

A Guide For Parents & Coaches to Help Young Athletes Safely Excel in Sports

Rainbow Sports Medicine
www.rainbowbabies.org
216-983-SPORT or 216-844-RAINBOW





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Rainbow Babies & Children's Hospital

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Dear Parents & Coaches:

The Sports Medicine Division of Rainbow Babies & Children's Hospital and the Rehabilitation & Sports Medicine Division of University Hospitals believe strongly in the team approach. Our lineup of well-rounded specialists includes sports medicine physicians, physical therapists, orthopedic surgeons, athletic trainers and dieticians. We are just one part of the equation. It takes everyone working in unison — the athlete, parents, coaches, and medical staff — to achieve optimal health for your athlete.

We hope you will find this guidebook useful for the athletes in your family and the kids you coach. Our goal is to keep the young adult in your life safe and enjoying their athletic experience.

The Staff at Rainbow Babies & Children's Hospital
Rainbow Sports Medicine
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216-983-SPORT or 216-844-RAINBOW





Sports Injury Line 216-983-SPORT (7767)

The Rainbow Sports Injury Line allows athletes, parents and coaches immediate access to general information related to sports injuries.

Our services are available 7 days a week, 365 days a year. Dial 216-983-SPORT (7767). One of our athletic trainers or physical therapists will respond to your call to discuss your problems or concerns and make suggestions.

In case of emergency, your first call is always 911.



The Sports Medicine Team

Our physicians are part of the Sports Medicine Division at Rainbow Babies & Children's Hospital and the Rehabilitation & Sports Medicine Division of University Hospitals. These specially trained sports medicine physicians are dedicated to helping their patients achieve lifelong fitness and wellness. We want to encourage the prevention of illness and injury and minimize time away from the field, work or school. Rainbow Sports Medicine's coordinated healthcare approach includes: specialty physicians and surgeons, athletic trainers, physical therapists, coaches, dieticians, and of course, the athlete.

Rainbow Sports Medicine Division

Rainbow Sports Medicine cares for both competitive athletes and weekend warriors. Our physicians meet the highest standards possible in specialty training and are focused on the issues that affect athletes under the age of 25. Our Board Certified pediatricians have completed a two-year accredited sports medicine fellowship and have earned their Certificate of Added Qualifications in Sports Medicine.

Primarily, we treat musculoskeletal sports conditions. All surgical cases are referred to our orthopaedic colleagues. Common examples of problems we take care of include:

- Acute injuries (ankle sprains, muscle strains, knee and shoulder injuries and fractures)
- Overuse injuries (tendinitis, stress fractures and back pain)
- Growth plate injuries
- Mild traumatic brain injury (concussion) and other head injuries
- Athletes with chronic or acute illness such as infectious mononucleosis, asthma or diabetes
- Return-to-play decisions for the sick or injured athlete
- Athletes with eating issues, menstrual irregularity or bone density loss
- Nutrition, supplements, ergogenic aids and performance issues
- Specialized guidance for youth and women athletes
- Injury prevention for all ages
- Exercise guidance for patients who want to improve their fitness
- Pre-participation sports physicals

- Assessment of sport-specific needs in specialized populations such as Special Olympics athletes

Rehabilitation & Sports Medicine Division of University Hospitals

The Rehabilitation & Sports Medicine Division of University Hospitals (RSMD) provides state-of-the-art rehabilitation services throughout northeastern Ohio. With offices in Mentor, Willoughby, Chesterland, Chagrin Highlands, Cleveland, Westlake, North Royalton and Hudson, there is always an office close to home or school.

We know your time is important, so we've streamlined appointment scheduling. After calling our office, you will have an appointment within two business days, and your wait will never be greater than ten minutes. Our services are provided by a courteous, professional and knowledgeable staff. With a multitude of health-improving programs available from RSMD, athletic training, physical therapy and occupational therapy are just the beginning of an improved quality of life.

Our rehabilitation team is focused on returning young athletes to their sports. This entails sports-specific training such as our *Back-to-Throwing* program, which focuses on rehabilitating athletes that have to throw. We also offer full fitness evaluations and preventative rehabilitation programs for athletes. And we are excited about our new *Performance Enhancement Series*.

For more information on our special programs and information on how to contact our physical therapists, please visit www.rehab.uhhs.com.

General Medical Issues

Pre-Participation Physicals

The state of Ohio requires high school athletes to obtain a pre-participation physical every calendar year. Athletes involved in youth sports may also be required to get a pre-participation physical.

When 6 to 8 weeks before season begins

Where Primary care physician

Or contact Rainbow Sports Medicine Division at 216-983-SPORT to schedule a physical with a sports medicine specialist (No insurance accepted. \$45 flat fee.)

What is Involved A review of the athlete's medical history and a physical exam including a detailed musculoskeletal assessment.

Why Identify any reason to restrict the athlete and determine how to help rehabilitate old injuries

Medications

Many athletes require medication. For individuals with exercise-induced asthma, this usually means a rescue inhaler. Some athletes have chronic medical problems, such as diabetes, and may require blood sugar monitoring, insulin, or snacks during sports. Whatever the medical problem, an athlete who needs medicine on a regular basis should have it readily available for practices and game situations.

This means the medication should be kept on the sidelines or with an athletic trainer. It's important to teach our young athletes to be responsible for their own healthcare, and remind them to keep their medications within reach.

