



# Hughston Health Alert

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

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For a Healthier Lifestyle

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## Having to "Shoulder" the Burden

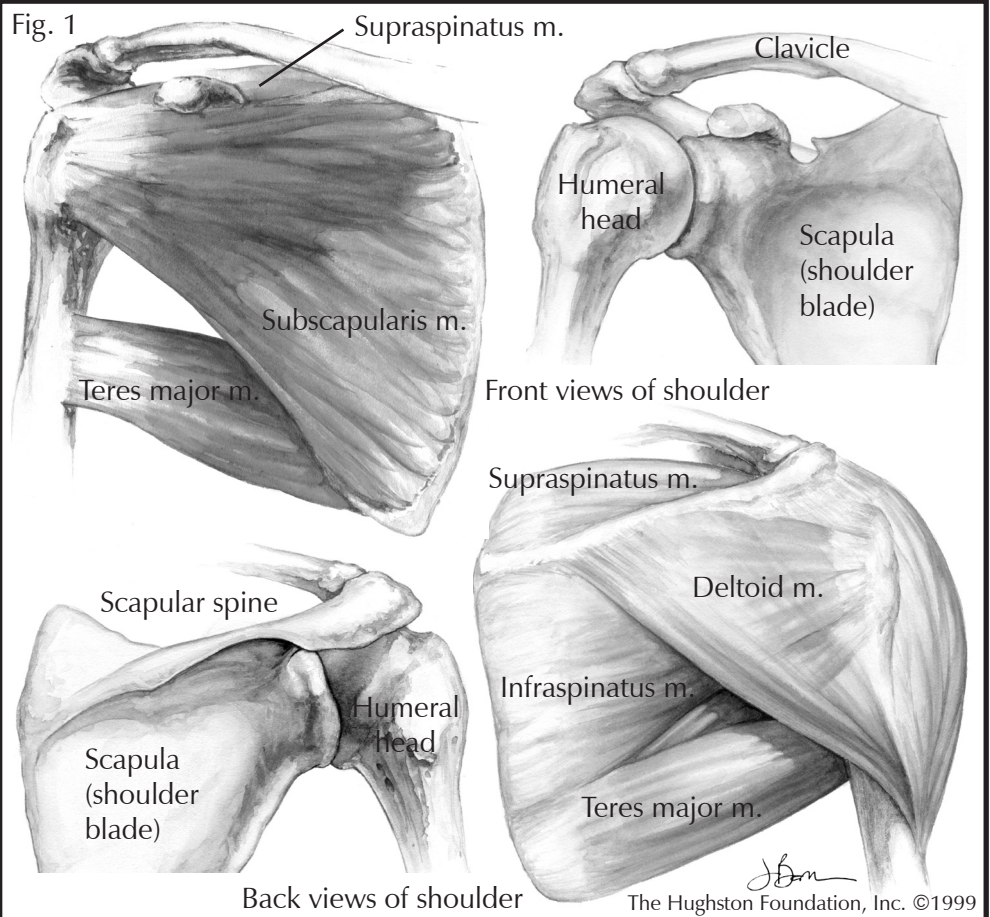
### *Repetitive Overuse Injuries of the Shoulder*

Shoulder injuries are common and generally occur as a result of trauma (a sudden, forceful injury). However, the most common cause of injury to the shoulder joint is repetitive overuse of the muscles and tendons that support and move the joint. Athletes and workers who repetitively perform certain movements, such as throwing a baseball or using a hammer, have a higher risk of developing overuse injuries.

### **Cause of injury**

As a result of repetitive muscle contractions, the tendons that attach muscle to bone can sustain slight tears, or microtears, in the tissue. Fortunately, the natural healing process of your body usually heals

Fig. 1



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- Skin and Nail Disorders
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these tears. However, when there is an accumulation of microtears from overuse, your body's healing response cannot keep up, leading to serious tissue and joint damage.

