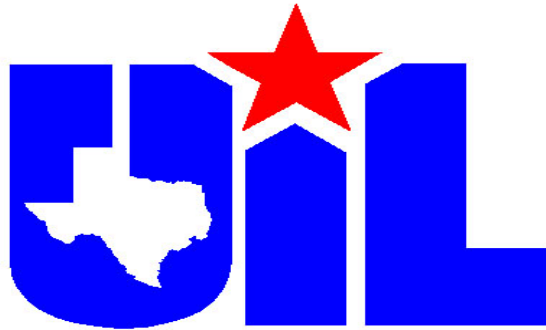


# Extracurricular Activity Safety Training Program



2008-2009

# Section 1

## Sudden Cardiac Death

# Basic CPR

(this does not qualify as certification)

QuickTime™ and a  
TIFF (Uncompressed) decompressor  
are needed to see this picture.

# What is Sudden Cardiac Death?

- Sudden cardiac death is an abrupt occurrence where the heart ceases to function and results in death within minutes.
- It is not a heart attack.
- It is usually due to a malfunction of the heart's electrical system that coordinates the heart muscle contraction to pump blood through the body. The lower chambers (ventricles) of the heart go into fibrillation (ventricular fibrillation) - a fast and disorganized contraction. The ventricles spasm or quiver and can no longer pump blood to the body. The heart cannot recover from ventricular fibrillation on its own.
- Sudden cardiac death in athletes is usually caused by a previously unsuspected heart disease or disorder.
- The occurrence of sudden cardiac death is thought to be in the range of 1 out of 100,000 to 1 out of 300,000 high school age athletes. So it is very rare.

# Possible Causes of Sudden Cardiac Death

**Hypertrophic Cardiomyopathy** - a condition where the muscle mass in the left ventricle "hypertrophies". The thickened heart muscle can block blood flow out of the heart and can increase the risk of ventricular fibrillation. In over half of the cases, this heart disorder is hereditary and is most common in young adults. This is the most common cause for sudden cardiac death in athletes in the United States.

**Coronary Artery Abnormalities** - an abnormality of the blood vessels that supply blood into the heart muscle. This is present from birth, but can be silent for years until very vigorous exercise is performed. During exercise, blood flow to the heart muscle can be impaired and result in ventricular fibrillation.

**Commotio Cordis** - a concussion of the heart that can occur when someone is hit in the chest in the area of the heart. Objects such as a baseball, softball, hockey puck, lacrosse ball, or even a fist can cause ventricular fibrillation upon striking the chest. These injuries are rare.

# Possible Causes of Sudden Cardiac Death, Cont.

**Marfan Syndrome** - an inherited abnormality of the connective tissue (ligaments and tendons) in the body. Often these people are tall and thin with long arms, legs, fingers and toes. The wall of the aorta, the main artery from the heart, can become weak and rupture, especially during exercise.

**Wolff-Parkinson-White Syndrome** - an extra conduction fiber in the heart that can allow for rapid heart beat episodes and in some cases ventricular fibrillation can occur.

**Long QT Syndrome** - an inherited abnormality of the heart's electrical system. Episodes of rapid heartbeat can occur in the bottom chambers of the heart (ventricles) and ventricular fibrillation can result.

**Recreational Drug Use** - even someone with a completely normal heart can develop ventricular fibrillation and die suddenly due to drug use.

# **Warning Signs of Sudden Cardiac Death**

Palpitations - feeling fast or skipped heart beats.

Dizziness - feeling lightheaded.

Chest pain or chest tightness with exercise.

Shortness of breath.

Syncope - fainting or passing out.

Family history of sudden cardiac death at less than age 50.

# Section 2

## Head and Neck Injuries

# Reducing Head and Neck Injuries

1. Preseason physical exams for all participants. Identify during the physical exam those athletes with a history of previous head or neck injuries. If the physician has any questions about the athlete's readiness to participate, the athlete should not be allowed to play.
2. A physician should be present at all games. If it is not possible for a physician to be present at all games and practice sessions, emergency measures must be provided. The total staff should be organized in that each person will know what to do in case of head or neck injury in game or practice. Have a plan ready and have your staff prepared to implement that plan. Prevention of further injury is the main objective.
3. Athletes must be given proper conditioning exercises, which will strengthen their necks so that participants will be able to hold their head firmly erect when making contact.
4. Coaches should drill the athletes in the proper execution of the fundamentals of football skills, particularly blocking and tackling.

