Hughston Health Alert

6262 Veterans Parkway P.O. Box 9517 Columbus GA 31908-9517

VOLUME 9, NUMBER 2 | *For a Healthier Lifestyle* | SPRING, 1997

Goal!

To Recognize and Prevent Overuse Injuries in Soccer

Soccer, one of the most popular team sports in the world with over 200 million registered players worldwide, is a game of nonstop action. Most injuries in soccer occur in the lower body, mostly to the knees and ankles. However, repeated or prolonged use (overuse) injuries are common problems, especially toward the end of a long and grueling season. These injuries are the result of constant overloading and wearing down of a tendon (tissue connecting muscle to bone), muscle, bone or joint, resulting in the inability of that structure to perform its normal biomechanical duties.

Inside This Issue:

- Exercise-Induced Asthma
- Achilles Tendon: Tendinitis and Tears
- Prevent Achilles Tendon Injury—STRETCH!
- Nutrition Guidelines
- Golf Injuries

Types of Injury

The rate of injury in soccer has been reported to be between 15 and 20 injuries per 1000 hours of play. The rate is slightly higher for female players than male participants. Injuries range from a severe bruise to more traumatic type injuries (broken bones). Overuse injuries are responsible for almost 30% of the injuries in soccer and range from mild tendonitis (swelling of a tendon) all the way to a stress fracture.

Symptoms

Inflammation (swelling) is the most common sign of an overuse injury. The signs of inflammation are redness, warmth and swelling, pain with movement, pain to deep touch, and a grinding feeling over the muscle as it is moved. One or all of these signs may be present. In the early stages, players may feel an aching pain after practice. As the injury gets worse, the pain will occur during practice or games with increasing pains as an

attempt is made to maintain a high level of performance.

Youth and adolescent players are most at risk for overuse injuries during times of rapid growth. Strong muscle pull at the tendon-bone junction and at the attachment to the growth plate can cause inflammation. One common adolescent overuse injury is Osgood-Schlatter's disease (apophysitis). It is a painful bump where the patella (knee cap) tendon attaches to the tibia, or shin bone, (Fig. 1). This can become inflamed by repetitive running or jumping. Tight hamstrings seem to go hand in hand with this injury. An injury such as this should not be ignored because it could lead to a complete separation of the tendon from the bone.

Sever's disease is another common area of pain in the young soccer player (age 7 and older). It is a growth plate inflammation of the calcaneus (heel bone), which may mimic Achilles tendinitis (Fig. 2) Other areas of growth plate inflammation can occur at the pelvic rim, the thigh muscle attachment to the hip, the hamstrings, and the groin muscles attachment to the pelvis.

