



# **SPORTS MEDICINE®**

**TENNESSEE  
ORTHOPAEDIC  
CLINICS** | The Power of Results.

## Parent /Student-Athlete Medical Handbook

# Tennessee Orthopaedic Clinics (TOC)

## Sports Medicine

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This handbook contains important information for parents of students participating in high school athletics. Included is educational material on topics common in sports, as well, as proper forms that may be needed for medical purposes.

Tennessee Orthopaedic Clinics is partnered with a number of local schools to provide Certified Athletic Trainer's (ATC) for medical coverage of athletic programs. Athletic trainers are highly qualified health professionals who are trained in preventing, recognizing, managing, and rehabilitating injuries that result from physical activity. Our ATCs are at their assigned schools daily, covering practices and games, and are available to assist your child if an injury has been sustained. They will be able to assess the injury and determine the appropriate course of action for care. However, if the injury is more serious and needs additional care, the ATC will notify a parent or legal guardian and give an update on the athlete's health status and can assist in referring to a physician for further medical evaluation if needed.

Additionally, TOC provides a year round Quick Care After Hours Clinic. Here you will be able to receive quality orthopedic care for both acute problems and non-emergency injuries after normal business hours. Currently, the hours are Monday through Friday from 4 p.m. to 8 p.m. and Saturday 9 a.m. to 1 p.m., no appointment is necessary. It is located at The Tower at Parkwest, 9430 Park West Boulevard, Suite 110. (865) 862-4357

For more information about Tennessee Orthopaedic Clinics, our locations, and the services we provide please visit our website at [www.tocdocs.com](http://www.tocdocs.com). Additional forms and resources are also available.

### **TOC Athletic Trainers Contact Information**

Bill Brewer	Christian Academy of Knoxville	865-789-2172
Sarah Brooks	Grace Christian Academy	865-850-8853
Lisa Schutt	Webb School of Knoxville	865-405-8224
Valerie Snider	Loudon High School	585-978-9581
Kristen Legg	Clinton High School	865-661-7441
Colin Heenan	TOC Sports Medicine Coordinator	865-386-1446



Our Sports Medicine team is able to offer advice, coordinate injury screenings, and assist in scheduling doctor appointments over the phone. Please feel free to contact your Athletic Trainer if you have any questions regarding sports injuries for your student-athlete, as well as, any family members or friends, and our staff will be happy to assist.

## Head Injuries and Concussions

It is important that both parents and student-athletes are familiar with signs and symptoms of Concussions and that these injuries are reported to the Athletic Trainer, a coach, or medical provider. The following pages contain important information regarding the TSSAA policy on Concussions, as well as, valuable educational material on Concussions.

This policy is followed by all the Athletic Trainers within Tennessee Orthopaedic Clinics Sports Medicine Outreach program. Parents will be contacted in the case of a suspected concussion and the “TSSAA Concussion Return to Play” form will be issued for follow up care and return to play guidelines.

Additionally, there are required Information and Signature forms for 1.) Coaches 2. Student Athletes & Parent/Legal Guardians, which must be completed before a student is allowed to participate in school athletics practices and events.

The complete policy and guidelines, as well as, additional forms are available at [www.tssaa.org](http://www.tssaa.org) and [www.tocdocs.com](http://www.tocdocs.com).

### Head Injury Home Care

If your son/daughter has sustained a head injury while participating in sports, in some instances the signs and symptoms of a concussion do not become obvious until several hours or even days after the injury. Please be especially observant for the following signs and symptoms:

- Headache (especially one that increases in intensity\*)
- Nausea and vomiting\*
- Difference in Pupil Size from R to L; Dilated pupils\*
- Mental confusion/behavior changes
- Dizziness
- Memory Loss
- Ringing in Ears
- Changes in Gait or Balance
- Blurry or Double Vision\*
- Slurred Speech\*
- Noticeable Changes in Level of Consciousness (Difficulty Awakening, or Losing Consciousness Suddenly\*)
- Seizure Activity\*
- Decreased or Irregular Pulse OR Respiration\*

#### **\*Seek Medical Attention at the Nearest Emergency Department**

The best guideline is to note symptoms that worsen, and behaviors that seem to represent a change in your son/daughter. If you have any questions or concern at all about the symptoms you are observing, contact a physician for instructions, or seek medical attention at the closest emergency department.

