



Gear up for your *best season yet*

Sports Medicine Guide

Orthopaedics & Sports Medicine
336-716-WAKE • WakeHealth.edu/SportsMedicine



Expert Orthopaedic & Sports Medicine Care

Our experts at Atrium Health Wake Forest Baptist provide leading specialized care for adults, children and athletes. Whether it's a broken bone, chronic pain or an ACL tear, our team will quickly get you moving again. While you don't have to be an athlete to see one of our specialists, we will keep you and your family active and minimize recovery time and possible future injury.

No matter the performance level or age, all athletes and active individuals benefit from the care of an experienced sports medicine team that works with patients to develop a plan to prevent, treat and rehabilitate injuries. Each of our patients receives the same advanced techniques and high standards of care that we provide to over 35 pro, collegiate and youth sports organizations.

We offer a wide range of nonsurgical treatments. If surgery is necessary, our doctors are trained in the latest minimally invasive techniques so you can recover faster and get back to doing what you love.

Our services

- Injury evaluation and treatment
- Return-to-play management
- Sports cardiac clearance in young athletes
- Concussion care
- Nonsurgical treatments
- Injection therapies
- Platelet rich plasma (PRP) therapy
- Arthroscopy
- Minimally invasive surgical repairs
- Comprehensive surgical care
- Cartilage restoration procedures
- Performing Arts Medicine
- Musculoskeletal imaging and diagnostic imaging
- Management of medical conditions in athletes (diabetes, asthma, illness)
- Pediatric and adolescent sports medicine
- Women's sports medicine
- Sports psychology
- Sports nutrition
- Sports physicals
- Fitness assessments
- Massage therapy
- Hip preservation and arthroscopy
- Osteotomy and joint preservation
- Shoulder replacements

your local team doctors

We're the official team doctors and sports partners of more than 35 pro, collegiate and youth sports organizations throughout the region.



Physical therapy

- Injury prevention and training
- Sports-specific rehabilitation
- Sports conditioning and athletic training
- Bicycle and running analysis
- 3-D motion analysis for a variety of sports
- Biomechanical evaluation and orthotics
- Dry needling / manual therapy
- Cupping therapy
- Kinesio taping
- Golf evaluations and injury rehabilitation (Titleist Performance and Golf Fitness-certified therapist)
- Blood flow restriction therapy
- Ultrasound

Conditioning and avoiding injury

As competitive levels increase in youth sports, it is important that parents and coaches know about proper conditioning programs and when athletes should rest to prevent unnecessary and avoidable injuries.

10 PRINCIPLES OF CONDITIONING

1 WARM UP/ COOL DOWN Warm up with a light jog to get blood flowing. Cool down by stretching after your workout. 	2 MOTIVATION It's OK if training is fun. Be creative with workouts and practices to keep interested. 	3 OVERLOAD Work harder than normal to place stress on your body (within limits). Your body will adapt and improve. 	4 CONSISTENCY Create a set schedule for your workouts to be effective. 
5 PROGRESSION Gradually increase the intensity of your workout over a period of time. Keep in mind your limits. 	6 INTENSITY Work hard for shorter periods rather than longer periods of time. 	7 SPECIFICITY Be specific in your drills to match the skills needed for your sport. 	8 INDIVIDUALITY Every athlete is an individual. Each athlete needs individual attention! 
9 MINIMIZE STRESS Athletes need at least 1 to 2 days of rest during the week. 	10 SAFETY Make sure the environment where you are training is safe and learn proper techniques to avoid injury. 		

Many injuries can be prevented if you are properly conditioned. An athlete may be physically fit for one sport or position, but that does not mean they are adequately prepared for another.

The basics of hip pain and sports

Sports are great for everything from exercise to entertainment, but they can also come with physical consequences for many athletes. Even some of the strongest areas of the body can be injured or damaged while playing sports, and even some of the greatest athletes in the world get exposed to these injuries if they're not properly prepared.

One of these areas is the hip, which is generally one of the strongest and most stable parts of the body — but can still be at risk while playing sports. The hip is what's called a "ball-and-socket" joint: the bone has a wide range of movement that's cushioned by cartilage every time it moves. Over time, problems can develop, especially for athletes putting a lot of strain on the hip joint.

