GEAR UP FOR YOUR BEST SEASON YET

Our certified athletic trainers keep student athletes safe and healthy

SPORTS MEDICINE
888-716-WAKE | WakeHealth.edu/SportsMedicine
What is a certified athletic trainer?

The number of students playing sports is increasing. According to Centers for Disease Control, the number of students playing sports has increased to 7 million in high school and there are many others in middle school and summer sports leagues. The increased sports participation has brought a sharp rise in the chance of injury, as today’s student athletes are encouraged to become bigger, faster and stronger. For these reasons, certified athletic trainers are needed now more than ever.

Certified athletic trainers specialize in preventing and managing athletic injuries. They are some of the most comprehensively prepared medical professionals, with more than 70 percent having master’s or doctoral degrees (NATA 2016). All certified athletic trainers must pass a national certification exam and be licensed by the state.

Certified athletic trainers are uniquely qualified to:

► Help student athletes avoid injury
► Assess, manage and treat injuries if they occur
► Rehabilitate injuries with exercise therapy and nutritional counseling
► Develop and implement comprehensive emergency action plans for when serious injuries occur

Athletes in the Winston-Salem/Forsyth County School (WS/FCS) system now receive treatment and injury prevention guidance through the Wake Forest Baptist Health certified athletic trainer program.

Certified athletic trainers are an integral part of our Sports Medicine team at Wake Forest Baptist Health. On the playing field or court, they act as our “eyes and ears,” keeping athletes safe and healthy.

Dr. Heath Thornton
Medical Director, Athletic Training Outreach Program
Athletic trainers prevent injury by:

► Educating athletes about what they should do to avoid putting themselves at risk for injuries
► Planning and implementing comprehensive programs to prevent injury
► Applying protective or injury-preventive devices such as tape or braces
► Identifying unsafe field or environmental conditions
► Addressing nutritional concerns and reinforcing weight management strategies related to the sport

When an injury occurs, athletic trainers:

► Immediately evaluate injuries
► Work with student athletes daily to help maximize healing potential
► Design and implement rehabilitation programs that are sports and/or position specific and age appropriate
► Consider the physical, mental and emotional preparation of the injured athlete

What can parents do to promote healthy success for their children?

Nutrition: The “magic meal” does not exist.

One good meal before competition cannot make up for inadequate daily nutrition. Parents, students and coaches should know these guidelines:

► The best practice is to eat more carbohydrates for several days prior to competition.
► To avoid cramping, the pre-event meal should be low in fat, protein, fiber and anything else that makes the stomach and intestines work harder.
► Timing is important as athletes need to allow for proper digestion and absorption of the nutrients (performance “fuel”). One hour should be appropriate for a small snack of less than 200 calories, while a meal larger than 400 calories may require up to four hours for complete digestion. Carbohydrates take the least amount of time to digest and are readily converted into energy. Foods high in protein fall between fats and carbohydrates in length of digestion.
► Low impact, endurance athletes may tolerate residual food in the digestive system better than athletes participating in high impact, speed burst activities.

Eating for optimum performance

► Eat within one hour of waking up.
► Eat every three to four hours during the day.
► Eat within two hours following exercise.
► Choose a smart option for a pre-workout meal such as a granola bar, high carbohydrate sports bar or sports drink.
► Choose easy and inexpensive options for a post-workout meal such as a glass of chocolate milk, yogurt or a smoothie.

Sleep

Sleep is essential for every student. Guidelines are:

► Teenagers need 9–10 hours of sleep to function best.
► They should aim to fall asleep and wake up at approximately the same time every day.
► Sleep impacts cognitive performance, physical health and mental health, all critical for a high-functioning student.
► A good night’s rest is critical for adequate physical recovery from a workout, practice or game.
Conditioning and avoiding injury

Many injuries to young athletes can be prevented if the athlete is properly conditioned. As competitive levels increase in younger age groups, it is important that parents and coaches know about proper conditioning programs and when athletes should rest to prevent unnecessary and avoidable injuries. An athlete may be physically fit for one sport or position, but that does not mean he or she is adequately prepared for another.

