Player Safety and Injury Prevention

Concern about player safety and particularly concussions is at an all-time high. The possibility that a child could receive a brain or other serious injury warrants the highest attention to this issue. The purpose of this document is to provide information on the following topics:

A. Emergency situations
B. Heat illness & Hydration
C. Understanding and reacting to Concussions and other head injuries
D. Helmet Selection, Mouth Pieces and Helmet Fitting
E. Coaching Proper Fundamentals – As a safety measure NYO teaches "Heads Up" fundamentals developed by USA Football. Proper techniques reduce the risk of concussions and other injuries
F. Lightning

Supplemental materials are organized as attachments which you are encouraged to read.

Emergency Situations:

Coaches and parents should keep a first aid kit and cell phone with them while at the Park with the USA Football app installed. In the event a player is knocked unconscious or there is any concern about whether a serious orthopedic problem or spinal injury may have occurred, call 911 immediately and do not move the player. While there are often physicians at the Park that can assist don't waste time attempting to locate them; call 911 first. Emergency services are sometimes confused when traveling to Chastain Park, so if you have called an ambulance assign a person to wait near the Wieuca Road entrance to NYO to direct the EMT unit to the player's location. If a player on your team is injured to the extent he will miss one or more games please notify your League Director.

A. Heat Related Illnesses & Hydration:

Beginning on the next page please read the material from Children's Healthcare of Atlanta (CHOA) about heat related health conditions and hydration. In addition to the CHOA article here are some beneficial reminders:

1. "USA Football" – Download this free smart app designed by USA Football. The first emphasizes Heads UP techniques and various player safety reminders including local heat index, lightning strikes, hydration tips, concussion symptoms, etc.
2. Identify High Risk Players – Large players are typically more at risk for heat related conditions.
3. Buddy System - You may want to pair your players up in a buddy system in which players help watch their buddies for heat or other problem.
4. Parents Role – Important actions by parents should include: being familiar with this information about heat illnesses, having their child become acclimated to the heat prior to the season with a responsible amount of outdoor exercise, be sure hydration begins the day before athletic functions and provide sufficient fluids for consumption during the athletic event. Players should not be using energy or other caffeinated drinks.
5. Bring Water & Ice – Players should bring their own fluids but early in the season when they are needed the most some kids forget so bring some extra water. Consider dark towels (that won't show blood) on ice which can be used to cool players.
6. SCHEDULE Frequent Breaks / Hydration Reminders:
    a) Fluids: water or sports drinks NOT energy drinks or other caffeinated beverages
    b) 2 to 3 hours before event drink 17-20 ounces
    c) 30 minutes before event drink another 7-10 oz.
    d) 88 lb. player needs 5 oz. each 20 minutes during practice
    e) 132 lb. player needs 9 oz. each 20 minutes during practice
    f) Sports drinks are needed for athletic functions over one hour.
7. More Information – Further information about heat illnesses is provided by Children's HealthCare of Atlanta (CHOA) on the following pages and by USA Football.

Children's® Healthcare of Atlanta

Sports Medicine Program

Heat-related Illness in Young Athletes

Heat-related illness is responsible for thousands of Emergency Department visits annually by young athletes. The severity of heat injury ranges from mild heat cramps to heat stroke and death. In fact, heat stroke is the third most common cause of exercise-related death in U.S. high school athletes.

Because most of the contributing risk factors to heat-related illness are modifiable, heat-related illness is preventable. Some basic knowledge about thermoregulation, the human response to heat stress and how to recognize early signs of heat-related illness can significantly reduce the risk of an exercising youth suffering a heat-related illness.

HEAT AFFECTS CHILDREN DIFFERENTLY

Are children and adolescents at an increased risk of heat-related illness?

In a recent policy statement about heat-related illness in exercising children and adolescents, the American Academy of Pediatrics (AAP) challenged the previous notion that young athletes are at an increased risk of suffering a heat-related illness due to differences in thermoregulation when compared to adults. According to the AAP, children and adolescents are not physiologically at a higher risk than similarly fit and acclimated adults with similar hydration status. In other words, children and adolescents are not at any higher risk of suffering a heat-related illness just because they are young.