The worst case in the spectrum of

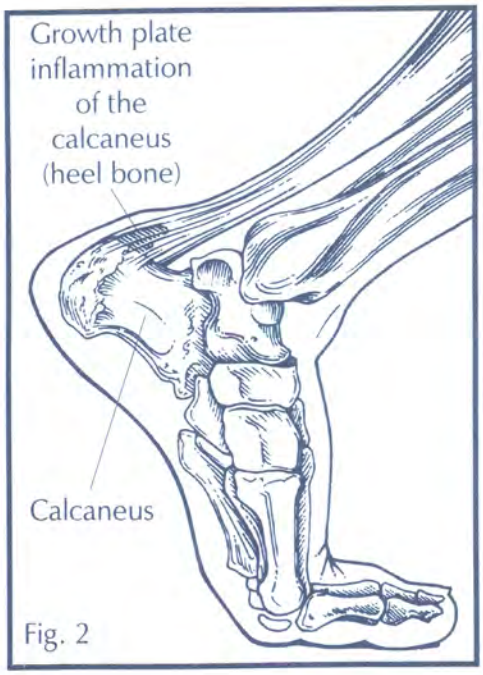

Fig. 2

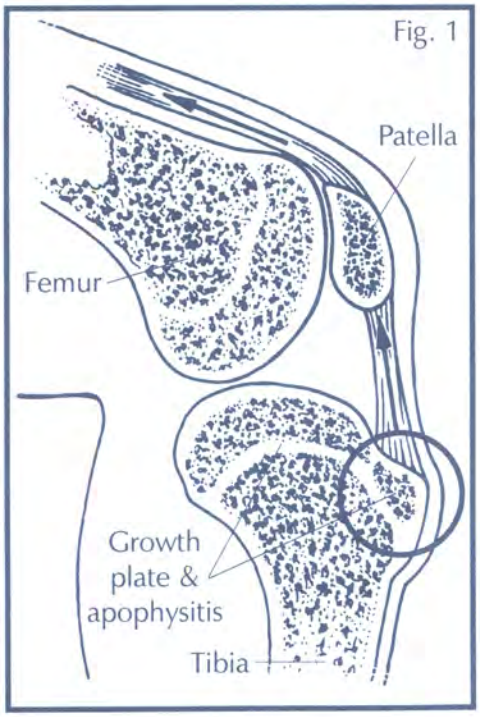

Fig. 1

overuse injuries is the stress fracture. This results from an inability of the bone to keep up with the increasing demand placed upon it. The result is a fracture (break) of the bone (Fig. 3).

Adult soccer players also suffer from overuse injuries. Common places for injuries in adults are the Achilles tendon, plantar fascia (tissue that runs from the heel bone to the toes), inside of the lower leg shin (shin splints), and at the knee. Improper footwear and playing on hard surfaces can lead to these injuries. If left untreated these injuries can lead to tendon rupture.

Prevention

Players should be aware of their physical condition. Even seemingly minor injuries should be treated appropriately. Injuries tend to increase as players fatigue, so adequate rest is essential. Players should also warm-up and stretch prior to any practice or game, and warm-down and stretch afterwards.

Treatment is P.R.I.C.E.-less

Prevention is the most important part of the equation. **R**est involves giving the injured tissue adequate time to repair itself. **I**ce is used to decrease inflammation and should be applied before and after practice or games over the injured body part. **C**ompression involves applying an elastic wrap over the injured part to help reduce swelling. **E**levation helps to decrease swelling by using gravity to assist in the process. Nonsteroidal anti-inflammatory drugs (NSAIDs), such as ibuprofen and aspirin, are also used to reduce swelling. During periods of acute pain, athletes should consider a stop in play and allow time for the injury to heal.

Conclusion

Proper conditioning, appropriate training techniques, quality footwear, proper warm-up and stretching, and paying attention to the bodies early warning signs can prevent overuse injuries. Early treatment with rest, ice, compression, and elevation can shorten time away from playing. If the signs and symptoms persist, players should get medical attention to prevent further injury.

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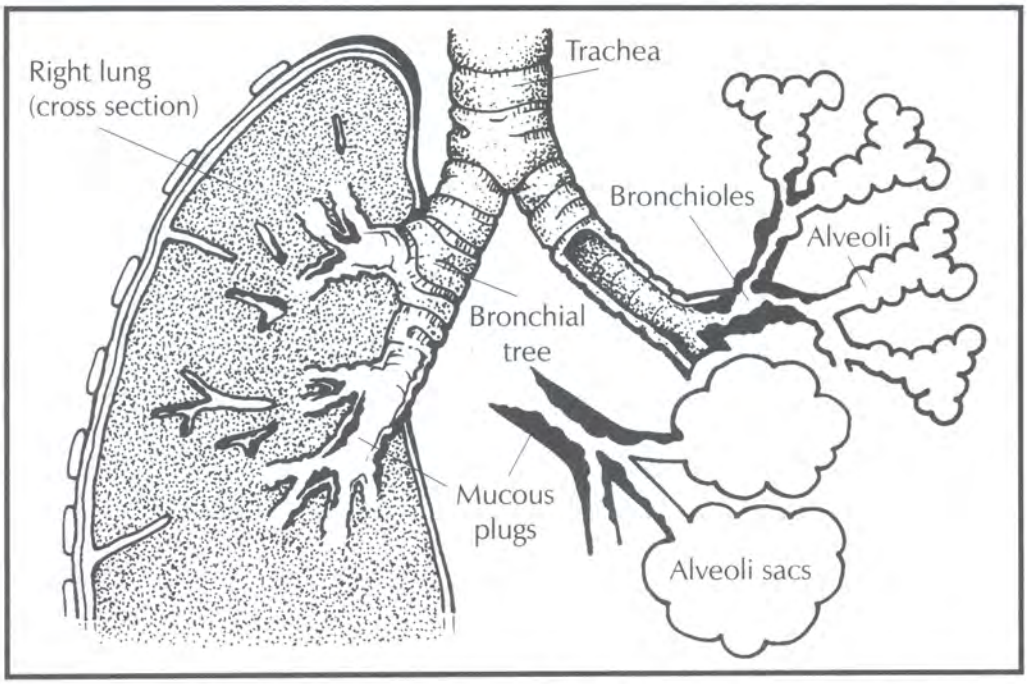
Fig. 3