# Reducing Head and Neck Injuries, Cont.

5. Coaches and officials should discourage the players from using their heads as battering rams. The rules prohibiting spearing should be enforced in practice and in games. The players should be taught to respect the helmet as a protective device and that the helmet should not be used as a weapon.
6. All coaches, physicians, and trainers should take special care to see that the player's equipment is properly fitted, particularly the helmet.
7. Strict enforcement of the rules of the game by both coaches and officials will help reduce serious injuries.
8. **When a player has experienced or shown signs of head trauma (loss of consciousness, visual disturbances, headache, inability to walk correctly, obvious disorientation, memory loss) he should receive immediate medical attention and should not be allowed to return to practice or game without permission from the proper medical authorities.**

# Keep the Head Out of Football

- Rules changes that eliminated the head as the initial contact point in blocking and tackling have significantly reduced head and neck injuries in the sport.
- Coaches can do their part to continue that trend by teaching correct techniques and emphasizing proper fundamentals at all times. That way, players can avoid catastrophic injury.

# Signs and Symptoms of Mild Head Injury

- Headache
- Nausea
- Balance problems or dizziness
- Double or fuzzy vision
- Sensitivity to light or noise
- Feeling slowed down
- Feeling "foggy" or "not sharp"
- Change in sleep pattern
- Concentration or memory problems
- Irritability
- Sadness
- Feeling more emotional

# Signs of Concussion

Concussions can appear in many different ways. To follow are some of the signs and symptoms frequently associated with minor head trauma (e.g., "ding", "bell rung", dazed or concussion). Most symptoms, signs and abnormalities after a head injury fall into the four categories to follow. A coach or other person who knows the athlete well can usually detect these problems by observing the athlete and/or by asking a few relevant questions to the athlete, referee or a teammate who was on the field or court at the time of the head injury. Below are some suggested observations and questions a non-medical professional like a coach or school administrator can use to help determine whether an athlete has suffered a concussion and how urgently he or she should be sent for medical care following a head injury.

# Signs of Concussion, Cont.

## PROBLEMS IN BRAIN FUNCTION:

- a. Confused state – dazed look, vacant stare, confusion about what happened or is happening.
- b. Memory problems – Can't remember assignment on play, opponent, score of game, or period of the game. Can't remember how or with whom he or she traveled to the game, what he or she was wearing, what was eaten for breakfast, etc.
- c. Symptoms reported by athlete – Headache, nausea or vomiting, blurred or double vision, oversensitivity to sound, light or touch, ringing in ears, feeling foggy or groggy.
- d. Lack of Sustained Attention – Difficulty sustaining focus adequately to complete a task or a coherent thought or conversation.

# Signs of Concussion, Cont.

SPEED OF BRAIN FUNCTION: Slow response to questions, slow slurred speech, incoherent speech, slow body movements, slow reaction time.

UNUSUAL BEHAVIORS: Behaving in a combative, aggressive or very silly manner, or just atypical for the individual. Repeatedly asking the same question over and over. Restless and irritable behavior with constant motion and attempts to return to play or leave. Reactions that seem out of proportion and inappropriate. Changing position frequently and having trouble resting or "finding a comfortable position." These can be manifestations of post-head trauma difficulties.

PROBLEMS WITH BALANCE AND COORDINATION: Dizzy, slow clumsy movements, acting like a "drunk," inability to walk a straight line or balance on one foot with eyes closed.

# Second-Impact Syndrome

Second-impact syndrome is a rare event, which poses a significant concern for athletes who return too soon after suffering a previous concussion. Second-impact syndrome is characterized by an autoregulatory dysfunction that causes rapid and fatal brain swelling, and can result in death in as little as two to five minutes. It is particularly important to note that virtually all of the second-impact syndrome cases that have been reported have occurred in adolescent athletes. The progressive signs of second-impact syndrome are as follows:

- \* Previous history of concussion
- \* Visual, motor or sensory changes
- \* Difficulty with memory and/or thought process
- \* Collapse into coma
- \* Signs of cranial nerve and brainstem pressure

# Section 3

Heat, Hydration and Asthma

# Heat Stress and Athletic Participation- Symptoms

**Heat Cramps** - Painful cramps involving abdominal muscles and extremities caused by intense, prolonged exercise in the heat and depletion of salt and water due to sweating.

