Racquet Sports

Racquet sports (tennis, racquetball, squash, badminton, and paddle tennis) are sports of speed and agility and involve athletes of all ages.

As in many sports, the risk of injury increases with age due to the style of play, contact forces, and size of athletes. However, the risk of injuries can be reduced.

The following is information from the American Academy of Pediatrics (AAP) about how to choose a racquet and prevent racquet sports injuries. Also included is an overview of common injuries and treatment.

How to choose a racquet

Racquet choice can affect an athlete's performance. The appropriate head and handgrip size are important. Athletes may need to test out different string tensions before deciding what is right for them.

- **Racquet head size.** The head size refers to the hitting area. The following are general racquet sizes based on age:
  - 21-inch—4 to 6 years of age
  - 23- to 25-inch—5 to 8 years of age
  - 25- to 26-inch—8 to 11 years of age
  - 27- to 29-inch (adult size)—11 years of age and older
- **Handgrip size.** Handgrip size ranges from 3 to 5 inches (measured in eighths of an inch). There are many ways to assess proper grip size. One way is to measure the tip of the ring finger to the last palmar crease, or one "shakes hands with racquet." And one finger breadth should fit between the thumb and second digit. The following are average handgrip sizes. If you measure between sizes, buy the racquet with the smaller grip and use an overgrip to increase grip size.
  - Smaller than 4 inches—juniors
  - 4⅛ to 4⅜ inches—women 18 years and older
  - 4½ and 4¾ inches—men
- **String tension.** Average string tension runs anywhere from 55 to 65 pounds. A good rule of thumb to remember: higher tension equals more power and less control; lower tension equals less power and more control.

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 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. Examples of poor technique include not fully extending the elbow on forehands or backhands, hitting the ball too late, and serving behind one's head. Athletes should work with coaches and athletic trainers on achieving proper technique.
- **Training.** A good rule of thumb is not to increase training by more than 10% per week. That means if an athlete is playing 10 hours per week, the following week could be 11 hours not 20 hours.
- **Exercises.** Some young athletes are weak in their shoulder, trunk, or leg muscles. It is wise to do appropriate strengthening exercises for these muscle groups. Others are inflexible in the hamstrings, hips, or shoulders and need appropriate stretching exercises. A certified strength and conditioning coach or athletic trainer can demonstrate appropriate exercises.
- **Equipment.** Safety gear includes
  - **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 (ASTM).
  - **Sun protection** (ie, sunscreen, lip balm with sunblock) when outdoors
- **Environment.** Athletes used to playing on a soft surface (clay or grass) should gradually change to a hard surface. For example, 10 hours per week on soft surface; 1 hour per week on hard surface. Also, extra balls on the playing surface should be cleared away so that no one steps on them.

Common injuries

Shoulder injuries

Shoulder injuries result from too many serves or overheads in a short period. The result is that the muscle fatigues and then doesn't function properly. Treatment consists of strengthening the muscles that support the shoulder. Athletes are advised to avoid the serving or overheads until the activity is pain-free.

Elbow injuries

Tennis elbow (lateral epicondylitis) is not common in children and teens. However, irritation of the growth plates in the elbow can occur. This is often the result of a new service motion involving topspin. Treatment consists of rest from painful activities (hitting or throwing), ice, medicines, and stretches.

Wrist injuries

Wrist injuries often result from hitting too late, changing grip, or ground strokes. Athletes may have pain with use and loss of range of motion.

Treatment begins with rest, ice, compression, and elevation (RICE). Athletes should see a doctor if their wrists are swollen or painful the next day. X-rays may be needed.

Low back pain

Spondylolysis, stress fractures of the bones in the lower spine, are usually the result of too many serves (particularly topspin) or overheads in a short period. Symptoms include low back pain that feels worse with hyperextending the spine (doing back bends). Treatment of spondylolysis includes rest, physical therapy to improve flexibility and low back and core (trunk) strength, and possibly a back brace. Athletes with low back pain for longer than 2 weeks should see a doctor. X-rays are usually normal so other tests are often needed to diagnose spondylolysis. Successful treatment requires early recognition of the problem and timely treatment.

Hip and groin injuries

Hip and groin injuries are common in tennis. They usually result from quick side to side changes of direction. They can be muscle injuries or avulsion fractures (when muscles or tendons pull away from the bone). If the athlete is limping or hears a pop, or there is immediate swelling, an x-ray should be done. Treatment consists of RICE along with hip strengthening and flexibility exercises.

Heat-related illness

Many tennis athletes suffer from muscle cramps. This may be due to fatigue and excessive sweating, which causes salt loss and dehydration. Athletes who are dizzy, confused, or complain of a headache are most likely suffering from heat exhaustion or heat stroke. These athletes must be taken to a shaded area, cooled, and evaluated by emergency medical services (call 911).

Heat-related illnesses can be prevented when athletes are given 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, and avoiding stimulants including caffeine, can also help.

Ankle sprains

Ankle sprains are some of the most common injuries in racquet sports. They can prevent athletes from being able to play. Ankle sprains often happen with quick side to side changes of direction, causing the ankle to roll in (invert). An ankle sprain is more likely to happen if an athlete had a previous sprain, especially a recent one.

Treatment begins with RICE. Athletes should see a doctor as soon as possible if they cannot walk on the injured ankle or have severe pain. X-rays may be needed.

Regular icing (20 minutes) helps with pain and swelling. Weight bearing and exercises to regain range of motion, strength, and balance are key factors to getting back to sports. Tape and ankle braces can prevent or reduce the frequency of ankle sprains. Tape and an ankle brace can also support the ankle, enabling an athlete to return to activity more quickly. However, athletes should not return too quickly or more serious ankle injuries can occur.

Eye injuries

There are reported cases of retinal injury and blindness in the eye secondary to the ball striking the eye, especially in squash and racquetball. Any injury that affects vision or is associated with swelling or blood inside the eye should be evaluated by an ophthalmologist. The AAP recommends that all children involved in organized sports wear appropriate eye protection.

Remember

Injuries from racket sports 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

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