Exercise-Induced Asthma



It's a great-looking morning, clear and dry. You're due at the office in 90 minutes, but there's time for a quick run. For the first few minutes, you feel great; your limbs begin to loosen and you're able to quicken the pace. But just as you're about to hit your training stride, this run turns into a frightening experience. Your breathing becomes constricted, and you can't seem to take in enough air. These gasps are interrupted by coughing spasms, but you can't clear your lungs. That sense of well-being you had just moments ago is suddenly replaced by anxiety.

What is asthma?

Although the above scenario may sound dramatic, for millions of asthma sufferers it is frighteningly real. Asthma is an inflammatory (swelling) disease that blocks the airway. In asthma, airways are hyper-reactive, or "twitchy," and obstructive episodes can be triggered by infections (colds, bronchial or sinus infections, etc.), allergens (substances that provoke allergies), irritants (smog and tobacco smoke), and even emotional factors. Exercise, however, is one of the most common causes of asthma.

Exercise-induced asthma (EIA) is quite common in people with asthma, affecting about 90% of them. It is also common in people with a history of allergies, such as hay fever or eczema. However, EIA can occur in people with no known history of allergy or asthma.

What are the symptoms?

The onset of wheezing is the classical sign of an attack, but it may not be present or the only symptom. Other things to look for are coughing, chest pain, and feeling out of breath, which some people mistake as being out of shape. An obstructive episode can last up to 2 hours. In about one-third of unfortunate victims, a "late phase" attack takes place 3 to 6 hours after exercise. Typically, exercises that provoke asthma are fairly intense, have to be sustained for 6 to 12 minutes, and often have to take place in a certain setting or under certain "modulating" conditions, such as in smog or on a grassy field during hay fever season.

How does exercise cause asthma?

During intensive exercise, the amount of air taken in compared with that at rest may increase by 30 times. This large volume of air must be heated and humidified as it travels to the lungs to deliver oxygen. It is believed that the stress of this demand on the airways triggers the asthmatic episode. This stress provokes certain inflammatory cells, which then release various substances leading to airway constriction (or bronchospasm), swelling, and mucous plugging of the airways (see figure).

Not all exercises provoke an attack and the same exercise may not always produce the same symptoms. Exercising in cold and dry air is likely to cause an attack, whereas a warm humid environment (such as an indoor swimming pool) may be somewhat protective.

There's good news . . .

Many medications are available for the treatment of asthma. Inhaled medications, which expand the airways, are the mainstay of prevention and treatment.

Strategies can also be used to allow people with EIA to exercise freely. One simple measure is to breathe moist, humid air. For example, this can be accomplished through nasal breathing or by using a face mask in cold weather exercise. Additionally, choosing sports with intermittent short exercise bursts, such as baseball and football, is a good strategy. These activities are not likely to provoke asthma as compared with sustained high-intensity workouts. Avoiding allergens, pollutants, and choosing the proper environment can be beneficial for many.

By using preventative strategies and medications as needed, most people with EIA can participate in exercise safely and enjoyably.