# TSSAA Concussion Policy



## Tennessee Secondary School Athletic Association

P. O. BOX 319 • 3333 LEBANON ROAD • HERMITAGE, TENNESSEE 37076  
615/889-6740 • Fax 615/889-0544 • [www.tssaa.org](http://www.tssaa.org)

### TENNESSEE SECONDARY SCHOOL ATHLETIC ASSOCIATION CONCUSSION POLICY

Beginning with the 2010-11 school year, TSSAA implemented a new concussion policy that all member schools must follow. Every individual involved in athletics must become more proactive in identifying and treating athletes who show signs of concussions. In order to address this critical issue, the NFHS has drafted the following language and made it a part of every sport rule book publication:

*Any player who exhibits signs, symptoms or behaviors consistent with a concussion (such as loss of consciousness, headache, dizziness, confusion or balance problems) shall be immediately removed from the game and shall not return to play until cleared by an appropriate health-care professional.*

Education is the key to identifying and treating student-athletes that show signs of a concussion during athletic participation. It is very important that every administrator, coach, parent, official, athlete, and health-care provider know the symptoms and steps to take when dealing with student-athletes that display signs of a possible concussion. Concussion can be a serious health issue and should be treated as such.

The TSSAA Board of Control approved the following "TSSAA Concussion Return to Play Form" that must be used in practice and games. The form was adapted from the Acute Concussion Evaluation (ACE) plan on the CDC website ([www.cdc.gov/injury](http://www.cdc.gov/injury)). It contains specific instructions that shall be followed before an athlete can return to sports. The form must be completed and signed by a licensed medical doctor (M.D.), Osteopathic Physician (D.O.), or a Clinical Neuropsychologist with Concussion Training before an athlete that has been removed from practice or a game may return to participate. A copy of the form must be kept on file at the school by an administrator.

TSSAA is asking the administration of every TSSAA/TMSAA member school to meet with their coaching staff and review this policy prior to the beginning of every sports season. The state office will distribute this information to as many officials, athletic trainers, and health-care providers as possible. We ask that school personnel do the same in their area. This information should also be given to all parents and student-athletes.

Following a copy of "Signs/Symptoms of Concussion" to help with the educational process. Please make sure every individual involved in athletics at your school has and understands this information. **The NFHS has also developed a free 20-minute course online entitled "Concussion in Sport – What you Need to Know" that we encourage every individual to take. It can be accessed at [www.nfhslearn.com](http://www.nfhslearn.com). Athletic Directors at all member schools are asked to take the lead and require every coach in their school to complete the course and make the information available to parents.** Failure to do so is not an option. Our student-athletes' safety must come first.

If you have any questions regarding this, please feel free to contact our office.

REVISED 9/9/2011



# TSSAA CONCUSSION RETURN TO PLAY FORM



This form is adapted from the Acute Concussion Evaluation (ACE) care plan on the CDC web site ([www.cdc.gov/injury](http://www.cdc.gov/injury)). All medical providers are encouraged to review this site if they have questions regarding the latest information on the evaluation and care of the scholastic athlete following a concussion injury. **Please initial any recommendations that you select.**

Athlete's Name: \_\_\_\_\_ Date of Birth: \_\_\_\_\_

Date of Injury: \_\_\_\_\_

This return to play plan is based on today's evaluation. Date of Evaluation: \_\_\_\_\_

Care plan completed by: \_\_\_\_\_ Return to this office Date/Time: \_\_\_\_\_

Return to school on (date): \_\_\_\_\_

- RETURN TO SPORTS:**
1. Athletes should not return to practice or play the same day that their head injury occurred.
  2. Athletes should never return to play or practice if they still have **ANY symptoms**.
  3. Athletes, be sure that your coach and/or athletic trainer are aware of your injury, symptoms, and has the contact information for the treating health care provider.