Causes of hip pain in athletes

- Arthritis or osteoarthritis (also known as "wear and tear" arthritis)
- Cartilage injuries
- Muscle strains in the thighs, lower back or groin (all muscles which affect hip functions)
- IT band syndrome (tightness in ligaments)
- Hip pointer (bruise or contusion)
- Stress reaction or fractured bones
- Bursitis (inflammation of joint cushions)
- Cartilage or ligament tears
- Tendinitis
- Labral tears
- Femoroacetabular impingement (FAI)

A specific injury or accident can cause many of these conditions. Some hip pain, though, is the result of constant movements that wear down the joints over time.

Symptoms of hip pain

Like in many areas of the body, it's common for hip pain to cause problems elsewhere — as you naturally try to compensate for the pain in one area, it puts too much strain on another area. At other times, it's possible for pain in other areas to also affect the hip.

The main areas where you may feel specific pain with hip problems are:

- Hip joint, both inside and outside
- Thighs
- Groin
- Buttocks



Hip Pain Treatment

Many cases of hip pain can be treated at home and monitored under a doctor's care. Some cases, though, are serious enough to require significant medical attention.

At home:

The main goal when treating hip pain is limiting swelling and other painful symptoms — and at the same time, helping prevent the larger issues these can cause. Some good methods include:

- Ice: For 15-to-20-minute intervals, wrapped in a towel (never apply it directly to skin). This helps reduce inflammation and soothe the joints.
- Pain medication: Basic Tylenol or another over-the-counter pain medication is often enough to help reduce pain and inflammation.
- Equipment: Shoes, padding and any other sporting equipment should be up to date, and should be replaced if they aren't.
- Stretching and low-impact cardio: Helps keeps joints healthy and agile.
- Physical therapy: Helps increase motion.
- Nutrition: Include a diet high in vitamin D and calcium.
- Posture and mechanics: Eliminating harmful movements you may make hundreds of times in a given sporting event can go a long way.

Other options:

For certain cases of hip pain, including arthritis or injuries such as fractures, labral tears or tendon tears, further medical assistance may be necessary. Surgery is one option. If you're experiencing severe pain that negatively impacts your quality of life, or if at-home treatments don't bring relief, consult with your doctor. He or she will work with you to create a treatment plan that works best for you.

Steroid abuse in high school and college athletes

High school and college students are young and impressionable. Driven by concern about their body image or inspired by mainstream athletes, they start taking steroids—or anabolic steroids in particular—that mimic testosterone hormones and their effects. It helps them build strength and endurance, which they require to boost their performance in various sports.

What starts off as a simple step to increase physical endurance ends up in a mess, with harmful side-effects such as mood swings, sleeping disorders, paranoia and fertility issues. Yet, steroid abuse is rampant in the locker rooms even though they were designated as a controlled substance by the U.S. government in 1990. This infographic aims to educate the masses about the perils of steroid abuse in high school and college athletes with the help of some important facts and figures.

Dangers of Anabolic Steroids

The Good, the Bad and the Ugly

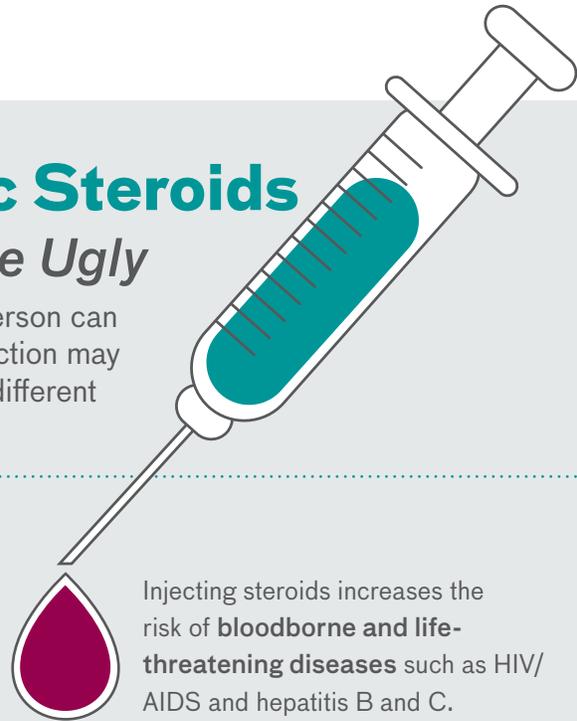
Anabolic steroid dependence occurs when a person can no longer function without using the drug. Addiction may be difficult to detect because steroids present different symptoms from other commonly abused drugs.

