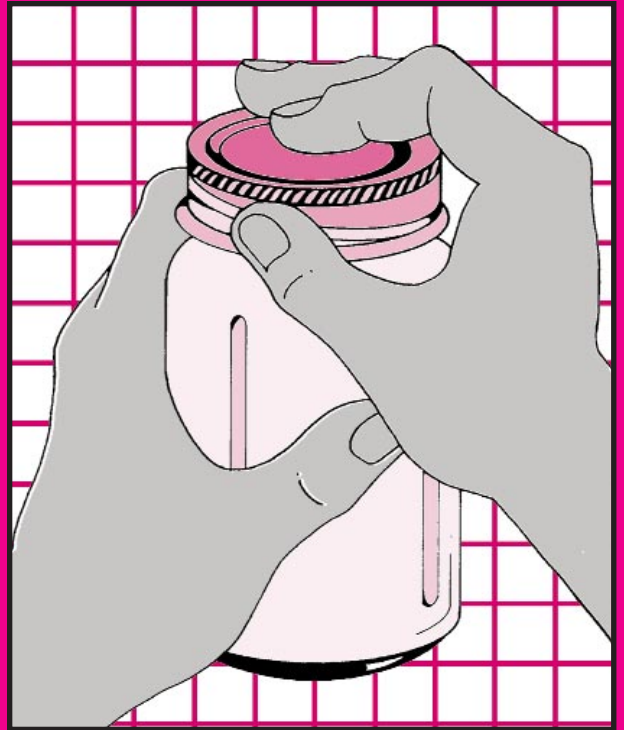

What You Need To Know About
ARTHRITIS

A Physical Therapist's Perspective



American Physical Therapy Association

What You Need To Know About Arthritis

Almost all of us know someone who has been affected by arthritis or a related condition. Ironically, arthritis is so commonplace that we sometimes underestimate its seriousness as a threat to the public health. According to the national Centers for Disease Control and Prevention (CDC), arthritis is the leading cause of disability in people 15 years of age and older.

There are more than 100 types of arthritis. (The word *arthritis* literally means “joint inflammation.”) The most common type, **osteoarthritis (OA)**, is a degenerative disease of the cartilage and bone that results in pain and stiffness in the affected joint. **Rheumatoid arthritis (RA)**—a systemic disease characterized by joint inflammation and pain—is far less common than osteoarthritis but potentially much more serious. The exact cause of RA is unknown.

Both OA and RA are chronic conditions; there is no cure for arthritis. The good news is that tremendous strides have been made in the management and treatment of arthritis and related conditions. In addition, there are many things you can do to make living with arthritis easier and less painful.

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This brochure is not intended as a substitute for professional health care.

In this booklet you will find out:

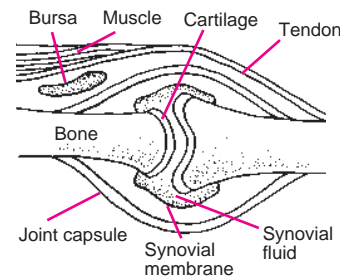
- How the joints and other parts of the body may be affected by arthritis;
- Why exercise and weight control are important in managing arthritis;
- What kinds of exercises are best for arthritic joints;
- How to make your home environment “arthritis friendly”;
- Tips to help avoid fatigue and flare-ups; and
- How physical therapy can help.

How Joints Work

In simple terms, a joint is an area of the body where two or more bones are joined together using a network of **muscles, tendons, ligaments, and cartilage**. Muscles are attached to bones with tendons (flexible, fibrous cords of tissue). Muscles create movement in the joint, and they also help stabilize the joint. Smooth **articular cartilage** encases the bones in the joint and helps promote friction-free movement, while pads of cartilage help absorb shock. **Ligaments**—tough bands of fibrous tissue—bind the joint together. The entire joint is surrounded by a sheath or “glove” of strong fibrous material called the **joint capsule**. The **synovial lining** of the joint capsule secretes tiny amounts of fluid that lubricate the joint. In addition, some joints (such as in the shoulder and the knee) are supplemented by **bursa sacs (bursae)**, little fluid-filled sacs that help cushion the joint and reduce friction.

The human body has many different kinds of joints—from simple “hinge” joints such as the elbow to very complex joints such as the hip and shoulder—which can move in many different directions. In addition, some joints must be able to withstand tremendous weights and forces; the

knee, for example, must support the weight of the entire body as it moves through space. Furthermore, pressure on the knee is magnified when you run, climb stairs, or walk on an uneven surface.

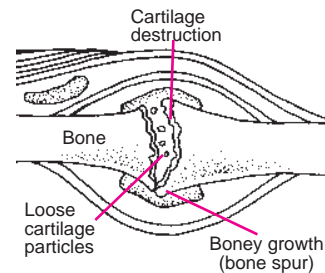


A healthy joint

Osteoarthritis

Osteoarthritis (OA)

is characterized by pain, stiffness, limited range of motion, and mechanical irregularities in the affected joint. While inflammation is not directly caused by OA, it is not uncommon for arthritic joints to swell due to erosion of the joint tissue. OA may also create bony enlargements around the joints (a phenomenon often seen in people with arthritic hands). For some people, OA is a minor annoyance; for others, however, the disease is a serious, even disabling condition.