10 PRINCIPLES OF CONDITIONING

1. WARM UP/COOL DOWN: Warm up with a light jog or swim a few easy laps to get blood flowing into the muscles. It’s easier to stretch a warm muscle than a cold muscle. After warming up, stretch the appropriate muscle groups, perform the activity, and then cool down with stretching.

2. MOTIVATION: Coaches should be creative with workouts and practices to keep athletes interested. It’s okay for training to be fun!

3. OVERLOAD: Work harder than normal to place stress on the body—within limits. The body will adapt and improve to those levels as long as the stress is not too difficult.

4. CONSISTENCY: Workouts must have a regular schedule to be effective.

5. PROGRESSION: Increase the intensity of a workout (more reps or weight) gradually and within the athlete’s ability over a period of time.


7. SPECIFICITY: Be specific in the drills to match the skill the athlete requires for the sport.

8. INDIVIDUALITY: Every athlete is an individual requiring individual attention.

9. MINIMIZE STRESS: It is important to push, but an athlete needs at least one to two days away from conditioning in order to rest.

10. SAFETY: To avoid injury, make sure the environment where the athlete is training is safe and that proper technique is taught and practiced.
What to do in case of an injury

At Wake Forest Baptist Health, our goal is to get an athlete back in the game. We work with patients to develop a plan focused on rehabilitation and preventing injuries.

No matter the performance level or age, every student athlete benefits from the care of an experienced sports medicine team. Our team provides board-certified orthopaedic and primary care sports medicine doctors, physical therapists and other specialists. A student athlete receives the same advanced techniques and high standards of care that we provide to college and professional athletes.

We offer a range of non-operative treatments, but if surgery is necessary, our doctors are trained in the latest minimally invasive techniques for faster recovery.

What if a doctor advises a student athlete to not play sports for a period of time?

Experts say an athlete should follow six steps before returning to play.

► **Allow healing:** Use ice on the area that is bruised and sore. Ice packs can help minimize swelling around the injury, reduce bleeding into the tissues, and reduce muscle spasm and pain. If a student athlete is on crutches or in a cast, he or she will not likely be tempted to begin exercising the injured area. If the student athlete insists on exercising to stay in shape while the injury heals, the doctor should be consulted to see if the activity puts stress on the injured area.

► **Restore full range of motion and function to the injured area:** Student athletes should do the exercises recommended by the doctor or physical therapist to restore range of motion. If student athletes fail to do so, they may never get back full range of motion.

► **Regain normal gait:** After a leg injury, many athletes find they have lost their usual gait — the normal way they walk. No student athlete should be allowed to return to sports if he or she is still limping. When student athletes are walking and jogging normally, they are likely ready to return to sports.

► **Regain muscle strength:** After resting from an injury, student athletes need to rebuild strength in the rested muscles. A doctor or athletic trainer should give student athletes weight-training exercises to build up the weakened muscles.

► **Regain endurance:** Most healthy athletes, especially children, regain endurance quickly. To do this, a student athlete should do activities such as swimming, running in the water, biking or rowing. Working out three times a week for 30 minutes each time should be enough.

► **Regain skills:** If student athletes are away from a sport for a period of time, their skills are not as sharp as they were before injury. Student athletes should work to regain their skills before playing competitively again.

► **Regain confidence:** When student athletes suffer an injury that keeps them out of sports for an extended period of time, they suffer psychological loss. It's important to be psychologically ready to return to a sport. An athlete who returns too soon risks re-injury, injury to a different part of the body, depression and/or decreased performance.
Concussion signs and symptoms

A concussion may occur when there is a forceful bump, blow or jolt to the head or body that results in rapid movement to the head. An undiagnosed, unrecognized or poorly treated concussion can significantly prolong recovery and may cause permanent brain damage.

Wake Forest Baptist Health provides expert care in the event of a concussion. We conduct extensive research on brain injuries that athletes suffer. This gives our staff important data that can more effectively diagnose, treat and respond to brain injuries.

Every high school athlete should be able to recognize the signs of a concussion and the steps to take after receiving one. Coaches, parents and fellow players must be vigilant in observing whether an athlete may have a concussion or a head injury. A concussion may not be immediately obvious because the victim does not always become unconscious.