Steroid abusers take as much as

10–100

times the **prescribed medical dose**.

Such abuse may cause a hormonal imbalance and other severe physical and mental side effects.



Injecting steroids increases the risk of **bloodborne and life-threatening diseases** such as HIV/AIDS and hepatitis B and C.



Illicit steroids can often be **contaminated**, posing a serious health threat to buyers and abusers.

Steroid abuse in sports may lead to a loss of playing privileges, may adversely impact chances of earning an athletic scholarship, and can lead to loss of identity and lack of peer support.



When steroid use stops, co-occurring addictions are common, and symptoms may occur that require steroids **withdrawal treatment**.



Treating steroid abuse, addiction and dependence is manageable and safe.

The benefits of playing multiple sports

Sports play an important role in many children's developmental years. Participation in athletics can help children learn motor control, patience, teamwork, listening skills and the benefits of hard work.

Sport specialization is defined as year round training in a single sport, excluding other sports. There are trends today that suggest many young athletes are beginning sport specialization prior to high school. Many young athletes are turning toward sport specialization with a goal of achieving elite success. Recent suggestions and recommendations advise athletes to avoid sport specialization before adolescence. These recommendations to avoid sport specialization are aimed at keeping young athletes healthy and preventing injuries.

Why play multiple sports?

Participation in multiple sports can improve coordination and muscle control. Performing a variety of movements, such as during varying sports, can help developing athletes gain proper skills. These skills may provide prevention against injury. For example, baseball players are required to run (sprint), overhead throw, squat, and lunge during play. In contrast, soccer players are required to run (longer duration with sprinting included), kick and pivot. Therefore, participation in both baseball and soccer would place different demands on a young athlete's musculoskeletal system.

Growing athletes benefit from the development of all the components of neuromuscular control such as

endurance, power, strength, agility, speed, flexibility and stability. Underdevelopment of any of these areas can lead to deficits or asymmetries within the athlete, which may place them at increased risk of injury during future sport participation.

In addition to allowing for better development of the musculoskeletal system, participation in multiple sports can avoid overuse of any one muscle group. If we use the example of the baseball and soccer athlete again, participation in both sports can allow "rest" for certain muscles groups when involved in the other sport (ex: the shoulder and arm used to throw in baseball get a break when playing soccer). This rest can help to avoid overuse injuries in a young athlete.

Participation in multiple sports is beneficial for developing adolescent athletes. Overall, it is important to remember that sports participation provides many health benefits at all ages.

RECENT SUGGESTIONS AND RECOMMENDATIONS ADVISE ATHLETES TO AVOID SPORT SPECIALIZATION BEFORE ADOLESCENCE. THESE RECOMMENDATIONS TO AVOID SPORT SPECIALIZATION ARE AIMED AT KEEPING YOUNG ATHLETES HEALTHY AND PREVENTING INJURIES.



Tip on how to avoid overuse injuries in youth athletes:

- Emphasize skill development and fun during sports
- Avoid sport specialization until at least puberty
- Limit specialized training to less than 16 hours per week or do not exceed hours per week greater than the athlete's age
- Incorporate rest days into the routine
- Try to schedule months during the year where the athlete takes a break from their sport or participates in another sport

Performing Arts Medicine Clinic

(inside Orthopaedics & Sports Medicine – Stratford)

1901 Mooney St.

Winston Salem, NC 27103

Appointments: 336-716-3286

Whether you are a dancer, musician, vocalist or artist, our Performing Arts Medicine Clinic is designed to meet your needs. Our nationally renowned team of experts is one of very few in the country and includes Orthopaedic, Sports Medicine, Physical Medicine & Rehabilitation and ENT/Head & Neck physicians, as well as physical, occupational and speech therapists. Our experts have specialized knowledge, experience and training to meet the unique demands of performers and get them back to their peak performance. Many of our providers also have backgrounds in performing arts including former or current actors, musicians, dancers and artists.

