situations involving injury or illness to an athlete, coaches are typically the first responder and must be able initiate the Emergency Action Plan (EAP) in the absence of a licensed athletic trainer. In the event that a possible life threatening injury or illness occurs without the presence of a medical professional, first responders must remain calm and act quickly in order to facilitate life-saving care.

Time is the most important factor when responding to a serious injury. Due to the immediate contact coaches have with their athletes, initiating the EAP yourself can save an injured athlete valuable minutes. Having a licensed athletic trainer on staff is an asset to an athletic program; it *does not* eliminate the coach's responsibility to keep their athletes safe nor does it protect them from negligence. Emergency responsibilities for coaches as first responders would include: Contacting emergency medical services (EMS-911), performing CPR, applying a defibrillator, or providing first aid.

Signs or Symptoms of a Potentially Serious Injury or Illness

1. Changes in skin color (red, pale, or blue) or temperature (hot, dry, cool, or clammy).
2. Body temperature that is less than 95 deg or greater than 104 degrees.
3. Changes in breathing (shallow, irregular, or gasping).
4. Complaints of head, neck, or abdominal pain after a collision or contact type injury.
5. Frothy blood dissipating from the mouth.
6. Loss of consciousness.
7. No signs of breathing or a pulse.
8. Numbness below the neck and difficulty or inability to move extremities.
9. Pupils are unequal in shape or fully dilated.
10. Uncontrollable bleeding from a laceration or puncture wound.

Head and Neck Injuries

Concussions occur regularly in a collision type sport such as football. Injuries to the head and neck can be catastrophic in nature. If an athlete suffers an injury to the head or neck and there are no medical personnel available, then it is the coach's responsibility to make sure that their athlete receives proper medical care. Always err on the side of caution in regards to a head or neck injury. Diagnosing a concussion can be very difficult and is often passed over as "just getting his bell rung". "Burners" or "Stingers" can also occur regularly in collision sports and should be treated as a potentially serious nerve injury. Remember, if an athlete is hit hard enough to elicit an ill effect, then it may no longer be safe for that athlete to immediately continue the contest. Returning to play after a concussion will be determined on a case by case basis, athletes may return to play only after receiving an official released by their caring physician or by the athletic trainer. FWC has adopted the "ImPact Concussion Program" to help aid the medical staff in their decision making. Do not allow the athlete to return to play if he or she is suffering from any of the following symptoms:

1. Loss of consciousness (even if for a few seconds). (*Refer to EAP section of this manual)
2. Numbness, tingling, or burning sensation in the arms or legs.
3. Headache, dizziness, ears ringing, confusion, or amnesia. (Do not give medication to the athlete anytime, use an ice pack to decrease symptoms instead)
4. Complaints of pain anywhere on the head or along the spine.

Duties of the Personnel Involved in the Emergency Action Plan

1. First coach or staff member on the scene will initiate EAP protocol and perform life-sustaining skills as needed and attempt to contact the athletic trainer.
2. Upon arrival, the athletic trainer will assume control over the incident scene and direct other coaches and or staff members on proper procedures.
3. Whoever is chosen to be the designated caller will also direct (flag down) the ambulance to the location of the incident. If no designated caller is available, the first coach/staff member on the scene will direct EMS to the proper location once he or she has been relieved by the athletic trainer to do so.
4. Coaches and/or staff members will also assist the athletic trainer by maintaining crowd control if necessary.

Emergency Action Plan Protocol (EAP) *in the absence of an athletic trainer*

Step 1: *Activate EMS (call 911) if:

1. Athlete is unconscious and not breathing.
2. Bleeding uncontrollably from a wound (damaged artery, impaled object, etc.)
3. Possible ingestion of a toxic substance.

**if possible, designate another coach or staff member to do this while you tend to the victim.*

Step 2: Communicate information to EMS in this order (speak clearly and calmly):

1. Name of the school, address of the school, and location of incident (i.e. baseball field).
2. Your name and phone number.
3. Description of incident.