The following are the return to sports recommendations at the present time:

PHYSICAL EDUCATION: \_\_\_\_\_ Do Not Return to PE class at this time. \_\_\_\_\_ May Return to PE class.

SPORTS: \_\_\_\_\_ Do not return to sports practice or competition at this time.

\_\_\_\_\_ May gradually return to sports practices under the supervision of the health care provider for your school or team.

\_\_\_\_\_ May be advanced back to competition after phone conversation with treating health care provider.

\_\_\_\_\_ Must return to the treating health care provider for final clearance to return to competition.

-OR- \_\_\_\_\_ Cleared for full participation in all activities without restriction.

### Treating Health Care Provider Information (Please Print/Stamp)

Please check:

\_\_\_\_\_ Medical Doctor (M.D.) \_\_\_\_\_ Osteopathic Physician (D.O.) \_\_\_\_\_ Clinical Neuropsychologist w/ Concussion Training

Provider's Name: \_\_\_\_\_ Provider's Office Phone: \_\_\_\_\_

Provider's Signature: \_\_\_\_\_ Office Address: \_\_\_\_\_

### Gradual Return to Play Plan

Return to play should occur in gradual steps beginning with light aerobic exercise only to increase your heart rate (e.g. stationary cycle); moving to increasing your heart rate with movement (e.g. running); then adding controlled contact if appropriate; and finally return to sports competition.

Pay careful attention to your symptoms and your thinking and concentration skills at each stage or activity. After completion of each step without recurrence of symptoms, you can move to the next level of activity the next day. Move to the next level of activity only if you do not experience any symptoms at the present level. If your symptoms return, let your health care provider know, return to the first level and restart the program gradually.

**Day 1:** Low levels of physical activity (i.e. symptoms do not come back during or after the activity). This includes walking, light jogging, light stationary biking, and light weightlifting (low weight – moderate reps, no bench, no squats).

**Day 2:** Moderate levels of physical activity with body/head movement. This includes moderate jogging, brief running, moderate intensity on the stationary cycle, moderate intensity weightlifting (reduce time and or reduced weight from your typical routine).

**Day 3:** Heavy non-contact physical activity. This includes sprinting/running, high intensity stationary cycling, completing the regular lifting routine, non-contact sport specific drills (agility – with 3 planes of movement).

**Day 4:** Sports Specific practice.

**Day 5:** Full contact in a controlled drill or practice.

**Day 6:** Return to competition.

# Pre-participation Physical Exams

## TSSAA Requirements

Prior to participating in TSSAA-sanctioned athletics, there are several forms that must be completed. All student-athletes must have evidence of a current physical on file in their school's athletic office. In accordance with the TSSAA handbook, physicals must be signed by a doctor of medicine, osteopathic physician, physician assistant, or certified nurse practitioner. Physicals for high school athletic participation must be performed after April 15th to be valid for the following school year. A physical must be obtained before participating in any practices, scrimmages or games.

Tennessee Orthopaedic Clinics provides physicals for the schools that they work each year and are typically held during the first two weeks in May. Our Athletic Trainers and Sports Medicine Coordinator will work with each school individually in coordinating your schools physicals. Once finalized, specific information will be provided to athletes and parents. Athletes are welcome to have their physicals obtained through another provider, such as their Primary Care Physician, but encouraged to take advantage of this service that TOC provides.

It is required for a parent or guardian to complete and sign the physical form prior to completion of the exam. Although it is not mandatory, we do encourage all parents and legal guardians to attend physicals with their child.

These sports physicals **should not** replace your child's annual exam with his or her primary care physician. As, this screening will not address immunizations, blood work or evaluate other medical conditions that your pediatrician/primary care physician may perform during an annual exam.