Common conditions treated:

- Hip pain and snapping hip
- Foot and ankle pain
- Hand and wrist pain and carpal tunnel
- Tendinitis
- Stress fracture
- Bony stress injury
- Sprains
- Concussions
- Back pain in the dancer
- Focal dystonia
- Pointe-readiness
- OS trigonum
- Relative energy deficiency syndrome
- Singing and professional voice evaluations
- Vocal health, laryngitis, vocal strain, vocal fold scar, lesions, aging voice problems



Elise Franchi
of Charlotte, N.C.

Elise Franchi, a young trainee with the Charlotte Ballet Pre-Professional Program, was terrified when she suffered her first major injury, a partially torn labrum in her left hip. Drs. David Popoli and Allston Stubbs IV at Atrium Health Wake Forest Baptist's new Performing Arts Medicine Clinic helped Elise recover quickly and improve her performance. Their care strengthened her hip, providing better stability and balance, and their state-of-the-art analysis helped her to correct motions and avoid future problems.

Same-day/next-day appointments often available: [336-716-WAKE \(9253\)](tel:336-716-WAKE) | WakeHealth.edu/SportsMedicine

Concussions

Concussion facts

Concussions can happen to anyone at any age during any activity that jars the brain. All athletes are at risk, and it is estimated that more than 140,000 high school athletes across the U.S. suffer a concussion each year.

Concussions are not limited to contact sports — falls are the leading cause of non-sports-related concussions — and they can also occur from any incident that causes the head and brain to move back and forth rapidly (whiplash).

Concussion Q & A

Facts that parents need to know

Q: What is a concussion?

A: A concussion is a brain injury that results in a temporary or in some cases lasting disruption of normal brain function. A concussion occurs when the brain is violently rocked back and forth or twisted inside the skull as a result of a blow to the head or body. Concussion symptoms may last from a few days to several months. Some may never go away. Concussions can cause symptoms that interfere with school, work, and social life.

Q: If my child has a concussion, will s/he be OK?

A: The vast majority of children who have sustained a concussion make a complete recovery with no complications. If your child has suffered a possible concussion, the most important thing you can do to maximize his/her chances of a full recovery is to seek immediate medical treatment from a doctor trained in concussion management. Always follow prescribed recommendations for rest, monitoring, and follow-up care. And, if your child plays sports, be sure to adhere to the restrictions and gradual schedule for return to play outlined by the doctor.

Q: Is there any way to prevent concussions? Do helmets and mouth guards help?

A: Nothing can prevent a concussion. Helmets were designed to guard against skull fractures and catastrophic brain injuries, not concussions. Mouth guards, although very good at protecting the mouth and teeth, do not lower the risk of concussions.

If your child has already suffered one concussion, the best way to prevent another is to make sure s/he has recovered fully (getting plenty of mental and physical rest) and been cleared by a doctor before returning to his/her normal routine, including athletics.

Q: How can I tell if my child has sustained a concussion?

A: Concussions can have many different symptoms. Some children experience many symptoms, whereas others have only a few. Every concussion is different!

Things you might observe or your child might experience following a concussion:

Signs Observed by Others	Signs Reported by Athletes
Moves clumsily (altered coordination)	Just not feeling right or feeling down
Exhibits balance problems	Headaches or pressure in head
Loses consciousness (even briefly)	Nausea or vomiting
Less energetic	Double vision, blurry vision
Appears dazed or stunned	Sensitivity to light or noise
Seems confused	Feeling sluggish, fatigued, or groggy
Forgets plays or instructions	Balance problems or dizziness
Is unsure about game, score, opponent	Problems concentrating
Responds slowly to questions	Memory problems
Forgets events prior to hit or fall	Foggy or hazy feeling
Shows changes in mood or behavior	Difficulty falling or staying asleep

Concussion Q&A *continued*

Q: My child did not lose consciousness. Does this mean my child did not have a concussion?