Step 3: Call FWC head athletic trainer - Coach Karlen

Step 4: If the victim is unconscious: Check ABC's (airway, breathing, circulation) and stabilize the head if you suspect a neck injury. If no breathing or pulse is found, apply defibrillator or begin CPR until help arrives (if using defibrillator, follow voice prompts). If breathing, monitor for changes until help arrives.

Step 5: Control severe bleeding by applying direct pressure over or above the wound. Keep athlete calm until EMS arrives.

*Never leave an injured or unconscious victim unattended unless you are the only available person to activate the EAP. You must keep the victim calm and perform life sustaining skills as needed! Every effort must be made for another person to call 911 and to notify the athletic trainer of the situation.

Remember to use common sense! There is no liability for attempting to provide some sort of medical assistance, but the consequences can be severe if you neglect to do nothing at all.

Non-Emergent Injuries or Illness

Non-emergent injuries to athletes are considered “not life threatening” and have a common place in athletics. Injuries can certainly make an athletic trainer’s or coach’s job very difficult because of the uncertainty of the athlete’s condition from day to day, week to week, or even month to month. Rarely can the full recovery from any injury be pre-determined. Coaches should understand that there is usually a huge disparity with the physical demands placed on the body when an athlete is participating in practice as opposed to a game. Factors such as an athlete’s health, level of conditioning, nutrition intake, sleeping habits, or compliance with a treatment protocol can affect how quickly an athlete recovers from an injury.

Examples of non-emergent injuries or illness:

1. Ligament sprains.
2. Muscle strains.
3. Most contusions (monitor the athlete if contact occurred to the head, spine, abdomen, or groin).
4. Blisters or small lacerations.
5. Muscle spasms or cramps.
6. Post workout fatigue and soreness.

Protocol for handling non-emergent injuries in the absence of the athletic trainer:

Step 1: Have the athlete sit and rest, apply ice to the pain site as needed. If applicable, instruct the student athletic trainer to assist the injured athlete.

Step 2: If symptoms do not resolve within 15 minutes, contact the head athletic trainer.

*Notes from physicians or parents should be given to the head athletic trainer regarding all injuries. All injuries occurring during FWC athletics should be evaluated by the athletic trainer – NOT THE SCHOOL NURSE. Any athlete having to miss 2 consecutive days of practice due to injury may require a physician’s evaluation to help determine the extent of an injury or illness.

Equipment provided for practices and games:

Every effort will be made to provide drinking water and injury ice to all FWC practices and home games. Away games will be equipped with a least a medical kit per coaches discretion. To avoid a potential hazard or liability, student athletes should not allowed to retrieve items from the medical kit without the permission from a coach or trainer. If available, a student athletic trainer may provide basic first aid needs to an athlete in the absence of the head athletic trainer. Please contact the head athletic trainer if there is any doubt regarding the seriousness of an injury.

MEDICATION POLICY

Do not under any circumstance give an injured athlete medication without the written or verbal consent from that athlete’s parent or legal guardian. Medications such as Ibuprofen can cause gastrointestinal bleeding with excessive use or with the consumption of alcohol. The medications contained in our medical kits are for intermittent use only in the event that a parent is unable to provide it themselves at the time of the request. If an athlete needs medication on a regular basis, they must purchase their medication and give it to the head athletic trainer or coach for controlled distribution. Athletes using inhalers should provide visible access to their inhalers and notify the coach and athletic trainer of their condition.

*Please refer to the air quality and ozone section of this manual for additional info.

HEAT, HUMIDITY, AND THE HEAT INDEX

Hot weather is a part of life in Texas and heat waves pose threats to the health of students, teachers, coaches, and athletic trainers. It is important for all FWC staff members who supervise physical activity understand the risks to student athletes who exercise in hot and humid conditions. The risk of suffering heat related illness significantly increases at temperatures reach 90 degrees F with humidity as low as 20 percent.

Heat index is how the heat and humidity in the air combine to make us feel. Higher humidity plus higher temperatures often combine to make us feel a perceived temperature that is much higher than the actual air temperature. The combination of heat and humidity results in heat stress on student athletes by interfering with the body's ability to cool itself through sweating. Student athletes exposed to prolonged heat stress can develop heat cramps or heat exhaustion. If heat stress continues, the condition can progress dangerously to heat stroke or even death.