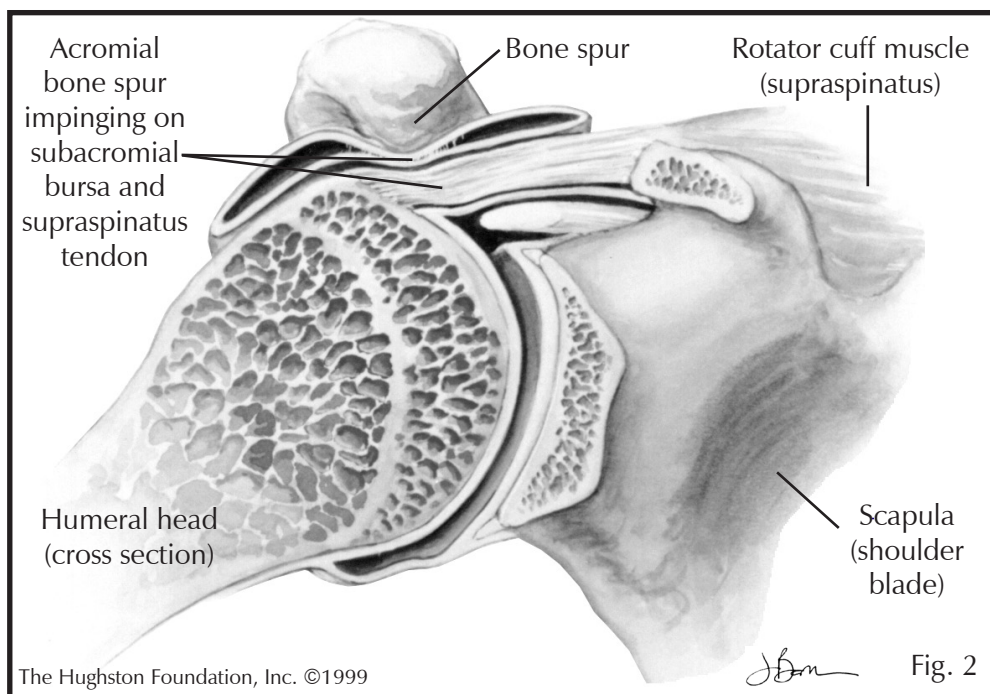
Some characteristics or risk factors have been identified as predisposing a person to an overuse injury in the shoulder. These include age over 30 years, a job or sport that requires a high activity level or a demanding

technique, being out of shape, and participating in an event that overexerts your shoulder three or more times per week for 30 minutes or more per session.

### **How can overuse affect my shoulder?**

The part of the shoulder that is most commonly affected by overuse is the rotator cuff. The rotator cuff is a group of muscles and tendons

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that originate from the scapula (shoulder blade) and attach to the humerus (upper arm bone) (see Fig. 1, cover). Localized injury to the tendons can occur from the wear and tear of repetitive motions, resulting in irritation and swelling of the tendons. This in turn will weaken your rotator cuff muscles, causing the tendons between the humeral head and overlying bony prominence (acromion) in your shoulder to compress, or impinge. This is known as primary impingement syndrome. Bone spurs (Fig. 2) can also form, causing fraying and tearing of the tendon, particularly during chest-level or overhead activities, with pain occurring more frequently at night. Shoulder weakness is also common.

When diagnosed early, the injury to the rotator cuff can be treated with nonsurgical methods. However, in more advanced stages, rotator cuff impingement may require surgery.

Overuse can also cause ailments such as tendinitis and tendinosis. And although they sound alike, they are completely different. Tendinitis refers to an inflammation of the tendons and is caused mainly by overuse activity. Tendinitis is generally

treated with conservative measures, including rest, ice, and nonsteroidal anti-inflammatory drugs (such as ibuprofen).

