



Golden Hills

Orthopedic and Sports Physical Therapy

j o u r n a l

march-april 2008



Our Mission...

To further the prevention, diagnosis and treatment of movement dysfunction in order to enhance the physical health and functional abilities of our patients.

To maximize the patient's potential for regaining full physical health by providing rehabilitation through the use of advancements in physical therapy techniques and state-of-the-art equipment.

To establish a self-management program for the patient through education and a personalized home exercise program for each individual to enable the patient to maintain their physical health at home and at work.

Seasonal Activity Spotlight: Court Sports

It's spring again, which means that high school, collegiate and NBA basketball are in full swing, as is the high school tennis season. As your patients put away their skis and snowboards for the year and head onto the courts for fun or competition, and as younger athletes participate in their schools' spring and early summer athletics programs, Golden Hills is here to help them achieve their performance goals and, if an injury occurs, to help them heal and return to their pre-injury levels of performance.

Continuing our focus on seasonal sports, recreation and exercise (SRE) activities, the March-April issue of *Golden Hills Journal* delves into court sports such as basketball, tennis and racquetball, including strategies for injury prevention, the most common causes of injury and Golden Hills' approach to treating injured patients. Our goal is to help you and your patients understand the risks inherent in certain activities as well as the range of physical therapy services available to them.

We welcome referrals of patients who have suffered a court sport-related injury or who are simply looking to enhance their performance through effective training and safety practices. Just contact us at **(408) 274-0888**, or **therapy@goldenhillspt.com**. We're here to help!

Basketball: An Overview

Many people may not think of basketball as a collision or contact sport, but it is. In spite of rules and regulations aimed at minimizing body contact with other players, unplanned collisions do occur and injuries result. Injuries can also occur when a player collides with the backboard or hard wood playing surface of a basketball court. Because basketball is played without protective equipment, such injuries can be serious. The majority of collision-related injuries, however, are minor and consist primarily of contusions and lacerations.

In addition, because basketball is a dynamic, fast-paced sport that requires the use of the entire body, the basketball player is susceptible to a number of overuse and acute injuries to almost every part of the body, including the foot, ankle, leg, knee, hip, chest, arm, elbow, wrist, hand, head and neck.

Fortunately, thanks to the fact that basketball players are generally in excellent physical condition and have unusually gifted neuromuscular control of their bodies, as well as the close scrutiny of officials, injuries in basketball are kept to a minimum and generally are not very serious.

Basketball-Related Injuries

Basketball-related injuries are generally defined as either cumulative (overuse) or acute (traumatic) injuries.

Overuse injuries occur over time due to stress on the muscles, joints and soft tissues without proper time for healing. They begin as a small, nagging ache or pain, and can grow into a debilitating injury if they aren't treated early. Overuse injuries most commonly associated with basketball include:

- Tendonitis
- Achilles tendonitis
- Rotator cuff tendonitis

Acute or traumatic injuries occur due to a sudden force, or impact, and can be quite dramatic. The more common traumatic injuries in basketball include:

- Anterior and posterior cruciate ligament (ACL/PCL) injuries
- Injuries to the meniscus
- Wrist sprains
- Finger fractures
- Ankle sprains
- Achilles tendon rupture
- Hamstrings pull or tears
- Muscle sprains and strains

Tennis: An Overview

Tennis is the widest played of all the racquet sports. Several million people play tennis on a regular basis. Only recently have concerted efforts been made to understand the sports science of tennis. However, within the last 10 or 15 years, great strides have been made in

Tendonitis Defined

Tendonitis is one of the most common causes of court sport-related overuse injuries.

Tendonitis pain is caused by inflammation of tendons. It can cause deep, nagging pain that is caused by inflammation of the tendons, which are tough, fibrous tissues that connect muscles to bones. For a variety of reasons (for example, the stress of repeated motion, a traumatic injury or a biomechanical issue) a tendon may become irritated or inflamed. When this happens the usually smooth tendon motion becomes painful.

The Causes of Tendonitis

The most common cause of tendonitis is overuse syndrome, also called chronic repetitive stress or strain injury.