Emergency Plan for Sports Teams

An important part of sports safety involves the league and the coaches taking direct responsibility for their athletes' well being. This requires setting up an emergency plan prior to the start of the season and educating all coaches on the specifics of the plan.

See next page for an example of an emergency plan form.



General Medical Issues continued

Emergency Plan Example

I. Pre-Participation Exam (PPE) Forms

- A. Every athlete should have a completed PPE.
- B. All forms should be easily accessible to the coach and the athletic trainer. The coach should carry these forms to away games.
- C. The emergency contact information for each athlete should be highlighted on the PPE form.
- D. All athletes with higher risk conditions (e.g. bee sting allergies, diabetic, asthmatic) should be brought to the coach's attention at the start of the season.

II. Medical Emergencies

- A. Draw up a protocol for medical emergencies prior to the start of the season.
- B. Coaches and athletic trainers should be updated annually on any changes in protocol.
- C. In case of emergency, identify who should stay with the athlete and who should be responsible for getting help.
- D. Identify the person responsible for telling the parents of the problem.

III. Emergency Communication

- A. All games should be attended by a person who can call for emergency help (i.e. cell or land line phone).
- B. The person should be taught to identify their location when calling 911 (currently mobile phones go through their home area code emergency call centers).
- C. A list of emergency phone numbers should be posted in the gymnasium and at outdoor facilities whenever possible.
- D. Identify routes for ambulances to access playing fields and gymnasiums. Make sure these routes don't have any locked gates or other obstructions.

IV. Automated External Defibrillator (AED)

- A. All coaches should be trained in CPR with instruction on AED use.
- B. Make sure that all AEDs are well marked
- C. All coaches and athletic trainers should be aware of the AED location.

- D. Keep a list of available people trained in AED use.
- E. Ideally, the AED should be kept on the playing field during a game. AEDs are most effective if used within 4 minutes, so they should not be locked in the school. If more than one game is going on at a time, a central location should be designated and all teams informed where the AED is located.
- F. Identify the individual responsible for getting the AED in case of emergency.

V. Lightning

- A. Determine the easiest way to monitor lightning activity (handheld detector, use of radio, National Weather Service website).
- B. Establish a protocol for lightning (see section below on environmental hazards for further information). In general, all events should be stopped if lightning occurs within a 6-mile radius or it is seen in the sky. No competition should resume until 30 minutes after the last lightning was seen.
- C. Have a plan in place to move spectators, officials and athletes to a safe location quickly.

VI. General Hazards

- A. All playing fields should be checked for hazards prior to practices and games.
- B. Equipment should be checked for broken pieces prior to practices and games.
- C. Make water available at all practices and games, never restrict an athlete from water breaks.
- D. Identify how athletes will be monitored for heat exhaustion and dehydration during hot, humid days.
- E. Athletes with sickle cell trait should be restricted from all timed trials and excessive running drills during the first week of outdoor practices. It is believed that they may be at high risk for sudden death during these drills.

VII. Medical Protocols

- A. Determine a plan for caring for athletes with the following symptoms: Neck or back injury, unconsciousness, collapse, respiratory distress, bee sting (if the athlete has known allergy), heat illness, suspected fracture, tooth injury.

Common Sports Injuries & Illnesses

Children are not miniature adults. Because their bodies are in the process of maturing and changing, their bones, muscles and ligaments are easily overstressed. Growth plates, areas on the end of each bone where new bone is forming, make children more susceptible to severe musculoskeletal injuries. Poor coordination and poor balance can make a young child prone to suffer injuries when competing in sports.

Musculoskeletal Injuries

Musculoskeletal injuries occur in many forms. The most common classification method is acute versus chronic injuries. Acute injuries occur after a single traumatic episode. Prior to the injury, the athlete is performing at 100 percent. Acute injuries include sprains, strains, fractures, contusions, and occasionally growth plate injuries. Chronic injuries start as a relatively small problem, but never seem to go away. These are sometimes called overuse injuries.

Common Acute Injuries

Sprains

A sprain is an injury to a ligament, which attaches bone to bone. The injury may be a stretch, a partial tear or a complete tear. Ligament injuries commonly occur in the shoulder, knee, ankle and involve swelling and pain. PRICE (page 8) is the initial treatment of choice. Seeking the care of a physician is important for proper assessment, diagnosis and guidance for rehabilitation to enable the athlete to get back on the field.

Strains

A strain is an injury to a muscle. Strains occasionally cause some swelling and may even bruise if a muscle partially tears. Strains cause pain and can limit an athlete's ability to use the muscle effectively. If an individual has excessive swelling or bruising, or is unable to move the injured area without significant pain, they should seek the care of a physician.

Contusions

Another word for a bruise. Contusions can occur to the soft tissue such as muscle. There is usually

discoloration of the skin associated with the injury and pushing on the area is often painful. Sometimes deep contusions can occur to the bone. The bruising to the bone cannot be seen on the surface — even an X-ray is unable to detect these injuries. An MRI is needed to reveal the contusion of the bone. Sometimes the pain associated with these deep bone bruises can take weeks or months to resolve.

Fractures

Fractures are acute bone injuries. They may result in a bone breaking. Sometimes a fracture is obvious, but often it is not. Subtle signs can include swelling directly over a bone and an inability to move the area without pain. Care of a physician should be sought if any of these symptoms are present. An X-ray may be performed to look for a fracture, but sometimes more specialized tests such as an MRI are needed.