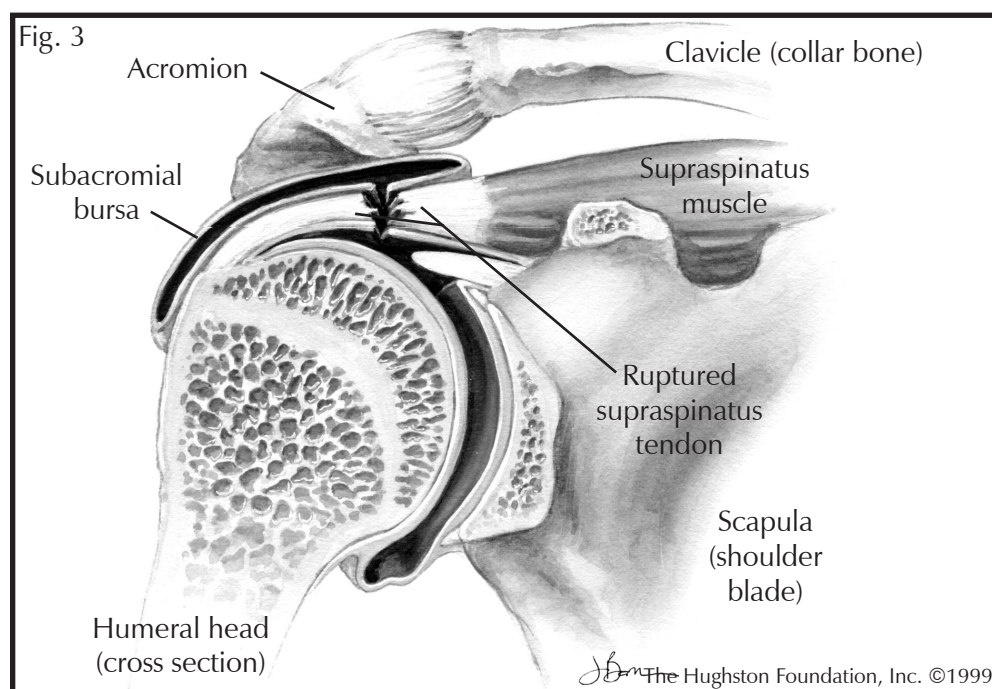
Tendinosis is not inflammatory in nature, but rather degenerative. This is commonly seen more in older patients, where tissue deteriorates over a period of time from either a previous injury or traumatic event. Certain factors are usually

responsible for the tendon damage, including repetitive strain, muscle fatigue and weakness, and an age-related decrease in blood supply to the tendon. Your ability to naturally heal becomes hindered due to the decreased blood supply, and the degenerative process advances. This process is generally chronic (long lasting) and irreversible and may require surgery to repair any partial or complete tendon ruptures (Fig. 3).

### How can I prevent this from happening to me?

Unfortunately, no single injury can be totally prevented, but there are some measures that can be taken to lower your risk of injury. Stretching and strengthening your muscles can help lower your risk of injury. Just remember to see your physician to rule out any other possible problems before undergoing a stretching and strengthening program.

*George M. McCluskey, III, M.D.  
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## On the Other "Hand"

### *Repetitive Overuse Injuries of the Hand & Wrist*

Many repetitive overuse injuries take place in the workplace and are most commonly seen in the hand, wrist, shoulder, and spine. In fact, the U.S. Bureau of Labor estimates that the incidence of repetitive overuse injuries is dramatically increasing and now accounts for 50% of all work-related ailments. While it is true that certain occupations can contribute to musculoskeletal symptoms, the job itself is not always the main cause. Most people would agree that there are many factors that contribute to developing an overuse injury.

#### What are some of these factors?

Key factors usually attributed to repetitive overuse injuries are repetition or prolonged use, force directly applied to the soft tissues (nerves, tendons, ligaments, muscles), and awkward postures. Prolonged use combined with applied force can cause micro-trauma, resulting in inflammation and injury. Awkward postures, poor work station and equipment design, and improper work technique can lead to muscle imbalances. Additional hazards, such as vibration and exposure to the cold, must always be considered as well. Pre-existing conditions (such as diabetes, arthritis, and pregnancy) can also play a major role. Recreational activities and hobbies outside the workplace can also contribute to the development of an overuse injury.

#### Types of injuries

The most common form of repetitive overuse injury in the hand and wrist is tendinitis. This refers to an inflammation of the wrist tendons—fibrous bands of tissue that connect muscle to bone (see figure below). The tendons

may become very sensitive to touch, especially for those of you who do a lot of typing. Also, you may have limited motion and weakness in your wrist.