However, the setting or circumstances in which children and adolescents exercise in hot environments may put them at an increased risk of suffering a heat-related illness compared to adults. Situations in which children and adolescents are at an increased risk include:

- School-age children and adolescents are often working out or exercising under the supervision of an adult, coach or official who determines when to take water breaks.
- Children and adolescents may be less willing to notify a coach when they are in the early stages of a heat-related illness for fear of appearing weak or out of shape.
- Adults or coaches may not recognize the early signs of a heat-related illness due to the large number of children or adolescents on the field at once (e.g., football, track, band).
- Children and adolescents tend to rely on thirst to determine when they should drink. The thirst mechanism kicks in when the body is 1 percent to 2 percent dehydrated.
- Children and adolescents may participate in all-day activities, such as tournaments involving repeated bouts of exercise, often with inadequate recovery time between bouts to rest and rehydrate.
- Because children are closer to the ground than adults, they more readily absorb radiant heat from the ground and pavement, thus raising their body temperature faster.
- Children and adolescents new to the South or out of shape should exercise for shortened, less-intense sessions three to four times a week for two weeks to allow their bodies to acclimate.

Hydration tips for young athletes

Thirst is a poor indicator of hydration status. When children and adolescents begin to feel thirsty, they may already be 1 percent to 2 percent dehydrated.

- Prehydrate 30 minutes before activity. Children and adolescents should drink until they are no longer thirsty plus another 8 ounces.
- Hydrate during activity:
  - Drink 5 ounces every 20 minutes of activity for children and adolescents weighing less than 90 pounds.
  - Drink 8 ounces every 20 minutes of activity for children and adolescents weighing more than 90 pounds.
  - Encourage children and adolescents to drink water during activity instead of pouring it on their heads or faces.

Water is best if the activity lasts less than one hour. For activities lasting more than an hour, a fluid with carbohydrates (sugar) and electrolytes is best. Gatorade and Powerade were designed specifically for rehydration during exercise and contain the right amount of carbohydrates (about 6 percent to 8 percent).

Children younger than age 10 may dilute a sports drink—one part sports drink to one part water—for a better taste. Drinks, such as fruit juice and soda, contain too much sugar and can cause cramping. Avoid carbonated and caffeinated beverages because the carbonation can cause bloating and the caffeine can speed up metabolism, generating more heat.

Tips for exercising in the heat

- Schedule workouts during the cooler times of the day.
- Allow children and adolescents who are overweight, out of shape or unacclimated time to adjust to the heat.
- Schedule water and rest breaks every 30 minutes during activities. During these breaks, do not just encourage, but require children and adolescents to drink. This also gives the coach or trainer a chance to monitor the athletes.
- Have shade, ice and a kiddie pool available for emergency treatment and rapid cooling.
- Have a cell phone (with a charged battery) available at all workouts for emergency contact.
- Wear sunscreen with a sun protection factor (SPF) of at least 15. Apply it 30 minutes before going out in the sun and every 20 to 30 minutes if sweating or swimming.
- Wear hats with brims and light-colored, breathable clothing.
- Youth sports rules can be modified to increase the safety of athletes. For example, soccer games can be divided into quarters rather than halves to allow for more rest breaks, hydration and monitoring. Referees can call an official time out for hydration periodically during the game.

Be aware of the heat index

Humidity plays a major role in athletes' heat response. Know the heat index, which is a measure of the environmental temperature and humidity. This can be measured at the field or obtained from your local weather service or the Internet. When the temperature is 90°F and the humidity is 80 percent, the heat index is 115°F, which places athletes at risk of suffering a heat-related injury.

ACTIVITY GUIDELINES (see chart to the right)

Add 5°F to the temperature between 10 a.m. and 4 p.m. from mid-May to mid-September during sunny days.

(A.) Children and adolescents should receive a five- to 10-minute rest and fluid break every 25 to 30 minutes of activity.

(B.) Children and adolescents should receive a five- to 10-minute rest and fluid break every 20 to 25 minutes of activity. Children should be in shorts and T-shirts (with helmet and shoulder pads only, not full equipment, if worn for activity).

(C.) Children and adolescents should receive a five- to 10-minute rest and fluid break every 15 to 20 minutes of activity. Children should be in shorts and T-shirts only (with all protective equipment removed, if worn for activity).

(D.) Cancel or postpone all outdoor practices and games. Practice may be held in an air-conditioned space.

EARLY SIGNS OF HEAT-RELATED ILLNESS

Dehydration and heat cramp

Thirst, fatigue, dizziness, light-headedness, muscle cramps and loss of energy may be signs of dehydration. Athletes should stop and drink water or a sports drink. Muscle cramps can be stretched and lightly massaged. Resume activity with caution only when all symptoms have cleared.