A complete TSSAA approved physical form can be found at [www.TSSAA.org](http://www.TSSAA.org) under Forms section or on the Tennessee Orthopaedic Clinics website at [www.tocdocs.com](http://www.tocdocs.com)



## General First Aid

The athletic trainer is equipped and prepared to handle common athletic injuries. However, many teams practice and compete at sites miles away from the school or at times the athletic trainer is not available. Below are general guidelines on treating non-emergency common athletic injuries. Most of these injuries respond well to the **RICE** principle of treatment:

**Rest** – Avoiding any aggravating activity can prevent further injury.

**Ice** - should be applied to the injured area for 15-20 minutes. Reapply every couple of hours. This can help decrease swelling and inflammation. Skin irritation and tissue damage may result from improper or excessive use. If you are allergic to cold or develop irritations, it is recommended that you place a moist towel or pillowcase between the ice and your skin. Methods of Icing include:

1. Ice Bag – Place ice in a plastic bag and apply to injured area for 15-20 minutes.
2. Commercial Cold Pack – place cold pack in a pillowcase and apply for 15-20 min.
3. Ice Massage – Fill a paper cup about  $\frac{3}{4}$  full with water and freeze it. Peel away approx. 1 in. of the top of the cup and massage injured area for 5-10 min.
4. Ice Bucket – Immerse injured part in a bucket of ice water for 15-20 min.

**Compression** - can help reduce swelling with application of an ACE wrap. Avoid applying too tight as this may cause numbness, tingling, or loss of circulation to the injury or area.

**Elevate** – Elevate the injured area above the level of the heart

## Care for Common Athletic Injuries

**Bruises or Contusions** - A contusion is caused from bleeding of damaged blood vessels or soft tissue. Most contusions are not serious and can be treated as follows:

- 1) Apply ice to the injured area for 20 minutes. Reapply ice up to 20 minutes each hour.
- 2) Elevate an injured extremity to control bleeding.
- 3) If a more serious injury is suspected (fracture, concussion, or contusion of an internal organ such as the liver or spleen) seek further medical assistance.
- 4) DO NOT apply heat or a heating pad to a contused area; heat will increase the bleeding.

**Strains** - A strain is an injury to a muscle or tendon. Treating a strained muscle promptly and appropriately can minimize the time an athlete is hampered by this injury. Use the following treatment guidelines:

- 1) Apply ice to the injured area for 20 minutes. Reapply hourly as needed.
- 2) Do not apply heat to a muscle strain during the first 72 hours. The athletic trainer should make the decision of when and if to use heat as a treatment modality.

- 3) Do not use analgesic balms such as Icy Hot, Biofreeze or other product to an acute muscle strain (during the first 72 hours). These products should only be used under the direction of the athletic trainer.
- 4) Do not over-stretch an acute muscle strain.

**Sprains** - A sprain is an injury to a ligament. It is a result of a joint moving beyond its normal range of motion. Moderate or severe sprains can be accompanied by a fracture and should be treated accordingly. First aid for sprains includes:

- 1) Apply ice to the injured area for 20 minutes. Reapply ice every hour for 20 minutes.
- 2) If the injury is a lower extremity injury, the athlete should not bear weight on the injured leg if they are noticeably limping when they walk. The athlete should use crutches.

### **HEAT comes later . . .**

Heat may be used successfully for acute and chronic injuries when used correctly. **Heat should only be used after swelling has stopped (~48-72 hrs. following an injury).** Heat should be applied for no more than 20 minutes every two hours. Individuals differ in their ability to tolerate the use of heat over a body area; therefore you may need to place a layer(s) between the heat source and the injured area. Moist Heat should be comfortable; if it's too hot, you may get burned.

DO NOT use a Sports Cream under a moist heat application; this can lead to serious tissue damage and possible burns.

Methods of heat application include:

1. Moist Heat Pack— a towel soaked in hot water, wrapped in another towel. Apply for 20 minutes to the affected area.
2. Hot Soak – soaking the body area in water heated to 96-98 degrees for no more than 20 minutes. Decrease the time and temperature of the soak if a full body immersion is required.
3. Moist Heating Pad— may be purchased commercially. Follow the manufacturer's directions for use of the moist heat pad.