Another form of repetitive overuse injury commonly seen in the hand and wrist is carpal tunnel syndrome. Your wrist contains a firm, tunnel-like structure called the carpal tunnel, which contains nerves, bones, and ligaments. As a result of pressure placed on the wrist, the median nerve becomes pinched (see figure below), causing pain and numbness in your hand and wrist.

Treatment for both injuries can include ice, modifying or limiting your activity, wearing a splint, and taking nonsteroidal anti-inflammatory drugs (such as ibuprofen) to help reduce pain and swelling. Cortisone injections and surgery are reserved for severe, chronic (long-lasting) cases that do not improve with conservative treatment.

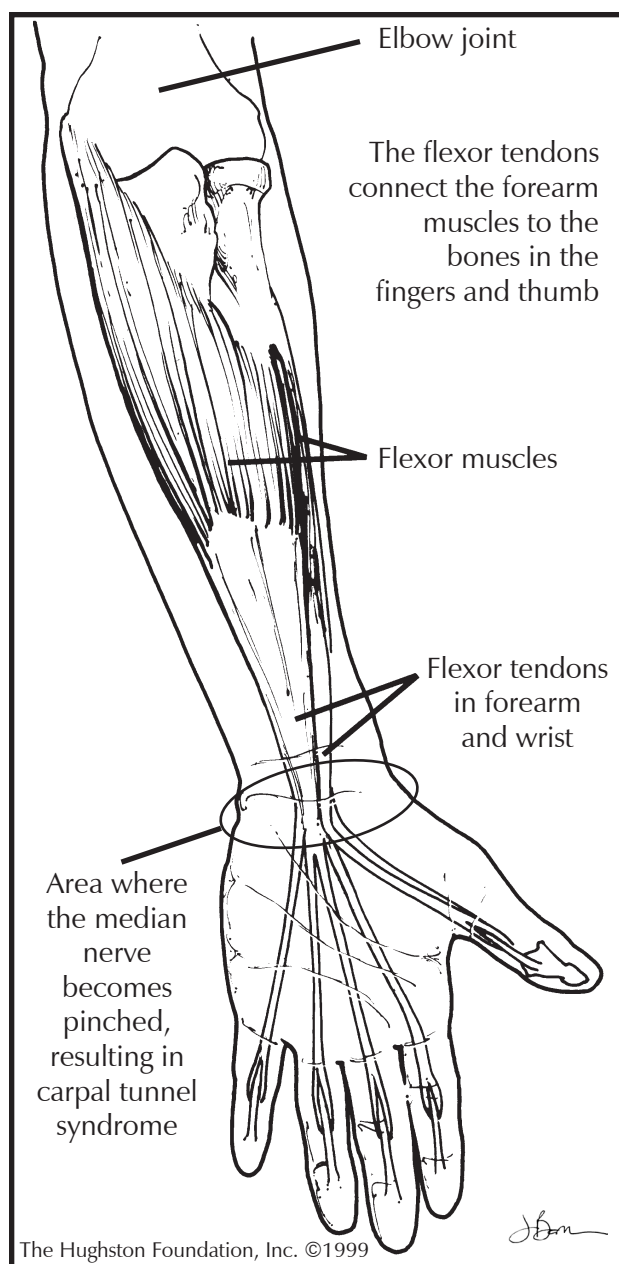
#### Stop it before it starts

If a specific situation at work can be identified as the source of your prolonged use or awkward posture, then it should be corrected.

Oftentimes, this is all that is needed to resolve the problem. Ergonomic interventions, such as redesigning work stations and modifying work methods, can help to prevent these problems. The most important aspect in preventing work-related problems is to identify the potentially hazardous situation before it affects you.

Since overuse injuries have increased so rapidly within the past 10 years, many aggressive and forward-thinking companies are having their work stations evaluated by experts in ergonomics to prevent their employees from experiencing these conditions. Also, you can perform various strengthening, stretching, and conditioning exercises before, during, and after work in a manner similar to an athlete participating in a sport. Because let's face it, even "industrial athletes" need to warm up.