Dislocations

Dislocations occur when a joint comes out of socket. Fingers are the most common joints affected, however, shoulder dislocations are frequently seen. Rarely do hips, knees, ankles and elbows become dislocated. These are significant injuries, and they all require medical care in young athletes. Only a qualified physician should attempt to remedy a dislocation on the playing field. If the dislocated joint can not be put back into place, the athlete should be taken to the emergency room for appropriate evaluation. Even if a physician can put a joint back in, these athletes should obtain X-rays immediately since growing athletes are highly susceptible to fractures at the time of dislocation.

Common Sports Injuries & Illnesses continued

Common Chronic Injuries — Overuse

Tendinitis

Tendons connect muscle to bone and when inflammation of the tendon occurs, it is called tendinitis. This injury often happens at the start of a sports season or when there is another abrupt change in a workout routine. Common areas on tendinitis include the elbow (tennis elbow), the knee (jumper's knee), and the ankle (Achilles tendonitis). The affected area is often painful and hurts with use. PRICE (page 8) is a good initial treatment, but if pain lasts more than three days despite these measures, you should seek the care of a physician or call our Rainbow Sports Medicine specialists at 216-983-SPORT.

Stress Fractures

Stress fractures are different from acute fractures. Stress fractures result from a repetitive stress on an area of bone rather than one single event causing a break in the bone. Eventually the bone is unable to heal from the continuous stress and a crack occurs in the bone. These injuries are sometimes not apparent on an X-ray. Instead, an MRI or a bone scan is needed to find these injuries. Stress fractures should be suspected whenever there is a pain in a single location that lasts longer than a week. Common areas include the feet (naviculars and metatarsals), the tibias, the femurs, and the lumbar region of the spine (spondylolysis). Treatment depends on the injury location.



Growth Plate Injuries

Bones have areas of growth where muscles and tendons attach. These growth plates can become inflamed from overuse. Common locations include the front of the shin (where the inflammation is called tibial tuberosity or Osgood Schlatter disease); the heel, or calcaneus (Sever's disease); and the elbow, or medial epicondyle (Little League elbow). Sometimes poor flexibility and weakness contribute to the injury. Pain, weakness and occasional swelling will occur at the site. Continued activity will make the problem worse. If one of these injuries is suspected, see a doctor.

Occasionally, when there is a sudden, forceful muscle contraction, these growth plates can become acutely injured and pull away from the rest of the bone. These acute injuries are much more worrisome than the chronic growth plate injuries. Any growing child who feels or hears a sudden pop in their shoulder, elbow, knee or foot should see a doctor.

Initial Treatment of Sports Injuries

“PRICE”

Whether we like it or not, sports injuries do occur. Once they do, your quick action may prevent the injury from becoming worse. When an injury occurs, quickly “PRICE” it!

After you PRICE the injury, call the Rainbow Sports Medicine Injury Line at 216-983-SPORT (7767). Our certified athletic trainers are available 365 days per year and are ready to give advice and answer any questions related to sports. If you would like to see a Rainbow Sports Medicine physician, call 216-983-SPORT to set up an appointment.



- (P) Protection** Protect the injured area with splints, braces or crutches. Help the athlete to a safe area if they can be moved.
- (R) Rest** As soon as pain occurs, stop the activity immediately. Stay off the injured area as much as possible so the tissues can begin to heal themselves. Resting the area right away will often allow an athlete to return much sooner.
- (I) Ice** Ice the injured body part for the first 24 – 72 hours to decrease swelling. Crushed or cubed ice works best, as it will conform well to the body part. Keep the ice on for 20 minutes at a time. Initially, ice at least once an hour. Never leave ice on longer than 20 minutes. After 20 minutes, the body thinks it is being frostbitten and sends lots of blood rushing to the area, which defeats the purpose of icing in the first place. Never apply heat to a new injury unless recommended by a medical professional.
- (C) Compression** Compression helps limit swelling which would otherwise delay healing time. Keep a compression dressing (like an Ace bandage) around the body part. It should be wrapped snugly but not to the point of numbness.
- (E) Elevation** Elevating the injured leg or arm above the heart helps to drain excess fluid from the injured area. Elevate the injured area on pillows for the first 24 – 72 hours. Continue to prop it up while sleeping.

Injury Prevention for Young Athletes

Children's athletic injuries can often be prevented. Here are a few guidelines to use year-round.

Pre-habilitation

Instead of re-habilitation after a sports injury, practice "pre-habilitation." This means that athletes should get ready for the season with the right sport-specific training. Prepare muscles that will be commonly used in your sport by strengthening and stretching 9 – 12 weeks before the start of the season. A certified athletic trainer, physical therapist, strength and conditioning coach or sports medicine physician can help you set up an appropriate program for the off-season.

Pre-habilitation also should include re-habilitating any injuries from last season. Although an old injury may no longer hurt, there is a good chance that you may have some weakness or inflexibility that will make you more likely to get another injury this season. So if you suffered an ankle sprain and you haven't done any strengthening or balance exercise since the injury, now is the time.

10 Percent Rule

Following the 10 percent rule can prevent overuse injuries such as tendinitis and stress fractures. The rule suggests starting slow and increasing training by 10 percent per week. So if you normally run 20 miles per week, you may increase to 22 miles the second week. Then you may increase up to 24.2 miles the third week and gradually increase following this pattern.