Overuse injuries are the result of repetitive use, stress and trauma to the soft tissues of the body (muscles, tendons, bones and joints) without proper time for healing. They are common injuries of new exercisers who do too much, too soon without enough rest. Repeated overuse will cause an inflammation and tendonitis. It's important for the patient to start slowly and increase his or her training time and intensity over time.

Sometimes there is a biomechanical reason that the patient will develop tendonitis. When this happens, an orthopedic surgeon may recommend surgery to realign or smooth the area the tendon slides over, followed by a regimented physical therapy program to aid in recovery.

Specific Types of Tendonitis

There are some areas of the body that commonly develop tendonitis. These include:

- Tennis elbow (lateral epicondylitis)
- Golfer's elbow (medial epicondylitis)
- Achilles tendonitis
- Rotator cuff tendonitis
- Patellar (kneecap) tendonitis
- Wrist tendonitis
- Carpal tunnel syndrome
- Tendonitis (ruptured tendons) of the knee

Treatment of Tendonitis

Treating tendonitis generally begins with the same treatment used for overuse injuries. This includes:

- Resting the stressed tissues
- Reducing the intensity, duration or frequency of the exercise
- Icing the injury

For more serious overuse injuries, physical therapy will be necessary, in combination with over-the-counter pain medications and even complete rest. Golden Hills can evaluate the seriousness of the patient's tendonitis and help you develop a patient care plan that will minimize the patient's recovery time and help prevent further injury.

understanding the biomechanics, physiology, psychology and sports medicine of tennis, largely through research funded by the USTA.

Tennis-Related Injuries

Clinical studies show that the injury rate for tennis players is quite high. One study showed that 100 total injuries occurred in 63 out of 97 junior tennis players over the 18 months prior to the study. The anatomic areas with the highest rate of injury include the shoulder and back, followed by the elbow, knee and ankle.

Like basketball, tennis injuries are generally defined as either cumulative (overuse) or acute (traumatic) injuries. Analysis found that overuse injuries, representing a failed body response to chronic repetitive tensile microtrauma, were present in 63% of cases. Traumatic injuries, representing acute responses to one-time microtrauma, were present 37% of the time.

Overuse injuries associated with tennis include:

- Anterior and posterior cruciate ligament (ACL/PCL) injuries
- Tennis elbow (lateral epicondylitis)
- Bursitis of the elbow
- Rotator cuff tendonitis
- Shoulder tendonitis, bursitis and impingement syndrome
- Frozen shoulder (adhesive capsulitis)
- Glenohumeral arthritis
- Wrist tendonitis
- Achilles tendonitis
- Iliotibial band syndrome
- Osteoarthritis of the knee
- Stress fractures
- Plantar fasciitis

Acute or traumatic injuries associated with tennis include:

- Torn rotator cuff
- Shoulder separation
- Wrist sprains
- Ankle sprains
- Achilles tendon rupture
- Hamstrings pull or tears
- Muscle sprains and strains

Racquetball: An Overview

Racquetball is a fast-paced game that requires endurance, skill and body control.

Racquetball was developed on a handball court in the early 1950s by a man named Joe Sobek, who vigorously promoted his game of “paddle racquets” at YMCAs across the country.

Today, 9 million amateurs play the game, and 3,500 racquetball facilities dot the Americas, Europe and Japan. Tournaments are conducted worldwide, including at least 20 annual professional competitions.

Racquetball-Related Injuries

There is less research on the musculoskeletal aspects of racquetball than on tennis. However, analysis shows many similarities to tennis, with injuries rates concentrating in the shoulder, elbow, knee and ankle.

The major difference from tennis injury types includes contusions from impact by the ball, collisions with opponents and the high prevalence of injuries to the eye, which, of course, cannot be treated through physical therapy.

Knee Injuries

Ligament injuries to the knee are common in sports that require stopping and starting or quickly changing directions. These extreme forces on the knee can result in torn ligaments. The anterior cruciate ligament (ACL) and the medial collateral ligament (MCL) are the most often injured, but the posterior cruciate ligament (PCL) and the lateral collateral ligament (LCL) can also be injured.