**Heat Syncope** - Weakness, fatigue and fainting due to loss of salt and water in sweat and exercise in the heat. Predisposes to heatstroke.

**Heat Exhaustion (Water Depletion)** - Excessive weight loss, reduced sweating, elevated skin and core body temperature, excessive thirst, weakness, headache and sometimes unconsciousness.

**Heat Exhaustion (Salt Depletion)** - Exhaustion, nausea, vomiting, muscle cramps, and dizziness due to profuse sweating and inadequate replacement of body salts.

**Heatstroke** - An acute medical emergency related to thermoregulatory failure. Associated with nausea, seizures, disorientation, and possible unconsciousness or coma. It may occur suddenly without being preceded by any other clinical signs. The individual is usually unconscious with a high body temperature and a hot dry skin (heatstroke victims, contrary to popular belief, may sweat profusely).

# Heat Stress and Athletic Participation- Treatment

Know what to do in case of emergency and have your emergency plans written with copies to all your staff. Be familiar with immediate first aid practices and prearranged procedures for obtaining medical care, including ambulance service.

**Heat Stroke** - This is a medical emergency. DELAY COULD BE FATAL.

Immediately cool body while waiting for transfer to a hospital. Remove clothing and place ice bags on the neck, in the axilla (armpit), and on the groin area.

**Heat Exhaustion** - OBTAIN MEDICAL CARE AT ONCE.

Cool body as you would for heat stroke while waiting for transfer to hospital. Give fluids if athlete is able to swallow and is conscious.

**Summary** - The main problem associated with exercising in the hot weather is water loss through sweating. Water loss is best replaced by allowing the athlete unrestricted access to water. Water breaks two or three times per hour are better than one break an hour. Probably the best method is to have water available at all times and to allow the athlete to drink water whenever he/she needs it. Never restrict the amount of water an athlete drinks, and be sure the athletes are drinking the water. The small amount of salt lost in sweat is adequately replaced by salting food at meals. Talk to your medical personnel concerning emergency treatment plans.

# Recommendations for Hydration

## HYDRATION TIPS AND FLUID GUIDELINES

- \* Drink according to a schedule based on individual fluid needs.
- \* Drink before, during and after practices and games.
- \* Drink 17-20 ounces of water or sports drinks with six to eight percent CHO, two to three hours before exercise.
- \* Drink another 7-10 ounces of water or sport drink 10 to 20 minutes before exercise.
- \* Drink early - By the time you're thirsty, you're already dehydrated.
- \* In general, every 10-20 minutes drink at least 7-10 ounces of water or sports drink to maintain hydration, and remember to drink beyond your thirst.
- \* Drink fluids based on the amount of sweat and urine loss.
- \* Within two hours, drink enough to replace any weight loss from exercise.
- \* Drink approximately 20-24 ounces of sports drink per pound of weight loss.
- \* Dehydration usually occurs with a weight loss of two percent of body weight or more.

# Recommendations for Hydration, Cont.

## WHAT NOT TO DRINK

- \* Drinks with Carbohydrate (CHO) concentrations of greater than eight percent should be avoided.
- \* Fruit juices, CHO gels, sodas, and sports drinks that have a CHO greater than six to eight percent are not recommended during exercise as sole beverages.
- \* Beverages containing caffeine, alcohol, and carbonation are not to be used because of the high risk of dehydration associated with excess urine production, or decreased voluntary fluid intake.