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## Skin and Nail Disorders

In addition to the musculoskeletal disorders that affect our hands and wrists, a number of skin and nail problems are commonly seen, ranging from bacterial and fungal infections to allergic reactions and inflammation.

### What are some of these problems?

Eczema is one of the most common problems encountered by primary care physicians. It refers to an inflammation of the hands and fingers. Eczema of the hands affects 1 in 20 Americans. It is twice as common in women as in men and can cause discomfort and embarrassment, often interfering with daily activities.

Contact dermatitis is also an inflammation of the skin that is caused by an allergic reaction to something you are in physical contact with, such as a watchband made of nickel or even certain fragrances. The most harmful exposures are to chemicals, but detergents, dust, and dry dirt often trigger the rash. Typically, the skin becomes irritated, itchy, and blistered as a result.

Topical steroids (cortisone-like drugs) are usually helpful in relieving symptoms, but unfortunately, the condition is often



**Subacute and chronic eczema:** Inflammation with severe drying and splitting of the fingertips.

### Tips for Patients with Irritant Hand Dermatitis

- Wear unlined rubber gloves when irritants are encountered. However, rubber gloves alone are not sufficient because the lining collects sweat, scales, and debris and can become more irritating than those objects to be avoided. Dermal white cotton gloves should be worn next to the skin under rubber gloves. Several pairs of cotton gloves should be purchased so they can be changed frequently. Try on rubber gloves over the white cotton gloves at the time of purchase to ensure a comfortable fit.
- Wash hands as infrequently as possible. Ideally, soap should be avoided and hands washed in lukewarm water.
- Shampooing must be done with rubber gloves or by someone else.
- Avoid direct contact with household cleaners and detergents. Wear cotton, plastic, or rubber gloves when doing housework.
- Do not touch or do anything that causes burning or itching (such as wool; wet diapers; and handling fresh fruits, vegetables, and raw meat).

chronic (long lasting) and relapsing. You should avoid certain things that are likely to aggravate your symptoms (see table).

Fungal infection of the hands often looks and acts much like eczema. When the back of the hand is infected, it may look more like classic "ringworm." Antifungal creams and oral antifungal medication can be very useful in treating these conditions.

Fungal nail infections were at one point in time untreatable. Today, however, there are several oral antifungal medicines available,

although they are expensive and must be taken for three or more months.

One of the more painful conditions, known as paronychia, involves a skin infection around the fingernail edges.



**Acute paronychia:** Painful, bright red swelling. Infection with pus behind the cuticle.



**Chronic paronychia:** Redness, tenderness, and mild swelling at the tip and sides of the nailfolds. The cuticle is absent, and chronic (long-lasting) inflammation has caused horizontal ridging of the nails. Individuals whose hands are repeatedly exposed to moisture (such as bakers, dishwashers, dentists) are at greater risk.



**White superficial onychomycosis:** Soft, dry, and powdery surface that can easily be scraped away. The nail plate is not thickened.

Biting your nails or frequently getting them manicured can cause this type of bacterial infection. Topical and/or oral antibiotics or antifungal agents may be needed. Sometimes surgical drainage of the infected tissue is necessary.

Fortunately, new treatments are available for some of these problems. For example, Lamisil and Sporanox are prescription medications that are effective in the treatment of stubborn fingernail disease. If you are having skin problems, be sure to make an appointment to see your physician, who may recommend specific tests or treatment options, or even a referral to a dermatologist for consultation.

Clark H. Cobb, M.D.  
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**Tinea of the hand:** A well-defined border with significant scaling.

Photos and table  
reprinted from  
Habib TA. *Clinical  
Dermatology: A Color  
Guide to Diagnosis  
and Therapy* (3rd  
ed.) St. Louis, MO,  
Mosby, 1996.

# Ergonomic Hints for Computer Users

## Keyboard and Work Surface

- The height of the “home keys” should be 28 to 31 inches from the floor.
- The top row of keys should be no more than 10 inches from the front edge of your work surface.
- The work surface should allow 25 to 27 inches of clearance for your legs.

