



# NATA



## 2009-2010 Media Guide

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what  
why  
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how



## WHAT IS THE NATIONAL ATHLETIC TRAINERS' ASSOCIATION?

The National Athletic Trainers' Association (NATA) is a not-for-profit organization dedicated to advancing, encouraging and improving the athletic training profession. NATA represents and supports the 30,000 members of the athletic training profession through public awareness, education and research. Certified athletic trainers are allied health care professionals who specialize in the prevention, assessment, treatment and rehabilitation of injuries and illnesses — in sports settings, performing arts, corporations, the military, schools, clinics and hospitals, physician offices and other health care facilities.

## KEY INFORMATION ABOUT CERTIFIED ATHLETIC TRAINERS AND NATA

- ◆ Certified athletic trainers hold a bachelor's or master's degree with a major in athletic training and are focused on injury prevention, assessment, treatment and rehabilitation. Seventy percent hold a master's degree or higher. They are required to pursue continuing education to retain their certification, which is awarded by the Board of Certification, Inc., an organization independent of NATA.
  - ◆ Certified athletic trainers provide medical and allied health care services. Their official title is "athletic trainer" or "certified athletic trainer."
  - ◆ Certified athletic trainers should not be confused with personal trainers, who are focused primarily on physical conditioning and fitness. There are no standardized educational requirements for personal trainers. Simply using the "trainer" reference by itself creates confusion in clearly understanding how athletic trainers are very different from personal trainers.
  - ◆ ATC<sup>®</sup> is the official credential for the certified athletic trainer. More than 85 percent of all U.S. athletic trainers belong to NATA.
  - ◆ The organization is pronounced N-A-T-A.
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PURPOSE OF THE NATA MEDIA GUIDE

To provide the media with valuable information on the athletic training profession, as well as details on certified athletic trainers —who they are, what they do and how they help people of all ages in sports settings, performing arts, corporations, the military, schools, clinics and hospitals, physician offices and other health care facilities.



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## NATA'S TOP 10 HEALTH & SAFETY TIPS

1. Always have an emergency plan in place, which includes access to a phone and a first aid kit.
2. Should a new injury occur, do the following: rest, ice, compression, elevation (RICE).
3. When playing contact sports, always wear a mouthguard.
4. In severe weather, use the "flash-to-bang" method to avoid lightning danger. Count seconds between seeing lightning (flash) and hearing the (bang) of thunder. Divide by 5 to determine how far away in miles the lightning activity is occurring. Be inside a safe structure by the time the count approaches 30 seconds (6 miles).
5. Anyone who exercises should drink 7-10 oz. of water or a sports drink every 15-20 minutes. In general, more fluid is needed when exercising intensely in the heat. It is best to match fluid intake with losses.
6. Maintaining good eating habits and proper nutrition will enhance physical activity.
7. Use proper and well-fitted equipment (including shoes) when playing sports.
8. Before starting an exercise program, see your physician for a physical exam.
9. For a healthier body and lifestyle, avoid tobacco, alcohol, performance enhancing supplements and harmful drugs.
10. Seek out the services of certified athletic trainers — allied health care professionals who provide services for athletes and other active people.



## NATA: NEWS RESOURCE FOR SAFETY ISSUES, INJURY PREVENTION TIPS AND EFFECTIVE TREATMENTS

NATA is an excellent resource for current medical news and studies. The organization represents thousands of allied health care professionals who can provide helpful information on injury and illness prevention, assessment, treatment and rehabilitation for men, women and children. NATA's experts are available to comment on a variety of issues, including:

### Sports Safety:

- ◆ Advice to parents on children's sports safety
- ◆ Importance of pre-participation physical exams
- ◆ Equipment — proper fit and maintenance
- ◆ Lightning safety
- ◆ Sports safety checklist
- ◆ Exercise-induced asthma
- ◆ Cheerleading safety

### Injury Prevention:

- ◆ Emergency plans for sports programs
- ◆ Heat illness
- ◆ Overuse injuries
- ◆ Modified exercise for boomers and seniors
- ◆ Sport-related concussion
- ◆ Commotio cordis
- ◆ Ergonomics
- ◆ Industrial safety
- ◆ Common sports injuries
- ◆ Common injuries among female athletes
- ◆ Comparison of injury statistics among different sports
- ◆ High school sports with the highest injury rates

### Exercise Tips:

- ◆ Safety measures
- ◆ Year-round physical conditioning

- ◆ Muscular strength and endurance development, cardiovascular fitness and flexibility
- ◆ Warm up, stretching and cool down for industrial athletes

### Nutrition Advice:

- ◆ Weight loss
- ◆ Supplements
- ◆ Proper diet to improve performance
- ◆ Importance of fluid replacement

### Injury Evaluation, Treatment and Rehabilitation:

- ◆ Steps to treat heat illness and cold injuries
- ◆ Appropriate care for the spine-injured athlete
- ◆ Management of head injuries
- ◆ Treatment of skin disorders
- ◆ Evaluation of injuries
- ◆ Appropriate medical care for high school and intercollegiate athletics
- ◆ Aggressive injury treatment for sprains, strains and common injuries
- ◆ Rehabilitation of musculoskeletal injuries

### Scientific Journal

NATA publishes the quarterly *Journal of Athletic Training*, which is available to the media.

### NATA Speakers Bureau

Groups seeking experts to address their members are invited to contact NATA.

For more information, contact:

Ellen Satlof, public relations manager, NATA, at 214-637-6282, ext. 159 or [ellen@nata.org](mailto:ellen@nata.org).



## NATA FACTS & FIGURES\*

Total membership:	30,471
Certified members:	25,353
Student members:	4,195
Percent of female members:	50%
U.S. members:	99%
International members:	1%

\*as of December 31, 2005

## NATA HISTORY

The National Athletic Trainers' Association (NATA) was founded in 1950, when a core group of 200 athletic trainers met in Kansas City, Mo. Today, NATA's membership spans the globe and includes 30,000 members in the athletic training profession.

Certified athletic trainers provide services to secondary schools, colleges/universities and professional sports. They also work in sports medicine clinics, emergency rooms and hospitals, physician offices, military, performing arts and a variety of occupational settings.

Formerly based in Greenville, N.C., NATA is now headquartered in Dallas, Texas, with a full-time executive director and staff. The organization has more than 30 committees to advance the athletic training profession, with members serving as volunteer leaders.

The complete history of NATA and athletic training can be found in the book, *Far Beyond the Shoe Box: Fifty Years of the National Athletic Trainers' Association*, which is available from the NATA office.

## WHERE TO FIND CERTIFIED ATHLETIC TRAINERS

### Secondary Schools

Certified athletic trainers work closely with athletes and multiple sports teams, as well as cheerleading and other spirit groups. Many certified athletic trainers also teach classes at the high school level.

### Colleges and Universities

Certified athletic trainers work as part of the university's athletic department, campus recreation department or health center. As classroom and/or clinical instructors, they prepare students for careers in athletic training. Certified athletic trainers conduct research to expand the body of knowledge as it relates to injury prevention, management and rehabilitation.

### Professional Sports

Certified athletic trainers work with professional teams in sports such as football, NASCAR, baseball, basketball, hockey and soccer.

### Sports Medicine Clinics and Hospitals

Certified athletic trainers in sports medicine clinics, rehabilitation centers and hospitals work with various health care professionals and a diverse population. Many clinics and hospitals also outsource athletic training services to companies, secondary schools, colleges and universities and professional teams.

### Physicians' Offices

Many certified athletic trainers work in private physician practices, including orthopaedics, family practice, pediatrics and physiatry. Physicians in private practice hire athletic trainers because of their skills in triage, rehabilitation, wellness, patient education and sometimes office administration and research. Certified athletic trainers — and other support health care providers — working in physician offices are frequently referred to as "physician extenders."

### Military Branches

Certified athletic trainers can be found in every branch of the U.S. military. They serve as part of the health care team for: injured and non-injured service people, on-and-off-base fitness and wellness centers, new-recruit readiness programs and pre-enlistment readiness programs. Their expertise has proven extremely valuable in helping to accelerate the return to duty of injured service people.

### Occupational Workplaces

Certified athletic trainers provide value and return on investment in industrial and commercial settings, which use both outreach clinics and full-time certified athletic trainers to deliver services. Their assistance can result in lower liability, workers' compensation and general health care insurance costs for the employer.

### Performing Arts

Certified athletic trainers work with performing artists to ensure their flexibility, conditioning, injury prevention and rehabilitation. Examples include the Radio City Rockettes, Blue Man Group, Broadway performers and acrobats from Cirque du Soleil.

### Youth Sports and Recreation

Certified athletic trainers work with youth and adults in organized sports leagues and recreational facilities. In this role, they educate coaches, participants and parents in sports safety and injury care.

## EDUCATION REQUIREMENTS

All certified athletic trainers or licensed athletic trainers must hold a bachelor's or master's degree with a major in athletic training from an accredited athletic training educational program. Seventy percent of ATC<sup>®</sup> credential holders have a master's degree or higher. Academic programs in athletic training are accredited through an independent process by the Commission on Accreditation of Athletic Training Education (CAATE). Go to [www.caate.net](http://www.caate.net) for a list.

Entry-level athletic training education uses a competency-based approach to both the classroom and clinical settings. Students must receive formal instruction and be evaluated for clinical competence in a variety of subject areas such as prevention, assessment and acute care of injury and illness, risk management, orthopaedic clinical examination and diagnosis, therapeutic modalities, physical conditioning, pharmacology and rehabilitative exercise.

Students are required to participate in a minimum of two years of clinical education, under the direct supervision of qualified clinical instructors.

## CERTIFICATION

The independent Board of Certification, Inc. (BOC) nationally certifies athletic trainers. Athletic trainers must hold a bachelor's degree and pass an examination to become certified. To retain certification, ATC credential holders must obtain 75 hours of associated continuing education credits every three years and adhere to a code of ethics. BOC certification is recognized by the National Commission for Certifying Agencies and is the only accredited certification program for athletic trainers.