# Recommendations for Hydration, Cont.

## WHAT TO DRINK DURING EXERCISE

- \* If exercise lasts more than 45-50 minutes or is intense, a sports drink should be provided during the session.
- \* The carbohydrate concentration in the ideal fluid replacement solution should be in the range of six to eight percent CHO.
- \* During events when a high rate of fluid intake is necessary to sustain hydration, sports drinks with less than seven percent CHO should be used to optimize fluid delivery. These sports drinks have a faster gastric emptying rate and thus aid in hydration.
- \* Sports drinks with a CHO content of 10 percent have a slow gastric emptying rate and contribute to dehydration and should be avoided during exercise.
- \* Fluids with salt (sodium chloride) are beneficial to increasing thirst and voluntary fluid intake as well as offsetting the amount of fluid lost with sweat.
- \* Salt should never be added to drinks, and salt tablets should be avoided.
- \* Cool beverages at temperatures between 50 to 59 degrees Fahrenheit are recommended for best results with fluid replacement.

# Asthma and Exercise

Coaches, athletic trainers and other health care professionals should:

- \* Be aware of the major signs and symptoms of asthma, such as coughing, wheezing, tightness in the chest, shortness of breath and breathing difficulty at night, upon awakening in the morning or when exposed to certain allergens or irritants.
- \* Devise an asthma action plan for managing and referring athletes who may experience significant or life threatening attacks, or breathing difficulties.
- \* Have pulmonary function measuring devices, such as peak expiratory flow meters (PFMs), at all athletic venues, and be familiar with how to use them.
- \* Encourage well-controlled asthmatics to engage in exercise to strengthen muscles, improve respiratory health and enhance endurance and overall well being.
- \* Refer athletes with atypical symptoms; symptoms that occur despite proper therapy; or other complications that can exacerbate asthma (e.g. sinusitis, nasal polyps, severe rhinitis, gastroesophageal reflux disease [GERD] or vocal cord dysfunction), to a physician with expertise in asthma. They include allergists, ear, nose and throat physicians, cardiologists and pulmonologists trained in providing care for athletes.

# Asthma and Exercise, Cont.

- \* Consider providing alternative practice sites for athletes with asthma. Indoor practice facilities that offer good ventilation and air conditioning should be taken into account for at least part of the practice.
- \* Encourage players with asthma to have follow-up examinations at regular intervals with their primary care physician or specialist. These evaluations should be scheduled at least every six to 12 months.
- \* Identify athletes with past allergic reactions or intolerance to aspirin or non-steroidal anti-inflammatory drugs (NSAIDs), and provide them with alternative medicines, such as acetaminophen.
- \* Be aware of Web sites that provide general information on asthma and exercise induced asthma. These sites include: the American Academy of Allergy, Asthma and Immunology – [www.aaaai.org](http://www.aaaai.org); the American Thoracic Society – [www.thoracic.org](http://www.thoracic.org); the Asthma and Allergy Foundation of America – [www.aafa.org](http://www.aafa.org); and the American College of Allergy, Asthma & Immunology – [www.acaai.org](http://www.acaai.org)

# Section 4

## Anabolic Steroids and Nutritional Supplements

# Illegal Steroid Use and Random Anabolic Steroid Testing

- Texas state law prohibits possessing, dispensing, delivering or administering a steroid in a manner not allowed by state law.
- Texas state law also provides that bodybuilding, muscle enhancement or the increase in muscle bulk or strength through the use of a steroid by a person who is in good health is not a valid medical purpose.
- Texas state law requires that only a medical doctor may prescribe a steroid for a person.
- Any violation of state law concerning steroids is a criminal offense punishable by confinement in jail or imprisonment in the Texas Department of Criminal Justice.
- As a prerequisite to participation in UIL athletic activities, student-athletes must agree that they will not use anabolic steroids as defined in the UIL Anabolic Steroid Testing Program Protocol and that they understand that they may be asked to submit to testing for the presence of anabolic steroids in their body. Additionally, as a prerequisite to participation in UIL athletic activities, student-athletes must agree to submit to such testing and analysis by a certified laboratory if selected.

# Illegal Steroid Use and Random Anabolic Steroid Testing, Cont.

- Also, as a prerequisite to participation by a student in UIL athletic activities, their parent or guardian must certify that they understand that their student must refrain from anabolic steroid use and that the student may be asked to submit to testing for the presence of anabolic steroids in his/her body. The parent or guardian also must agree to submit their child to such testing and analysis by a certified laboratory if selected.
- The results of the steroid testing will only be provided to certain individuals in the student's high school as specified in the UIL Anabolic Steroid Testing Program Protocol which is available on the UIL website at [www.uil.utexas.edu](http://www.uil.utexas.edu). Additionally, results of steroid testing will be held confidential to the extent required by law.