Concussion signs observed by coaching staff, parents and players

► Appears dazed or stunned
► Is confused about assignment or position
► Forgets an instruction
► Is unsure of game, score or opponent
► Moves clumsily
► Answers questions slowly
► Loses consciousness (even briefly)
► Shows mood, behavior or personality changes
► Can’t recall events before or after the hit or fall

Concussion symptoms reported by athletes

► Headache or “pressure” in head
► Nausea or vomiting
► Balance problems or dizziness
► Double or blurry vision
► Sensitivity to light and/or noise
► Feeling sluggish, hazy, foggy or groggy
► Concentration or memory problems
► Confusion
► Does not “feel right” or is “feeling down”

Concussion action steps

► Consult the school’s certified athletic trainer or team physician
► Make the certified athletic trainer, team physician, parents, players and coaches aware of the injury
► Get written permission to return from a medical practitioner trained in the field of concussion management

Often, symptoms will worsen over a matter of days, and it is common for new symptoms to appear in the days following the injury. Symptoms may also worsen when the brain is stressed, as when the student athlete is doing schoolwork or participating in a physical activity.
GO WHERE THE ELITE ATHLETES GO

We regularly treat college and professional athletes and dancers. The following universities and sports teams have chosen us for their health care.

► Wake Forest University Demon Deacons
► Winston-Salem State University Rams
► Winston-Salem Dash
► UNC School of the Arts
► Winston-Salem Open
► Salem College

Same-day/next business day appointments: 336-716-WAKE (9253) | WakeHealth.edu/SportsMedicine
Our services

► Sports Injury evaluation and treatment
► Return-to-play management
► Concussion care
► Nonsurgical treatments
► Arthroscopy
► Single-portal arthroscopy
► Injection therapies
► Minimally invasive surgical repairs
► Sports physicals
► Sports cardiac clearance in young athletes
► Pediatric sports medicine
► Women’s sports medicine
► Management of medical conditions in athletes (diabetes, asthma, illness)
► Dermatology concerns of athletes
► Sports psychology
► Sports nutrition
► Musculoskeletal imaging and diagnostic imaging

Physical therapy

► Injury prevention and training
► Sports conditioning and athletic training
► Bicycle and running analysis
► 2-D motion analysis for a variety of sports
► Postoperative sports-specific rehabilitation
► Biomechanical evaluation and orthotics
► Dry needling
► Manual therapy
► Golf evaluations and injury rehabilitation (Titleist Performance and Golf Fitness-certified therapist)

Massage therapy

► Swedish massage
► Deep tissue massage
► Sports massage
► Therapeutic massage
► Neuromuscular massage
► Trigger point therapy
► Myofascial release
► Reiki/healing touch
► PNF and ALS stretching

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Offering platelet rich plasma (PRP) therapy

Platelet-rich plasma (PRP) therapy has been available for years and is becoming a more common treatment for arthritis and various tendon and ligament issues.

During PRP therapy, blood is drawn and spun in a centrifuge, a process that separates the various components of the blood. This isolates the platelets, a solid component in the blood, from other blood cells. The platelet-rich solution is then injected back into the body.

Pediatric expertise

When a child is complaining of pain after sports practice, make sure they see one of our pediatric orthopaedic experts. Wake Forest Baptist pediatric specialists are trained to care for children with broken bones, sprains and other injuries. They know that kids aren’t “little adults” and account for how children grow.

Pediatric ED

Our Pediatric Emergency Department is the only Level 1 Pediatric Trauma Center in the region. Our staff has received highly specialized training in caring for children experiencing any type of pediatric emergency. We are located at Wake Forest Baptist Medical Center on Medical Center Boulevard, Winston-Salem. Open 24 hours a day, 7 days a week.

Leaders in sports medicine treatment

As an academic medical center, we are training tomorrow’s leaders in sports medicine treatment and care in our fellowship programs. Our sports medicine physicians are experts in their field. Most hold subspecialty certification in Orthopaedic Sports Medicine from the American Board of Orthopaedic Surgery.

Many of our sports medicine experts participate in leading-edge research to find better treatment sports injury treatment options.