**These guidelines outlined are not meant as, and should not be used as, a substitute for competent medical care. If you have questions or concerns about the health and well-being of your child you should seek medical advice from the sports medicine staff or a medical doctor.**



## Hydration and Heat Illnesses

Proper hydration is required for optimal athletic performance. Dehydration can affect an athlete in less than 1 hour of exercise and puts them at greater risk for heat illnesses such as cramps, heat exhaustion, and heat stroke.

Proper nutrition should be taught and encouraged. Salt tablets, caffeine, pickle juice, protein, and nutritional supplements are not recommended. Replace these with water to replenish body fluids, and keep healthy dietary habits.

**Pre-Activity Hydration:** Consume 16-20 ounces of water 2-3 hours before activity and drink another 6-10 ounces of water 10-20 minutes prior to activity.

**Rehydrating during Activity:** If your child weighs more than 90 pounds, he or she should drink 20 gulps of fluid (about 10oz) every 15 to 20 minutes

**Post Activity Re-Hydration:** Athletes should consume 16-20 ounces of fluid (water or sports drink) for every pound lost of body weight.

## Exertional Heat Illnesses

It is important to be able to recognize signs and symptoms of possible heat illnesses and seek immediate medical as some can be fatal.

**Dehydration:** Loss of more than 2-3% body weight in fluids. Dry mouth, thirst, weakness, headache, chills, cramps, general discomfort and decrease performance.

**Cramps:** intense pain (not associated with acute muscle strain) and persistent muscle contractions during or after prolonged exercise

**Heat Syncope:** dehydration, fatigue, tunnel vision, pale or sweaty skin, decreased pulse rate, dizziness, and lightheadedness.

**Heat Exhaustion:** normal to elevated body temperature, physical fatigue, dehydration, dizziness, profuse sweating/pallor, headache, nausea, or vomiting, and difficulty continuing exercise.

**Heat Stroke:** altered consciousness, disorientation, irritability, confusion, and elevated body temperature (>104). Possible nausea, vomiting, diarrhea, hot & wet or dry skin, increased heart rate and decreased blood pressure.

**While many factors can lead to heat illness, dehydration is a common cause. Every athlete must be responsible for maintaining their own hydration throughout the day, not just during practice and games.**

## TSSAA Heat Policy

The TSSAA has a Heat Policy in place relating to heat related illnesses and can be found at [www.tssaa.org](http://www.tssaa.org) . There it lists required modifications to practices & competitions that must be taken as a precaution during activity depending on the Heat Index.

TOC Sports Medicine 2014 <http://www.tocdocs.com>

**TSSAA Heat Policy - Modifications for Golf Competitions and Practice 95°-104°**

*Players should have immediate access to water regardless of their location on the course. Water bottles should be kept with players at all times. Pace of play should be so that players are resting at least one minute for every three minutes that they are walking. The time taken between shots and the transition time on the tee-box between holes can be considered resting time.*

**TSSAA Heat Policy - Modifications for Soccer Competition when the Heat Index is 95°-104°**

*The referee shall stop the game for a heat time-out lasting no less than five minutes during the first and second half. The time-out will be called at the first logical time to stop play after the 20 minute mark of each half.*

**TSSAA Heat Policy - Modifications for Football Competition when the Heat Index is 95°-104°**

*Officials shall stop the game for a heat time-out at the first dead ball after the halfway point of each quarter. If either team has possession of the ball inside the other team's twenty yard line, officials may delay this time out until either the offensive team scores or the ball is turned over.*

**TSSAA Heat Policy - Modifications for Cross Country Competition when the Heat Index is 95°-104°**

*Athletes should have access to unlimited water before and after competition. Athletes should be monitored closely for signs of heat illness following the conclusion of the competition. Athletes should be encouraged to re-hydrate and seek shade as soon as the competition is complete.*