# Health Consequences Associated with Anabolic Steroid Abuse

- *In boys and men*, reduced sperm production, shrinking of the testicles, impotence, difficulty or pain in urinating, baldness, and irreversible breast enlargement (gynecomastia).
- In girls and women, development of more masculine characteristics, such as decreased body fat and breast size, deepening of the voice, excessive growth of body hair, and loss of scalp hair.
- In adolescents of both sexes, premature termination of the adolescent growth spurt, so that for the rest of their lives, abusers remain shorter than they would have been without the drugs.
- In males and females of all ages, potentially fatal liver cysts and liver cancer; blood clotting, cholesterol changes, and hypertension, each of which can promote heart attack and stroke; and acne. Although not all scientists agree, some interpret available evidence to show that anabolic steroid abuse-particularly in high doses-promotes aggression that can manifest itself as fighting, physical and sexual abuse, armed robbery, and property crimes such as burglary and vandalism. Upon stopping anabolic steroids, some abusers experience symptoms of depressed mood, fatigue, restlessness, loss of appetite, insomnia, reduced sex drive, headache, muscle and joint pain, and the desire to take more anabolic steroids.
- In injectors, infections resulting from the use of shared needles or nonsterile equipment, including HIV/AIDS, hepatitis B and C, and infective endocarditis, a potentially fatal inflammation of the inner lining of the heart. Bacterial infections can develop at the injection site, causing pain and abscess.

# Nutritional / Dietary Supplements

The contents and purity of nutritional / dietary supplements are NOT tested closely or regulated by the Food and Drug Administration (FDA).

As such, UIL is making student athletes and parents aware of the possibility of supplement contamination and the potential effect on a student athletes' steroid test. UIL does not approve or disapprove supplements.

Contaminated supplements could lead to a positive steroid test. The use of supplements is at the student-athlete's own risk. Student-athletes and interested individuals with questions or concerns about these substances should consult their physician for further information.

Student athletes must be aware that they are responsible for everything they eat, drink and put into their body. Ignorance and/or lack of intent are not acceptable excuses for a positive steroid test result.

The American College of Cardiology recommends that "Athletes should have their nutritional needs met through a healthy balanced diet without dietary supplements".



The National Center for Drug Free Sport, Inc. has partnered with the UIL to provide an easily accessible resource designed to answer questions about its drug-testing program, banned substances and inquiries about dietary supplements.

The REC is available 24 hours a day seven days a week by calling the UIL hotline or going online and entering the assigned password. All correspondence with the REC can be done so anonymously, and will be kept confidential.

The web address for The Resource Exchange Center (REC) is:  
[www.drugfreesport.com/rec](http://www.drugfreesport.com/rec)

The password to the REC for the Texas State High Schools: texashs

The toll free number to the REC for the UIL: 877-733-1135

# Section 5

## Lightning Safety

# Recommendations for Lightning Safety

- Establish a chain of command that identifies who is to make the call to remove individuals from the field.
- Name a designated weather watcher (A person who actively looks for the signs of threatening weather and notifies the chain of command if severe weather becomes dangerous).
- Have a means of monitoring local weather forecasts and warnings.
- Designate a safe shelter for each venue. See examples below.
- Use the Flash-to-Bang count to determine when to go to safety. By the time the flash-to-bang count approaches thirty seconds all individuals should be already inside a safe structure. See method of determining Flash-to-Bang count below.
- Once activities have been suspended, wait at least thirty minutes following the last sound of thunder or lightning flash prior to resuming an activity or returning outdoors.