BOC certified athletic trainers are educated, trained and evaluated in six major practice domains: (1) prevention; (2) clinical evaluation and diagnosis; (3) immediate care; (4) treatment, rehabilitation and reconditioning; (5) organization and administration; (6) professional development. The Web site [www.bocattc.org](http://www.bocattc.org) provides additional details.

## STATE REGULATIONS

While practice act oversight varies by state, athletic trainers practice under state statute recognizing them as health care professionals. Athletic training licensure/regulation exists in 44 states. Athletic trainers practice under the direction of physicians.

## INSURANCE REIMBURSEMENT

In most cases, athletic trainers are reimbursable by insurance companies and third-party payers.





## NATA STATEMENTS

NATA's position and official statements provide athletic trainers, other sports medicine professionals, the general public and media with current knowledge about different topics and practices in athletic training. The full text of these statements is available at [www.NATA.org](http://www.NATA.org):

## POSITION STATEMENTS

- ◆ Management of sport-related concussion: An effective plan to define, evaluate and treat sport-related concussions.
- ◆ Management of asthma in athletes: Guidelines on how to recognize, prevent and manage asthma in athletes.
- ◆ Head-down contact and spearing in tackle football: Educational information for coaches, players and officials on the dangerous techniques which can lead to catastrophic cervical spine injuries (CSIs) — and guidelines to decrease risk of these injuries.
- ◆ Exertional heat illnesses: Recommendations for the prevention, recognition and treatment of exertional heat illnesses.
- ◆ Emergency planning in athletics: Guidelines for organizations that sponsor athletic activities or events to develop and implement a written emergency plan.
- ◆ Lightning safety for athletics and recreation: A proactive approach to lightning safety, including the implementation of a lightning safety policy that identifies safe locations for shelter from a lightning hazard.
- ◆ Fluid replacement for athletes: How dehydration can compromise performance and increase the risk of exertional heat illness.

## CONSENSUS STATEMENTS

- ◆ Appropriate medical care for secondary school-age athletes
- ◆ Exertional heat illnesses
- ◆ Pre-hospital care of the spine-injured athlete
- ◆ Recommendations on emergency preparedness and management of sudden cardiac arrest in high school and college athletic programs

## OFFICIAL STATEMENTS

- ◆ Automated external defibrillators
- ◆ Community-acquired MRSA infections
- ◆ Steroids and performance-enhancing substances
- ◆ Youth football and heat-related illnesses
- ◆ Use of qualified athletic trainers in secondary schools
- ◆ Commotio cordis
- ◆ Full-time, on-site athletic trainer coverage for secondary school athletics programs

## COOPERATIVE AND SUPPORT STATEMENTS

- ◆ American Medical Association's support of athletic trainers in secondary schools
- ◆ American Academy of Family Physicians' support of athletic trainers for high school athletes
- ◆ The Coalition to Preserve Patient Access to Physical Medicine and Rehabilitation Services
- ◆ Recommendations and guidelines for appropriate medical coverage of intercollegiate athletics
- ◆ NCAA's support of recommendations and guidelines for appropriate medical coverage of intercollegiate athletics
- ◆ American Academy of Pediatrics' endorsement of lightning safety for athletics and recreation position statement

Upcoming NATA position statements will focus on:

- |  |   |
|--|---|
| ◆ Eating disorders                             | ◆ Sudden cardiac death                          |
| ◆ Cold injuries                                | ◆ Sports medicine issues for the senior athlete |
| ◆ Weight control issues in weight-class sports | ◆ Joint dislocations                            |
| ◆ Skin disorders                               |   |
| ◆ Pediatric overuse injuries                   |   |



## NATA EXCELLENCE IN SPORTS MEDICINE REPORTING AWARD

Each year, the National Athletic Trainers' Association presents the NATA Excellence in Sports Medicine Reporting Award, at the National Sportscasters and Sportswriters Association (NSSA) awards weekend in Salisbury, N.C. The winner receives \$500 and paid transportation to the event.

NATA seeks a reporter whose article or broadcast best highlights a sports medicine issue or an athletic trainer in a positive manner. The nomination process is open to NSSA members.

### Recent Award Winners:

2006—Gary Mihoces, USA Today

2005—Karen Crouse, The New York Times

2004—Scott Fowler, Charlotte Observer

2003—Rick Reilly, Sports Illustrated

2002—Arnie Melendrez Stapleton, Associated Press

2001—Jim Jeannotte, WMUR-TV (ABC), Manchester, N.H.

In addition to the award, NATA also presents a sports medicine seminar during the awards weekend, sharing valuable information on a variety of timely topics such as heat illness, concussions, community-acquired MRSA infections and steroids.



Gary Mihoces, 2006 winner



Karen Crouse, 2005 winner



## NATIONAL ATHLETIC TRAINING MONTH

Every March, NATA celebrates National Athletic Training Month to heighten awareness of the athletic training profession and to promote overall health and wellness.

National Athletic Training Month was first launched in 2001 to educate the public about certified athletic trainers and the important services they provide in their local communities. Throughout the month, athletic trainers across the country host a variety of events, including health screenings, charity 5K races, lectures, exhibitions and career workshops.

## A

**Abduction:** Lateral movement of a body part away from the midline of the body.

**Abrasion:** An injury that scrapes off the surface of the skin. Although the injury is minor, it carries with it the risk of infection.

**Abscess:** A localized collection of pus caused by a bacterial infection.

**AC Joint:** See acromioclavicular joint.

**Acclimatization:** When the body adapts to a new environment or climate. For example, football players exercising in the heat prior to football season to "get used to" the summer heat.

**Achilles Tendon:** The thick tendon at the distal portion of the triceps surae (calf) that connects the calf muscle to the heel. The calf muscles consist of the gastrocnemius, soleus, and plantaris.

**ACL:** See anterior cruciate ligament.

**Acromioclavicular Joint:** Joint of the shoulder where acromion process of the scapula and the distal end of the clavicle meet; most shoulder sprains ("separations") occur at this joint. Also referred to as "the tip of the shoulder."

**Active Range of Motion:** The amount of joint motion that can be produced by a muscle contraction.

**Activities of Daily Living:** Fundamental skills required for a certain lifestyle, including mobility, self-care, and grooming.

**Acupuncture Points:** Areas of the skin theorized to control body-wide functions. These points lie along 12 main channels, 8 secondary channels, and a network of subchannels.

**Acute:** Of recent onset. The period after an injury when the local inflammatory response is still active.

**Adduction:** Movement of a body part toward the midline of the body.

**Adductor Muscle Group:** The muscles of the inner thigh that move the legs together. This group consists of the adductor longus, adductor magnus, adductor brevis, gracilis, and pectineus muscles.

**Adductor Strain:** Stretching or tearing of one or more of the adductor muscles caused by an imbalance in strength or less commonly, an extreme movement of the lower extremity away from the midline of the body.

**Adenosine Triphosphatase (ATP):** An important source of energy for cell metabolism.

**Adhesion:** The abnormal thickening, shortening, and/or adherence of collagen fibers to the surrounding structures that result from immobilization following trauma or as a complication of surgery which restricts normal elasticity of the structures involved.

**AED:** See automated external defibrillator.

**Aerobic Exercise:** Long-duration, relatively low-intensity activity in which energy needed is supplied by oxygen from respiration and is required for sustained periods of vigorous exercise with a continually high pulse rate. Opposite of anaerobic exercise.

**Allograft:** During surgery, the replacement or augmentation of the patient's tissues with a synthetic substance, tissues from another human donor, or an animal donor.

**Amenorrhea:** The absence of menstruation. A characteristic of the Female Athlete Triad.

**Anabolic Steroid:** Testosterone, or a steroid hormone resembling testosterone, that stimulates growth in the body as a whole. For more information see:  
<http://nata.org/publicinformation/docs/steroidstatement.pdf>

**Anaerobic Exercise:** Short-duration, high-intensity exercise without the use of oxygen as an energy source. Opposite of aerobic exercise.

**Analgesia:** Absence of the sense of pain.

**Analgesic:** A pain-reducing substance.

**Anaphylactic Shock:** Shock that is caused by an allergic reaction.

**Anaphylaxis:** Allergic reaction.

**Anesthesia:** A loss of, or decrease in, sensation.

**Ankylosis:** Immobility of a joint.

**Anorexia Nervosa:** A psychological condition where the individual restricts his or her food intake.

**Antagonistic:** In the opposite direction of movement (e.g., the antagonistic motion of extension is flexion).

**Anterior:** The forward facing surface of the body; to the front; in front of.

**Anterior Compartment Syndrome:** A condition where swelling within the anterior compartment of the lower leg impedes blood flow and nerve function, jeopardizing the muscles, nerves, and arteries that serve the foot and lower leg. In severe cases, emergency surgery is necessary to relieve the swelling and pressure.

**Anterior Cruciate Ligament (ACL):** A primary stabilizing ligament within the center of the knee joint that prevents hyperextension, anterior displacement and excessive rotation of the lower leg. Most ACL sprains are the result of a noncontact mechanism. A complete tear of ACL almost always requires reconstruction and require 6 to 12 months of rehabilitation.

**Anterior Cruciate Ligament Tear:** A third-degree sprain of the ligament that sections it in two.

**Anterior Talofibular Ligament:** A ligament of the ankle that connects the fibula (lateral ankle bone) to the talus. This ligament is the most frequently sprained ankle ligament.

**Anti-Inflammatory:** Any agent that decreases and controls inflammation, including aspirin or ibuprofen.

**Arthrogram:** X-ray technique for joints using air and/or dye injected into the affected area (to show torn cartilage or rotator cuff tears). Arthrograms have largely been replaced by MRIs and CT Scans, but are still sometimes used in the shoulder and wrist.