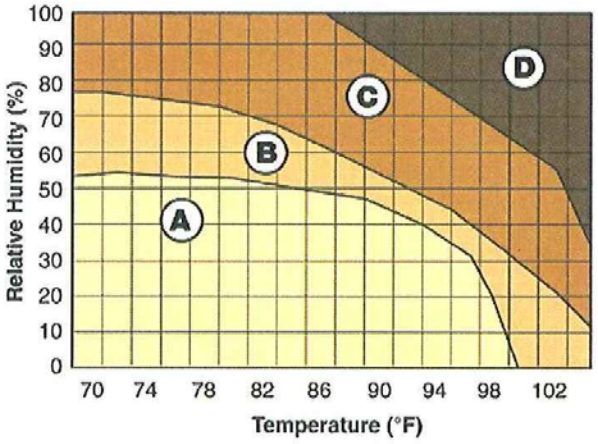
Heat exhaustion

Dizziness, rapid pulse, headaches, nausea, vomiting, chills and loss of coordination may be signs of heat exhaustion. The athlete may be sweating profusely or the skin may be dry. Activity should be discontinued and the athlete should be rehydrated. If his level of consciousness does not allow oral hydration, transport him to a medical facility for intravenous hydration. Core body temperature should be measured. If this is not available, transport him to a medical facility for hydration and monitoring.

Heat stroke

Call 911 immediately. Confusion, irrational behavior, drowsiness, nausea, vomiting and a dangerously high temperature (104°F and above) may be signs of heat stroke. This is a life-threatening medical emergency that requires rapid cooling by immersion in an ice bath. Ice bags on the neck and groin may help if a bath is unavailable.

Physicians and parents with knowledge about heat-related illness should take on a role of educating administrators, coaches and officials and encouraging proper training in the recognition and treatment of heat-related illness.



Certain children and adolescents are at an increased risk of suffering a heat-related illness and must be identified so extra precautions can be taken, if needed. At-risk children and adolescents include those who:

- Are overweight and/or unacclimated to exercising in a hot environment.
- Have or are recovering from a recent illness, especially involving vomiting, diarrhea and/or fever.
- Are taking certain medications (diuretics, attention-deficit/hyperactivity disorder (ADHD) medications, anticholinergics and caffeine).
- Have chronic medical conditions (asthma, sickle cell trait, hyperthyroidism or cystic fibrosis).
- Have a history of suffering a heat-related illness.

Visit www.choa.org/sportsmed or call 404-785-6880 for more information.

B. <u>Concussions – Understand What They Are & How to Properly React</u>:

1. **What is a concussion?** A concussion is a type of traumatic brain injury that changes the way the brain normally works. A concussion is caused by a blow to the head or body that causes the brain to move rapidly inside the skull. Even a "ding", "getting your bell rung" or what seems to be a mild bump can be serious.

2. **What are the Risks?** A concussion is a type of traumatic brain injury that changes the way the brain normally works. If an athlete has a concussion, his / her brain needs time to heal. While an athlete's brain is still healing, he / she is much likely to have another concussion. Repeat concussions can increase the time it takes to recover. In rare, repeat concussions in young athletes can result in brain swelling or permanent damage to their brain. They can even be fatal. This is why when there is any doubt a player may have sustained a concussion; the player should be removed from competition.

3. **Concussion symptoms Observable by Coaches & Parents:**	4. **Concussion symptoms reported by players**
• Appears dazed or stunned • Is confused about assignment or position sports • Forgets plays • Is unsure of game, score, or opponent • Moves clumsily • Answers questions slowly • Loses consciousness (even briefly) • Shows behavior or personality changes • Can't recall events prior to hit or fall • Can't recall events after hit or fall It is sometimes necessary to wait a period of time and reevaluate the athlete.	• headache or pressure in head • nausea or vomiting • balance problems or dizziness • double or blurry vision • sensitivity to light • feels sluggish, hazy or foggy • concentration or memory problems • confusion • does not feel right <u>COACH SMART</u> – This free app from Vanderbilt University includes these symptoms and other good information. <u>USA Football app</u> – This free app has check lists about concussions and other Heads Up topics.

5. **How does the severity of a concussion impact recovery?** The severity of a concussion determines the length of time needed before a player can safely return to sports activities which is why proper diagnosis is important.

6. **How are concussions diagnosed?** Concussions can only be diagnosed by medical professionals. Prior baseline testing is helpful in this process but baseline testing is best suited for players age 12 and above. CHOA in conjunction with the Impact Testing program can provide baseline testing. CT & MRI's can't necessarily detect concussions.

7. **How are concussions treated?** Medical professionals must prescribe treatment but it is essential to understand that following a concussion the brain simply needs time from mental and physical exertion to recover. The decision as to when to return to school and sports should only be given by a doctor.