# Recommendations for Lightning Safety, Cont.

- Avoid being the highest point in an open field, in contact with, or proximity to the highest point, as well as being on the open water. Do not take shelter under or near trees, flagpoles, or light poles.
- Assume that lightning safe position (crouched on the ground weight on the balls of the feet, feet together, head lowered, and ears covered) for individuals who feel their hair stand on end, skin tingle, or hear "crackling" noises. Do not lie flat on the ground.
- Observe the following basic first aid procedures in managing victims of a lightning strike:
  - \* Activate local EMS
  - \* Lightning victims do not "carry a charge" and are safe to touch.
  - \* If necessary, move the victim with care to a safer location.
  - \* Evaluate airway, breathing, and circulation, and begin CPR if necessary.
  - \* Evaluate and treat for hypothermia, shock, fractures, and/or burns.
- All individuals have the right to leave an athletic site in order to seek a safe structure if the person feels in danger of impending lightning activity, without fear of repercussions or penalty from anyone.

# Recommendations for Lightning Safety, Cont.

## Safe Shelter:

- A safe location is any substantial, frequently inhabited building. The building should have four solid walls (not a dug out), electrical and telephone wiring, as well as plumbing, all of which aid in grounding a structure.
- The secondary choice for a safer location from the lightning hazard is a fully enclosed vehicle with a metal roof and the windows completely closed. It is important to not touch any part of the metal framework of the vehicle while inside it during ongoing thunderstorms.
- It is not safe to shower, bathe, or talk on landline phones while inside of a safe shelter during thunderstorms (cell phones are ok).

## Flash-to-Bang:

To use the flash-to-bang method, begin counting when sighting a lightning flash. Counting is stopped when the associated bang (thunder) is heard. Divide this count by five to determine the distance to the lightning flash (in miles). For example, a flash-to-bang count of thirty seconds equates to a distance of six miles. Lightning has struck from as far away as 10 miles from the storm center.

Postpone or suspend activity if a thunderstorm appears imminent before or during an activity or contest (irrespective 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.

# Section 6

## Communicable Diseases

# Communicable Disease Procedures

The risk for blood-borne infectious diseases, such as HIV/Hepatitis B, remains low in sports and to date has not been reported. However, proper precautions are needed to minimize the potential risk of spreading these diseases. In addition to these diseases that can be spread through transmission of bodily fluids only, skin infections that occur due to skin contact with competitors and equipment deserve close oversight, especially considering the emergence of the potentially more serious infection with Methicillin-Resistant Staphylococcus Aureus (MRSA).

# Communicable Disease Procedures, Cont.

## Universal Hygiene Protocol for All Sports:

- \* Shower immediately after all competition and practice
- \* Wash all workout clothing after practice
- \* Wash personal gear, such as kneepads, periodically
- \* Don't share towels or personal hygiene products with others
- \* Refrain from (full body) cosmetic shaving

# Communicable Disease Procedures, Cont.

Means of reducing the potential exposure to Infectious Skin Diseases include:

- \* Notify guardian, trainer and coach of any lesion before competition or practice. Athlete must have a health-care provider evaluate lesion before returning to competition.
- \* If an outbreak occurs on a team, especially in a contact sport, consider evaluating other team members for potential spread of the infectious agent.
- \* Follow NFHS or state/local guidelines on "time until return to competition." Allowance of participation with a covered lesion can occur if in accordance with NFHS, state or local guidelines and is no longer considered contagious.

# Communicable Disease Procedures, Cont.

Means of reducing the potential exposure to Blood-Borne Infectious Diseases include:

- \* An athlete who is bleeding, has an open wound, has any amount of blood on his/her uniform or has blood on his/her person, shall be directed to leave the activity until the bleeding is stopped, the wound is covered, the uniform and/or body is appropriately cleaned and/or the uniform is changed before returning to competition.
- \* Certified athletic trainers or caregivers need to wear gloves and take other precautions to prevent blood-splash from contaminating themselves or others.
- \* Immediately wash contaminated skin or mucous membranes with soap and water.
- \* Clean all contaminated surfaces and equipment with disinfectant before returning to competition. Be sure to use gloves with cleaning.
- \* Any blood exposure or bites to the skin that break the surface must be reported and evaluated by a medical provider immediately.

# Sources

- American College of Cardiology
- California Interscholastic Federation
- National Athletic Trainers Association
- National Federation of State High School Associations
- National Institute on Drug Abuse
- Syracuse University
- Texas Education Agency
- University Interscholastic League