Baseball and Softball

Baseball and softball are extremely popular among America's youth. Injuries are common because of the large number of athletes participating. While most injuries are acute, there are specific overuse injuries that commonly affect young ball players. Most of these injuries can be prevented.

The following is information from the American Academy of Pediatrics (AAP) about how to prevent baseball and softball injuries. Also included is an overview of common injuries.

Injury prevention and safety tips

- **Sports physical exam.** Athletes should have a preparticipation physical evaluation (PPE) to make sure they are ready to safely begin the sport. The best time for a PPE is about 4 to 6 weeks before the beginning of the season. Athletes also should see their doctors for routine well-child checkups.
- **Fitness.** Athletes should maintain a good fitness level during the season and off-season. Preseason training should allow time for general conditioning and sport-specific conditioning. Also important are proper warm-up and cool-down exercises.
- **Technique.** Athletes should learn and practice safe techniques for performing the skills that are integral to their sport. For example, baseball and softball players should avoid headfirst slides, and run bases with a helmet and break-away bases. Athletes should work with coaches and athletic trainers on achieving proper technique.
- **Equipment.** Safety gear should fit properly and be well maintained.
  - **Protective eyewear.** Glasses or goggles should be made with polycarbonate or a similar material. The material should conform to the standards of the American Society for Testing and Materials. Batting helmets and catcher's masks with face masks also are recommended.
  - **Shoes** with rubber (not metal) spikes
  - **Pads** (knee and shin guards)
  - **Athletic supporters** and cups for boys
  - **For catchers:** helmets with face guards, throat guards, knee-saver pads, and chest protectors (Note: Chest protectors cannot prevent direct trauma to the heart. See "Commotio cordis" on page 2.)
  - **For batters:** batting helmets, face guards
  - **Safety baseballs** (Softer balls decrease overall injury from getting struck by the ball in addition to lowering the risk of commotio cordis.)
- **Environment**
  - **Heat.** Proper hydration and scheduling practices and games during cooler times of the day can prevent heat-related illness and dehydration. (See "Heat-related illnesses" on page 2.)
  - **Lightning.** Guidelines should be in place to postpone play until a safer time. Play should be stopped for 30 minutes after the last strike if lightning is detected within a 6-mile radius (follow the 5 second per mile rule). A safe area (buildings with metal pipes or well-grounded wires) should be identified ahead of time. No one should stand under the bleachers or other non-grounded structures.
  - **The field.** A safe playing field is free of debris; holes and uneven surfaces should be repaired. The infield and pitcher's mounds should be raked and smoothed regularly. Evening games should be well lit. Breakaway bases should be used to reduce injuries from sliding. A runner's base placed to the right of the first base foul line in the runner's lane is one way to help prevent collisions at first base. Safety screens should be in place to protect the dugouts from balls and thrown bats.
- **Emergency plan.** Teams should develop and practice an emergency plan so that team members know their roles in emergency situations. The plan would include first aid and emergency contact information. All members of the team should receive a written copy each season. Parents also should be familiar with the plan and review it with their children.

Common injuries

General treatment for acute injuries

Rest, ice, compression, and elevation is the first step in treating an acute injury accompanied by pain and swelling. Athletes should stop playing and apply ice directly to the injured area for 20 minutes. After icing, an ACE bandage can be used to limit swelling. The injured area should be raised above the heart to limit swelling.

Shoulder injuries

Shoulder impingement is an overuse injury that causes achy pain on the front or side of the shoulder. The pain is felt most when the arm is overhead or extended to the side. Shoulder impingement is common in young athletes with weak upper back and shoulder muscles. Off-season stretching of the back of the shoulder and strengthening of the shoulder blade and core muscles can help prevent these injuries.

Baseball pitchers and other high-volume throwers (for example, catchers) are at risk for *Little League shoulder,* an irritation to the growth plate in the humerus bone of the shoulder. Limiting the number of pitches a player can throw during a practice or game can help prevent these types of overuse injuries (pitch count guidelines based on age are published by USA Baseball). Any athlete who has shoulder pain for more than 7 to 10 days should see a doctor.

Elbow injuries

Elbow injuries are very common in baseball players, especially pitchers, and include *Little League elbow* (irritation of the growth plate of the humerus bone of the elbow). As with shoulder injuries, limiting the number of pitches a player throws during a practice or game can help prevent overuse injuries.

Ankle injuries

Ankle injuries often occur as a result of uneven playing fields or sliding into bases, or from improper rehabilitation/protection after injury. Fields should be well maintained and breakaway bases should be used. Use of ankle braces and ankle exercises that strengthen and improve balance of the ankles may prevent repeat injury.

Eye injuries

Eye injuries typically occur from contact with the ball, bat, or a finger. Any injury that affects vision or is associated with swelling or blood inside the eye should be evaluated by an ophthalmologist. Athletes should also stay a safe distance away from any player swinging a bat or playing catch. The AAP recommends that children involved in organized sports wear appropriate protective eyewear.

Heat-related illnesses

Athletes who are dizzy or confused, or complain of a headache, are most likely suffering from heat exhaustion or heat stroke. Any athlete suspected of having heat illness should immediately be removed from play, cooled by any means available, and transported by emergency medical services (call 911).

Heat-related illnesses can be prevented when athletes are given adequate time to get used to exercising in the heat (usually takes 1 to 2 weeks). Drinking water or a sports drink before, during, and after training, as well as avoiding stimulants including caffeine, can also help.

Commotio cordis

Sudden death as a result of a significant impact to the chest is known as commotio cordis. The usual cause is impact from a baseball, lacrosse ball, or puck, or a direct blow in football or hockey. Recognition and resuscitation alone are rarely successful; however, if available an automated external defibrillator can successfully resuscitate athletes with this condition.

Remember

Baseball and softball injuries can be prevented when fair play is encouraged and the rules of the game are enforced. Also, athletes should use the appropriate equipment and safety guidelines should always be followed.

Notes

American Academy of Pediatrics

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