William L. Cappiello, M.D.
Santa Clara, California

Achilles Tendon: Tendinitis and Tears

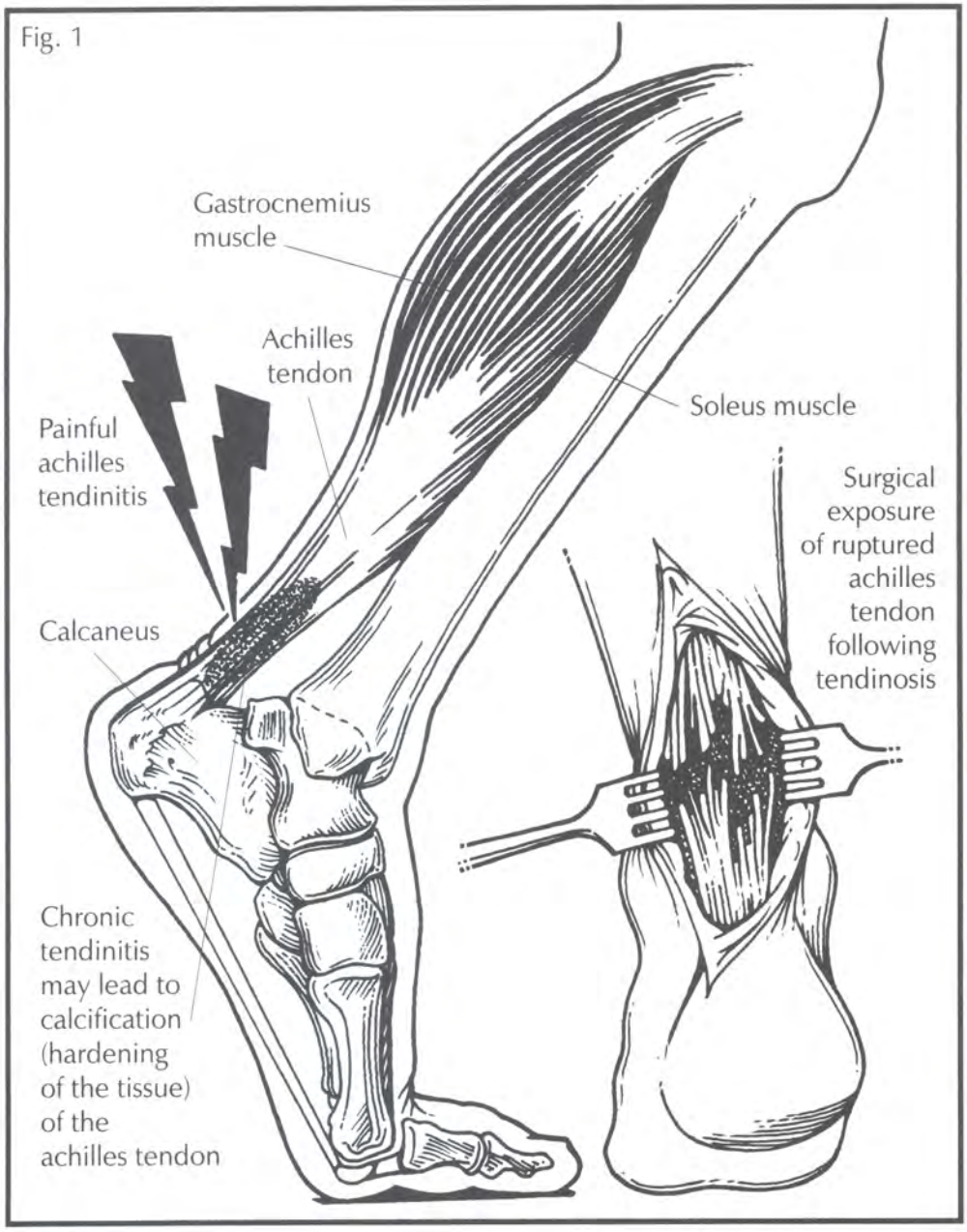
Why is the Achilles tendon so important?

The Achilles tendon is the strongest and largest tendon in the body. It is a tendinous structure (attaches muscle to bone) that forms from a combination of the gastrocnemius-soleus muscles located in the calf (Fig. 1). The tendon attaches to the heel bone (calcaneus) and causes the foot to push off (plantar flex) when the calf muscles tighten. The tendon is necessary for normal walking, running, and jumping. Athletic and traumatic injuries to the Achilles tendon are common and can be disabling.

What is Achilles tendinitis?

Achilles tendinitis is an inflammation (swelling) of the tendon, which usually occurs as a result of overuse injury. Basketball players are the most susceptible to Achilles tendinitis because of the frequent jumping. Any activity requiring a constant pushing off the foot, such as running or dancing, may result in swelling of the tendon.

Fig. 1



Symptoms and treatment for Achilles tendinitis

People with Achilles tendinitis may experience pain during and after exercising. Running and jumping activities become painful and difficult. Symptoms include stiffness and pain in the back of the ankle when pushing off the ball of the foot. For patients with chronic tendinitis (longer than six weeks), x-rays may reveal calcification (hardening of the tissue) in the tendon (Fig. 2). Chronic tendinitis can result in a breakdown of the tendon, or tendinosis, which weakens the tendon and may cause a rupture.