A joint with osteoarthritis

Although OA can occur in any joint, it usually affects one or more of the following areas: the hand, shoulder, neck, lower back, hip, and knee.

The likelihood of OA increases as we age; it is estimated that nearly 75% of people over age 60 will experience OA. However, it's important to note that osteoarthritis is not an *inevitable* part of the aging process, and that young people can also get OA.

The joint cartilage is normally smooth, shiny, and

wet; in a healthy joint, the cartilage-covered surfaces move against each other with very little friction, like “glass on glass.” Cartilage normally absorbs nutrients and fluid like a sponge, and this keeps the cartilage healthy and smooth. In osteoarthritis, however, the cartilage does not get the nutrients and fluid it requires. Eventually the cartilage dries out and develops cracks—instead of moving smoothly like glass on glass, the roughened cartilage moves like sandpaper against sandpaper. In extreme cases of cartilage loss there may be actual bone-on-bone contact within the joint.

In people over 65, osteoarthritis is the most frequently cited reason for limiting physical activity. This statistic is particularly alarming to health care professionals because inadequate physical activity is implicated in a host of serious physical problems, from muscle and bone degeneration to heart disease. Quality of life suffers, too: by limiting mobility and functioning, OA can contribute to isolation, dependence, and depression.

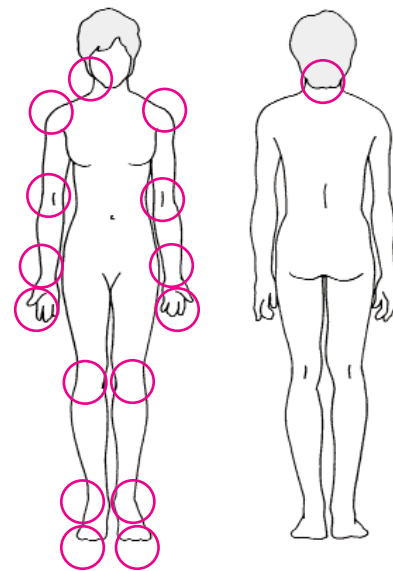
As we noted, osteoarthritis is not always associated with aging; a traumatic injury or abrupt impact can trigger the disease as well. Falls, car accidents, and sports injuries are often implicated in the onset of OA. Traumatic osteoarthritis is a process that first causes degeneration of the cartilage and articular cartilage. Because the cartilage is no longer able to absorb shock and cushion the bones, the joint is likely to become painful and feel stiff. As with OA associated with aging, traumatic OA can lead to a downward spiral of pain, inactivity, and deconditioning.

Extreme cases of OA may require surgery. However, OA responds well to conservative treatment. People with OA can directly influence

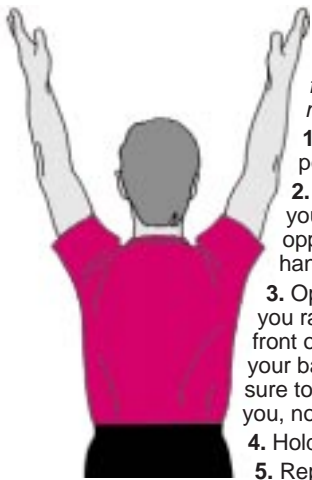
the course of the disease through physical therapy and a regular program of moderate stretching and strengthening exercises. A positive mental attitude can also work wonders in helping you maintain a degree of control over the disease.

Rheumatoid Arthritis And Related Conditions

The other major form of arthritis, which causes inflammation in the lining of the joints and joint deformity, is **rheumatoid arthritis (RA)**. In some instances RA may affect not only the joints, but also internal organs of the body (including the lungs, heart, and blood vessels). The cause of RA is unknown, although it is thought to be associated with genetics and with some incident that triggers an abnormal immune response. Unlike osteoarthritis, which is a localized condition, rheumatoid arthritis is a systemic disease that may involve the whole body. Fatigue is a common symptom of the disease. Although



**Joints that may be affected
by rheumatoid arthritis**



“V” Exercise

This stretching exercise is good for maintaining flexibility and range of motion in the shoulders.

1. Sit or stand, using good posture.
2. Cross your arms so that your thumbs are at the opposite hips. Put your hands in a fist.
3. Open your hands as you raise arms straight out in front of you, then up and toward your back into a narrow “V”. (Be sure to raise your arms *in front* of you, not out to the sides.)
4. Hold for a count of three.
5. Repeat.

anyone can get RA, including children, the disease most often appears in middle age or later; furthermore, there are three times as many women as men with RA.

The severity of rheumatoid arthritis varies widely, from minor pain and inflammation in the joints to life-threatening complications involving the internal organs. Individuals with RA also experience variations in disease activity over short periods of time: there are times when the disease is “quiet” and times when it flares up. People with RA may also experience extended periods of remission, during which the symptoms of the disease disappear.