A: No. A child can have a concussion without losing consciousness. In fact, very few children lose consciousness when they sustain a concussion.

Q: My child did not get hit in the head. Could s/he still have a concussion?

A: Yes, it is possible to sustain a concussion without being directly hit in the head. A concussion is most often caused by a direct blow to the head, but it can also result from body actions that snap the head forward or back, shaking the brain around in the skull hard enough to cause brain injury, such as a whiplash injury. Any action that results in the brain being bounced around can cause a concussion.

Q: It didn't appear that my child got hit that hard. Could s/he really have sustained a concussion?

A: Yes, a fairly light looking hit can result in a concussion, and a hit that appears to be hard or very forceful might not result in any symptoms at all. Many other factors affect the severity of injury (if any), including angle of hit, whether the athlete was prepared for the hit, etc.

Q: The coach pulled my child from the game after she collided with a teammate. She got up and stumbled and looked dazed, but said she felt fine except for a mild headache. Is it really necessary to take her out of the game?

A: Absolutely! If an athlete is suspected of having a concussion, s/he must immediately be removed from play, be it a game or practice. Continuing to participate in physical activity after a concussion can lead to worsening concussion symptoms, increased risk for further injury, and even death. Parents and coaches are not expected to be able to diagnose a concussion. That is the job of a medical professional. However, you must be aware of the signs and symptoms of a concussion, and if you or a coach is suspicious, then the child must stop playing: When in doubt, sit them out!

Q: Is a concussion always obvious right away?

A: Most of the time, signs or symptoms appear at the time of the injury. However, it's always possible that symptoms won't emerge until later (or that they will be subtle enough to be overlooked, especially if the child has also suffered a more visible injury such as a laceration). For this reason,

even if your child received immediate treatment from an athletic trainer, school nurse, EMT, or in the emergency room or urgent care, s/he must also see a concussion specialist as soon as possible. S/he should be monitored closely for the next few days.

Q: My child sustained a concussion. Should I take him/her to see a doctor?

A: YES. All athletes who sustain a concussion need to be evaluated by a health care professional who is familiar with sports concussions. You should call your child's physician and explain what has happened and follow your physician's instructions. If your child is vomiting, has a severe headache, or is having difficulty staying awake or answering simple questions, s/he should be taken to the emergency department immediately.

Q: Do I need to wake my child up every hour when s/he is sleeping?

A: No. Sleep is the best treatment for a concussion. A concussion affects how the brain works, so resting the brain as much as possible is necessary for recovery. Large amounts of sleep are normal. It is OK to let him/her sleep without interruption the night of the injury after evaluation by a health care professional, or if you have spoken with your child's physician and s/he does not think your child needs further evaluation in the emergency department. It is a good idea to track the amount your child is sleeping and report it to your medical professional.

Q: Is it okay to give my child medicine for his/her headache?

A: Yes and No. Relieving headache pain is certainly appropriate, but it does not replace the need for cognitive and physical rest if symptoms are present. Be aware that symptom improvement with medication does not mean that the brain has recovered. After a concussion is diagnosed, talk to your physician about the use of medication — including type of medication and dose — for headache pain and other symptoms.

Q: What signs indicate a need for immediate emergency attention rather than waiting to see a pediatrician or sports medicine doctor?

A: In the first 24-48 hours after the injury, you should watch your child very carefully. You should get immediate medical help if the intensity of your child's symptoms increase.

Signs for immediate emergency attention

Loses consciousness/can't be awakened
Has difficulty recognizing familiar people
Vomits repeatedly
Is very confused
Gets a headache that worsens, lasts for a long time, or is severe
Has trouble talking or slurred speech
Has weakness, numbness, trouble walking, or decreased coordination
Has a seizure (arms or legs shake uncontrollably)

Q: Does my child need to give up sports if s/he has suffered a concussion?

A: No. Athletes should not return to sports while still having symptoms from a concussion because they are at risk for prolonging symptoms and further injury. It is very rare that any child is told to give up playing sports after a single injury. However, if the recovery is quite prolonged (greater than 6 months), you should consult with a concussion specialist to further discuss the possible risks of return to playing sports. An evaluation with a concussion specialist should be considered in any child who has had more than one sports-related concussion.