Cruciate ligament injuries don't always cause pain, but typically cause a loud “pop.” Most of these injuries are confirmed with an MRI. Arthroscopic surgery is sometimes the best way to find a partial tear.

Torn Knee Cartilage

Torn knee cartilage is usually a torn meniscus. These small, “c”-shaped pieces of cartilage act as cushions between the thigh bone (femur) and the tibia (shin bone). There is one on the outside (lateral meniscus) and one on the inside of the knee (medial meniscus). Meniscus tears are often the result of twisting, pivoting, decelerating or a sudden impact.

Chondromalacia

Chondromalacia refers to softening and deterioration of the underside of the kneecap. In young athletes this is typically an injury from trauma, overuse, poor alignment of the knee joint or muscle imbalance. This leads to friction and rubbing under the kneecap the results damage to the surface of the cartilage. The sensation is a dull pain around or under the kneecap that worsens when walking down stairs or hills, climbing stair other weight bearing activity.

Preventing Court Sport Injuries

Many court sport injuries result from overuse, lack of proper rest, lack of proper warm up or poor conditioning. Research suggests that injury rates could be reduced by 25% if athletes took appropriate preventative action.

The following safety precautions are recommended to help prevent help court sport-related injuries:

- Be in proper physical condition to play a sport.
- Avoid “weekend warrior” syndrome and adequately train for your sport.
- Know and abide by the rules of the sport.
- Wear appropriate protective gear and equipment.
- Rest in between active days or sessions.
- Always warm up before playing.
- Avoid playing when very tired or in pain.
- Warm up thoroughly prior to play.
- Wear the right court shoes (basketball, tennis or racquetball) with skid-resistant soles.
- Use protective equipment (mouth guards, knee and elbow pads or eye protection) as appropriate to the sport.
- Clean off courts before play; check for slippery spots or debris.
- Have a first aid kit on hand.
- Stay hydrated.
- Wear eye protection (for racquetball).

Research provides helpful clues about the cause of sports injury. There are two factors that outweigh the rest when it comes to predicting—and preventing—a sports injury:

- **History of injury:** Previous injuries to a muscle, tendon, bone or joint tend to develop into chronic problem areas. It is extremely important to warm up and stretch previously injured body parts.
- **Consecutive training days:** Incorporating recovery days into your practice or training schedule can reduce injury rates by giving muscles and connective tissues an opportunity to repair between training sessions.

Physical Therapy Treatment

When an injury occurs, Golden Hills’ skilled physical therapists are prepared to help your patients heal from the injury and recover their pre-injury levels of performance, including strength, flexibility, balance and endurance.

In past issues of *Golden Hills Journal*, we have discussed in depth our treatment approach for injuries to specific joints or biomechanical systems. The following table shows which areas are discussed in which issues. Please contact us if you would like another copy of any of the issues!

Biomechanical System	Discussed in Issue
Shoulder	Aug-Sep 2006
Elbow	Oct-Nov 2006
Hand/Wrist	Jan-Feb 2007
Knee	Jun-Jul 2006
Foot/Ankle	Mar-Apr 2007

Injury Recover Phases

During the acute recovery phase, the patient should:

- Seek physical therapy evaluation and care
- Follow the R.I.C.E. principles (rest, ice, compression and elevation)
- Limit his or her activity, allowing time to heal

Depending on the type and severity of the injury, treatment may also include medical care and/or surgery.

Regaining range of motion and strength should be started as soon as possible as directed by the physical therapist. Once muscle strength and flexibility return the therapist will work with the patient to slowly get him or her back into the sport, working at about 50% to 70% max capacity for a few weeks. During this reentry phase, functional drills for balance, agility and speed can be added as tolerated by the patient.

In order to ensure a safe return to the sport, the patient should be pain free, have no swelling, regain full range of motion, have full or close to full (90%) strength, and be able to perform sport-specific exercises and motions.

By following the above guidelines, your patients can significantly increase their enjoyment of their sport and avoid many of the injury conditions discussed earlier in the article. For more information on how Golden Hills can help your patients achieve their court sport-related training or injury recovery goals, contact us at **(408) 274-0888**, or **therapy@goldenhillspt.com**.