Cross Training

Although basketball players like nothing better than to play pickup ball in the summer and soccer players are willing to play indoor leagues all winter, sometimes our bodies need rest. Year-round sport-specific training can put stress on a body. This means that even pitchers should take a break from pitching during the year. So how

do you stay in shape for the season? The answer is cross-training. This means picking an activity that will keep you in good cardiovascular shape but does not exert the same demands as your usual sport. Excellent choices are swimming, deep-water running and even biking. All are low-impact but keep you in tip-top shape. Also, it's safe to pick impact activities such as running, basketball or soccer — just pick something that focuses on different muscles than your primary sport. Instead of dedicating a month to cross-training, you can mix it into your usual training routine once or twice a week.



Flexibility

Muscles have a tendency to become strong and tight with exercise. Since bones grow faster than muscles, it is important that adolescents stretch as they progress through their growth spurts. Pay attention to maintaining muscle flexibility because muscles can become excessively tight and inflexible. In addition to keeping muscles flexible, stretching exercises can help reduce the chance of injury.

Injury Prevention for Young Athletes continued

Stretching Strategy

Muscles are designed to expand and contract with ease. If you do not work to keep your muscles pliable and flexible, they become more susceptible to sprains and strains (injuries to tissue surrounding the joints).



- 1 Warm-up (5 – 10 minutes):** A warm-up can include a brisk walk, jogging, stationary biking, elliptical or any sport-specific activity done at a slow pace.
- 2 Stretching should be performed immediately after the warm-up.** Perform at least one type of stretch on each major muscle group.
- 3 Make sure all stretches are done on both sides of the body (both arms, both legs).**
- 4 Repeat each stretch two to three times.**
- 5 Take your time. Don't hurry through stretching exercises.**
- 6 Hold each stretch for 30 – 60 seconds.**
- 7 Do not bounce!**
- 8 Concentrate on smooth, regular and relaxed breathing.**
- 9 Stretch at least daily to increase the length of the muscle if you are considered inflexible.**
- 10 Stretching after exercise delays the onset of muscle soreness.**

Choosing the Right Equipment



Most athletes are fit for their protective equipment at school. For equipment like mouth guards, footwear and athletic supporters, the athlete is usually responsible for these purchases. Unfortunately, athletes often forget to buy the necessary protective equipment. Try to stress the importance of quality, proper-fitting equipment and make sure all male athletes wear a cup for contact sports. Here is some information to help you select proper footwear, mouth guards, and helmets.

Footwear

Choosing the right running shoe is important to prevent injuries associated with motion control or flexibility. Footwear that is properly fitted can provide protection from overuse injuries, help

the athlete avoid blisters, and allow for a more enjoyable experience. Below are some guidelines in choosing the running shoe best suited for you.

- 1** Perform a wet test to determine if you have high arches, flat feet or normal arches. Place your feet in water and step onto a tile floor, concrete driveway or paper bag. Notice the foot formation. If you see only toes and heels, this indicates that you have a high arch. If the outline of the whole foot is visible, generally you are flat-footed. A curve in the middle of the foot with an outline of the toes and heels indicates a normal foot
- 2** Shop for shoes in the middle of the day or evening since the foot tends to increase in size as the day goes on.
- 3** Shop at a specialty running shoe store so that trained salespeople can help identify the type of shoe best suited for your feet.
- 4** Tell the salesperson the type of arch you have and the type of running you plan to do.
- 5** If you currently wear orthotics, bring them to the store.
- 6** Take your old running shoes with you so the salesperson can look at your tread pattern for clues about your running form.

If you want the shoe to last a long time, then don't use it for other activities. A running shoe should last 300 – 500 miles.

If a problem such as foot pain, shin splints, knee pain or hip pain develops, consult a physician or call our Rainbow Sports Medicine specialists at 216-983-SPORT.

Choosing the Right Equipment continued

Mouth Guards

Anyone who is playing a sport where dental injury may occur should wear a mouth guard. Athletes with braces or orthodontic appliances should strongly consider wearing a mouth guard for all sports. The American Dental Association (ADA) recommends a mouth guard should be worn for all contact or collision sports. These include:

Baseball	Basketball	Bicycling	Boxing	Equestrian
Field Hockey	Football	Gymnastics	Handball	Ice Hockey
Inline Skating	Lacrosse	Martial Arts	Racquetball	Rugby
Shot-put	Skateboarding	Skiing	Skydiving	Soccer
Softball	Squash	Volleyball	Water Polo	Wrestling

There are several types of mouth guards:

Stock This is an off-the-shelf mouth guard that is pre-formed and cannot be altered. They tend to be bulky and hard to breathe through. It is the least effective at protecting your teeth from injury.

Boil and Bite These are the most commonly used. After the guard is placed in hot water, you bite into it, imprinting your teeth into the rubber. If you bite too hard, the protection becomes too thin. (These guards lose their effectiveness over time because athletes tend to chew through parts of the mouth guard until it is too small to protect their teeth.)

Custom Molded These are the most effective you can buy. They are also the most expensive. Both sports medicine physicians and dental professionals recommend these mouth guards for protection. They provide a superior protection because they produce an exact fit to your teeth and maintain an appropriate thickness to the mold. Dentists make the custom mold of your teeth, and can even personalize the mouthguard by adding your name and team colors. If you have braces, this is the best choice for you. Contact your dentist for more information. Internet ordering is also available through companies such as O-Pro (online at www.opro.com). The cost of a custom mouth guard ranges from \$40 to \$60. However, it is still less expensive than treatment for serious dental injuries.