Q: My doctor told my child to have mental rest. What exactly does “rest” mean? Can my child watch television, play video games, text, etc.?

A: Mental rest means avoiding activities that require the brain to work hard to process information. This includes critical thinking and problem solving activities such as schoolwork, homework, technology use, and driving.



Concussion Clinic

Atrium Health Wake Forest Baptist provides expert care for concussions. 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.



If you suspect that an athlete has a concussion, contact the **Atrium Health Wake Forest Baptist Concussion Clinic** where we have medical professionals trained in concussion management.

Contact: 336-716-WAKE



Follow these **seven** steps before returning to play:

- 1 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 you insist on exercising to stay in shape while an injury heals, you should consult your doctor to see if activity puts stress on the injured area.
- 2 Restore full range of motion and function to the injured area:** Athletes should do the exercises recommended by their sports medicine specialist or athletic trainer. If they fail to do so, they may never get back full range of motion.
- 3 Regain normal gait:** After a leg injury, many athletes find they have lost their usual gait (the normal way they walk). No athlete should return to sports if they are still limping. When athletes are walking and running normally, they are likely to be ready to return to sports.
- 4 Regain muscle strength:** After resting from an injury, you need to rebuild strength in the rested muscles. A sports medicine specialist can give you weight-training exercises to build up weakened muscles.
- 5 Regain endurance:** Most healthy athletes, especially children, quickly regain endurance. To do this, the 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.
- 6 Regain skills:** If you are away from your sport for a period of time, your skills will not be as sharp as they were before the injury. Work to regain your skills before playing competitively again.
- 7 Regain confidence:** When you suffer an injury that keeps you out of your sport for an extended time, you may suffer psychological loss. It's important to be psychologically ready to return to your sport. An athlete who returns too soon risks re-injury, injury to a different part of the body, depression and/or decreased performance.

Success Stories



Michael Herzberger
of High Point, N.C.

Two-sport high school athlete **Michael Herzberger** felt his knee pop as he jumped into the pool to start a race, leading to weeks of knee problems. Doctors advised that he might never fully recover. Then he visited Dr. Brian Waterman with Atrium Health Wake Forest Baptist who removed broken bone fragments from Michael's knee. Michael recovered quicker than expected, becoming a conference champion swimmer and earning all-state in soccer.



Victoria Moser
of Greensboro, N.C.

A torn ACL resulting from a noncontact injury caught Greensboro's **Victoria Moser** by surprise, but she wouldn't let it derail her dream of playing collegiate soccer. Her family sought care from Dr. Steve Lucey, a former Clemson soccer player, who performed ACL patellar tendon graft reconstruction surgery that will allow Victoria to continue her career at Virginia Tech.

Christina and **Gonzalo Chavez**, siblings and competitive soccer players, were heartbroken when they suffered torn anterior cruciate ligaments (ACLs) in their knees just months apart. They had seen other doctors but wanted the sport-specific expertise at Atrium Health Wake Forest Baptist. Our orthopaedic and sports medicine team reconstructed their ACLs and guided each of them through recovery and back to playing soccer again. "Our experience has been truly amazing, they've helped our whole family stay active" says their mother, Yadira.



Christina and Gonzalo Chavez
of Pilot Mountain, N.C.

Greensboro's **Jahvaree Ritzie** is continuing his football career at UNC Chapel Hill, but only after he and his mother, Kindra, sought a second opinion on his injury our experts reassured them that Jahvaree could get back to full strength and resume playing, which he did three months later. "They saved my son's emotional well-being and got him back to his peak. I can't say 'thank you' enough," said Kindra.



Jahvaree Ritzie
of Kernersville, N.C.

Leaders in sports medicine treatment and research

Atrium Health Wake Forest Baptist is one of the highest performing orthopaedic groups in the country and our sports medicine doctors are experts in the field. Our team treats professional to beginner athletes and includes pediatric and adult specialists. Most hold subspecialty certification in Orthopaedic Sports medicine from the American Board of Orthopaedic Surgery.