Relative humidity is measured using a sling psychrometer – a device that gives the athletic trainer a reading for a wet bulb temperature. The athletic trainer may take a sling psychrometer reading in the morning before middle school practices and in the afternoon before high school practices or use the FWC weatherbug to get a reading. If a reading suggests a danger to athletes, the athletic trainer will notify the appropriate coaches and practices may be altered. Due to commitments with other school districts and with officials, it is extremely difficult to cancel games without disrupting the working relationships with other schools and the official's association. Games will proceed as scheduled with extreme caution.

% Relative Humidity

		15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90
T e m p e r a t u r e	110	108	112	117	123	130											
	105	102	105	108	113	117	122	130									
	100	97	98	102	104	107	110	115	120	126	132						
	95	91	93	95	96	98	100	104	106	109	113	119	124	130			
	90	86	87	88	90	91	92	95	97	98	100	103	106	110	114	117	121
	85	81	82	83	84	85	86	87	88	89	90	92	94	96	97	100	102
	80	76	77	78	78	79	79	80	81	82	83	84	85	86	87	88	89

Legend

80-89 degrees	Fatigue is possible with prolonged exposure and/or physical activity.
90-104 degrees	Heat cramps and heat exhaustion are possible with prolonged exposure and/or physical activity.
105-129 degrees	Heat cramps and heat exhaustion are likely. Heat stroke is possible with prolonged exposure and/or physical activity.
130+ degrees	Heatstroke is highly likely with continued exposure.

Heat Illness Warning Signs

- profuse sweating
- muscle cramps
- fainting
- fast/shallow breathing
- headache
- weak/rapid pulse
- nausea or vomiting
- paleness
- fatigue
- dizziness

Different Types of Heat Illnesses

1. Heat syncope: Fainting or near fainting following dizziness, usually while running or after a sudden change in position. Caused by a drop in blood pressure as the brain is deprived of oxygenated blood.
2. Heat cramps: Tightening or spasms of active muscles, without the loss of consciousness. Caused by an electrolyte imbalance.
3. Heat exhaustion: Inability to continue exercise. Headache, dizziness, fatigue, pale or clammy skin, nausea and vomiting, which maybe accompanied by irrational behavior or belligerence and muscle cramping. Loss of consciousness may occur. Core temperature mildly elevated.
4. Heat stroke: **MEDICAL EMERGENCY!!** Extremely high body core temperature 104-108 degrees F, no perspiration, disorientation, muscle twitching, red-hot-dry skin, rapid pulse, convulsions, may become unconscious, may lead to a coma and possible death.

Dehydration and its effects on performance:

1. Dehydration occurs when fluid loss exceeds fluid intake. Urine color is similar to apple juice.
2. Dehydration can affect an athlete's performance in less than 1 hour of exercise. It can begin sooner if the athlete begins the session dehydrated.
3. Dehydration of just 1-2% of body weight can negatively influence performance.
4. Dehydration of 3% body weight increases an athlete's risk of heat illness (heat cramps, heat exhaustion, or heat stroke).

Fluid guidelines to prevent dehydration:

- Thirst is NOT a good indicator for when to drink fluids.
- 2 hours before activity, drink 20oz of water or sports drink.
- 15 minutes before activity, drink 10oz of water or sports drink.
- Every 10-20 minutes during activity, drink 10oz of water or sports drink.
- Within 2 hours after activity, athletes need to drink 20oz of water or sports drink for every pound of body weight lost through sweat. Example: 3 lbs lost = drink 60oz of fluids before the next practice.
- Urine color should be similar to lemonade.

*Coaches should encourage all athletes to weigh themselves before and after practices in order to properly gauge re-hydration needs.

AIR QUALITY AND THE OZONE

FWC has no control over the ozone levels within our area nor deciding the level of ozone concerns, the National Weather Service determines ozone levels. Due to the numerous factors that determine whether an individual has any health risks to the ozone, FWC does not believe it is possible to establish a policy that provides ozone protection for every student athlete and coach who is prone to respiratory ailments.