Choosing the Right Equipment continued

Helmets

Helmets are designed to prevent facial injuries and concussions. It is important that the helmets are fit, and not just handed out to athletes.

Redness on the forehead is acceptable when the helmet is removed. Whiteness indicates a loss of circulation. The phrase “firm but comfortable” describes how the helmet should feel. Don’t forget to recheck the fit throughout the season. And remember, proper blocking and tackling techniques are essential in injury prevention.



The following steps should be taken when fitting a helmet:

- 1** Always follow the manufacture’s guidelines.
- 2** Make sure the helmet has a current NOCSAE or CSA stamp.
- 3** Make sure the hairstyle resembles that which will be worn during competition.
- 4** Wet the athletes hair to resemble game conditions.
- 5** The cheek pads should contour the face and fit snugly. It is common for young players to have narrow faces so adjustments must be made.
- 6** The chin strap should have 4 straps and be of equal distance from both sides.
- 7** The helmet should sit 1- 1.5 finger widths above the player’s eyebrows.
- 8** The facemask should be 2-3 finger widths from the tip of the player’s nose.
- 9** The back of the helmet should cover the base of the skull.
- 10** The ear holes should match up with the center of the ears.
- 11** With the chin strap fastened, the helmet should not move independently from the head when the facemask is pulled up, down, left, right. The skin on the forehead should move with the helmet.

Head & Neck Injuries

Whether it's a hard hit in football, taking an elbow to the head in basketball or a collision at home plate, nothing is more frightening than having your athlete suffer a head or neck injury. If the athlete is unconscious, initial care should include basic CPR by a certified individual. This means making sure the athlete has an open airway, is breathing on their own and has a good pulse. Never move an athlete with a neck injury who's unconscious — it can cause irreversible spinal cord damage. If an athlete is unconscious, call for an ambulance so they can be taken to the emergency room. Even if an athlete regains consciousness, they should still be attended to with extreme caution.

Concussion

Any athlete who sustains a head injury and is not knocked out may still have a significant injury. Usually, they suffer a concussion, sometimes called a “brain bruise.” A concussion may or may not cause loss of consciousness. The injury always causes a temporary loss of normal brain function. By definition, these symptoms are reversible.

Common symptoms that occur include:

- Headache
- Nausea
- Vomiting
- Dizziness
- Poor balance
- Trouble with bright lights
- Trouble with loud noises
- Garbled speech
- Repetitive speech
- Irritability
- Feeling tired
- Difficulty concentrating
- Memory loss
- Inability to form new memories

Any person suspected of suffering a concussion should be immediately removed from competition. They should never be allowed to return to play the same day. Proper evaluation by a medical professional is required prior to an athlete's return.

New research has revealed that adolescents may suffer significant problems with concentration and memory even if their concussion symptoms clear up within 15 minutes. We also know that if a child returns too soon to contact sports, they are 10 times more likely to suffer another concussion. Coming back too early may place the athlete

at risk for a devastating injury called Second Impact Syndrome. This may occur when an athlete suffers a second concussion before they have recovered from the first. The result can be devastating, with half of these athletes dying suddenly and the other half developing irreversible brain damage.

Indications for sending an athlete to the emergency room include:

- Loss of consciousness
- Vomiting more than once
- Severe headache
- Significant worsening of other symptoms
- An abnormal neurological exam, performed by a medical professional
- If something just doesn't seem right to you

If an athlete seems to improve on the sidelines and does not develop any of the above problems, they can be sent home with a parent.

Parents should be instructed to do the following:

- Watch for any of the above signs or symptoms. If they develop, go to the nearest Emergency Room.
- Wake the athlete every two or three hours to check on them. This check should include asking the athlete some basic questions (what's your name?, what happened today?, where do you live?, etc.) Also, assess the athlete's ability to move all four extremities. Ask about their symptoms (are they better or worse?).
- See a qualified physician or Rainbow Sports Medicine specialist for assessment within 24 – 48 hours to determine their condition.

Head & Neck Injuries continued

Stingers

“Stingers” include stretching or bruising of the nerves in the neck, upper shoulder and arm. They typically happen in football or wrestling. The stinger symptoms of pain and weakness usually disappear within a few minutes of the injury. No athlete should be allowed to return to play if they have pain. Home therapy should include ice to the upper shoulder region to decrease any soreness, bruising or trauma. The athlete should continue to attempt to move and use the arm in all directions as much as possible to maintain the integrity and functioning of the stretched or bruised nerve.

Stingers cause a sharp burning sensation in one arm or the other. If symptoms are in both arms, this should be treated as a neck injury and a qualified medical professional should evaluate the athlete. Consider spine immobilization if neck pain and arm numbness occur together. If an athlete suffers more than one stinger per season or the symptoms don't resolve within 15 minutes, seek the care of a physician.



Broken Noses

Though most injuries to the nose are very bloody and very painful, few result in actual broken noses. Once the bleeding has been controlled and ice applied to the nose to decrease swelling and discoloration, the athlete's breathing needs to be monitored. If air is not getting through either nostril, a physician should be contacted immediately. Should bleeding continue, do not put a lot of cotton or gauze up into the nose cavity. Place a small roll of gauze in the tip of the nose with most of it extending out. This will prevent the gauze or cotton from being lost in the nose. Also, apply ice to the bridge of the nose.