**Arthroplasty:** Surgical reconstruction or replacement of an articular joint.

**Arthroscope:** A surgical instrument used to visualize the interior of a joint cavity. See arthroscopy.

**Arthroscopy:** An arthroscopic procedure can be used to remove or repair damaged tissue or as a diagnostic procedure to inspect the extent of damage or confirm a diagnosis.

**Articular Cartilage:** A smooth, slippery substance lining the ends of two bones to decrease friction during joint motion.

**Aspiration:** The withdrawal of fluid from a body cavity by means of a suction or siphonage apparatus, such as a syringe.

**Asthma:** A chronic inflammatory disorder of the respiratory system that results in narrowed airways and causes breathing difficulties. Asthma attacks are characterized by "wheezing" during breathing and shortness of breath. See also exercise induced asthma.

**Asymptomatic:** Without symptoms.

**ATC \*:** The official credential for the certified athletic trainer. Athletic trainers with this designation have passed the certification exam administered by an independent Board of Certification. Certification is a prerequisite for licensure as an athletic trainer in most states.

**Athlete's Heart:** See hypertrophic cardiomyopathy.

**Athletic Trainer:** Allied health care professional who specializes in the prevention, assessment, treatment and rehabilitation of injuries and illnesses.

**Atrophy:** The wasting of muscle tissue. Often the result of immobilization or lack of use.

**Autograft:** The tissues used to replace the ligaments harvested from the patient's body (e.g., bone-patellar tendon-bone, hamstring tendon).

**Automated External Defibrillator:** A computerized device that detects cardiac arrest or other heart abnormalities and, if appropriate, delivers an electrical shock to restore the normal heart beat.

**Avascular Necrosis:** Tissue death caused by a lack of blood.

**Avulsion:** The tearing away of a part or structure.

**Avulsion Fracture:** The pulling away of a ligament or muscle tendon's attachment to the bone.

**Axial Load:** Compression along the long axis of a bone or structure.

**Axilla:** The armpit.

**Axon:** The stem of a nerve.

## B

**Baker's Cyst:** Localized swelling behind the knee of a bursa in the posterior knee caused by fluid that has escaped from the joint. A Baker's cyst indicates that there is a trauma inside the knee joint that leads to excessive fluid production.

**Bankart Lesion:** Tearing of the labrum from the glenoid in the anterior capsule of the shoulder — common in throwers and often occurs with severe or recurrent shoulder dislocations.

**Bennett's Fracture:** A fracture and dislocation of the base of the thumb (first metacarpal).

**Biceps:** See biceps brachii.

**Biceps Brachii:** A muscle on the front of the upper arm responsible for flexing the elbow.

**Biceps Femoris:** The most lateral muscle of the hamstring group. See also hamstring group.

**Bilateral:** Both sides of the body.

**Biomechanics:** The effect of muscular forces, joint axis, and resistance on the quality and quantity of human movement.

**Body Fat Percentage:** The amount of body weight that is adipose, fat tissue. Fat percentages can be calculated by underwater weighing, measuring select skinfold thickness, or by analyzing electrical impedance.

**Bone Scan:** An imaging procedure in which a radioactive-labeled substance is injected into the body to determine the status of a bony injury. If the radioactive substance is taken up by the bone at the injury site, the injury will show as a "hot spot" on the scan image. Although not definitive, a bone scan is used to make an early diagnosis of a stress fracture.

**Brachial Plexus:** A network of nerves originating from the lower cervical and upper thoracic spine that serves the shoulder and arm. Injuries to the brachial plexus are commonly referred to as "burners" or "stingers."

**Bradycardia:** Abnormal heart rate, often below 60 beats per minutes (BPM). Many highly conditioned athletes have a normal heart rate below 60 BPM.

**Bruise:** A discoloration of the skin due to blood seeping into the underlying tissues.

**Bulimia:** A psychological disorder where the person significantly overeats followed by purging the food.

**Burner:** Lay term for brachial plexus trauma. Usually results in decreased strength and a burning or tingling sensation in the shoulder and/or arm when the neck is forced beyond the normal range of motion. See brachial plexus.

**Bursa:** A fluid-filled sac that is located in areas where friction is likely to occur, then minimizes the friction; for example, between a tendon and a bone.

**Bursitis:** Inflammation of a bursa. The bursa is a sac of fluid located around tendons to reduce friction from movement.

## C

**Calcaneofibular Ligament:** An ankle ligament that connects the fibula to the calcaneus. Prevents inversion (inward rolling) of the ankle.

**Calcaneus:** The heel bone.

**Calcium Deposit:** An accumulation of minerals in muscle or other tissue. See myositis ossificans.

**Calf:** Three muscles – gastrocnemius, soleus, and plantaris — located on the back of the lower leg that is connected to the heel by the Achilles tendon. These muscles are responsible for foot plantarflexion (pointing the toes) and are instrumental in jumping.

**Capsule:** A ligament-like structure that surrounds, encloses, and helps to stabilize a joint. Also see synovial capsule.

**Carbohydrate (CHO):** Nutrients such as sugars, starches, and glycogen that provide energy to the body. Some forms of carbohydrates are a more immediate fuel source during exercise than others.

**Carbohydrate-Electrolyte Drink:** Sports drink such as Gatorade Thirst Quencher that replaces fluids and electrolytes (sodium, potassium) lost in sweat and provides carbohydrate energy to working muscles. These drinks are also useful in preventing heat-related illnesses.

**Cardiac Arrhythmia:** An irregular heart beat.

**Cardiopulmonary Resuscitation (CPR):** The artificial establishment of circulation of blood and movement of air into the lungs in a pulseless, non-breathing person.

**Carpal Tunnel Syndrome:** Compression of the median nerve that produces pain, numbness, and weakness in the palm, ring, and index finger.

**Carpals:** The small bones of the wrist.

**Cartilage:** See articular cartilage, costochondral cartilage, and/or meniscal cartilage.

**CAT Scan:** See computerized tomography.

**Catastrophic Injury:** Trauma that causes permanent spinal cord disability, results in the loss of a limb, or death.

**Cellulitis:** Inflammation of the cells of skin and/or connective tissue. Cellulitis is frequently caused by a bacterial infection and can be life-threatening. Symptoms include fever, chills, and local swelling.

**Cervical Vertebrae:** The seven spinal bones in the neck.

**CHO:** See carbohydrate.

**Chondral Fracture:** Fracture to the chondral (cartilaginous) surfaces of bone. If unrecognized or untreated, chondral fractures can result in severe disability.

**Chondromalacia:** Softening of the articular cartilage; results in pain and crunching or grinding during joint motion. Chondromalacia patellae, a softening of the articular side of the kneecap, is the most common form of chondromalacia.

**Chondromalacia Patellae:** See chondromalacia.

**Chronic:** Continuing for a long period; with injury, extending past the primary hemorrhage and inflammation cycle.

**Claudication:** Pain arising in the lower leg as the result of inadequate venous drainage or poor blood supply.

**Clavicle:** The collar bone.

**Claw Toe:** A toe posture characterized by extension of the first joint and flexion of the second and third joints.

**Coccyx:** The "tail bone"; a group of four vertebrae that are fused together, located at the terminal end of the spine.

**Cold Pack:** A pack of natural or synthetic ice that is applied to an injury. Cold packs prevent the formation of swelling, decrease inflammation, and minimize the extent of an acute injury.

**Collagen:** A protein-based connective tissue.

**Colles' Fracture:** A fracture of the distal end of the radius (the bone of the forearm on the same side as thumb). The radius is displaced posteriorly (backward).

**Collision Sports:** Individual or team sports relying on the physical dominance of one athlete over another. By their nature, these sports mandate violent physical contact.

**Commotio Cordis:** Disruption of the normal heart rhythm caused by a blunt blow to the chest. Commotio cordis can cause death if unrecognized or untreated. For more information see: <http://nata.org/publicinformation/files/ASTFstmt.pdf>

**Computerized Tomography (CT Scans):** A computer is used to decode x-rays that are passed through the body to produce a cross-sectional or three-dimensional image. CT scans are useful in visualizing bony structures.

**Concentric Muscle Contraction:** A shortening of the muscle as it develops tension and contracts to move a resistance. Referred to as a "positive" contraction in weight training.

**Concussion:** Jarring injury of the brain resulting in dysfunction. It can be graded as mild, moderate or severe depending on memory, motor function, brain function (analytical and cognitive skills), balance and coordination, and loss of consciousness. Athletes should not be returned to competition when any of these symptoms are present. See also Post concussion syndrome and second impact syndrome.

**Congenital:** Existing before birth; to be born with.

**Connective tissue:** Tissue that supports and connects other tissue types.

**Contact Sport:** Sports in which physical collisions or contact with opposing players is incidental but inherent to the game.

**Contracture:** A condition resulting from the loss of a tissue's ability to lengthen.

**Contralateral:** Pertaining to the opposite side of the body. The left side is contralateral to the right.

**Contrecoup Brain Injury:** Trauma to the brain opposite the point of contact. Usually caused by the head striking a stationary object.

**Cutusion:** An injury to a muscle and tissues caused by a blow from a blunt object that produces bleeding beneath the skin. See also ecchymosis.

**Core Temperature:** Body temperature taken orally or rectally or via the tympanic membrane in the ear. Core temperature is the primary finding in determining heat stroke.

**Cortisone:** A medication that reduces inflammation, pain, and swelling. Cortisone is a glucocorticoid, a different family than anabolic steroids.

**Costochondral Cartilage:** A dense, fibrous tissue that separates the bones within the rib cage.

**CPR:** See cardiopulmonary resuscitation.

**Crepitus:** A grinding or crunching sound or sensation.

**Cryotherapy:** The application of therapeutic cold packs to injured tissues that aid in healing.

**CSCS:** Certified strength and conditioning specialist.

**CT Scan:** See computerized tomography.

**Cumulative Dehydration:** The net loss of body fluids over time. See also dehydration.

**Cyst:** Abnormal sac containing liquid or semi-solid matter.

## D

**Debride:** Removal of dead tissue or foreign matter from a wound.

**Degenerative Joint Disease:** A wearing away or irregular growth of the cartilage that lines joint surfaces as a result of repetitive trauma. Osteoarthritis.

