

## *Minimizing Injuries on the Football Field*

**Knowledge and Skill Development:** Before playing football, each athlete should have mastered a basic set of information and skills. At a minimum, athletes should understand the rules of football related to injury prevention and should master the proper execution of the fundamental football skills, particularly blocking and tackling without using the head.

**Conditioning:** Year-round conditioning programs involving exercise and appropriate nutrition are essential to the athlete's safety. Conditioning programs for football should promote anaerobic endurance; cardiovascular endurance; flexibility; range of motion and muscle strength, power and endurance. More intensive conditioning and strength training should be initiated a minimum of six weeks before the start of daily practice, so athletes will be conditioned before the first day of practice.

- **Muscle Strengthening:** Resistance training programs may help to prevent injuries in youth sports. To avoid injury, fitness professionals who have a thorough understanding of resistance training and safety procedures should supervise every exercise session. Equipment should be in good repair and properly adjusted to each individual user. Strengthening exercises should be preceded by 5-10 minutes of general warm-up exercises (low intensity aerobic exercise and stretching). Any individual muscle group should be trained only two to three times per week, to allow two to three days of rest between resistance training sessions for a given muscle group. Resistance training regimens should be individualized for each athlete; competition among athletes for levels of strength should be discouraged.

- **Weight Equipment for Youth:** If weight equipment is used as part of the strengthening regime for youth who have not completed puberty, equipment should be carefully selected and adjusted for immature users. Direct supervision should be provided by a qualified adult. Youth should be carefully instructed in technique and in equipment adjustment. No one-repetition maximal lifts should ever be attempted by physically-immature athletes.

- **Neck Strengthening:** To reduce the risk of spinal injuries, athletes should receive football-specific shoulder, upper back and neck flexibility and strengthening exercises, so players will be able to hold their heads firmly during blocking and tackling. Close supervision is required to check that these exercises are being done and being done correctly. Neck strengthening exercises should not be performed immediately prior to a practice or a game.

- **Overuse Injuries:** Younger athletes are particularly susceptible to overuse injuries. To prevent such injuries, conditioning and skill practicing sessions should be increased gradually in intensity, duration and frequency.

### **Preventive Measures Related to the Sports Setting**

**Equipment and Apparel:** Each athlete should have equipment that is the safest available. All helmets should meet safety standards set by the National Operating Committee on Standards in

Athletic Equipment (NOCSAE). Mouth protectors, properly-sized for each athlete, should be worn. Protective eye devices should be mandatory for players with severely impaired vision or vision in only one eye. All equipment should be carefully examined for damage before it is given to an athlete, and periodically during the season. Old, worn, or damaged equipment should be reconditioned or discarded. Improper fit of protective football equipment may increase the severity of an injury or be the cause of one; therefore, each player should be individually fitted for each piece of equipment. Coaches should pay particular attention when assigning equipment to young or inexperienced players who may not recognize when equipment feels right.

**Facilities:** Playing fields should be well-lighted and free of holes, broken glass and other hazardous debris. All fields should be well-maintained. Goal posts should be padded to prevent injuries from high-speed collisions. Locker rooms, weight rooms and shower rooms should be sanitary, well-lighted and free of hazardous debris, with ground fault circuit interrupters when water is near electrical outlets. To prevent injuries to spectators, out-of-bounds buffer zones between spectators and the playing field should be adequate to prevent collisions.

### **Preventive Measures Related to Management of Practice and Competition**

**Coach's Responsibilities:** The coach has overall responsibility for the safety of the athletes, including teaching safety principles to them; overseeing proper selection, fitting and maintenance of equipment; seeing that they are properly conditioned; requiring proper warm-up; teaching appropriate techniques; avoiding unsafe environmental situations; and preventing players from competing beyond their fatigue level. The coach should be certified in first aid and CPR, and should attend state-approved in-service training on coaching football. The coach should have a thorough mastery of the rules of football.

- **Preventing Catastrophic Spine Injuries:** Coaches should teach players not to use the top of their helmets to tackle, block or strike opponents. Contact should always be made with the head up and never with the top of the head/helmet. Initial contact should never be made with the head/helmet or face mask.

- **Practices:** Pre-season practices are injury-prone times. Controlled activities should be emphasized at this time and coaching staff should be particularly vigilant of technique. A significant percent of injuries occur during contact practice drills. A reduction in the amount of contact practice should be considered as the season progresses.

**Officials' Responsibilities:** Officials should promote the safety of athletes by having a thorough mastery of the rules of football and by enforcing the rules strictly.

**Trainer Responsibilities:** Each institution responsible for football competition should identify a staff member with first aid training whose roles are to develop an injury prevention program, work with injuries and develop a conditioning program. This person should be present at all practices and all games. These roles are best accomplished by an athletic trainer who is certified by the National Athletic Trainers Association (NATA).

**Parents' Responsibilities:** Parents of young athletes are important for safe football. They should be well-informed about specific injury prevention measures, including safer blocking and tackling techniques that do not use the head. They should be free to make unannounced visits to practices and should ask questions if they see something that seems unsafe. In addition, parents should be sure any injury is reported to the athletic program staff, should reinforce compliance with treatments or rehabilitation after injury and be sure that athletes' immunizations are up-to-date.

**Athletes' Responsibilities:** Athletes can reduce their risk of injuries by cooperating with conditioning programs, mastering correct execution of football techniques, wearing protective equipment, following the rules of football, reporting all injuries (even minor ones) to the athletic program staff and complying with injury treatment and rehabilitation programs.