It is the parent(s) or legal guardian(s) responsibility to determine if the air quality is unsafe for their child to participate outdoors. A parent or legal guardian will be required to provide a written statement to the head athletic trainer that their child should be excused from all outdoor activities for that day. Excessive absences (2 or more) from outdoor practices will require a physician's diagnosis and signed note containing details on the athlete's treatment plan regarding air quality.

DANGERS OF EXERCISING IN COLD WEATHER

Cold weather exposure can be uncomfortable and impair an athlete's performance significantly. Frostbite is the freezing of superficial tissues, usually of the face, ears, finger, and toes. Hypothermia is a dangerous condition in which the body's core temperature drops below 95 degrees F. Limited exposure and proper clothing is the best defense against frostbite and/or hypothermia. 40% of the body's heat can be lost through the top of the head.

Warning Signs for Hypothermia:

- shivering
- mental confusion
- difficulty speaking
- un-coordinated muscle activity
- numbness
- quick/shallow breathing
- pale/blue skin

Recommended clothing for cold weather:

- First layer: Polyester material (UnderArmour) to help wick away moisture from the body.
- Second layer: Cotton material (sweatshirt and pants) to provide insulation for body heat.
- Third layer: Nylon material (windbreaker) to help reduce wind chill exposure to the body.
- Head: Wool cap (beanie) to trap body heat, should also cover the ears.
- Hands: Use full length gloves if possible.
- Feet: Wear at least 1 pair of socks, 2 pair is better to trap heat and control moisture, also reduces blisters caused by friction.

GUIDELINES FOR ACTIVITIES DURING EXTREME TEMPERATURES

The athletic trainer may obtain sling psychrometer readings and weather reports before middle school and high school practices whenever weather conditions are questionable. If the psychrometer reading and/or the air temperature poses a threat to the athletes, the athletic trainer will notify the appropriate coaches and practices maybe altered for that day. Hot Weather is defined as temperature above 90 degrees F or WBGT of 75 degrees or higher. Cold Weather is defined as a wind chill below 32 degrees F. No weather reports or practice modifications need to be made if the air temperature is between 45 deg - 90 deg F.

Hot Weather

1. Coaches should allow 10-14 days for athletes to get acclimated to the hot weather.
2. Traditional August football 2-a-days: Outside practices between Noon–6pm are discouraged.
3. After school practices will be monitored carefully, recommend limiting sun exposure to 2-3 hours.
4. Off-season sports should limit outdoor practices to 1 hour maximum.
5. Outside practices will be discouraged if temperature is > 109 deg F or heat index > 119 deg F.
6. Mandatory water breaks will be given to all sports every 15-20 minutes with at least 5 minutes of total rest for each break. Football players should attempt to have helmets off during breaks.
7. Open water policy should be available to all student athletes without penalty.

Psychrometer reading (conducted by athletic trainer) wet bulb temperature / practice adjustments:

- Under 60 degrees F / no adjustments needed.
- 61-72 degrees F / no adjustments needed, but observe all athletes carefully.
- 73-79 degrees F / monitor athletes, recommend additional water breaks.
- 80 degrees F or higher / recommend limiting sun exposure to 2-3 hours maximum, provide additional water and rest breaks. Recommend removing helmets during non-contact drills and limiting post workout conditioning (i.e. running).

Cold Weather

All athletes, except football, should wear a minimum of a full-length warm-up or sweats (tops and bottoms), athletic shoes with socks. FOOTBALL: athletes need to wear socks with their cleats and are encouraged to wear long sleeves. If a student athlete does not have the minimum required clothing available, he or she may not be able to participate in any outside activities and will be counted as an unexcused absence. That athlete may also be subject to disciplinary actions per his or her coach.

- Wind chill factor 25-32 deg F without rain: Recommend a maximum of 45 minutes total exposure.
- Wind chill factor 25-32 deg F or below with rain: Consider indoor practice, per coaches discretion.
- Wind chill factor 24 deg F or below with or without rain: Recommend indoor practices only.