**TSSAA Heat Policy - Modifications for Track and Field Competition when the Heat Index is 95°-104°**

*Athletes should have access to unlimited water before, during and after competition. Athletes should be monitored closely for signs of heat illness during the competition. No mandatory stoppage of play required unless the heat index exceeds 104°. Athletes should re-hydrate and seek shade at each available opportunity during the competition.*

**TSSAA Heat Policy - Modifications for Baseball Competition when the Heat Index is 95° -104°**

*Athletes should have access to unlimited water before, during and after competition in the dugout area. No mandatory stoppage of play required unless the heat index exceeds 104°.*

**TSSAA Heat Policy - Modifications for Softball Competition when the Heat Index is 95° -104°**

*Athletes should have access to unlimited water before, during and after competition in the dugout area. No mandatory stoppage of play required unless the heat index exceeds 104°.*

**TSSAA Heat Policy - Modifications for Tennis Competition when the Heat Index is 95° -104°**

*Athletes should have access to unlimited water before, during and after competition. No mandatory stoppage of play required unless the heat index exceeds 104°. Regular periods of rest between games and/or sets should be long enough to maintain a ratio of 1 minute of rest for every 3 minutes played.*

## Tips on Hygiene Practices and Communicable Diseases Prevention

The National Athletic Trainers' Association (NATA) recommends that health care professionals and participants in secondary school athletics take the proper precautions to prevent the spread of communicable and infectious diseases.

Due to the nature of competitive sports at the high school level, there is increased risk for the spread of infectious diseases, such as impetigo, community acquired methicillin-resistant staphylococcus infection (MRSA) and herpes gladiatorum (a form of herpes virus that causes lesions on the head, neck, and shoulders). These diseases are spread by skin-to-skin contact and infected equipment shared by athletes, generally causing lesions of the skin.

The following are suggestions from NATA to prevent the spread of infectious and communicable diseases:

- Immediately shower after practice or competition
- Wash all athletic clothing worn during practice or competition daily
- Clean and disinfect gym bags and/or travel bags if the athlete is carrying dirty workout gear home to be washed and then bringing clean gear back to school in the same bag. This problem can also be prevented by using disposable bags for practice laundry.
- Wash athletic gear (such as knee or elbow pads) periodically and hang to dry
- Clean and disinfect protective equipment such as helmets, shoulder pads, catchers equipment and hockey goalie equipment on a regular basis
- Do not share towels or personal hygiene products with others
- All skin lesions should be covered before practice or competition to prevent risk of infection to the wound and transmission of illness to other participants. Only skin infections that have been properly diagnosed and treated may be covered to allow participation of any kind
- All new skin lesions occurring during practice or competition should be properly diagnosed and treated immediately.
- Playing fields should be inspected regularly for animal droppings that could cause bacterial infections of cuts or abrasions
- Athletic lockers should be sanitized between seasons
- Rather than carpeting, locker or dressing rooms should have tile floors that may be cleaned and sanitized
- Weight room equipment, including benches, bars and handles should be cleaned and sanitized daily

**This is the Official Statement from the National Athletic Trainers' Association  
on Communicable and Infectious Diseases in Secondary School Sports**



## Staph Infections: Information and Prevention

In an effort to educate the public about the potential risks of the emergence of community acquired methicillin-resistant staphylococcus infection (CA-MRSA), the National Athletic Trainers' Association (NATA) recommends that health care personnel and physically active participants take appropriate precautions with suspicious lesions and talk with a physician.

Cases have developed from person-to-person contact, shared towels, soaps, improperly treated whirlpools, and equipment (mats, pads, surfaces, etc). MRSA is passed like the flu and the common cold through casual contact and contact with contaminated items.