8. **What are the Statistics concerning Concussions?**
   - The five leading sports or recreational activities which account for concussions for age 5-18 include: bicycling, football, basketball, playground activities, and soccer.
   - It is estimated these activities result in up 3.8 million concussions annually.
   - 5 million athletes participate annually in organized football. This figure is composed of 2,000 in the NFL, 100,000 collegiate players, 1.3 million high school players and 3.5 youth players.
   - The # of helmet impacts is approximately 5 times higher in high school vs. youth football. However, high magnitude helmet contact occurs at all levels of football per a study done by VA Tech University.
   - Only ten percent (10%) of players incurring a concussion lose consciousness.

9. **What should be done if a concussion is suspected?**
   a) Remove the athlete from play for the balance of that practice or game.
   b) Seek medical attention by calling 911, if appropriate.
   c) Coaches should inform the parents about the situation and encourage them to seek medical attention. CHOA has a Concussion Hot Line which parents can call to speak with an experienced nurse about how to react to concussion situations --- **CONCUSSION HOT LINE – (404) 785-5437**.

11. **USA Football – Heads Up Program**
    Teaching athletes correct fundamentals is important in lowering the risk of concussions. USA Football is the leading source of information and coaching aids concerning youth football. The NFL has partnered with USA Football to promote player safety. NYO is a member of USA Football. The Heads UP program was developed by USA Football and is taught NYO coaches as a means to reduce concussions.

12. **What if a player is diagnosed with a concussion?**
    If a player is diagnosed as having sustained a concussion the parent should follow the directions of the medical provider and notify their child's coach and NYO at Football@NYOsports.com. The medical provider will direct when the player will be able to participate.

13. **Return to play**
    If a player has been diagnosed as having sustained a concussion by a medical provider then a protocol exists before that player can participate in sports at NYO. As an appropriate safety measure and as directed by Georgia law players may NOT "return to play" at sporting events at NYO until the parents have received written clearance from the medical provider and provided that clearance to NYO at Football@NYOsports.com.

14. **More Important Information about Concussions**
    Excellent information is available about youth sports and concussions through the Center for Disease Control, Children's Healthcare of Atlanta and USA Football. Two pages follow from the CDC. Please reference additional information at: CDC concussion information and CHOA concussion information. The Sports Medicine Program at CHOA offers excellent seasonal seminars for parents and coaches that address concussions and other medical conditions related to youth athletics.

Parent/Athlete Concussion Information Sheet

A concussion is a type of traumatic brain injury that changes the way the brain normally works. A concussion is caused by bump, blow, or jolt to the head or body that causes the head and brain to move rapidly back and forth. Even a "ding," "getting your bell rung," or what seems to be a mild bump or blow to the head can be serious.

WHAT ARE THE SIGNS AND SYMPTOMS OF CONCUSSION?

Signs and symptoms of concussion can show up right after the injury or may not appear or be noticed until days or weeks after the injury.

If an athlete reports ***one or more*** symptoms of concussion listed below after a bump, blow, or jolt to the head or body, s/he should be kept out of play the day of the injury and until a health care professional, experienced in evaluating for concussion, says s/he is symptom-free and it's OK to return to play.

Did You Know?

- Most concussions occur *without* loss of consciousness.
- Athletes who have, at any point in their lives, had a concussion have an increased risk for another concussion.
- Young children and teens are more likely to get a concussion and take longer to recover than adults.

SIGNS OBSERVED BY COACHING STAFF	SYMPTOMS REPORTED BY ATHLETES
Appears dazed or stunned	Headache or "pressure" in head
Is confused about assignment or position	Nausea or vomiting
Forgets an instruction	Balance problems or dizziness
Is unsure of game, score, or opponent	Double or blurry vision
Moves clumsily	Sensitivity to light
Answers questions slowly	Sensitivity to noise
Loses consciousness *(even briefly)*	Feeling sluggish, hazy, foggy, or groggy
Shows mood, behavior, or personality changes	Concentration or memory problems
Can't recall events *prior* to hit or fall	Confusion
Can't recall events *after* hit or fall	Just not "feeling right" or "feeling down"

CONCUSSION DANGER SIGNS

In rare cases, a dangerous blood clot may form on the brain in a person with a concussion and crowd the brain against the skull. An athlete should receive immediate medical attention if after a bump, blow, or jolt to the head or body s/he exhibits any of the following danger signs:

- One pupil larger than the other
- Is drowsy or cannot be awakened
- A headache that not only does not diminish, but gets worse
- Weakness, numbness, or decreased coordination
- Repeated vomiting or nausea
- Slurred speech
- Convulsions or seizures
- Cannot recognize people or places
- Becomes increasingly confused, restless, or agitated
- Has unusual behavior
- Loses consciousness *(even a brief loss of consciousness should be taken seriously)*

WHY SHOULD AN ATHLETE REPORT THEIR SYMPTOMS?