**Dehydration:** Loss of body water. During exercise dehydration is the result of excessive sweating and the lack of fluid intake. Associated electrolytes are also lost from the body. If unchecked, dehydration can result in heat cramps, heat exhaustion, or heat stroke (a potentially fatal condition). See also cumulative dehydration.

**Delayed-Onset Muscle Soreness (DOMS):** Residual muscle soreness, caused secondary to damage of the muscle cells, that appears within 24 hours after heavy muscular activity, particularly with eccentric muscle actions.

**Deltoid Ligament:** The medial (inside) ligaments of the ankle that connect the tibia to bones of the medial aspect of the foot. The deltoid ligament is primarily responsible for stability of the ankle on the medial (inside) side and is sprained much less frequently than other ankle ligaments.

**Deltoid Muscles:** The visibly prominent muscles of the shoulder. Divided into anterior, middle, and posterior segments, the deltoid muscle group is the prime mover of the shoulder.

**Denervation:** Lack of the proper nerve supply or nerve function to, for example, an area or muscle group.

**Dermatome:** An area of skin area supplied by a single spinal nerve root.

**Derotation Brace:** A knee brace worn by players with a history of rotational instability of the knee — especially ACL injuries — to minimize extreme rotations of the knee joint. Derotation braces may be purchased "off the shelf" or custom made to fit the athlete.



- Diagnosis:** The determination of the nature and scope of an injury or illness.
- Diaphysis:** The shaft of a long bone.
- Diffuse:** Scattered; widespread.
- DIP:** See distal interphalangeal joint.
- Diplopia:** Double vision.
- Disc/Disk:** See intervertebral disc.
- Dislocation:** Complete displacement of joint surfaces. Dislocations inevitably result in trauma to the joint tissue including ligaments and/or tendons.
- Disposition:** The patient's current physical status and projected course of recovery.
- Distal:** Term referencing one anatomical term away from another; for example, the hand is distal to the elbow.
- Distal Interphalangeal Joint:** In the fingers and toes, the second joint from the knuckle.
- Dorsiflexion:** Ankle motion in which the foot and toes are moved away from the ground in an upward fashion.
- Due Care:** An established responsibility for an individual to respond to a given situation in a certain manner.
- Dynamometer:** A device used for measuring muscular strength.
- Dyskinesia:** The inability to perform proper voluntary joint movements.
- Dyspnea:** Air hunger marked by labored or difficult breathing; may be a normal occurrence after exertion or an abnormal occurrence indicating cardiac or respiratory distress.

## E

- EAP:** See emergency action plan.
- Eccentric Muscle Contraction:** An overall lengthening of the muscle as it develops tension and contracts to control motion performed by an outside force; oft times referred to as a "negative" contraction in weight training.
- Ecchymosis:** Bleeding into the surface tissue below the skin, resulting in a "black and blue" effect and frequently occurs following a sprain or strain. Ecchymosis is different from a contusion in that a direct blow is not a prerequisite for ecchymosis formation. See also contusion.
- ectomy:** Suffix indicating surgical removal of the affected part, for example, an appendectomy.
- Edema:** Accumulation of fluid and/or solid matter in organs and tissues of the body; swelling.
- Efficacy:** The ability of a modality, treatment regimen, or rehabilitation technique to produce the intended effects.
- Effusion:** Accumulation of fluid in various spaces in the body, especially joints.
- Electrical Stimulation:** A family of therapeutic techniques that sends an electrical current through the body at select voltages, amperages, and frequencies to stimulate sensory, motor or pain nerves, desensitize pain receptors, neutralize muscle spasms, or re-educate muscle along with other functional applications. See also high voltage pulsed stimulation, neuromuscular electrical stimulation, transcutaneous electrical nerve stimulation.
- Electrolyte Drink:** See carbohydrate-electrolyte drink.
- Electrolytes:** Ionized salts in blood, tissue fluids and cells, including salts of sodium, potassium and chloride needed for the body's metabolic functions.
- Electromyogram (EMG):** Test used to determine nerve function.
- Embolism:** Embolism: Blockage of a blood vessel by a blood clot or other foreign substance.
- Emergency Action Plan (EAP):** The policies and procedures to be used in the event of a serious injury during an athletic contest or practice. For more information see: <http://nata.org/publicinformation/files/emergencyplanning.pdf>
- EMG:** See electromyogram.
- EMT:** Emergency medical technician.
- Endogenous Opiates:** Pain-inhibiting substances produced in the brain. These include endorphins and enkephalins. See also endorphin; enkephalin.

**Endorphin:** A morphine-like neurohormone produced in the pituitary. Endorphins are thought to increase the pain threshold by binding to receptor sites.

**Endurance:** The ability to engage in prolonged physical activity. Endurance may be described relative to the cardiovascular system or a specific muscle or muscle group.

**Enkephalin:** A substance released by the body that reduces the perception of pain by bonding to pain receptor sites.

**Epicondylitis:** Inflammation in the elbow due to overuse of either the wrist flexor or extensor muscles that attach to the medial (flexor group) or lateral (extensor group) epicondyle of the humerus.

**Epidemiology:** The study of the distribution, rates, and causes of injuries and illness within a specified population. This information may then be used to prevent future occurrence.

**Epidural Hematoma:** Rapid bleeding between the brain and skull. An epidural hematoma has a rapid onset and is potentially life-threatening.

**Epiphyseal Plates:** Growth plates of bones.

**Epistaxis:** A nosebleed.

**Epithelial Tissue:** Tissue that forms the outer skin and lines the body's cavities. This type of tissue has a high potential to regenerate.

**Ergometer:** A device used to measure the amount of work performed by the legs or arms.

**Etiology:** Study of the causes of injury and disease; the origin or cause of an illness or injury.

**Eversion:** Action of the ankle and foot turning outward.

**Exercise Induced Asthma:** An asthma condition caused by exercise. See also asthma.

**Exertional Heat Illness:** Decreased physiological function as the result of participating in a high heat and/or high humidity environment. See heat illness.

**Extension:** The action of straightening of a joint; performed by extensor muscles.

**Extensor Mechanism:** The mechanism formed by the quadriceps and patellofemoral joint responsible for causing extension of the lower leg at the knee joint.

**Extensor Muscles:** A muscle or muscle group which, upon contraction, results in straightening a joint, for example the quadriceps group in the leg or the triceps in the arm.

**External Fixation:** A fracture-setting technique incorporating the use of metal rods that extend through the skin and are attached to a device outside the body.

**External Rotation:** Lateral (outward) rotational motion of a joint or extremity.

**Extracapsular:** Outside of the joint capsule.

**Extravasate:** Fluid escaping from vessels into the surrounding tissue.

**Exudate:** Fluid that collects in a cavity and has a high concentration of cells, protein, and other solid matter.

## F

**Facet Joint:** An articulation of the facets between each contiguous part of vertebrae in the spinal column.

**Facetectomy:** The surgical resection of a vertebral facet.

**Fascia:** A fibrous connective tissue sheath or membrane that covers, supports, or separates muscle; unites the skin to the underlying tissue.

**Fasciitis:** Inflammation of the fascia; most commonly used to describe inflammation of the plantar fascia of the foot. See plantar fasciitis.

**Fat Percentage:** See body fat percentage.

**Female Athlete Triad:** Consists of disordered eating, amenorrhea (absence of menstruation), and osteoporosis (weakening of bone) and is prevalent in sports where physical appearance may be taken into consideration during judging, gymnastics for example.

**Femur:** Thigh bone; longest bone in the body.

**Fibromyalgia:** Chronic inflammation of a muscle or connective tissue.

**Fibula:** The smaller of the two bones in the lower leg; runs from knee to the ankle along the outside of the lower leg.

**Fine Motor Control:** Specific control of the muscles allowing for completion of small, delicate tasks.

**Flash-to-Bang:** A technique used to determine the distance of an electrical storm. The number of seconds between the lightening flash to the bang of thunder divided by five equals the approximate distance in miles.

**Flexibility:** The ability of muscle to relax and yield to stretch forces.

**Flexibility Exercise:** General term used to describe exercises that passively or actively elongate soft tissue without the assistance of another person.

**Flexion:** Motion of bending a joint as achieved by a flexor muscle.

**Flexor Muscle:** A muscle which upon contraction flexes or bends a joint, the hamstring muscle group or biceps brachii for example.

**Fracture:** Breach in continuity of a bone. Types of fractures include open, closed, displaced, nondisplaced, oblique, spiral, transverse, and comminuted, and are based on the angulation and displacement of the fracture line(s).

## G

**Gait:** The sequential movements of the spine, pelvis, knee, ankle, foot, and upper extremity when walking or running.

**Gamekeeper's Thumb:** Tear of the ulnar collateral ligament of the metacarpophalangeal (MCP) joint at the base of the thumb.

**Gastroc:** See gastrocnemius.

**Gastrocnemius (Gastroc):** A muscle of the calf (triceps surae) that is responsible for pointing the toes and flexing the knee.

**Genu Recurvatum:** Hyperextension of the knee joint.

**Genu Valgum:** Knock-kneed.

**Genu Varum:** Bow-legged.

**Glenohumeral Joint:** The shoulder joint. A ball and socket joint formed by the scapula's glenoid fossa and the head of the humerus; surrounded by a loose joint capsule and labrum (which is frequently injured when the shoulder is dislocated). The glenohumeral joint is the most mobile in the body.

**Glenoid Fossa:** A depression on the scapula into which the head of the humerus fits to form the shoulder joint (the glenohumeral joint). Location of shoulder dislocation or subluxation.

**Goniometer:** A device used to measure the motion, in degrees, that a joint is capable of producing around its axis.

**Gout:** A form of arthritis caused by a buildup of uric acid in the bloodstream and marked by inflammation and pain in the distal joints.