Skin wounds and abrasions can be very common in athletics. Any wound should be reported to the athletic trainer to be assessed, cleaned, and covered. Signs and symptoms of skin infections, regardless of MRSA included:

- Bright red surrounding affected area
- Streaking red leading away from the affected area
- Oozing pus
- Inflammation and pain around area
- Fever

Staph or CA-MRSA can be difficult to identify and can often be misdiagnosed. Signs and symptoms could include:

- Pimples, pustules and boils which may grow quickly
- Red, swollen, and hot area
- Painful and hard lesions, often with a core in 2-3 days
- White, milky pus or other drainage if lesions open

Maintaining good hygiene and avoiding contact with drainage from skin lesions are the best methods for prevention. Proper prevention and management recommendations may include, but are not limited to:

- Keep hands clean by washing thoroughly with soap and warm water or using an alcohol-based hand sanitizer routinely.
- Encourage immediate showering following activity.
- Avoid whirlpools or common tubs with open wounds, scrapes or scratches.
- Avoid sharing towels, razors, and daily athletic gear.
- Properly wash athletic gear and towels after each use.
- Maintain clean facilities and equipment.
- Inform or refer to appropriate health care personnel for all active skin lesions and lesions that do not respond to initial therapy.
- Administer or seek proper first aid
- Encourage health care personnel to seek bacterial cultures to establish a diagnosis.
- Care and cover skin lesions appropriately before participation.

**Referral to a physician-early care can prevent more serious infections and prevent spreading infection to other athletes. Athlete should be removed from athletic participation until infection is under control and not weeping.**

## **Dietary Guidelines and Fluid Replacement**

Athletic participation places physical and mental stressors on an athlete. It is important that young athletes eat properly in order to provide quality fuel for activity. The following guidelines are general considerations that may assist the athlete in his/her efforts to succeed.

- Eat a varied diet. Avoid eating the same foods each day.
- Eat breakfast! Athletes need good fuel, which includes breakfast. Any combination of foods such as toast, juice, cereal, milk, or fruit will help reduce low blood sugar and help the body function optimally throughout the day.
- Avoid excessive amounts of fast food. Fast foods generally have a high fat content, which is digested slowly and may produce unwanted weight gains.
- Drink plenty of fluids. Fluids are important to hydrate the system, assist in the chemical process of energy metabolism, and provide for the transportation of nutrients throughout the body. Drinks containing caffeine and carbonation should be avoided. Increased consumption of water and/or sports drinks (Gatorade, PowerAde, etc.) is the only way to replace nutrients loss during activity.
- Avoid large amounts of red meat. While you need good sources of protein in an athletic diet, red meat is high in fat and calories. Choose more poultry and fish as your sources of protein in your diet.
- Consume complex carbohydrates. The athletic diet should consist of foods such as breads, potatoes, vegetables, pasta, fruits, cereals, etc. These products contain the energy sources an athlete needs and also the other nutrients necessary for good metabolic function and tissue growth. Stay away from foods with high fat and salt contents. Protein is important but is usually sufficient in the normal diet. Carbohydrate sources are much more beneficial for energy and growth than are high protein diets.
- A good diet will provide the nutrients needed for successful athletic participation. But exercise, practice, heredity, and skill development are also needed for athletic achievement.
- Eat a small snack or meal 1-2 hours before practice to give energy to burn during workouts. Consume carbohydrate and protein following practice to rebuild muscle and recover.
- Avoid skipping meals and make sure to get appropriate amounts of sleep and rest each day.

### ***A Note on Dietary and Performance Supplements***

TOC Sports Medicine Program does not promote, support, or encourage the use of dietary or performance supplements by student-athletes. Parents and student-athletes should be extremely cautious about using these substances and consult their personal physicians or other qualified experts before using these products.

## **Sudden Cardiac Death**

Sudden death in people under age 35, often due to hidden heart defects or overlooked heart abnormalities, is rare. When these sudden deaths do occur, it's often during physical activity, such as participating in a sporting event.

Millions of elementary, high school and college athletes compete every year without incident. Fortunately, if you or your child is at risk of sudden death, there are screening tests for heart defects and precautions you can take.

### **How common is sudden cardiac death in young people?**

Nearly 360,000 sudden cardiac arrests occur outside of hospitals each year in the United States alone. Of those sudden cardiac arrests, very few occur in young people, and only some of those young people die of sudden cardiac arrest. Most deaths due to sudden cardiac arrest are in older adults.