Do not have the athlete hold the head back to prevent bleeding. The blood will drip to the back of the throat causing the athlete to cough, gag or feel sick. Have the athlete sit up straight or lean the head forward into the lap. Placing a piece of rolled gauze underneath the upper lip will sometimes assist in decreasing the bleeding from the nose. Have a physician rule out injuries such as concussions and facial bone fractures.

Common Skin Conditions in Athletes

Athlete's Foot

When feet are not totally dried after bathing or they sweat a lot, fungal infections may develop. The fungus causes the skin between the toes to become soggy, cracked and whitish in appearance, and often smells offensive. The condition is infectious and can spread from one individual to another when people walk barefoot in such places as locker rooms, showers and swimming baths. Common preventative measures include regular foot washings with soap and water followed by thorough drying, frequent sock changes and the use of shower sandals.

Treatment includes use of a fungicidal preparation. These are available over the counter as a spray or a powder. If one of these products fails to work after two weeks, seek the care of a physician.

Blisters

Blisters can be a major problem, especially early in the season. As a result of rubbing on the skin, fluid accumulates below the outer skin layer. This fluid may be clear, bloody or infected. Common preventative measures and treatment of an early blister include applying petroleum jelly to areas of friction, wearing two pairs of socks (with a good moisture-wicking layer next to the skin), and making sure that athletic shoes are broken in before the season starts. It is important to leave the blister covered and not to pick at it, which may lead to a skin infection. For blisters already torn open, clean the blister and surrounding tissue with soap and water. Use sterile scissors and cut the torn blister halfway around the perimeter. Apply antiseptic or mild ointment to the exposed tissue. Lay the flap of skin over the treated tissue. Cover with sterile dressing and check daily for signs of infection.

Abrasions

Abrasions are common conditions in which the skin is scraped against a rough surface and the top layer is worn away, exposing the deeper layers of

skin and blood capillaries. This can increase the probability of infection unless the wound is properly cleaned. If you do get an abrasion, you should thoroughly clean the area with soap and water. Scrubbing the area gently will decrease the chance of infection. It is important to clean away any dirt, gravel or sand. Next, apply a solution of hydrogen peroxide over the injured area if the wound was very dirty. Then put on an antibiotic ointment (such as Bacitracin or Triple Antibiotic Ointment) to keep surface moist and clean. Place a non-adhering steril pad (Teifa pad) or gauze over the ointment to keep the wound protected.

Common Skin Conditions in Wrestlers Impetigo, Staff Infections, Herpes and Ringworm

Skin condition, especially among wrestlers, can be a concern to parents, coaches and the athletes themselves. Skin conditions such as impetigo, staff infections, herpes and ringworm are highly contagious. They can show up as rashes, raised red areas and fluid-filled lesions. Any new rash that is round, slightly red, with raised edges could be ringworm. Impetigo and herpes can initially look like fluid-filled lesions, but eventually they scab over. Herpes lesions can be scattered and can appear anywhere on the body. All of these rashes are caused by direct contact with another infected athlete. In certain contact sports such as wrestling, this can be a major concern, since an outbreak can stop an athlete or an entire team from competing.

Wearing clean clothes to each practice and game as well as bathing with an antibacterial soap, and not sharing towels, razors or soap may prevent contagious skin infections. All equipment and mats should be cleaned each day. Any athlete who develops a rash should not be allowed to play until they are evaluated further. Contact your primary care doctor, a Sports Medicine physician or a dermatologist if an athlete develops a rash. Proper treatment may include a topical or oral medicine. Preventing spread of the infection is paramount to keeping athletes healthy.

Heat Illnesses

Prolonged exposure to high temperatures may lead to excessive fluid loss and severe heat illnesses. Types of heat illnesses range from mild to severe and include heat cramps, heat exhaustion and heat stroke.

Heat Cramps (Mild)

Cramps can be caused by excessive loss of salt or water, and from extreme sweating during strenuous activity at high temperatures. Treatment involves stopping the activity and immediately drinking electrolyte replacement fluids. Massage and stretching may be helpful. There is no evidence that applying ice to the cramping muscle will help.

Heat Exhaustion (Moderate)

Signs and symptoms of heat exhaustion may include fatigue, nausea, vomiting, weakness, anxiety, excessive sweating and feeling cool and clammy. Treatment consists of laying the athlete on their back with their feet slightly elevated in a shaded or cool location. Encourage the athlete to drink small amounts of water frequently. If the athlete becomes confused or loses consciousness, apply ice bags to the groin and armpits and transport immediately to the emergency room.



Heat Stroke or Sunstroke (Severe)

Heat stroke can lead to a permanent brain damage or even death. The only way to determine heat stroke is by measuring temperature rectally. The diagnosis of heat stroke requires a rectal temperature of 105° F or greater. But other symptoms may be a clue that the athlete is in trouble. They may develop dizziness and headache; become disoriented, confused or unconscious; having a seizure, develop hot, flushed skin; and even appear to have rapid breathing. Treatment includes immediate rapid cooling of the body. Lay the athlete in a cool, shaded area and apply ice bags to the groin and armpits. An ambulance should be called for immediate transport to the emergency room.



Hydration and Nutrition

Hydration Guidelines

With so many kids playing sports these days, proper fluid replacement is becoming even more important. The body must have enough water to remove heat from working muscles, produce energy and process food. Working muscle produces a lot of heat by burning energy. The harder and longer the exercise, the more heat produced and the more water lost from the body. As it loses water, the body can't produce energy as well or remove heat as efficiently.