## Computer Screen

- The middle of the screen should be from 37 to 43 inches above the floor.
- The distance from your eyes to the screen should be no more than 20 inches.
- The middle of the screen should be directly in the center of your line of sight.

## Chair

- The chair should be fully adjustable and should support the curve of your lower back.
- If the chair has armrests, they should adjust so you don't have to slouch to use them.
- The chair seat should be 16 to 20 inches above the floor.
- The chair seat should be at least 18 inches wide, 15 to 17 inches deep.
- The back of the chair should lean back no more than 15° from the vertical starting point.
- The chair seat should slope downward no more than 10° from the horizontal starting point.
- Use an adjustable footrest if your feet do not rest comfortably on the floor when the chair is adjusted to these dimensions.
- Your thighs should remain horizontal or sloped slightly downward when you are seated in the chair.

## General

- When your hands hang loosely at your side, your wrist is in a flat and neutral position. Try to maintain this position when you are operating your keyboard.
- Sharp edges should never come into contact with your wrists. A padded wrist rest may help.

## RELAX!

- Use the least amount of pressure that you possibly can on your keys.
- Avoid drastic changes to your work station. Use the guidelines above as suggestions to gradually adjust your work area until it is comfortable for YOU!

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Adopted from Anonymous, IBM, 1973, ANSI Standards

## PNF

### A New Way to Stretch!

Flexibility has long been recognized as a key factor for maximizing exercise and preventing injuries. Of course, the best way to gain flexibility is through stretching. As a result of increased flexibility, less stress is placed on joints, muscles, and connective tissues (ligaments and tendons).

Muscles contain receptors, known as proprioceptors, that relay muscle activity information to the central nervous system (CNS). When a muscle reaches a point of maximum stretch, these proprioceptors signal the CNS to cause a reflex contraction of the muscle (Fig.1). After a period of a few seconds, another set of proprioceptors

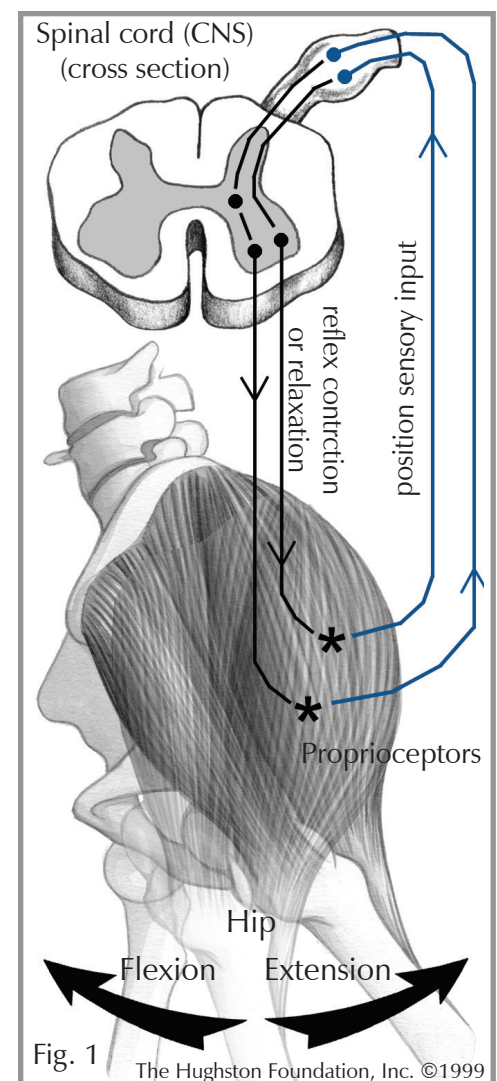




Fig. 2 Ballistic stretching  
(not recommended)