### **What can cause sudden cardiac death in young people?**

The causes of sudden cardiac death in young people vary. About two-thirds of the time, death is due to a heart abnormality. For a variety of reasons, something causes the heart to beat out of control. This abnormal heart rhythm is known as ventricular fibrillation.

Some specific causes of sudden cardiac death in young people include:

- **Hypertrophic cardiomyopathy (HCM)**
- **Coronary artery abnormalities.**
- **Long QT syndrome**

Other causes of sudden cardiac death in young people include structural abnormalities of the heart, such as unrecognized congenital heart disease and heart muscle abnormalities. Other causes include inflammation of the heart muscle, which can be caused by viruses and other illnesses. In addition to long QT syndrome, other abnormalities of the heart's electrical system, such as Brugada syndrome, can cause sudden death.

Another rare cause of sudden cardiac death that can occur in anyone, though it's usually heard about in young people who play sports, is called commotio cordis. It occurs as the result of a blunt blow to the chest, such as being hit by a baseball or hockey puck, at just the right time. The blow to the chest can trigger ventricular fibrillation if the blow strikes at exactly the wrong time in the heart's electrical cycle.

## **Are there symptoms or red flags parents, coaches and others should be on the lookout for that signal a young person is at high risk of sudden cardiac death?**

Many times these deaths occur with no warning, but symptoms to watch for include:

- **Unexplained fainting (syncope).** Sudden and unexplained fainting that occurs during physical activity could be a sign that there's a problem with your heart.
- **Family history of sudden cardiac death.** The other major warning sign is a family history of unexplained deaths before the age of 50. This obviously isn't a physical symptom like fainting, but deaths like this in your family should prompt you to pay close attention and perhaps talk with your doctor about screening options.

Shortness of breath or chest pain may also be a sign that you're at risk of sudden cardiac death, but these aren't common and may be a sign of other health problems in young people, such as asthma.

## **Who should be screened for sudden death risk factors?**

There's debate in the medical community about screening young athletes to attempt to identify those at high risk of sudden death.

Some countries such as Italy screen young people with the use of an electrocardiogram (ECG or EKG), which records the electrical signals present in the heart. However, this type of screening sometimes leads to false-positive results — indications that an abnormality or disease is present when in fact it is not — which can cause unnecessary worry and additional tests.

It's not clear that sudden cardiac death can be prevented by the types of routine physical exams that are often necessary to be cleared to play competitive sports.

For example, if the autopsy showed hypertrophic cardiomyopathy, it's recommended that all first-degree relatives of the deceased be checked for this condition, including parents, siblings and children. Repeat screening of family members is recommended over time, even if the first evaluation of their heart was normal.

## **Should young people avoid physical activity if they have a heart defect?**

If you're at risk of sudden cardiac death, talk to your doctor about your physical activity level. Whether you can participate in exercise or sports depends on your condition.

For some disorders, such as hypertrophic cardiomyopathy, it's often recommended that you avoid most competitive sports, but this doesn't mean that you will need to avoid exercise altogether. Talk to your doctor about what sort of activities and behaviors you should avoid.

## Resource Page

### Tennessee Secondary School Athletic Association [www.tssaa.org](http://www.tssaa.org)

- TSSAA Concussion Policy
  - Complete Policy
  - Return to Play Form
  - Coaches Information and Signature form
  - Parent & Student Athletes Information and Signature Form
- TSSAA Heat Policy and Modification Guidelines
- TSSAA Pre-participation Physical Exam Form



### Tennessee Orthopaedic Clinics [www.tocdocs.com](http://www.tocdocs.com)

- TSSAA Pre-participation Physical Exam
- TSSAA Concussion Policy
- Concussion Checklist
- TOC After Hours Clinic Information
- Links to Facebook and twitter accounts



### National Athletic Trainers' Association

[www.nata.org](http://www.nata.org) & [www.athletictrainers.org](http://www.athletictrainers.org)

- Variety of educational material
- Official Position Statements on common topics