Athletes should not rely on thirst as a good indicator of fluid needs as the thirst sensation occurs when the body is already 3% dehydrated. At this level, an athlete's performance will be compromised.

Athletes should avoid drinking soda pop, energy drinks, coffee, fruit juices and other drinks that contain high concentrations of sugar or caffeine.



Athletes should drink:

- Water
- An electrolyte replacement fluid (Gatorade, AllSport, PowerAde)

Fluid guidelines from the National Athletic Trainer's Association:

Before activity:

- Drink adequate fluid — ideally water — the day before
- Drink at least 16 oz. of water 2 – 3 hours before

During activity:

- Drink 7 – 10 ounces of water or electrolyte replacement fluid every 10 – 20 minutes
- Note: Electrolyte replacement fluid is needed only after one hour of exercise or more, or for individuals who are susceptible to heat cramping or heat illness

After activity:

- Drink 24 – 32 ounces of water or electrolyte replacement fluid
- Drink until urine is light yellow or clear
- Rehydrate completely within 2 hours of exercise

Hydration and Nutrition continued

General Nutrition Concepts

To maximize performance, an athlete needs to eat a varied and balanced diet during training. Emphasize making healthy choices for meals and snacks. Parents and coaches should discourage drastic weight fluctuations between sessions or during training. Do not recommend “quick fix” diets for weight loss or supplements for weight gain. A simple way to encourage all athletes to improve their diet is to eliminate fast food and soda pop.

Carbohydrates, protein and fat are nutrients that provide energy. Carbohydrates are the single most important nutritional factor affecting muscle gain and should comprise 60 – 70% of the athlete’s total calories per day. A high-carbohydrate diet is needed to replace muscle glycogen stores. This will foster quicker recovery and allow protein to be used for building muscle.

Protein, which is used by the body to build and repair muscle, tendons and ligaments, is not a major energy source. About 12 – 15% of an athlete’s total daily calories should come from protein. An adequate intake of protein along with a high-carbohydrate diet is critical for muscle mass gain.

Protein is better absorbed if it comes from natural food sources, rather than supplements. The extra protein not needed by the body is used as energy or stored as fat. Athletes involved in strength and endurance training need to increase the amount of protein they are consuming in order to build muscles.

Finally, there is fat. Eating too many fat calories is not a good habit. Even though fat is high in energy, fat calories are readily stored as body fat. Fat can add unwanted weight that must be carried during training and competition. Everyone, especially athletes, should eat only small amounts of high-fat foods, such as French fries, potato chips, mayonnaise, chocolate, bacon, fried foods

and butter. Some fat, however is needed in a healthy diet. A maximum of 20 – 25% of an athlete’s total daily calories should come from fat.

A good resource is available online at www.mypyramid.gov. By entering age, gender and exercise time you can get a rough guideline for how much of each food group an athlete’s body needs. There are also suggestions for how best to meet these food group goals.

Day of Competition Meals

Athletes need a little bit of everything to end their nighttime fast. Breakfast should include lots of carbohydrates and small amounts of protein and fat, eaten soon after the athlete gets up and at least two hours before a competition. If they have a late afternoon competition, lunch should be high in carbohydrate to provide the necessary energy to compete. If there’s an evening competition, eat some carbohydrates before the event and eat a main meal afterward.

Pre-Game Meals

The purpose of the pre-competition meal is to prevent hunger during the game. Athletes should eat their pre-game meal 3 – 4 hours before competition to allow ample time for digestion. This is not a time to experiment with new food, so the meal should be something familiar. Ideal food choices are cereals, grain products, bread, pasta, muffins, fruits and vegetables. Include low-fat protein choices such as eggs, thin-sliced turkey, chicken, cottage cheese, low-fat milk and low-fat cheese. Avoid high-fat and high-protein foods, such as burgers, peanut butter and cheese.

One hour before competition, a small snack may be consumed. Good choices include bananas, yogurt, oatmeal, apples, bagels, crackers, Fig Newtons, graham crackers and sports bars. These will give you the final boost of energy you need to get through your workout and prevent you from becoming hungry.

Hydration and Nutrition continued

During-Game Meals

Often, no food is needed for competitions lasting less than one hour. If a snack is desired, stick to the guidelines for pre-game snacks. Also, consider choosing foods high in water content, such as oranges or grapes. Water is the single most important item at this time.

Post-Game Meals

For weekend warriors and low-level competition athletes, the post-game meal is not as important as it is for the high-level athlete. A post-game meal for the endurance athletes should be consumed almost immediately (ideally within 15 – 20 minutes). Practically speaking, this is difficult for our teen athletes to do, so at minimum, they should eat a snack following competition. Again, this is not the time to be consuming fast food. It is crucial to replenish what has been lost. Filling up on high-fat foods will defeat all of the athlete's hard work.

Some good choices at this time include carbohydrates with a small amount of protein. Examples include a glass of orange juice with a bagel, a bowl of healthy cereal with milk and a banana or a sports drink and a yogurt. These can hold the athlete over until a more substantial meal is available. Fluids are also very important post-game. Please refer to the hydration section for more information.

An excellent resource for nutrition information for athletes is *Sports Nutrition Guidebook* by Nancy Clark, MS, RD. It provides sample menus and discusses the importance of good nutrition in much more detail.