The recommended treatment for Achilles tendinitis consists of icing, gentle stretching, and modifying or limiting activity. Nonsteroidal anti-inflammatory medications (NSAIDs), such as ibuprofen or aspirin, can reduce pain and swelling. Physical therapy and the use of an orthotic (heel lift) can also be helpful. For chronic cases where tendinosis is evident and other methods of treatment have failed, surgery may be recommended to remove and repair the damaged tissue.

What is an Achilles tendon rupture?

Achilles tendon rupture is a severe and disabling injury. A rupture usually takes place a couple of inches above the joining of the tendon and the heel bone. This typically occurs when someone contracts, or tightens, the calf muscle and suddenly pushes off the foot, such as in basketball or racquet sports. The injured person experiences pain, swelling, and an inability to stand on their tiptoes.

Symptoms and treatments for an Achilles tendon rupture

Achilles tendon ruptures usually occur in middle aged men as a result

Fig. 2

of overused or unused muscles. An injured person experiences extreme difficulty with pushing off the foot and even walking. Physical exams reveal swelling, a gap in the tendon, and an inability to stand tiptoed (plantar flexion). X-rays may be used to confirm a diagnosis. Magnetic resonance imaging (MRI) or ultrasounds can also confirm an Achilles tendon tear; however, they are not always necessary.

Surgery is usually recommended for treatment of Achilles tendon ruptures in active, healthy patients. For people with low levels of activity, casting can be used. Resumption of full athletic activity usually takes four to six months, or longer, after injury in the surgically treated patient. Surgically repaired tendons heal stronger with less chance of rerupture.

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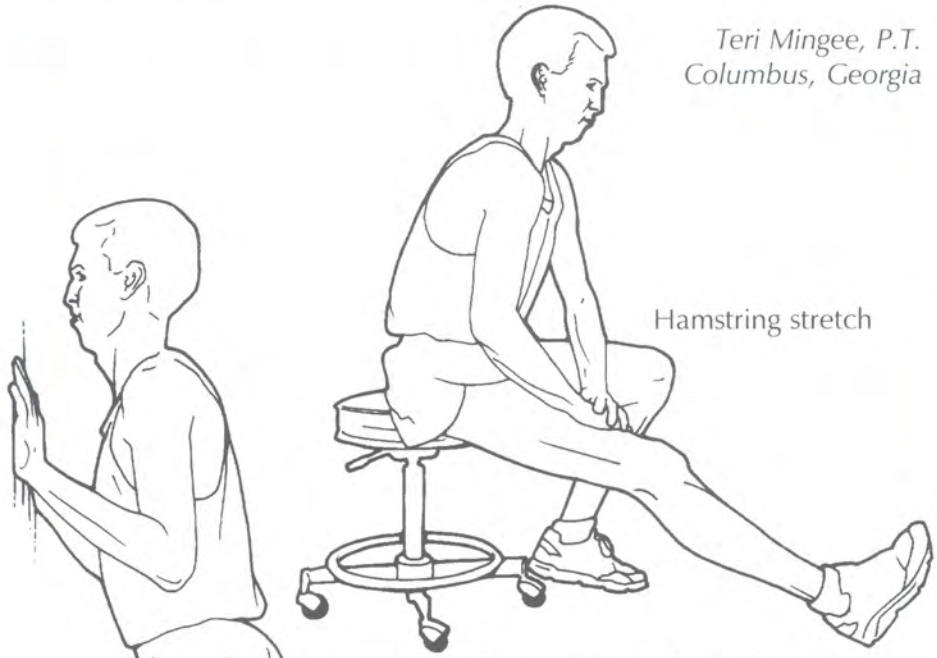
Prevent Achilles Tendon Injury—STRETCH!

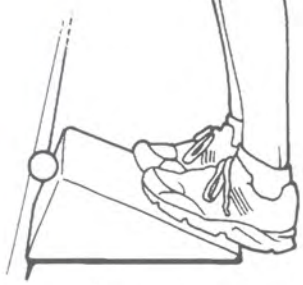
Good heel cord (Achilles tendon) flexibility can help prevent injury. An excellent tool to stretch your heel cords is an incline box (see dimensions below). Position your feet on the box so that when you lean forward, your heels stay down and you feel a GENTLE stretch in your calf muscles. Hold this position for 30 seconds. DO NOT BOUNCE. Lean back to release the stretch. You should do five stretches at least three times per day. Stretching should not be painful because you want your muscles to relax and lengthen, thereby increasing flexibility. These stretches are easy and can be done at home, work, or school to help avoid injury.