**Graft:** An organ or tissue used for transplantation. An allograft is a donor tissue transplanted from the same species. An autograft tissue is transplanted from within the same individual.

**Granulation Tissue:** Delicate tissue formed during tissue healing.

**Granuloma:** A hard mass of fibrous tissue.

**Groin:** A nondescript term used to describe the area between the thigh and abdomen; the genitals; or the hip adductor muscles.

**Groin Strain:** See adductor strain.

**Gross Deformity:** An abnormality that is visible to the unaided eye.

**Growth Factors:** Substances that stimulate the production of specific types of cells.

**Gynecomastia:** Enlargement of the male breasts, associated with a range of conditions including testicular cancer and anabolic steroid use.

## H

**Hammer Toe:** A condition marked by extension of the first and third joints of the toe and flexion of the second toe. This condition may be congenital or be caused by muscle shortening, disease, or improperly fitting footwear.

**Hamstring Group:** The large muscles on the back of the thigh of muscle that run from the buttocks to the knee. It functions to flex the knee, and is often injured as a result of improper conditioning, a lack of strength relative to the quadriceps muscles, or lack of muscle flexibility. The hamstring group consists of the semimembranosus, semitendinosus, and biceps femoris muscles.

**Health Insurance Portability and Accountability Act:** Federal legislation that assures patient confidentiality during the electronic transfer of medical records.

**Heart Murmur:** The sound made by blood flowing through the heart and heart valves. Murmurs may be indicative of a heart defect or faulty heart valve.

**Heat Cramps:** Painful muscle spasms of arms or legs, likely caused by depletion of fluids and electrolytes.

**Heat Exhaustion:** Mild form of shock to cardiovascular system likely due to dehydration caused by excessive sweating. Heat exhaustion can be prevented with acclimatization and attention to environmental heat stress and is treated by cooling the individual and replacing fluids and electrolytes.

**Heat Illness:** Used to collectively describe dehydration, heat cramps, heat syncope, heat exhaustion, heat stroke or hyponatremia. For more information see: <http://nata.org/publicinformation/files/exertionalheatillness.pdf>

**Heat Stroke:** Condition of rapidly rising internal body temperature that overwhelms the nervous system's mechanisms for release of heat. Heat stroke is potentially life-threatening.

**Heat Syncope:** Dizziness or fainting caused by exercising in a high heat and/or high humidity environment.

**Heat Tolerance:** The body's ability to maintain its normal function when exposed to a high heat and/or high humidity environment.

**Hemarthrosis:** Accumulation of blood within a joint as a result of an injury.

**Hematoma:** A mass produced by an accumulation of coagulated blood in a cavity.

**Hematuria:** Blood in the urine.

**Herniated Disc:** A protrusion or budge of the shock-absorbing disc located between the vertebrae. The protrusion may place pressure on a nerve root or spinal cord, causing radiating pain into an extremity and/or torso.

**Herniation:** The protrusion of a tissue through the wall that normally contains it.

**High Ankle Sprain:** See syndesmotom ankle sprain.

**High Voltage Pulsed Stimulation:** An electrical stimulation modality used to produce muscle contractions, edema reduction, and pain control.

**Hill-Sachs Lesion:** An indented fracture on the posterior humeral head caused by recurrent anterior shoulder subluxations and or dislocations.

**Hip Pointer:** Contusion to the iliac crest of the hip.

**HIPAA:** See Health Insurance Portability and Accountability Act.

**Hot Pack:** Silica (sand)-filled canvas pack that is stored in water having a temperature of approximately 160 degrees, and retains its heat for 15-20 minutes when placed in a towel for general therapeutic heat application.

**Humerus:** Bone of the upper arm that runs from the shoulder to the elbow.

**Humidity:** The amount of moisture in the air. The ratio between the amount of moisture in the air and the amount of moisture the air can hold, relative humidity.

**Hyaline Cartilage:** See articular cartilage.

**Hydrocortisone:** An anti-inflammatory drug that closely resembles cortisol, the body's natural anti-inflammatory agent.

**Hyperextension:** Extension of a limb or body part beyond that which is considered normal.

**Hyperhidrosis:** Excessive or profuse sweating.

**Hypermobile:** An abnormally large amount of motion.

**Hypertension:** High blood pressure.

**Hyperthermia:** Increased core temperature.

**Hypertrophic Cardiomyopathy:** Enlargement of the heart muscle. This will often cause sudden death. Also known as "athlete's heart."

**Hypertrophy:** To develop an increase in bulk, for example, in the cross-sectional area of muscle.

**Hyphema:** Bleeding into the anterior chamber under the cornea.

**Hypoglycemia:** Decreased blood sugar levels, resulting in fatigue, restlessness, and irritability. Commonly associated with diabetes.

**Hyponatremia:** A low concentration of sodium in the blood. Often associated with dehydration.

**Hypotension:** Low blood pressure.

**Hypothermia:** Decreased core temperature.

**Hypoxia:** Lack of an adequate supply of oxygen.

## I

**Ice Massage:** A cube of ice formed in a paper cup which is rubbed on an injury in a massaging action to achieve a level of numbness.

**Ice Pack:** See cold pack.

**Idiopathic:** Of unknown origin.

**Iliac Crest:** Lateral edge of the hip; generally the site of a hip pointer.

**Illiotal Band (IT Band):** A thick, wide fascial layer that runs on the outside of the femur from the iliac crest to the knee joint and is occasionally inflamed as a result of excessive running or a direct blow to the lateral thigh.

**Immediate Care:** See immediate treatment.

**Immediate Treatment:** Used in the initial management of orthopaedic injuries. Immediate treatment is composed of four components: rest, ice, compression, and elevation.

**Impingement Syndrome:** Pinching of the supraspinatus muscle and other soft tissue in the shoulder between the humeral head and the acromion process. Impingement syndromes are common in overhead activities, especially throwing.

**Inferior:** Anatomically beneath, distal, lower, or toward the bottom.

**Inflammation:** The body's natural response to injury and is a part of the healing process. Inflamed tissues display various degrees of pain, swelling, heat, redness and/or loss of function.

**Infraspinatus Muscle:** A member of the rotator cuff group of muscles responsible for externally rotating the humerus. During throwing, the teres minor, along with the infraspinatus are responsible for decelerating the humerus. See also rotator cuff.

**Innervate:** Normal and sufficient nerve supply to a muscle, body area or organ.

**Insidious:** Of gradual onset; with respect to symptoms of an injury or disease having no apparent cause.

**Instability:** Giving way or subluxation of a joint during functional activity that causes pain and inability to complete the activity.

**Intermittent Compression Pump:** A device that rhythmically pumps air or chilled water into a sleeve worn over an injury. Used to disperse and reduce edema and break up swelling at the injury site.

**Internal Fixation Devices:** Wires, screws, plates, or pins used to repair fractures.

**Internal Rotation:** Medial (inward) rotational of a joint or extremity.

**Interosseous Membrane:** A dense, collagenous fibrous tissue that unites the tibia and fibula. It has two functions: to serve as an origin for many of the muscles of the lower leg, and to transmit stress from the tibia to the fibula. See also syndesmotomic ankle sprain.

**Interphalangeal Joint:** A joint within the fingers or toes. See also distal interphalangeal joint and proximal interphalangeal joint.

**Intervertebral Disc:** A flat, rounded plate between each spinal vertebra. The disc consists of a thick fibrous ring which surrounds a soft gel-like interior. It functions as a cushion and shock absorber for the spinal column. See also herniated disc, ruptured disc.

**Intra-articular:** Within a joint.

**Inversion:** The movement of the bottom of the foot toward the midline of the body.

**Iontophoresis:** Introduction of medication into the body through the use of an electrical current.

**Ischemia:** Local and temporary deficiency of blood supply caused by obstruction of circulation to a part.

**Isokinetic:** A constant speed but variable resistance exercise.

**Isokinetic Exercise:** Form of active resistive exercise in which the speed of limb movement is controlled by a preset limiting machine, such as Cybex or Biodex.

**Isometric Contraction:** Muscular contraction in which tension is developed but no mechanical work is done. There is no appreciable joint movement and the overall length of the muscle stays the same.

**Isotonic Contraction:** A concentric or eccentric muscular contraction that results in movement of a joint or body part, as in lifting a weight. External resistance is preset and constant.

**IT Band:** See iliotibial band.

**-itis:** Suffix connoting inflammation (e.g. tendinitis, bursitis).

## J

**Jefferson Fracture:** A fracture of a circular bone (such as a vertebra) in two places; similar to breaking a doughnut in half.

**Joint Manipulation:** A passive, thrusting force placed across or through a joint to restore normal motion by breaking adhesion. This technique, a more extreme form of joint mobilization, is often performed while the patient is under anesthesia.

**Joint Mobilization:** Passive traction and/or gliding movements applied to joint surfaces that maintain or restore the joint play normally allowed by the capsule, so that the normal roll-slide joint mechanisms can occur as the joint moves.

**Joint Stability:** The integrity of a joint when it is placed under a functional load.

**Jones' Fracture:** Fracture of the base of the shaft of the fifth metatarsal.

**Jumper's Knee:** A general term most frequently used to describe inflammation of the patellar tendon where it arises from the base of the patella. Jumper's knee is associated with overuse of the knee from jumping and running.

## K

**Keloid:** A nodular, firm, movable, and tender mass of dense, irregularly distributed collagen scar tissue in the dermis and subcutaneous tissue. Common in the African-American population, keloid scarring tends to occur after trauma or surgery.

**Kidney Stones:** A crystal mass formed in the kidney that is passed through the urinary tract.

**Kienböck's Disease:** Osteochondritis or slow degeneration of the lunate bone in the wrist.

## L

**Lactic Acid:** A cellular waste product produced by muscular contraction or cell metabolism.

**Laminectomy:** Surgical removal of the lamina from a vertebra.

**LASER:** Acronym for Light Amplification by Stimulated Emission of Radiation. A highly organized beam of light. LASER is thought to have properties that are beneficial to healing.