If an athlete has a concussion, his/her brain needs time to heal. While an athlete's brain is still healing, s/he is much more likely to have another concussion. Repeat concussions can increase the time it takes to recover. In rare cases, repeat concussions in young athletes can result in brain swelling or permanent damage to their brain. *They can even be fatal.*

Remember

Concussions affect people differently. While most athletes with a concussion recover quickly and fully, some will have symptoms that last for days, or even weeks. A more serious concussion can last for months or longer.

WHAT SHOULD YOU DO IF YOU THINK YOUR ATHLETE HAS A CONCUSSION?

If you suspect that an athlete has a concussion, remove the athlete from play and seek medical attention. Do not try to judge the severity of the injury yourself. Keep the athlete out of play the day of the injury and until a health care professional, experienced in evaluating for concussion, says s/he is symptom-free and it's OK to return to play.

Rest is key to helping an athlete recover from a concussion. Exercising or activities that involve a lot of concentration, such as studying, working on the computer, or playing video games, may cause concussion symptoms to reappear or get worse. After a concussion, returning to sports and school is a gradual process that should be carefully managed and monitored by a health care professional.

It's better to miss one game than the whole season. For more information on concussions, visit: **www.cdc.gov/Concussion**.

Student-Athlete Name Printed	Student-Athlete Signature	Date
Parent or Legal Guardian Printed	Parent or Legal Guardian Signature	Date

Children's Healthcare of Atlanta℠

Sports Medicine

Concussion Info Sheet

What is a concussion?

A concussion is a **traumatic brain injury** (TBI) resulting in short-term impairment of neurologic or brain function caused by a direct blow to the head, face or neck, or an indirect blow to another part of the body that transmits an acceleration or deceleration force to the brain. One **does not** have to lose consciousness to have a concussion. In fact, only 10% of concussions involve loss of consciousness.

How common are concussions?

It has been estimated that 1.6 - 3.8 million concussions occur each year, many of which go unreported or unnoticed. The sport with the highest risk of concussion is football, followed by girl's soccer, boy's soccer and girl's basketball. As lacrosse grows in popularity, this sport may account for a significant number of concussions, especially in the boy's game. Other sports with a higher risk of concussion are gymnastics, cheerleading, hockey and wrestling. Recreational bike riding, not considered an "organized sport," actually accounts for more concussions than any organized sport.

What are the signs and symptoms of a concussion?

Signs (reported by observer)	**Symptoms** (reported by patient)
Appears dazed or confused	Headache
Vacant stare	Nausea/vomiting
Disoriented	Dizzy, feeling foggy, "out of it"
Clumsy	Double or blurry vision
Slow answering questions	Sensitive to light and noise
Emotional lability	Changes in sleep patterns
Behavior changes	Impaired concentration
Poor balance	Irritable, emotional, sad

Children's Concussion Program
404-785-1111
www.choa.org/concussion

David Marshall, M.D.
Medical Director, Sports Medicine Program
Children's Healthcare of Atlanta

What should I do if an athlete suffers a concussion?

Any athlete that shows signs or symptoms of a concussion should be held out from further participation until evaluated and cleared by a medical professional trained in the management of concussions. They **should not** return to play in the same contest or the same day. They need to receive immediate attention and monitored closely for deterioration in their condition. A sideline assessment card can be a helpful guide for the initial evaluation of an athlete suspected of suffering from a concussion.

When should an athlete go to the Emergency Department?

Any of the following conditions after a concussion warrants urgent referral to the Emergency Department:

- Loss of consciousness
- Progressive memory loss
- Severe or worsening headache, nausea or vomiting
- Seizures or focal neurologic signs

Will a CAT scan or MRI show that an athlete has a concussion?

Since a concussion is a *functional* injury to the brain and not *structural*, standard imaging such as CAT scanning and MRI are normal. In other words, a normal CAT scan does not mean your child did not suffer a concussion. CAT scan and MRI may be helpful in ruling out other causes of their symptoms like skull fracture, bleeding in the brain, and tumors.

When can athletes with a concussion return to play?