Teri Mingee, P.T.
Columbus, Georgia

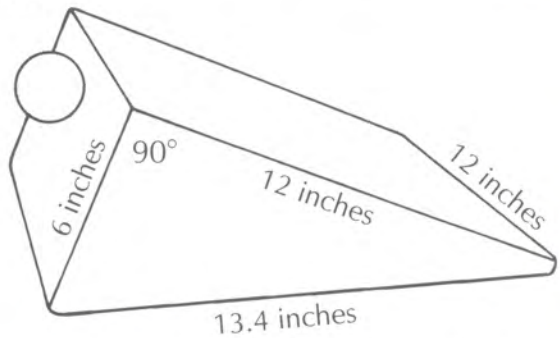


Hamstring stretch

Achilles tendinitis and tight hamstrings seem to go hand in hand. In addition to stretching your heel cords, be sure to stretch the back thigh muscles (hamstrings) as well. While sitting, with your knee slightly bent, place one leg out in front of you. Lean toward your toes until you feel a stretch in the back of your thigh. Hold for 30 seconds and then lean back to release the stretch.



Achilles tendon stretch



Incline box (or heel cord box)

Nutrition Guidelines for Healthier Living

(Based on the new American Heart Association statement)

Most Americans are bewildered when it comes to understanding the concept of "balanced nutrition." The reason is media sources offer a variety of information regarding the proper daily intake of nutrients (proteins, fats, carbohydrates, etc.), which often leads to confusion. Recently, however, the American Heart Association (AHA) has released new guidelines for a healthier lifestyle.

The new guidelines were developed by the AHA's Nutrition Committee. Dr. Krauss, chairman of the committee, states, "Perhaps the most dramatic change is that we are emphasizing the characteristics of the total diet (over several days or a week) rather than what one eats in any given meal or even on a given day. This allows some flexibility in choosing foods and fits the theme of consuming a variety of foods and reducing guilt from eating something 'bad' now and then."*

The New Guidelines

- More people in the United States are obese today than ever before. You should maintain an ideal weight (consult your physician) and perform daily exercises to stay physically active.
- Genetics can affect your response to fat, cholesterol, and salt. A specific diet plan for your metabolism can help reduce risk of weight gain.
- Total fat calories should be no more than 15% of daily intake.
- Limit monounsaturated fats, such as olive, canola, and peanut oils, to 15% of your daily diet.
- Daily intake of fiber should be 25 to 30 grams. It is important that you obtain fiber from foods, including fruits, vegetables, and whole grain products, and not supplements.
- Moderation is the key when using sugar. In other words, choose foods low in sugar, such as fruits, unsweetened beverages, and low-calorie snacks, which should be no more than 10% of your total calorie intake.
- Most Americans have too much salt in their diet. Your intake of table salt should be no more than 6 grams (1 teaspoon) per day. Keep in mind that most salt intake comes from processed snack foods (chips, nuts, and pretzels), as well as processed meats, such as luncheon meats, bacon, and sausage. These should be considered when figuring daily salt consumption.

The Nutrition Committee continues its study on proper daily dietary intake and plans to publish more statements in the near future. If you would like more information concerning the AHA guidelines, please call 1-800-242-8721.

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Krauss RM, et al. Dietary guidelines for healthy American adults. A statement for health professionals from the Nutrition Committee, American Heart Association. Circulation 1996 Oct 1; 94(7): 1795-800 http://www.amhrt.org/index.html