For example, they are investigating ways to rebuild the meniscus and are exploring tissue engineering to repair cartilage defects, along with participating in the nation’s largest study evaluating injuries in runners.
How parents can help their kids beat the heat

According to the Centers for Disease Control, it is estimated that 240 people die each year in the United States of heat-related illness. Heat stroke is ranked third in cause of death (behind head and neck injuries and heart conditions) of U.S. high school athletes. This becomes an even greater concern in younger athletes.

How to recognize heat-related illness

Kids are susceptible to heat-related illness because their small bodies generate more heat than their few sweat glands can handle. Plus, they don’t always drink enough to replace the fluid they lose in sweat, leading to dehydration. Here are signs and symptoms for the most common heat illnesses:

► **Heat cramps**: Painful leg or stomach cramps are caused by dehydration and a loss of minerals. Massaging tight muscles helps relieve the pain. However, if pain persists for an hour, get medical attention.

► **Heat exhaustion**: Fatigue, headache, nausea, and pale or clammy skin indicates a child is becoming seriously overheated. If symptoms last more than an hour despite your efforts, get medical attention.

► **Heat stroke**: If a child is disoriented, has hot dry skin, a rapid pulse or is unconscious, his or her temperature-regulating system has failed. Core temperature may even rise to 106 degrees. Call for emergency help immediately.

► Find more information on how to protect your child from a heat related illness at cdc.gov.

What should be done?

The basic first aid for heat cramps and heat exhaustion is to cool the athlete as quickly as possible. Fluid replacement by drinking water or a sports drink is the first step. Cool the athlete rapidly by moving him or her to a cool location (shade, air conditioning, etc.), remove sweat saturated clothes (if appropriate), and apply cold towels/water/ice to the athlete’s body. If heat cramps or heat exhaustion go untreated for too long, the condition can gradually progress to a full blown case of heat stroke.

Heat stroke is a medical emergency and Emergency Medical Services (911) should be contacted immediately. Emergency Services should transport the athlete to the nearest hospital for specialized treatment. While waiting, bring the athlete indoors and sponge him or her in cool water or put them in a tub of cool water. Do not give fluids.

How can heat illness be prevented?

There are several ways to prevent heat illness with athletes:

► Athletes should gradually acclimate or adjust to the heat. A graduated conditioning program should be implemented.

► Athletes should wear light-colored, lightweight athletic clothing. (Darker clothes attract more heat.)

► Water breaks should be taken at least every 15 to 30 minutes (every 10 minutes in more humid weather). Encourage athletes to drink water even if they are not thirsty.

► Modest salting of food at meals can help to replenish sodium lost due to sweating.

► Identifying more at-risk athletes (i.e. those who are overweight, out of shape, seem to sweat less) is also important to help prevent heat-related illnesses.
Our Sports Medicine team

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Scientists at Wake Forest Baptist Health have developed special technology that measures the intensity of impacts to football players’ heads. This technology is known as Risk Weight Cumulative Exposure and works by placing sensors in the helmets of football players. Researchers study the players and evaluate how probable an injury is when different intensities of impacts are received. These helmets help to identify a concussion that may otherwise have gone unnoticed. Joel Stitzel PhD, senior author of the study, said, “We know that young players are constantly experiencing low-level hits that don’t cause visible injury, but there hasn’t been a good way to measure the associated risk of concussion.”

A study funded by the Childress Institute of Pediatric Trauma used this technology to measure the impacts of 40 high school football players throughout the course of a season. Research on football-related head impacts have mainly been done on college players, so the results of this study are noteworthy for young athletes. “By recording more than 40,000 head impacts, this study represents the largest collection of biomechanical head impact data for youth football to date,” said study author Jillian Urban, PhD.

Because concussions can occur in all sports, our research has expanded beyond high school football. Researchers are now monitoring soccer players by placing sensors in their mouth guards. You can enroll your child in this free study, which will help our researchers discover new ways to improve sport safety for young athletes. Participants will undergo brain imaging procedures that are done before and after the season. These procedures detect damage that could have gone unnoticed and are free of charge for participants. For more information, call 336-716-5416.