As an academic medical center, our physicians train tomorrow's leaders in sports medicine through our fellowship and residency programs. Many of our sports medicine experts also participate in leading-edge research to find better sports injury treatment options. For example, they are investigating ways to rebuild the meniscus, exploring tissue engineering to repair cartilage defects, and leading one of the largest concussions research initiatives in the country and the largest study evaluating injuries in runners. They also conduct clinical trials that might help provide crucial treatments and cures for common sports medicine injuries. Find out more at WakeHealth.edu/BeInvolved.

Offering 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. PRP therapy helps regeneration of natural tissue and decreases the likelihood of repeat injuries. PRP therapy also helps patients who have tried traditional treatments with minimal success as well as people who want to avoid or postpone surgery.

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 your 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, Medical Center Boulevard, Winston-Salem. Open 24 hours a day, 7 days a week.

What is a certified athletic trainer?

The number of students playing sports has increased to over 8 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.

Each high school has a dedicated Wake Forest Baptist athletic trainer that keeps student athletes safe and healthy. Athletic trainers work with the coaching staff, school nurses, physical therapists, athletic administrators, parents and Wake Forest Baptist sports medicine specialists to provide expert level care to student athletes.

Atrium Health Wake Forest Baptist certified athletic trainers:

- Evaluate, treat and rehabilitate injuries and athletic-related illnesses
- Recognize and evaluate head injuries and concussions
- Provide acute, emergency and on-field care
- Design and implement injury prevention programs
- Understand general medical conditions, disabilities and health and wellness
- Know how nutrition can help injuries and illnesses
- Prepare athletes for practices and games
- Monitor field, environment and weather conditions (e.g., heat index and lightning)
- Attend all home athletic events, matches and games (including practices)
- Develop return-to-play programs for injured athletes
- Communicate with physicians, parents, and coaches about injuries
- Develop emergency action plans for schools



Athletes in the Winston-Salem/Forsyth County System, Wilkes County, Lexington City, Yadkin County, Alleghany County, Mt. Airy High School and some Guilford County schools receive treatment and injury prevention guidance through the Atrium Health Wake Forest Baptist Certified Athletic Trainer Program.

Transforming **ORTHOPAEDICS & SPORTS MEDICINE** care

Concussion research and technology

Scientists at Wake Forest School of Medicine have developed technology that measures the intensity of impacts to football players' heads. This technology, Risk Weight Cumulative Exposure, works by placing sensors in the helmets of football players. Researchers study the players and evaluate how probable an injury is when participants receive different intensities of impacts. These helmets help identify a concussion that may have gone unnoticed. **Joel Stitzel Jr., PhD, senior study author, 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 for Pediatric Trauma used this technology to measure the impacts of 40 high school football players throughout a season.

"By recording over 40,000 impacts, this study represents the largest collection of biomechanical head impact data for youth football to date," said study author Jillian Urban, PhD.

Dr. Urban's team has also recently conducted a study that compared head impact exposure in practice drills among six youth football teams, analyzing a total of 15,000 impacts during contact practices.

These findings are guiding changes in the way coaches and organizations structure their practice drills and game rules, ultimately improving safety in youth football."



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. Participants will undergo brain imaging procedures before and after the season. These free procedures will help detect damage that may have gone unnoticed. For more information, call **336-716-5416**.

State-of-the-art pitching lab

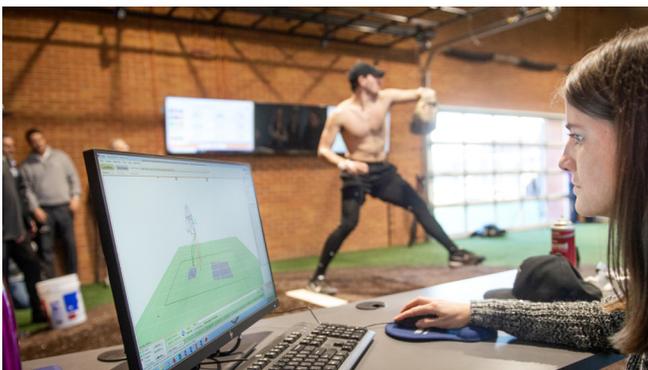
Thousands of young athletes seek medical treatment every year for elbow and shoulder injuries, with many occurring among baseball pitchers. To help identify the causes of many of these injuries and find ways to prevent them from occurring in the first place, Atrium Health Wake Forest Baptist sports medicine experts have partnered with Wake Forest University Athletics on a new state-of-the-art pitching lab. This biomechanics lab is one of the first of its kind in the country. The pitching lab uses 16 high-speed cameras and