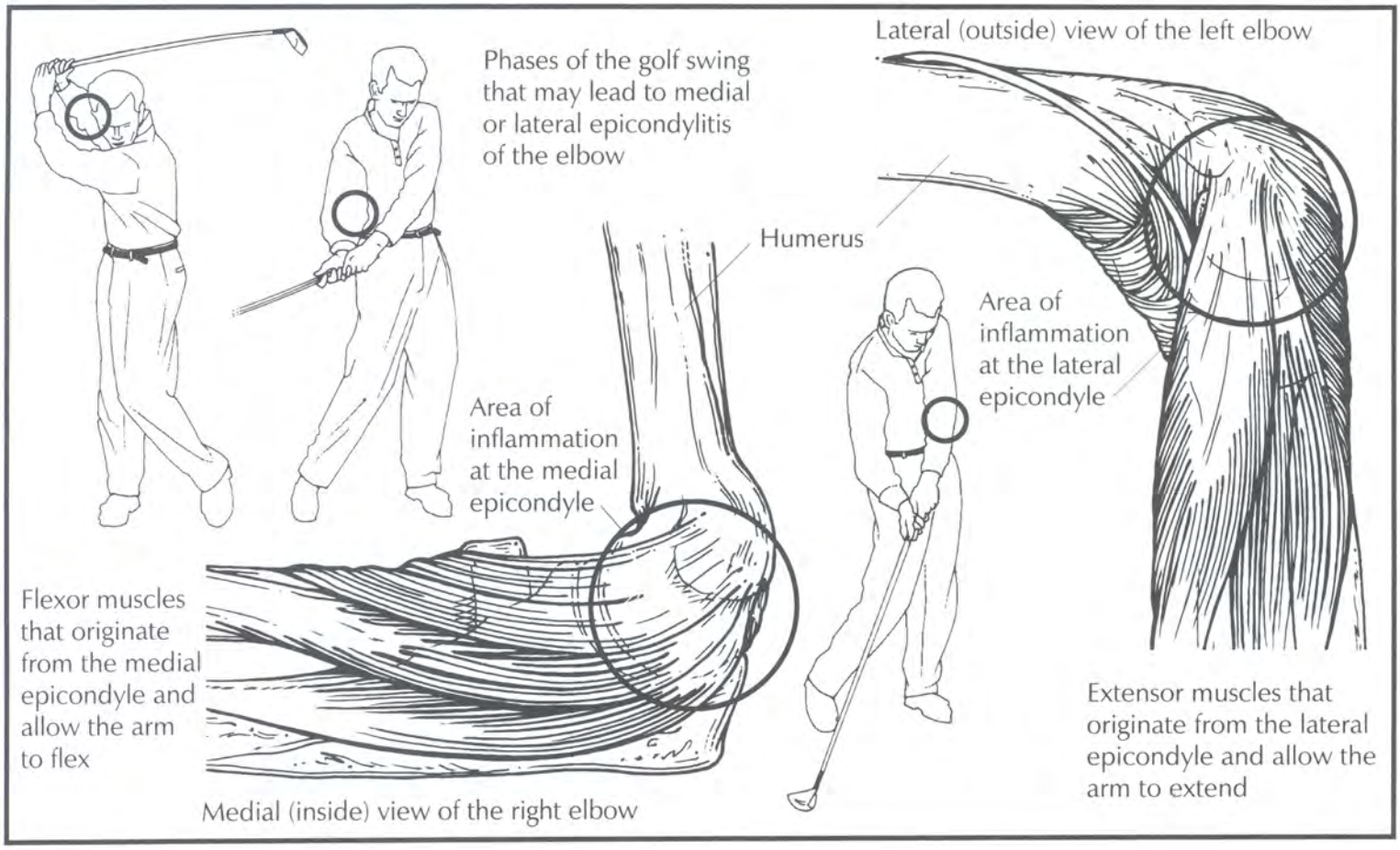
Golf Injuries

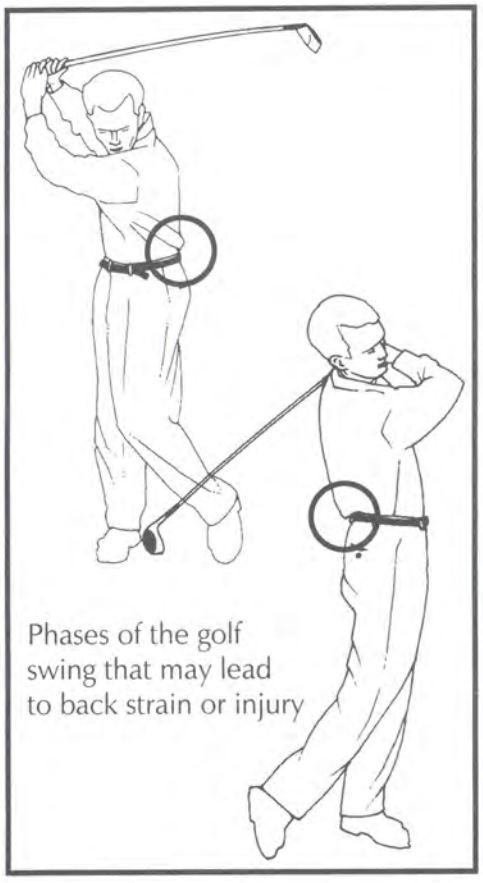
Golf is usually considered a low level activity, but golfers often suffer serious injuries. Over 50% of touring professionals have had to stop playing because of injuries. The motion of a golf swing, if done incorrectly, can cause injuries in many parts of the body. A golf swing involves a large trunk rotation and requires you to move both shoulders through a wide range of motion at very high speeds. Unlike professionals, amateur golfers are not as conditioned to make these motions. However, both amateur and professional golfers commonly injure their backs, elbows, shoulders, and wrists. If you have injured any of these areas, you may need to be examined by your family doctor or orthopaedist.