**Lateral Collateral Ligament (LCL):** Ligament of the knee along the lateral aspect that connects the femur to the fibula. It provides lateral stability to the joint.

**Lateral Malleolus:** The large protuberance on the outside of the ankle.

**Lateral:** To the outside of the body.

**Laxity:** The amount of motion available to the joint by ligaments; frequently used to describe a pathologic condition. See also flexibility.

**LCL:** See lateral collateral ligament.

**Legg-Calvé-Perthes Disease:** Avascular necrosis of the hip occurring in children age 3 to 12 years, causing a breakdown of femoral side of the hip and potentially decreasing the range of hip motion when they reach adulthood.

**Lesion:** Wound, injury, or tumor.

**Ligament:** Band of fibrous tissue or a thickening in a joint capsule that connects bone to bone or bone to cartilage and supports and strengthens joints and restricts the movement of bones.

**Lordosis:** The forward curvature of the cervical and lumbar spine.

**Lucid:** Of clear and rational mind.

**Lumbar Vertebrae:** Five vertebrae of the lower back that articulate with the sacrum to form the lumbosacral joint.

**Lumbosacral:** Region of lower back comprised of the lumbar and sacral spines.

**Lumina:** The growth plate of a fingernail or toenail.

**Lymph Nodes:** Nodules located in the cervical, axillary, and inguinal regions, producing white blood cells and filtering bacteria from the bloodstream. Lymph nodes become enlarged secondary to an infection.

**Lymphangitis:** Inflammation of the lymphatic vessels draining an extremity, most often associated with inflammation or infection.

**Lymphedema:** Swelling of the lymph nodes caused by blockage of the vessels by protein-rich substances.

## M

**Magnetic Resonance Imaging (MRI):** An imaging procedure in which a radio frequency pulse (magnetic wave) causes certain electrical elements in the tissues to vibrate. Through this process a computer display and permanent film establish a two- or three-dimensional visual image. MRI does not require radiation and is very useful in the diagnosis of soft tissue, disc, and meniscal cartilage injuries.

**Malaise:** Discomfort, mental fogginess, or disorientation. Often associated with infection and/or fever.

**Malleolus:** The large medial and lateral protuberances of the ankle.

**Mallet Finger:** Injury of the fingertip in which the extensor tendon is avulsed off the distal bone. The individual is unable to extend the fingertip.

**Malunion Fracture:** The faulty or incorrect healing of bone.

**Mandible:** The jawbone.

**Manipulation:** See joint manipulation.

**Marfan's Syndrome:** Inherited tissue disorder affecting many organs. It often causes a weakening of the aorta and leads to a shortened life expectancy.

**MAX VO2:** See maximal aerobic power.

**Maximal Aerobic Power (MAX VO2):** The maximal volume of oxygen consumed per unit of time. An index of endurance potential.

**McKenzie Exercises:** A set of exercises involving spinal flexion and extension that is used during the treatment and rehabilitation of patients with back injuries; these are used to improve range of motion and strengthening the spine.

**MCL:** See medial collateral ligament.

**MCP:** See metacarpophalangeal joint.

**Medial:** Towards the body's centerline.

**Medial Collateral Ligament (MCL):** Ligament of the knee along the medial aspect that connects the femur to the tibia. It provides stability to the medial aspect of the joint.

**Medial Malleolus:** The large protuberance on the inside of the ankle.

**Meningitis:** Inflammation of the membranes of the brain or spinal cord.

**Meniscal Cartilage:** Crescent shaped cartilage, usually pertaining to the knee joint. There are two menisci in the knee, medial and lateral. The menisci function to absorb weight within the knee, act as a shock absorber, and provide joint stability. The menisci do not have a rich blood supply, so their healing prognosis is poor. See also meniscectomy.

**Meniscectomy:** A surgical procedure in which all or part of a damaged meniscal cartilage is removed from the knee.

**Meniscus:** See meniscal cartilage.

**Metabolism:** The sum of physical and chemical reactions taking place within the body.

**Metacarpals:** Five long bones of the hand, running from the wrist to the knuckles.

**Metacarpophalangeal Joint (MCP):** The knuckle.

**Metatarsalgia:** General term describing a painful foot.

**Metatarsals:** Five long bones of the foot, running from the ankle to the base of the toes.

**Methicillin-Resistant Staphylococcus Aureus (MRSA):** Infection originally contracted by hospitalized patients, now also seen in athletes.

**Mobilization:** See joint mobilization.

**Modality:** The application of a form of energy to the body that elicits an involuntary response.

**Moist Heat Pack:** See hot pack.

**Morton's Toe:** A congenital condition where the first toe is shorter than the second toe. This can cause mechanical imbalances which produce pain within weight-bearing bones.

**MRI:** See magnetic resonance imaging.

**Myelogram:** X-ray study where dye is injected into the spinal cord sheath. This study is often used to detect a ruptured or herniated disc.

**Myocardial Infarction:** "Heart Attack"; a condition where part of the heart muscle dies due to lack of oxygen.

**Myocarditis:** Inflammation of the heart muscle.

**Myonecrosis:** Death of muscle tissue.

**Myositis:** Inflammation of a muscle.

**Myositis Ossificans:** Inflammation in a muscle resulting in the formation of bone-like substance; also known as "calcium deposit."

## N

**NATA:** See National Athletic Trainers' Association.

**National Athletic Trainers' Association (NATA):** The not-for-profit organization dedicated to advancing, encouraging and improving the athletic training profession.

**National Operating Committee for Safety in Athletic Equipment (NOCSAE):** The organization responsible for establishing safety standards for athletic equipment, especially football helmets.

**Necrotic:** Relating to death of a portion of tissue.



**Neoprene:** Lightweight rubber used in joint and muscle sleeves designed to provide insulate or store heat in an area.

**Nervous tissue :** Tissue possessing the ability to conduct electrochemical impulses.

**Neuritis:** Inflammation of a nerve.

**Neuroma:** Swelling or other mass formation around a nerve (Neuro = nerve; oma = tumor).

**Neuromuscular Electrical Stimulation (NMES):** The use of an electrical current to delay atrophy, re-educate, or strengthen muscle.

**Neuropathy:** The lack of normal nerve function.

**Neurovascular:** Pertaining to a bundle formed by nerves, arteries, and veins.

**NMES:** See neuromuscular electrical stimulation.

**NOCSAE:** see National Operating Committee for Safety in Athletic Equipment.

**Noncontact Sport:** A sport that does not involve any physical contact with opposing players.

**Nonunion Fracture:** Fracture that fails to heal spontaneously within a normal time frame.

**Numbness:** Lack of sensation in a body part.

**Nystagmus:** The involuntary shaking of the eyes.

## O

**Occiput:** The posterior base of the skull.

**Olecranon Process:** Bony projection of the ulna at the tip of the elbow.

**One Repetition Maximum:** The maximum amount of weight that can be lifted by the player in a particular exercise at one time. This is used as a strength testing technique.

**Orthotic:** Any device applied to or around the body in the care of physical impairment or disability, commonly used to control foot mechanics.

**Osteoarthritis:** Degeneration of a joint's articular surface. Commonly referred to as arthritis.

**Osteochondritis Dessicans:** A piece of bone and/or cartilage loosened from its attachment after trauma and a cause of a lesion.

**Osteomyelitis:** An inflammatory disease of bone usually caused by infection with streptococcus or staphylococcus.

**Osteophyte:** A branching bony outgrowth.

**Osteoporosis:** A porous condition resulting in thinning of bone. Most commonly seen (but not exclusively) in postmenopausal women and as a part of the Female Athlete Triad.

**Overload Principle:** A principle stating that for strength gains to occur, the body must be subjected to more stress than it is accustomed to. This is accomplished by increasing the load, frequency, or duration of exercise.

**Overuse Injury:** Trauma caused by accumulated microtraumatic stress placed on a structure or body area over time. A repetitive stress injury.

## P

**Pain Threshold:** The level of noxious stimulus required to alert the individual to possible tissue damage.

**Pain Tolerance:** The amount of time an individual can endure pain.

**Palliative:** Serving to relieve or reduce symptoms without curing.

**Paralysis:** The lack of sensation and the inability to move a body part. Paralysis is caused by a nerve or brain injury.

**Paraplegia:** The loss of nerve function – paralysis – in two extremities, most commonly the legs.

**Parasthesia:** Sensation of numbness or tingling, indicating nerve irritation.

**Partial Meniscectomy:** See meniscectomy.

**Patella:** The kneecap. The patella functions to increase the mechanical advantage and force generating capacities of the quadriceps muscle group. It also protects the anterior part of the knee.

**Patella Tendinitis:** Inflammation of the patellar tendon.

**Patellofemoral Dysfunction:** A collective term used to describe the improper mechanics and tracking of the patella as it glides over the femur (patellofemoral joint). Patellofemoral dysfunction can result in pain, decreased quadriceps strength, and subluxation.

**Patellofemoral Joint:** Articulation of the patella (kneecap) and femur. Inflammation of this joint can occur through: acute injury to the patella; overuse from excessive running, particularly if there is an associated knee weakness; chronic wear and tear of the knee; or poor foot mechanics. Patellofemoral irritation can lead to chondromalacia, which in its most chronic condition, could require surgery.

**Pathology:** Study of the nature and cause of injury or disease; description of an injury or disease.

**Pathomechanics:** Abnormal motion and forces produced by the body, most often occurring secondary to trauma.

**PCL:** See posterior cruciate ligament.

**Pectorals:** Chest muscles beneath breast that lead up to the shoulder.

**Periosteum:** A fibrous membrane containing blood vessels covering the shafts of long bones.

**Peroneal Muscles:** Group of muscles of the lateral lower leg that are responsible for everting the ankle and plantarflexing the foot. Tendons of these three muscles are vital to the stability of the ankle and foot. The muscle group consists of the peroneus longus, peroneus tertius, and peroneus brevis.