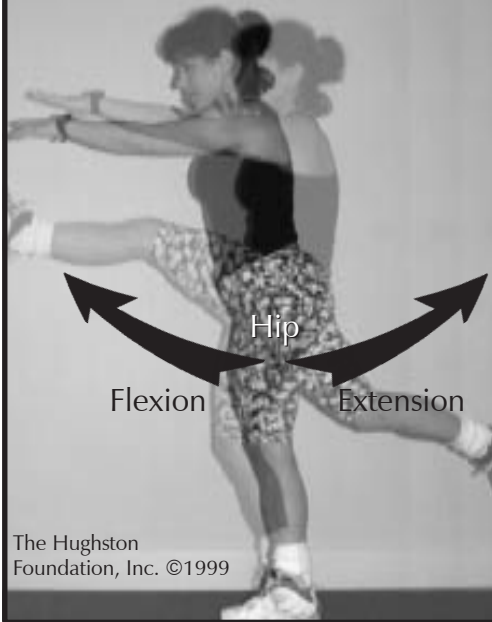


Fig. 3 Static stretching  
(recommended)



signal a reflex relaxation of the muscle. This is the body's method of preventing overstraining and tearing of the muscle fibers.

Certain stretching techniques, such as ballistic and static stretching, use the reflex contractions and relaxations signaled by the proprioceptors in an attempt to increase an athlete's flexibility. Ballistic stretching involves the use of quick, bouncing movements and is not routinely recommended due to the risk of muscle strains (Fig. 2). Static stretching requires the muscle to slowly be placed into a position of stretch and then held at that point (Fig. 3).

Recently, a third flexibility technique called Proprioceptive Neuromuscular Facilitation (PNF) has grown popular. PNF allows the muscle to be stretched to a greater degree by increasing the proprioceptor signals through a 5- to 10-second voluntary muscle contraction followed by a 5- to 10-second voluntary muscle relaxation. With the hold-relax PNF method, the muscle is placed into a static stretch. The athlete is instructed to "hold" and contract the muscle

Fig. 4  
Proprioceptive  
Neuromuscular Facilitation  
(PNF)



against resistance from a partner for 10 seconds (Fig. 4). The athlete is then instructed to "relax," and the partner slowly moves the muscle to a new static position. The technique is repeated two to three times.

Just as with any stretching activity,

PNF should be performed after a proper warm up, using correct body mechanics and motion that is pain free.

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## Exercise: The Key to Beating Stress

Stress is a part of our everyday life. We get stressed out, both mentally and physically, from lack of exercise, lack of rest, and everyday pressures from peers, family, and work. However, the main problem is a buildup of stress with no release valve. Exercise can provide such a release valve.

We all know that exercising the body can help to tone the muscles, improve our cardiovascular system, and reduce the risk of many types of problems (such as illnesses and injuries). Not only does exercise improve our physical condition, it can improve our mental condition as well by helping us feel good

about ourselves and giving us a positive outlook on life. It also helps build endurance, providing more energy.

"But I don't have time to exercise," some people say. The only solution is to make time! It's important to take care of yourself, and exercise can help you do that. Great ways to exercise include swimming, running, aerobics, bicycling, and walking.

Before you begin an exercise program, you should see your physician to rule out any potential physical complications. Your doctor can help recommend a safe and effective exercise program. So, remember to stay fit and exercise for a better lifestyle.

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The *Hughston Health Alert* is a quarterly publication of the Hughston Sports Medicine Foundation, Inc. The Foundation's mission is to help people of all ages attain the highest possible standards of musculoskeletal health, fitness, and athletic prowess. Information in the *Hughston Health Alert* reflects the experience and training of physicians at The Hughston Clinic, P.C., of physical therapists and athletic trainers at Rehabilitation Services of Columbus, Inc., of physicians who trained as residents and fellows under the auspices of the Hughston Sports Medicine Foundation, Inc., and of research scientists and other professional staff at the Foundation. The information in the *Hughston Health Alert* is intended to supplement the advice of your personal physician and should not be relied on for the treatment of an individual's specific medical problems.

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## Health Hint

When exercising in cold weather, remember that the cold temperatures not only affect your body, but your muscles as well. *This can lead to injury.* To prevent this from happening, be sure to dress in layers with loose-fitting, lightweight, warm clothing. The air trapped between the layers will help keep you warm. You can easily remove these layers to avoid sweating. Also, wear a hat. Most body heat is lost through the top of the head.



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