Common injuries

The most common injuries in golf are back injuries (see bottom figure). Most of these injuries are simply muscle or ligament strains that usually get better in a few weeks with rest, nonsteroidal anti-inflammatory medications (NSAIDS), such as aspirin and ibuprofen, and some simple strengthening exercises. Changing technique and equipment can help golfers with chronic (long-term) back pain play around the injury. Constant bending over causes extreme stress on the muscles and joints of the lower back. The use of newer and longer golf clubs can allow your body to remain closer to an upright position and help relieve stress on your back.

The elbow is the next most commonly injured area (see top figure). Most elbow pain results from tennis elbow or golfer's elbow. Tennis elbow (lateral epicondylitis) is an inflammation (swelling) of the tendons that connects the forearm to the elbow. The lateral tendons allow the elbow to extend (straighten). Golfer's





elbow (medial epicondylitis) is an inflammation of the tendons that allow the elbow to flex (bend). Treatment consists of rest, ice, and NSAIDS. For chronic cases, cortisone injections may be used. The doctor will also suggest that you take stress off your forearm and elbow while playing. You may be able to remove some stress by changing your swing. For example, if you are right handed, swing with your left elbow bent. If you are left handed, bend your right elbow when you swing. This "classic" swing technique puts less stress on your elbow.

Prevention

To avoid injuring yourself while playing golf, there are several things you can do. First, always warm up carefully before playing by hitting a few balls with your short irons. A touring professional, whose muscles are conditioned to play golf, will hit a few balls first to loosen up. The average weekend golfer typically starts out with the hardest swing of the day — the drive off the first tee.

Professionals usually do not have as many injuries as amateur golfers because they play with better form. Several studies have shown that most golf injuries are a result of poor techniques. A few lessons from your local golf instructor may help you tune up your swing to avoid an injury. However, beware of trying to swing exactly like the modern professionals do. They have conditioned their bodies to tolerate a swing, which may not be ideal for the average player.

If you have some injuries that hamper your golf game, there are ways to treat them so you can continue playing the game you love.

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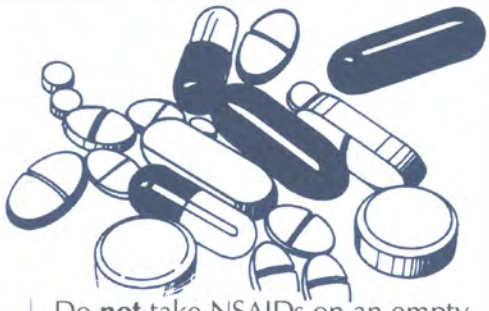
Ask the Doctor



Q What are the long-term effects of nonsteroidal anti-inflammatory drugs (NSAIDs)?

A NSAIDs are used to reduce pain and swelling caused by overuse injuries, such as golfer's elbow. However, long term use of NSAIDs can cause problems in your gastrointestinal (digestive) system. These problems range from dyspepsia (indigestion) to bleeding ulcers. Kidney, or renal, complications are not as common; however, they do occur and can range from an imbalance in electrolytes (sodium, potassium, calcium, etc) to kidney failure. You can prevent these problems by remembering the following:

Do **not** take NSAIDs on an empty stomach. Do **not** take more than the allowed dosage and for no longer than the recommended time period. Do **not** take NSAIDs if you have ulcers. If your original symptoms persist despite the use of NSAIDs or if you have additional problems that you think are caused by the NSAIDs, please contact your physician.

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Calendar Events

The 1997 Relay for Life

A Team Event To Fight Cancer
sponsored by
The American Cancer Society

will be held this year
May 2nd and 3rd
on the
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