****Guidelines for Hot Weather and Cold Weather apply to FWC practices only. Due to commitments with other schools and game officials, it can be extremely difficult to reschedule games. In order to maintain a good working relationship with these other schools and game officials, games shall proceed as scheduled unless mutually agreed upon by both head coaches to reschedule their event to another date.***

SEVERE STORMS

Lightning is the most consistent and significant weather hazard that can affect high school athletics. The National Sever Storms Laboratory estimates more and 100 fatalities and 400-500 injuries requiring medical treatment occur from lightning strikes every year. While the probability of being struck by lightning is extremely low, the odds are significantly greater when a storm is in the area and the proper safety precautions are not followed. Prevention and education are the keys to lightning safety and should begin long before any athletic event or practice.

Prevention starts with the head athletic trainer obtaining weather reports before an activity begins, designating a weather watcher, and implementing an evacuation plan for event participants and spectators during a lightning storm.

Most people have been educated that lightning is a dangerous phenomenon, but the seeking of safe shelter and the specific time one should evacuate to a safe location is generally not known.

Safe Shelter locations:

- Any **building** normally occupied or frequently used by people that has plumbing or electrical wiring that acts to electrically ground the structure. Avoid taking showers during a lightning storm.
- Any **vehicle** that is equipped with a hard metal roof and rolled up windows. It's not the rubber tires that make the vehicle safe. The hard metal roof dissipates the lightning strike around the vehicle. Do not touch the outside of your vehicle during a lightning storm.

AVOID: High places and open fields, isolated trees, gazeebos, rain or picnic shelters, baseball dugouts, communications towers, flagpoles, light poles, bleachers (metal or wood), metal fences, convertibles, golf carts, water (ocean, lakes, ponds, swimming pools, rivers, etc.).

Difference between a thunderstorm "Watch" and a "Warning":

"Watch": Conditions are favorable for severe weather to develop in an area.

"Warning": Severe weather has been reported in an area.

Lightning awareness should be increased with the first flash of lightning or the first clap of thunder, no matter how far away. This activity must be treated as a wakeup call to those monitoring the inclement weather. The important aspect is to monitor how far away the lightning is occurring, and how fast the storm is approaching, relative to the distance of a safe shelter. A typical thunderstorm can travel up to 30 miles per hour. Lightning can and does, strike as far as 10 miles away from the rain shaft. The existence of blue sky and the absence of rain are not protection from lightning; it does not have to be raining for lightning to strike.

To provide the best safety for student athletes who participate outdoors, Fort Worth Christian School has adopted the 30-30 Lightning Safety Rule. This rule incorporates the Flash-to-Bang method which is the most reliable, easiest, and most convenient way to estimate how far away lightning is occurring.

Fort Worth Christian School's lightning policy will also utilize a lightning detector as an aid to the Flash-to-Bang method by enhancing the observer's awareness during the initial stages of the storm. Even though technology and instrumentation have proven to be effective, they cannot guarantee the safety of our student athletes, coaches, officials, and spectators. Equipment malfunctions can cause confusion with the operator which would then cause an unfortunate delay in the evacuation process.

The 30 / 30 Lightning Safety Rule

The premise upon which the Flash to Bang method is based on is the fact that light travels faster than sound, with sound traveling approximately one mile every 5 seconds. Thunder always accompanies lightning, even though its audible range can be diminished due to background noise and its distance from the observer. Audible range of thunder is approximately 8-10 miles.

To estimate the distance between your location and a lightning flash, use the Flash-to-Bang method:

1. Count the number of seconds once lightning is sighted (flash), until the thunder is heard (bang).
2. Divide that number by 5 to obtain how far away (in miles) the lightning is occurring.

Example: If an individual counts 15 seconds between seeing the flash and hearing the bang, 15 divided by 5 equals 3. Therefore, the lightning flash is approximately 3 miles away.

Suspension of Play

Play is suspended if the Flash-to-Bang method reaches 30 seconds. This indicates the lightning is at the 6-mile range. As a minimum, the National Severe Storms Laboratory strongly recommends that by the time the observer obtains a Flash to Bang count of 30 seconds, all individuals should have left the athletics site and reached a safe location.