motion-capture markers to record every detail of a pitcher's throwing delivery and follow through to provide instant feedback on several large video monitors. Wake Forest Baptist's director of biomechanics, Kristen Nicholson, PhD, will collect and analyze the data to help coaches and players identify potentially dangerous pitching mechanics and determine if adjustments in a player's throwing motion need to be made. This will help athletes optimize their performance and stay on the field.

"Helping athletes prevent injuries is a major focus of our sports medicine team, and we are thrilled to be able to bring the experience directly to the players," said Brian Waterman, MD, our team physician for Wake Forest's baseball team.

The lab will be available to youth baseball teams for comprehensive evaluation and analysis of their pitchers' mechanics and development of customized training programs aimed at reducing the risk of injury and enhancing performance.

For more information or to participate, **WakeForestPitchingLab.com**.



Sports Medicine locations

ASHEBORO

Sports Medicine & Joint Replacement of Asheboro
223 W. Ward St., Suite B
336-333-6443

BERMUDA RUN

Orthopaedics – Davie
329 NC Highway 801 N.
336-716-8200

GREENSBORO

Orthopaedics & Sports Medicine – Proehlific Park
(inside Proehlific Park, 2nd floor)
4517 Jessup Grove Road
336-702-5635

Sports Medicine & Joint Replacement of Greensboro
200 W. Wendover Ave.
336-333-6443

The Hand Center of Greensboro
2718 Henry St.
336-375-1007

HIGH POINT

Orthopaedics – Premier
4515 Premier Drive, Suite 300
336-802-2250

Orthopaedics & Sports Medicine – High Point
611 Lindsay St., Suites 100 & 200
336-905-6100

LEXINGTON

Orthopaedics – Lexington
510 Emergency Drive
336-249-2978

NORTH WILKESBORO

Orthopaedics – West Park
1917 W. Park Drive
336-903-7845

SALISBURY

Orthopaedics & Sports Medicine – Salisbury
(formerly Salisbury Orthopaedics Associates)
605 Grove St.
704-633-6442

WINSTON-SALEM

Orthopaedics & Sports Medicine – Stratford
1901 Mooney St.
336-716-8091

Orthopaedics & Sports Medicine – Medical Plaza Miller
131 Miller St.
336-716-8091

Sports Medicine – Piedmont Plaza
Piedmont Plaza 1
1920 W. First St., 3rd floor
336-716-4479

For more locations and a list of our providers visit WakeHealth.edu/SportsMedicine.



Need Urgent or Saturday care? Walk in or call ahead.

Orthopaedics & Sports Medicine – Stratford • 336-716-8091 • Saturday, 8 AM – Noon
Orthopaedics & Sports Medicine – Proehlific Park • 336-702-5635 • Saturday, 8 AM – 1 PM
Orthopaedic Urgent Care – Medical Plaza Miller • 336-716-8091 • Monday – Friday, 8 AM – 7 PM
Orthopaedics & Sports Medicine – Salisbury • 704-633-6442 • Saturday, 8 AM – Noon
Orthopaedic Urgent Care – High Point • 336-905-6100 • Monday – Tuesday, 1 – 6 PM,
Wednesday – Friday, 1 – 5 PM

**Same- or next-day appointments often available.
Call or schedule your appointment online.**

Orthopaedics & Sports Medicine

336-716-WAKE • WakeHealth.edu/SportsMedicine



Atrium Health
Wake Forest Baptist

Some photos were taken prior to the COVID-19 pandemic. Since that time, all patients, faculty and staff are required to wear masks at our facilities.