**Pes Anserine Muscle Group:** Consisting of the semitendinosus, sartorius, and gracilis, these muscles flex the knee and rotate the lower leg inward. The pes anserine group attaches on the front of the knee and may become inflamed or contused during activity.

**Phalanges:** The group of bones that form the fingers or toes.

**Phalanx, Phalanges (pl.):** Any bone(s) of the fingers or toes.

**Phlebitis:** Inflammation of a vein.

**Phonophoresis:** The use of therapeutic ultrasound to introduce medication into the body.

**Photophobia:** The eye's intolerance to light.

**PIP:** See proximal interphalangeal joint.

**Plantar:** Pertaining to the sole of the foot.

**Plantar Fascia:** The tight band of connective tissue in the arch of the foot.

**Plantar Fasciitis:** Inflammation of the plantar fascia; associated with overuse or acute foot injury. In some cases this condition can be corrected with a foot orthotic.

**Plantarflexion:** Ankle motion where the toes are pointed toward the ground.

**Plantaris:** A long, thin muscle of the calf (triceps surae).

**Plica:** Fold of tissue in the joint capsule. A plica can be inflamed as the result of overuse.

**PNF:** See proprioceptive neuromuscular facilitation.

**Positive Contraction:** See concentric muscle contraction.

**Post Concussion Syndrome:** A condition where following a concussion or repeated mild concussions the symptoms continue for a length of time. They may last from weeks to months. Athletes should not compete when post concussion symptoms are present. See also concussion.

**Posterior:** At the back part, or back side of the body.

**Posterior Cruciate Ligament (PCL):** A primary stabilizing ligament of the knee that provides significant stability and prevents displacement of the tibia backward within the knee joint. A complete tear of this ligament necessitating reconstruction could require up to 12 months of rehabilitation.

**PRE:** See progressive resistance exercise.

**Prodromal:** Pertaining to the interval between the initial disease rate and the onset of outward symptoms.

**Progressive Resistance Exercise (PRE):** An approach to exercise whereby the load or resistance to the muscle is applied by some mechanical means and is quantitatively and progressively increased over time.

**Pronation:** In the foot, it is a combination of motions resulting in a position such that the foot is abducted and everted. Foot pronation can be a byproduct of an arch problem, leg length discrepancy, or chronically bad running mechanics; can be compromised with the use of an orthotic. In the hand, pronation is movement of the forearm into a palm down position.

**Proprioception:** The athlete's ability to sense the position of one or more joints.

**Proprioceptive Neuromuscular Facilitation (PNF):** An approach to therapeutic exercise for increasing range of motion based on the principles of functional human anatomy and neurophysiology.

**Prosthesis:** An artificial body part.

**Proximal:** Near the source, nearest any point being described. The elbow is proximal to the hand.

**Proximal Interphalangeal Joint:** The first joint from the knuckle in the fingers or toes.

**Purulent:** Containing pus.

## Q

**Q-Angle:** The angle formed by the quadriceps, patella, and the tibial tuberosity (where the patellar tendon attaches on the tibia).

**Quadriceps Muscle Group (Quads):** A group of four muscles in the front thigh that run from the hip and form a common tendon at the patella; they are responsible for knee extension. The muscles of the quadriceps group include the rectus femoris, vastus lateralis, vastus intermedius, and vastus medialis.

**Quadriplegia:** The loss of nerve function – paralysis – in all of the extremities.

## R

**Radial deviation:** Movement of the hand toward the radial (thumb) side.

**Radicular pain:** A sharp, shooting pain.

**Radiography:** A general term used for imaging techniques such as X-rays and MRI.

**Radius:** Forearm bone on the thumb side.

**Reconstruction:** Surgical rebuilding of a joint using natural, artificial or transplanted materials.

**Rectus Femoris:** See quadriceps muscle group.

**Referred Pain:** Pain felt in an undamaged area of body away from the actual site of injury.

**Rehydration:** The restoration of body fluids and an important aspect in preventing heat illness. For more information see: <http://nata.org/publicinformation/files/fluidreplacement.pdf>

**Relative Humidity:** The ratio between the amount of water vapor in the air and the actual amount of water the air could potentially hold based on the current temperature.

**Retinaculum:** A fibrous membrane that holds an organ or body part in place.

**RICE:** Acronym for rest, ice, compression, and elevation, the fundamental principles used in the immediate care of orthopaedic injuries.

**Rigidity:** A pathological loss of a joint's motion or a soft tissue's elasticity.

**Rotator Cuff:** Group of four shoulder muscles that is responsible for moving the shoulder in internal and external arcs; vital for throwing. Many rotator cuff impingement injuries are caused by the weakness of one or more of the rotator cuff muscles. The rotator cuff group consists of the subscapularis, supraspinatus, infraspinatus, and teres minor muscles.

**Ruptured Disc:** A lesion of an intervertebral disc where the core leaks through the fibrous outer layer, placing constant pressure on spinal nerve roots and/or the spinal cord and results in pain radiating into one or more extremity.

**Ruptured Ligament:** A third-degree sprain (tearing) of a ligament. When a ligament is ruptured, the joint becomes unstable.

**Ruptured Tendon:** A third-degree strain (tearing) of a tendon. When a tendon is ruptured the muscle cannot produce joint motion.

## S

**Sacroiliac Joint:** Junction of the sacrum with the pelvis.

**Sacrum:** Group of five fused vertebrae located just below the lumbar vertebrae of the lower back.

**Salicylates:** A family of analgesic compounds that includes aspirin.

**SC Joint:** See sternoclavicular joint.

**SCA:** Sudden cardiac arrest.

**Scapula:** Shoulder blade.

**Scapular Dyskinesis:** An improperly moving scapula.

**Sciatic Nerve:** A major nerve that carries impulses for muscular action and sensations between the lower back, posterior thigh, and lower leg; it is the longest nerve in the body.

**Sciatica:** Irritation or inflammation of the sciatic nerve resulting in pain or tingling running down the leg.

**Scoliosis:** Lateral curvature of the spinal column in the frontal plane, giving the spine an "S" shape when viewed from behind.

**Sebaceous Gland:** Organs within the skin that secrete a fat-based oil.

**Sedation:** The result of calming nerve endings.

**Sedative:** An agent that causes sedation.

**Semimembranosus:** A medial muscle of the hamstring group. See also hamstring group.

**Semitendinosus:** A medial muscle of the hamstring group. See also hamstring group.

**Sesamoid Bone:** A bone that lies within a muscle tendon to enhance the muscle's mechanical strength or protect an adjacent bone. The most commonly known sesamoid bone is the patella; however, there are two small sesamoid bones located at the base of the great toe. Occasionally, this type of bone will not develop as one complete piece, and this congenital condition is referred to as a "bipartite sesamoid" and can be inflamed through physical activity.

**"Shin Splint":** A catch-all syndrome describing pain in the shin that is not a fracture or tumor and cannot be defined otherwise.

**Shoulder Girdle:** The unit formed by the humerus, scapula, and clavicle.

**Shoulder Separation:** A lay term describing a sprain of the shoulder's acromioclavicular (AC) joint where the tip of the clavicle may be elevated from its normal position of attachment on the acromion process.

**Sign:** An observable condition that indicates the existence of a disease or injury.

**Sinus Rhythm:** An irregular heartbeat characterized by an increased rate during inspiration and a decreased rate during expiration.

**Soft Corn:** A corn, softened by moisture found between the toes. Soft corns run a high risk of infection.

**Soft Tissue:** Structures other than bone, including muscle, tendon, ligament, capsule, bursa, and skin.

**Soleus:** One of the calf (triceps surae) muscles. Responsible for pointing the toes.

**Spasm:** Sudden, violent, involuntary contractions of muscle.

**Spear Tackling:** See spearing.

**Spearing:** The act of hitting an opponent with the top of the head. This act flexes the cervical spine and the resulting force can result in a catastrophic fracture and/or dislocation of the cervical spine. Spearing rules should be enforced to protect the athlete who is hitting with the head. For more information see:

<http://nata.org/publicinformation/files/spearingps.pdf>

**Spinal Stenosis:** A narrowing of the opening in the vertebra through which the spinal cord or spinal nerve root pass.

**Spinous Process:** A projection of the posterior portion of each vertebrae that functions as an attachment site for muscles and ligaments of the spine.

**Spleen:** Large, solid organ responsible for the normal production of white blood cells and filtering blood of debris and toxic matter.

**Spondylitis:** Inflammation of one or more vertebrae.

**Spondylolisthesis:** Forward displacement of one vertebra over another due to a progressive deterioration of the bone.

**Spondylosis:** Abnormal vertebral fixation or immobility. Arthritis of the vertebrae.

**Sports Medicine:** The application of medical and scientific knowledge to the prevention (e.g., training methods and practices), care, and rehabilitation of injuries suffered by individuals participating in athletics.

**Sprain:** An injury to the ligaments surrounding the joint. The violent twisting, stretching, pulling or tearing of a ligament.

**1st Degree Sprain:** A stretching but no tear of a ligament. The athlete may be able to continue to play or will usually return to play in a few days.

**2nd Degree Sprain:** A partial tear of a ligament. Bracing may be required. The athlete will usually miss one to four weeks.

**3rd Degree Sprain:** A complete tear of a ligament. Depending on the ligament involved, bracing or surgery may be required. The athlete is usually out from three weeks to 12 months depending upon the course of treatment.

**Sternoclavicular Joint (SC Joint):** The articulation of the clavicle (collarbone) with the sternum (breast bone). The SC joint is the only bony attachment of the upper extremity to the torso.

**Sternum:** The breast bone.

**Stinger:** A lay term for brachial plexus trauma in the neck that results in an "electrical sensation" and decreased strength in the arm. See also brachial plexus.