Resumption of Play

Resumption of play can continue only when lightning or thunder has not been detected for at least 30 minutes. Each subsequent occurrence of lightning or thunder detected within the 30 minutes, the 30-minute clock restarts. Experts believe 30 minutes allows for thunderstorms to be approximately 10-12 miles from the area. This helps minimize the chances of a nearby lightning strike.

First Aid

In the unfortunate event that someone becomes struck by lightning, call 911 immediately. It is safe for an individual to perform CPR on a lightning victim because their body will no longer carry an electrical charge. Prompt, aggressive CPR increases the survival rate of victims of lightning strikes. If possible, move the victim to a safer location before starting CPR.

CHAIN OF COMMAND FOR SEVERE WEATHER EVACUATIONS

FWC Athletic Trainer will be the designated weather watcher for all home athletic events and will notify the game officials of FWC's inclement weather policy and evacuation procedures. In the rare instance that the athletic trainer is not in attendance, an FWC coach and/or game official will observe for inclement weather and begin the evacuation procedure as necessary. **Golf/Tennis:** Due to their off campus locations for practices and competitions, please seek shelter in their respected facilities.

1. FWC athletic trainer obtains a Flash-to-Bang count of 30 seconds or less.
2. Athletic trainer will first notify FWC head coach and game officials to suspend the contest due to inclement weather. FWC teams will then return to locker rooms, exception baseball and softball.
3. Game officials will notify opposing head coach of the suspension of play and advise opposing team and their staff to evacuate the playing field.

Football, Baseball, Soccer, Track, Cross Country: All teams and officials will evacuate to Cardinal gymnasium.

Softball: Both teams, officials, and spectators will evacuate to Mitchell gymnasium.

4. Athletic trainer will notify the FWC Athletic Director or head coach to begin evacuation procedures and then unlock designated gymnasium doors for athletic teams, officials, and spectators.
5. The Athletic Director (AD) will notify stadium PA announcer to read the evacuation message, exception baseball and softball. The AD will make sure that everyone has evacuated the facility and will lock all gates behind him. If the AD is not present, an FWC head coach will initiate the evacuation process and assume the AD's responsibilities.

Baseball and Softball: FWC AD or head coach will loudly and calmly announce to all spectators to evacuate the facilities and seek shelter in the nearby gymnasium:
(Softball - Mitchell gym) or (Baseball - Cardinal gym)

Football, Soccer, Track, Cross Country: The announcer will read the following over the PA system:

“Attention please! Due to the potential threat of thunder storms in the immediate area, play has been suspended for a minimum of 30 minutes. All event participants and spectators must evacuate the facilities immediately. Repeat, all event participants and spectators must evacuate the facilities immediately. Spectators may seek shelter in the nearby gymnasium. No one will be allowed back onto the facilities until it is deemed “safe” by game personnel. Thank you for your cooperation.”

*In the event that another type of emergency has occurred during an athletic event not related to severe weather, please refer to the Fort Worth Christian School's "Crisis Management Plan" maintained by the principles office.

CONCLUSION

Fort Worth Christian School's sports medicine department would like to thank Phil Francis, Head Athletic Trainer-Dallas ISD, Herbert Stephens, Athletic Director-Fort Worth ISD, and Becky Spurlock, Head Athletic Trainer-Keller ISD, for their contributions in creating this manual. Without their vast knowledge and experience, dedication to their athletic programs, and most of all their generosity, the quality of this manual would not be possible.

REFERENCES

- Arnheim, D. D. (1993). *Principles of athletic training* (8th Ed.). Mosby-Year Book Inc.
- Francis, P. (2001). Exertional heat illness guidelines. Dallas Independent School District.
- Francis, P. (2001). Lightning Safety Policy. Dallas Independent School District.
- Murry, B. (n.d.). Gatorade's 4-step hydration plan. Gatorade Sports Science Institute.
- Prentice, W. E. (1993). *Principles of athletic training* (8th Ed.). Mosby-Year Book.
- Spurlock, B. (2006). *Safety handbook*. Keller Independent School District.
- Stephens, H. (2002). *Ozone action plan*. Fort Worth Independent School District.
- Stephens, H. (2002). *Weather safety procedures*. Fort Worth Independent School District.
- Texas Department of Health. (n.d.). Division of Emergency Preparedness.