Dietary Supplements

Dietary supplements can consist of minerals, herbs, amino acids, enzymes or a combination of any of these. It is important to note that these supplements are not manufactured under strict guidelines. There is documented evidence of inconsistencies in pill contents and findings of contamination. So the consumption of any supplement is at your own risk.

Significant side effects — including heart attacks, stroke and even death — have been linked to supplements such as ephedra (banned from the market in 2004).

Please refer to the following websites for thorough information. If these sources do not answer your questions, please do not hesitate to contact our Rainbow Sports Medicine physicians at 216-983-SPORT.

Consumer Lab

www.consumerlab.com

An independent website with detailed reviews on product claims and safety (membership required). The most comprehensive list available online.

National Institutes of Health

www.nih.gov

Search: Dietary supplements

Food & Drug Administration

www.fda.gov

Search: Dietary supplements



Environmental Hazards



Bee Stings

With so many athletes playing sports outside, exposure to bee venom is a real risk. An athlete can get a small area of swelling around a bee sting. This is not a true allergy, but rather just a local reaction to the venom. Using tweezers on the stinger may squeeze more venom into the athlete. Instead, the easiest way to treat this is to use a credit card to scrape away the stinger. Next, apply ice to the area of swelling. If a child develops

extensive swelling or has any difficulty with breathing, they should be sent to the emergency room for further evaluation. If someone has a known bee allergy, they should always have an Epi-Pen available on the sidelines. If they are stung, the Epi-Pen should be used immediately and the athlete should be sent to the emergency room by ambulance.

Lightning Safety

Lightning kills an average of 100 people per year and injures hundreds more. It is important to know the risks associated with lightning and how to protect young athletes while playing outdoor sports.

When to take cover:

If you can see or hear the storm, it is close enough that lightning may strike. Most organized sports depend on the officials to signal when athletes, coaches and spectators should take cover. An emergency plan should be in place for all leagues. These plans should address when and where to take cover, and what to do if someone is struck by lightning.

Where to take cover:

- **Indoors** — A metal-framed structure such as an indoor shelter is best. These structures should have four completely enclosed walls. A baseball dugout is not adequate — the lightning can “flash” over the edges of the shelter. Restrooms are another safe location, especially at ballparks.
- **Automobile** — Roll all windows up. Do not touch the metal in the car. A convertible or other soft-roof automobile does not provide adequate protection in a lightning storm. The metal frame of the car is what protects you, not the rubber tires.

If you can not get to a safe place, follow these rules:

- Stay away from metal.
- Avoid tall, isolated objects such as a single tree.
- Avoid high terrain — try to get to a low point.
- Avoid open fields.
- Avoid water — get out of pools, move away from free-standing water.
- Assume a safety position. Do not lie on the ground. Squat down with your knees fully bent. Keep your feet close together, tuck your head between your knees and place your hands over your head.

If someone is struck by lightning:

People struck by lightning are safe to touch. First, send someone to call 911 for help. See if the person needs CPR. If an AED (automated external defibrillator) is available at the facility, send someone to get it while CPR is performed. Make sure to dry the person off before applying AED pads to the chest.



Positive Attitude

Athletes create a feeling of pride and accomplishment, while promoting teamwork, friendship, discipline and structure. While parents wish to encourage their child's pursuits, they sometimes don't know how to do this effectively. Sometimes adults project their own unfulfilled dreams, motivations and goals onto their children. It is important to realize that children experience the world very differently from adults. Coaches also have to be aware of their athlete's emotional needs. They must try to understand each athlete's reason for participating and try to address their needs.

The main reason children participate in sports is to have fun, improve skills, stay in shape, be part of a team and do something they are good at. This is equally true for boys and girls. Often parents, coaches and other adults fail to recognize

this and put too much emphasis on winning. Students tell us they drop out of sports when training and games are no longer fun. Most young people who participate do not see winning as a major benefit of sports. As a parent, it is important for you to understand why your daughter or son participate in sports. If you know their reasons, you can help guide them towards the fulfillment of their goals, which may be quite different from your own.

When talking with your son or daughter about their training and games, encourage them to discuss their feelings and motivations, as well as their achievements. Downplay winning and external rewards, and ask them to define success in terms of their attainment of their own goals. Let winning take care of itself. Each young athlete who enjoys his or her sport is a winner.



Rainbow Babies & Children's Hospital
Rainbow Sports Medicine
www.rainbowbabies.org
216-983-SPORT or 216-844-RAINBOW

About University Hospitals Rainbow Babies & Children's Hospital

Rainbow Babies & Children's Hospital is the 244-bed pediatric hospital of University Hospitals. Dedicated solely to the care of children, Rainbow is one of the most trusted names in children's health care. Parents have depended on Rainbow for more than a century, enabling the hospital to become one of the most renowned pediatric medical centers and a principal referral center for Ohio and the region. Rainbow has consistently been named the "Best Children's Hospital" in the Midwest and a Top 10 children's hospital nationally in surveys, including "U.S. News & World Report" and "Child" magazine. Rainbow consistently ranks among the nation's top children's hospitals in research funding from the National Institutes of Health.

As the primary affiliate of Case Western Reserve University, University Hospitals Case Medical Center and its academic counterpart form the largest biomedical research center in the state of Ohio. University Hospitals Case Medical Center is the tertiary hub of University Hospitals, which serves patients at more than 150 locations in northern Ohio.

A PDF download is available at www.uhhospitals.org/rainbowchildren/OurServices/PediatricSpecialties/SZ/SportsMedicine/tabid/163/Default.aspx.