**Financial Support:** Running athletic programs on a shoestring budget to maximize opportunities for participation is understandable. For football, however, because of the risk for permanent disabling injury and death, adequate financial support is needed to assure that each child has the safest possible equipment, fields are well-maintained, children can receive good pre-participation physicals and adequate medical supervision during practices and games.

**Emergency Preparation:** To minimize delays in treating injured athletes:

- A telephone should be immediately available at all game and practice sites, with prominent posting of numbers of ambulance, paramedics, first aid personnel and police.
- Plainly-marked emergency first aid equipment should be accessible on the field. This equipment should be inspected periodically to assure its completeness, cleanliness and usability.
- An emergency action plan should be developed and rehearsed. Key personnel who are to carry out the plan should be identified. The plan should include responses to severe injuries, hypothermia, heat illness and allergic reactions to plants and stinging insects.
- An NATA-certified athletic trainer or a physician should be available at every game and practice. If this is not possible, a physician should be available by phone or pager. At a minimum, a specific agreement should be negotiated with a local emergency department and/or emergency medical service (EMS) provider to deal with injured athletes.
- Up-to-date medical information for each athlete should be immediately accessible at the site of every game and practice. This information should include emergency contacts, preferred physician, preferred hospital and a signed consent form giving permission to provide emergency care. In addition, any health conditions or medications should be documented.
- Emergency transportation should be available on the scene or within six minutes from the football field. There should be no cars blocking ambulance routes to the field.

**Managing Severe Weather:** Extreme weather conditions threaten the health of athletes, coaches and spectators. Policies for modifying or canceling games and practices under conditions of

lightning, severe storms, tornadoes, high heat/humidity and low wind-chill index should be clearly defined before a season begins. Weather policies should include the chain of command for making weather decisions, the method to be used to document weather and the specific weather conditions that would result in specific precautions. Athletic programs should use Weather Radio equipped with the emergency alert system provided by the National Weather Service to be fully informed about life-threatening weather conditions.

- **Precautions for Lightning:** Know where the closest safe shelter is and how long it takes to get there. Monitor how close lightning is striking and how fast it is approaching by counting the number of seconds between the time lightning is sighted and the time thunder is heard. Before the flash-to-bang count reaches 30 seconds, all individuals should have left the athletic site and reached safe shelter. Athletic activity should not be resumed until 15-30 minutes after the last flash of lightning or last clap of thunder.

- **Precautions for Severe Storms and Tornadoes:** Weather Radio should be consulted before practices and games to check for storm warnings. If a tornado watch or severe thunder storm watch is issued during a practice, practice can continue, as long as coaching staff and athletes know how to get to nearby safe shelter and Weather Radio is being continually monitored. However, if a watch is issued during a game or three hours before a game, the competition should be suspended or canceled. If a tornado warning or severe thunderstorm warning is issued during either a practice or game, athletic activity should be suspended and all participants moved as rapidly as possible to safe shelter. Athletic activity should not be resumed until the National Weather Service suspends the watch or warning.

- **Precautions for Extreme Heat:** Acclimatize athletes to heat gradually. During hot weather, conduct practices and early season games in light-weight uniforms, without stockings or long-sleeved jerseys. Make cold water available at all times. Encourage drinking before, during and after practices and games. Weigh athletes before and after practice to monitor water loss. To avoid cumulative fluid depletion, track pre-practice weights over several days. Observe all athletes for signs of heat illness-fatigue, weakness, dizziness, pounding headache, visual disturbances, lethargy, cramps, inattention, confusion, nausea or vomiting, awkwardness, weak and rapid pulse, flushed appearance or fainting. Identify and observe more closely athletes at higher-than-normal risk for heat illness. If heat illness is suspected, cool the victim down and seek a physician's immediate service. Salt and electrolytes lost through sweating should be replaced through a normal diet with plenty of fruits and vegetables. Salt tablets are inappropriate and are potentially dangerous. Determine the degree of risk for heat illness, taking both temperature and relative humidity into account. During high risk conditions, rest and water breaks should be scheduled and enforced. During very high risk conditions provide rest periods of 15-30 minutes for each hour of workout, keep high risk athletes out of play and cancel practices and games in youth sports programs.

- **Precautions for Cold Weather:** Temperature, wind speed and degree of wetness should all be taken into account when considering cold weather safety policies. The risk of freezing of exposed flesh is increased when the wind-chill index is -20°F. No outdoor athletic activity should be permitted when the wind-chill index is -50°F.

**Warm-up:** Players should stretch before and after workouts. There should be a minimum of 15 minutes of warm-up before any game or practice and a cool-down period afterward. Athletes should also warm up for five minutes during any prolonged breaks in activity (half-time, between quarters, etc.).

**Re-injuries:** To minimize the occurrence of re-injuries, early intervention on a new injury and appropriate rehabilitation are important. Athletes should not be allowed to return to practice or play until injuries are healed, range of motion is restored and strength has been recovered. Medical consultants should agree on guidelines for return to play following head injuries such as those developed by the American Academy of Neurology. Each serious head injury should be dealt with by an experienced physician.

**Prevention of Communicable Diseases:** Before any piece of equipment is reassigned from one athlete to another, it should be sanitized. All players should be immunized for hepatitis B. Athletic staff should follow universal precautions for protecting themselves and athletes from exposure to blood-borne illnesses.

**Use of Drugs:** School districts and youth leagues should aggressively discourage children from using steroids and all other performance-enhancing drugs as well as from use of alcohol and recreational drugs.

**Transportation:** When an athletic program is transporting athletes, the vehicles used should be carefully maintained, inspected for safety and driven by appropriately-licensed drivers.

**Documenting Injuries:** Each organization administering a football program should establish a system for documenting injuries, working toward a surveillance system based on uniform definitions of injuries and exposures.