There is no set time frame that determines when a concussed athlete can return to the playing field. All concussive injuries must be treated individually just as no two brains are alike, no two concussions are alike

An athlete can return to sports when the following conditions are met:

1. Resolution of **all** symptoms after complete rest (physical and cognitive).
2. Remain symptom-free after a gradual return to a normal school day and a gradual return to full physical activity.
3. Normalization of neurocognitive testing.
4. Written clearance by a medical professional trained in the management of concussions.

What is *neurocognitive testing*?

ImPACT (Immediate Post-Concussion Assessment and Cognitive Testing) is the first, most widely used and the most scientifically validated computerized concussion evaluation system. It was developed in the early 1990's by a group a neuropsychologists from The University of Pittsburgh Department of Neurosciences and consists of a 30-40 minute computer-based test that measures multiple aspects of cognitive functioning such as attention span, working memory, sustained and selective attention time, non-verbal problem solving, reaction time and response variability.

How is the ImPACT test used?

The ImPACT test should be administered within 72 hours of a concussion to all athletes age 12 and above. The test can be re-administered every 7-10 days to document improvement and eventual normalization of neurocognitive functioning. When the athlete has fully recovered, he or she must be cleared by his/her doctor before returning to play. It must be noted that the ImPACT test *is only one tool* to help determine when the athlete recovers and is not intended to be used as the sole determinant for return to play. Since each symptom, response, and recovery pattern due to concussion varies from individual to individual, it is important that all athletes participating in high-risk sports (football, soccer, lacrosse, wrestling, gymnastics, ice hockey, basketball, etc.) take a baseline test at the beginning of 7^{th}, 9^{th} and 11^{th} grade. This will aid in determining when a concussed athlete's cognitive function has returned to "normal."

Can the ImPACT test be used if the athlete does not have a baseline test?

Yes, the ImPACT test can still provide useful information in concussion management even if a baseline test is not available. During the development of the test, a large amount of normative data was collected for various age groups. These "normal" scores can be used in comparison to the concussed athlete's scores.

Can an athlete with a concussion go to school or come to practice and just observe?

The concussed brain is in the midst of a metabolic crisis, consisting of a supply-and-demand mismatch and between the injured brain cells' demand for oxygen and glucose to heal and the decreased blood supply to them as a result of the brain trauma. Therefore, any type of mental activity that requires concentration, remembering, thinking or reasoning will continue to stress the brain, worsen symptoms and delay recovery. As long as the athlete has signs or symptoms of a concussion, he or she should be held out from school, avoid video games, texting, action-packed TV, computer work or any reading and studying. For the same reason, they should also not attend practice even just to "watch." Being at practice to watch or even just going to a game to

"support his or her teammates and cheer them on" also puts increased demand on the concussed brain and worsens symptoms and delays recovery.

This rest will enable to brain to recover quicker and expedite the athlete's safe return to school and athletics. When the symptoms subside, they can return to school in a partial-day format and eventually return to observe practice. Mental and physical work can be slowly increased as long as symptoms such as headache, dizziness, feeling slowed down, etc do not return. When asymptomatic, the physical stress will be ramped up, adding light, then moderate, then full contact. When **all** symptoms remain absent with a full return to the school day, resumption of unrestricted activities, and ImPACT scores return to baseline or are normal, his or her doctor will determine clearance to return to competition.

What can happen if an athlete returns too quickly, or is not completely recovered before returning to play?

If an athlete suffers a 2nd blow to the head before he/she has fully recovered, the consequence can be permanent brain damage or death. This *Second Impact Syndrome (SIS)* results in a massive rush of blood into the brain causing irreversible brain swelling, seizures, coma and death in one half of the people. Over 90% of survivors of SIS have permanent brain damage.

Another consequence of a repeated injury before full recovery is *post-concussive syndrome.* Post-concussive syndrome is when an athlete suffers long-term (over 6 weeks) of symptoms. It is difficult who predict who will get post concussive syndrome, but kids with previous concussion, ADHD, migraines or any other neurological condition may be at a higher risk.

It has also been shown that kids who suffer one concussion have a 3-4 times higher risk of suffering a second concussion. The second concussion may occur with a lesser impact, and the symptoms will generally last longer than the first concussion.

Do boys' responses to concussion differ from girls?

It has been shown the there are gender differences between boys' and girls' response to concussions. On average, girls take a few days longer to recover than boys. It should also be noted that younger athletes usually take longer to recover than older athletes.

In summary, when an athlete suffers a concussion, a "Concussion Management Team" will form with the athlete at the center. "Team members" will each have their own individual roles in management of the athlete and ensuring their safe return to school and athletics.