**Strain:** A muscle injury. The stretching, pulling or twisting of the muscle or tendon.

**1st Degree Strain:** A stretching but no tear of a muscle or tendon. The athlete may be able to continue to play or will usually return to play in a few days.

**2nd Degree Strain:** A partial tear of a muscle or tendon. The athlete will usually miss one to four weeks.

**3rd Degree Strain:** A complete tear of a muscle or tendon. Depending on the muscle or tendon involved, surgery may be required. Athlete is usually out from six weeks to a year. Complete tears are also referred to as "ruptures."

**Strength:** Maximum amount of force that can be produced by a muscle during a single contraction.

**Stress Fracture:** A hairline-type of break in a bone caused by overuse.

**Stress X-Ray:** An X-ray taken when a portion of the body is stressed to its maximum in order to determine joint stability.

**Stretching:** Any therapeutic maneuver designed to elongate shortened soft tissue structures and thereby increase flexibility.

**Subconjunctival Hematoma:** Leakage of the superficial blood vessels overlying the white part of the eye.

**Subcutaneous:** Beneath the skin.

**Subdural Hematoma:** Blood located between the brain and the dural lining of the skull. This blood will cause increased pressure that affects the blood flow to the brain resulting in brain damage or death. The signs and symptoms of a subdural hematoma have a relatively slow onset, sometimes taking weeks to show.

**Subluxation:** Partial dislocation of a joint. The term usually implies that the joint can return to its normal position without formal reduction.

**Subscapularis Muscle:** A muscle of the rotator cuff responsible for internal rotation the humerus. See also rotator cuff.

**Sudden Death:** Unexpected and instantaneous death occurring within one hour of the onset of symptoms; most often used to describe death caused secondary to cardiac failure.

**Superior:** In anatomy, the upper of two parts; toward the top or above.

**Supination:** Movement of the forearm into a palm-up position or the razing of the medial (inward) portion of the foot.

**Supraspinatus Muscle:** A muscle of the rotator cuff responsible for internal rotation and elevation of the humerus. See also rotator cuff.

**Sweat Rate:** The amount of body fluids lost via perspiration (sweating) during exercise. Calculated as:  $\text{Sweating rate} = \text{pre-exercise body weight} - \text{postexercise body weight} + \text{fluid intake} - \text{urine volume} / \text{exercise time in hours}$ .

**Symptom:** A condition not visually apparent and must be described by the patient. Pain is a common symptom.

**Syncope:** Fainting caused by a transient loss of oxygen supply to the brain.

**Syndesmosis Joint:** A relatively immobile joint in which two bones are bound together by ligaments.

**Syndesmotom Ankle Sprain:** An injury to the interosseus membrane, which is the fibrous tissue that stabilizes the two bones of the shin (tibia and fibula). This injury is usually due to excessive ankle rotation or dorsiflexion along with accompanied trauma to the ligamentous structures of the ankle joint. Also referred to as a "high ankle sprain."

**Synovial Capsule:** A thin layer surrounding most mobile joints that produces a lubricating synovial fluid.

**Synovial Fluid:** Joint lubricating fluid, produced in synovium, or the inner lining of a joint.

**Synovitis:** Inflammation of the synovial lining of a joint.

**Systemic:** Affecting the body as a whole.

## T

**Tachycardia:** Abnormal, rapid heart rate.

**Target Heart Rate:** A predetermined heart rate to be achieved during exercise to ensure development of training adaptations.

**Tarsals:** Group of seven bones of the foot consisting of the calcaneus, navicular, talus, cuboid and three cuneiform bones.

**Tarsus:** The portion of the foot closest to the ankle.

**Temporomandibular Joint (TMJ):** The articulation of the jaw and skull.

**Tendinitis:** Inflammation of the tendon and/or tendon sheath, caused by chronic overuse or sudden injury.

**Tendinosis:** Degeneration of a tendon from repetitive microtrauma or collagen degeneration within a tendon.

**Tendon:** Tissue that connects muscle to bone.

**Tennis Elbow:** General term for pain and inflammation of the lateral elbow; lateral epicondylitis.

**TENS:** See transcutaneous electrical nerve stimulation.

**Teres Minor Muscle:** A member of the rotator cuff group of muscles responsible for externally rotating the humerus. During throwing, the teres minor, along with the infraspinatus are responsible for decelerating the humerus. See also rotator cuff.

**Therapeutic:** Having healing properties.

**Thoracic Vertebrae:** Group of twelve vertebrae located in the thorax that articulate with the twelve ribs.

**Thrombophlebitis:** Inflammation and blockage of a vein by a blood clot.

**Tibia:** Larger of the two bones of the lower leg and is the primary weight-bearing bone; runs medially alongside fibula.

**Tinea Pedis:** A fungal infection of the foot and toes.

**Tinnitus:** Ringing in the ears.

**TMJ:** See temporomandibular joint.

**Tomograph:** A special type of radiographic apparatus that demonstrates an organ or tissue in a particular depth.

**Transcutaneous Electrical Nerve Stimulation (TENS):** An electrical modality that sends a mild current through electrodes at the injury site to decrease the sensation of pain.

**Transdermal:** Introduction of medication to the subcutaneous tissues through unbroken skin.

**Transverse Process:** Lateral projections off the right and left side of each vertebra that functions as an attachment site for muscles and ligaments of the spine.

**Triage:** The process of determining the priority of treatment.

**Triceps:** See triceps brachii.

**Triceps Brachii:** Muscle of the back of the upper arm, primarily responsible for extending the elbow.

**Triceps Surae:** The "calf" muscles of the lower leg: gastrocnemius, soleus, and plantaris. See calf.

**Trigger Point:** A localized area of spasm within a muscle.

**Tuberosity:** A nodulelike projection off a bone, serving as an attachment site for muscles and ligaments; referred to as a tubercle in the upper extremity.

**Turf Burn:** An abrasion resulting from contact with artificial turf in which one or more layers of skin is removed.

**Turf Toe:** A general term used to denote a sprain or inflammation of the metatarsophalangeal (MTP) joint of the great toe caused by excessive or repeated extension.

**Tympanic Membrane:** The ear drum.

**Type I Muscle Fibers:** Muscle fibers that generate a relatively low level of force but can sustain contractions for a long period. Geared to aerobic activity, these muscle fibers are also referred to as tonic or slow-twitch fibers.

**Type II Muscle Fibers:** Muscle fibers that generate a large amount of force in a short time. Geared to anaerobic activity, they are also referred to as phasic or fast-twitch fibers.

## U

**Ulceration:** An open sore or lesion of the skin or mucous membrane that is accompanied by inflamed and necrotic tissue.

**Ulna:** Forearm bone that runs from the tip of the elbow to the little finger side of the wrist.

**Ulnar Deviation:** Movement of the hand toward the ulnar side of the forearm.

**Ulnar Nerve:** Nerve in the elbow commonly irritated from excessive throwing or repeated trauma; when contused, produces pain and tingling in the fourth and fifth fingers associated with the "funny bone" sensation.

**Ultrasound:** A modality that transmits high-frequency sound waves through an applicator into the skin to the soft tissue to heat the local area. Ultrasound may also produce other effects that promote the healing process.

**Universal Precautions:** A series of steps, established by the Occupational Health and Safety Administration (OSHA), that individuals should take to avoid accidental exposure to bloodborne pathogens.

**Urticaria:** Skin vascular reaction to an irritant characterized by red, itchy areas, wheals or papules. Commonly referred to as "hives."

## V

**Valgus:** Angulation inward and toward the midline of the body.

**Valgus Stress (Force):** A force from the lateral side of the body to the midline of the body. The medial collateral ligament is most commonly sprained by a valgus force.

**Varicose Veins:** Enlargement of the superficial veins.

**Varus:** Angulation outward and away from the midline of the body.

**Varus Stress (Force):** A force from the medial side of the body outward. The lateral collateral ligament is most commonly sprained by a varus force.

**Vasoconstriction:** A narrowing of the diameter of an artery, decreasing local blood flow.

**Vasodilation:** An increase in the diameter of an artery, increasing local blood flow.

**Vastus Intermedius:** See quadriceps muscle group.

**Vastus Lateralis:** See quadriceps muscle group.

**Vastus Medialis:** See quadriceps muscle group.

**Vastus Medialis Oblique:** A portion of the quadriceps muscle group that is specifically responsible for maintaining normal patellar alignment, especially as the knee nears the end of extension.

**Vertebra:** The individual bones of the spinal column.

**Visceral:** Pertaining to organs of the body.

**Vital Signs:** Heart rate, blood pressure, respiration rate, skin color, and temperature. Vital signs help determine the status of the body.

**VMO:** See vastus medialis oblique.

## W

**WBGT:** See wet bulb globe temperature.

**Wet Bulb Globe Temperature (WBGT):** The temperature at which water evaporates. The higher the temperature, the more difficult it is to lose body heat through sweating.

**Whirlpool:** A hot or cold water bath in which the water is propelled by air to produce a massaging therapeutic action.

**"Wind Knocked Out":** Syndrome describing a contraction of the abdominal nerve trunk, the solar plexus, as a result of an abdominal contusion.

**Work Hardening:** Job-specific exercises used to prevent work-related injuries or to rehabilitate injured workers.

**Wrist:** The junction between the two forearm bones (radius and ulna) and the eight wrist bones (trapezium, trapezoid, capitate, hamate, pisiform, triquetrum, lunate and scaphoid).

## X

**X-ray:** Electromagnetic energy that is able to penetrate most solid matter. Used in the imaging of bones.

**Xiphoid Process:** Bottom portion of the sternum (breast bone).



## NATA CALENDAR OF EVENTS

### ANNUAL MEETING & CLINICAL SYMPOSIA

2007: June 26-30  
Anaheim, California

2008: June 17-21  
St. Louis, Missouri

2009: June 17-21  
San Antonio, Texas

2010: June 22-25  
Philadelphia, Pennsylvania

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