D. Helmet Selection, Mouth Pieces and Helmet Fitting

Properly selected and properly fitted equipment reduces the risk of concussions

1. **General comments about how helmets:**
   a) Players should use only high quality modern helmets. Be aware of the VA TECH University study ranking the safety of alternative helmets: http://www.sbes.vt.edu/helmet.php.
   b) Improperly fitted helmets contribute to the risk of concussions.
   c) Helmets should be tight but not painful to the athlete.
   d) The helmet should always move with the head, not independently.
   e) Maintenance of the helmet throughout the season is important. Hair cuts can influence the fit of a helmet. Most helmets are adjustable both through a selection of padding and air bladder pressure. Parents should be educated to check the condition of both regularly.
   f) Before each use, helmets should be inspected for defects. This is particularly true after helmets are disassembled for painting.

2. **Helmet Selection**
   a) Modern helmets are considered to be far superior to those of the past. Parents should seek modern high quality helmets sold by stores which have knowledgeable staff who can assure proper fitting.
   b) Virginia Tech University has completed a study concerning the ability of various helmets to cushion blows to the head. The results resulted in a ranking of helmets ranging from one to five stars, with five stars being the safest. Results of that study are available at: http://www.sbes.vt.edu/helmet.php.
   c) USA Football offers information about helmets at: http://usafootball.com/health-safety/equipment-fitting.

3. **Mouth Pieces:**
   a) Use of mouth guards tends to reduce concussions
   b) Mouth pieces should extend over molar teeth. So, periodically evaluate & replace mouth pieces that have been chewed off.

4. **Helmet Fitting** – Properly fitted helmets reduce the risk of concussions and other head injuries
   a) **Crown pressure:** Pull helmet straight down on athlete's head. You are looking for the pressure to be evenly distributed on the top of the head and the helmet should not come down on the nose.
   b) **Lateral grip:** Place your hands on each side of the helmet and ask the athlete to hold the head still. Gently force the helmet from side to side. What you are looking for here is the helmet padding to grip the head and not slide across the face. Facial skin should bunch up.
   c) **Vertical grip:** Again, place your hands on each side of the helmet and ask the athlete to hold the head still. Gently roll the helmet backward and forward. The skin on the forehead should move with the helmet and with enough force it will eventually slip a little, but it should catch on the eyebrow without coming down on the nose.
   d) When the helmet fits snugly, ask the athlete if it is causing any pain. If the answer is no, then you have a good fit. If the answer is yes, then you should go up to the next size. Do not ask if the helmet is tight because it is supposed to be tight.
   e) Be sure to explain to the athlete what you are doing through each step and why. This educates the athlete to quicker troubleshoot any problems that may occur with the helmet.
   f) The helmet should be 1" to 1 ½" above the eye brows and fit snugly around circumference of the head.
   g) Jaw pads should be touching the jaw and not the ears. Youth players have thinner faces that high school or college players and as a result must wear relatively wider jaw pads to prevent the helmet from moving laterally on the head.
   h) The rear padding should be infirm but with comfortable contact with the head.
   i) Reference the USA Football app or website for additional information about helmet fitting.

Chinstrap

- The chinstrap simply keeps the helmet on the head while playing; it is not a means to adjust the fit of the helmet.
- With the cup centered on the chin, the front or high should first be adjusted and buckled followed by the rear or low hook straps. There should be equal tension on all the straps.
- The upper snaps go under the face mask and never are unbuckled; the athlete will unbuckle only the lower snaps on the chin strap.
- The cup of the chin strap should be centered and should firmly against the chin

Ear / Jaw Pads

- Youth players have thinner faces that high school or college players and as a result must wear relatively wider jaw pads to prevent the helmet from moving laterally on the head.

Maintenance

- Inspect helmets before each use to insure they remain properly fitted and in good condition.
- Recheck the air-bladder suspension and helmet fit following the above guidelines.
- Fill the air bladder only while the helmet is in place on the athlete's head.
- Cool weather is one of several factors that can cause a helmet's air bladder to deflate.
- Facemasks may be bent with contact. Replace as needed.
- Check helmet shell for cracks and helmet hardware for rust. Replace screws as needed to insure the facemask can be removed easily in an emergency.

Putting on the Helmet

- The athlete should hold the helmet over the head with thumbs under the base of the helmet while squeezing the ear pads. Index fingers should go through the ear holes.
- The helmet should be pulled outward while pulling the helmet down over the head. If necessary the ear / jaw pads can be removed and snapped backed in after the helmet is on the head.
- Place front pad on forehead and roll the helmet back over & down on the head.

Taking off the Helmet

- Unbuckle only the lower chin straps (upper straps are not to be unbuckled)
- Thumbs should go under the base of the helmet & squeeze the ear pads. The squeezing motion creates clearance between the jaw / ear pads and the athlete's ears.
- Index fingers should go through the ear holes.
- The helmet should be pulled outward while pulling the helmet off the head. If necessary the ear / jaw pads can be removed and snapped backed in after the helmet is on the head.

E. Coach Proper Fundamentals – "Heads Up" & Emphasize Safety

Proper techniques reduce the risk of injuries.

At all practices coaches should teach proper football fundamentals particularly concerning tackling and blocking per "Heads Up' instructions. An essential coaching point is that players must not lead with their heads as a primary contact point and at all times keep their heads & eyes up. The Heads Up tackling techniques as prescribed by USA Football and terminology should be the only ones taught at NYO. Please refer to the USA Football website for the details on the five steps associated with Heads Up tackling. An overview of the Heads Up tacking techniques is summarized below and is available at: https://usafootball.com/resources-tools/coach/levels-of-contact/.

1) **Break down position -** Head up & eyes up, feet are slightly wider that shoulder width, knees are bent and hands are in a ready position.

2) **Buzz Steps – As the tackler nears the ball carrier in a break down position short choppy steps are taken.**
3) **Hit Position** – Immediately before impact a final downhill step is taken in preparation for impact. The helmet slides to the side of the ball carrier.
4) **Shoot –** This refers to the explosive upward action of the tackler's legs and hips.
5) **Rip -** With head & eyes remaining up the tackler should use an upper cut motion with both arms to lock up and lift the ball carrier slightly. The point of impact on the tackler's body is the front section of the shoulder pads, not the head. The lift serves several purposes: it keeps the tackler on his feet, prevents dives and misses; it breaks the runner's balance and makes the next point easier.

F. **Eliminate Unsafe Drills and Emphasize Safe Actions**– We are dealing with young players many of whom have never played before. Safety has to be a top priority. Only appropriate well organized drills should be used. If you have any question about a drill contact the Football Committee. Particularly early in the season it is also imperative that before each drill you provide very clear instructions about what is expected with an emphasis on safety.

1. Coaches need to verify helmets are properly fit and that mouth pieces are being used.
2. Explain to players the symptoms of concussions and that they are to communicate with coaches if symptoms are experienced.
3. NO full contact drills should begin with players more than three yards apart unless most of their motion is on an angle such as on a sideline drill.
4. Particularly early in the season it is also imperative that before each drill you provide very clear instructions about what is expected with an emphasis on safety.
5. Remind players that heads & eyes should remain up at all times
6. Remind players to never lead with their heads
7. Walk through new drills which will reduce confusion by players; confused players are more likely to be injured.
8. Coaches should pair players of similar size and ability for contact drills
9. Particularly early in the season the distance between players in hitting drills should be kept to a maximum of two yards.
10. Certain drills such as "bull in the ring" are old school and serve little benefit toward enhancing players' skills; eliminate these.
11. Most tackling in game conditions occurs on angles. Minimize drills that requires repeated head on tackling
12. Either avoid or minimize live coverage of kicks or punts during practices.
13. Players within Oklahoma drills should never begin further than 5 yards apart.
14. Quick whistles – Players must learn to play until the whistle so coaches must be diligent about stopping each play during practices with a whistle. During practice err on the side of stopping play with a whistle blown too quickly.
15. Never run drills where any player is defenseless or flat footed.

F. Lightning

As quickly as possible, announcements of game cancellations and field closings will be posted on the NYO website, distributed to coaches & parents by email and the telephone message at NYO's office will be revised with the weather update. Sometimes NYO will close the fields, even if rain & lighting have passed, in order to avoid damage to the turf. If bad weather develops closer to game time, game officials will determine whether or not games can be played. At all times, coaches need to use good judgment about bad weather concerning player safety and for not damaging wet fields. The app, "COACHSMART" provides real time information on the proximity of lightning strikes.

NYO is equipped with a lightning detection system. If this horn goes off with a single loud blast, leave the fields quickly. NYO is equipped with a lightning detection system situated above the press box overlooking the Bronco baseball field. If this horn goes off with a single loud blast, leave the fields quickly. You can monitor this system using the link: http://nyosports.thormobile1.net/mobile/ which you should keep on your phone. Dugouts and pavilions are NOT safe options. If the yellow light is spinning on top detection system that means the all clear has not sounded and all fields are closed. The system will provide three short blasts when it is safe to return to the fields. For further weather updates please reference NYO's office & website: (404) 256-1483 & www.nyosports.com.