Rheumatoid arthritis demands early, expert diagnosis by a physician specialist. Proper management includes anti-rheumatic or anti-inflammatory drugs. Anti-rheumatic drugs influence the course of the disease, while anti-inflammatory drugs are used to control the symptoms of RA. In extreme cases surgery may be required. Physical therapists—often working as part of multidisciplinary team of health care professionals—play a major role in the treatment

of RA, both in post-surgical rehabilitation and as part of a long-term program designed to help manage pain and increase flexibility, strength, and mobility.

Rheumatoid arthritis *per se* is only one of many rheumatic conditions. **Systemic Lupus Erythematosus (SLE)**, also known as **lupus**, is one of the more common rheumatic diseases. It is a systemic disorder found mostly in women. Lupus is characterized by *arthralgia*—pain in the joints that is not accompanied by swelling and deformity. (However, people with lupus may have swelling or deformity as the result of arthritis.) People with lupus often experience fatigue and photosensitivity—a pronounced sensitivity to sunlight that can cause a rash across the face. More seriously, lupus can eventually attack the kidneys and the central nervous system. Early diagnosis and treatment is essential for long-term management of this disorder.

Unlike rheumatoid arthritis and lupus, which affect more women than men, **ankylosing spondylitis (AS)** is a disease found mainly in males. This disease—frequently overlooked or misdiagnosed—is characterized by an abnormal growth of bone cells where the ligaments attach to the bones, causing the ligaments to become *ossified* (boney). Eventually AS may result in fusion of the bones in the spine, hips, shoulder, hands, knees, and the rib cage. Again, expert care by a physician specialist is required, but physical therapy can help greatly in the battle to maintain flexibility and good posture and to help manage pain.

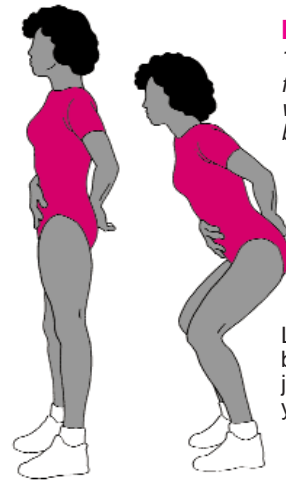
One of the more limiting aspects of AS is the possibility that the rib cage will lose flexibility and interfere with the natural expansion of the rib cage during breathing. To minimize this problem,

the physical therapist will instruct the person with AS in sleeping positions, exercises, and breathing techniques that will reduce the likelihood that the rib cage will “freeze” in a contracted position.

Many of these rheumatic diseases are difficult to diagnose and treat. This is especially true of **mixed-connective tissue disease**, an extremely variable condition that may involve a combination of rheumatoid arthritis, lupus, and a skin disorder. Symptoms of mixed-connective tissue disease vary widely. Yet another type of rheumatic disease is **psoriatic arthritis**, which is more prevalent in men than women. Psoriatic arthritis—in some ways similar to RA—involves inflammation and fusion of the vertebrae in the neck and lower back, and is also characterized by scaly skin and pitting of the fingernails. In addition, there are **non-specific arthritic diseases** that may combine various features of other rheumatic diseases.

Juvenile arthritis is a rheumatic condition that typically involves the joints, internal organs, and even the eyes. Still, juvenile arthritis doesn't fit the mold of other rheumatic diseases—the course of the disease is quite predictable, and the outlook for recovery is exceptionally bright. In fact, juvenile arthritis usually goes into remission once the patient enters adulthood. The greatest challenge for a health care team in treating a person with juvenile arthritis is to prevent permanent damage to the body while the disease is active.

Fibromyalgia—characterized by muscle pain in a symmetrical pattern of tender points on the body—is another common secondary condition, though very different in nature from the others described. Fibromyalgia is primarily a condition



Hip Hinging

The “hinge” technique is good for sitting or rising from a chair, or when you need to lower your body to perform a task or get a closer look at something.

1. Locate your hip joints, where your legs meet the trunk of your body.
2. Place your hands as shown. To “hinge,” keep your head up and your back straight. Lead with your chest and slowly bend your knees, letting your hip joints act as a hinge to lower your body.

of muscle inflammation, and is accompanied by easy fatigue. Although it often occurs by itself, fibromyalgia is also a common secondary diagnosis in people with RA. Paradoxically, fibromyalgia does not directly involve the joints: there is no joint inflammation or degeneration.

Keeping Arthritis In Perspective

It's important to remember that RA and other rheumatic diseases are relatively rare. Even if you have one of these conditions, your personal experience will often not reflect a worst-case scenario. Physical therapists emphasize that each individual has great power over his or her condition: an upbeat, positive attitude—combined with physical therapy, exercise, and confidence in your ability to be a successful “self-manager”—can minimize the impact of the disease on your life.

The same is true for osteoarthritis, which is known to affect people in middle age and beyond, and may occur in younger people as the result of injury. Whether your particular case is mild or more severe depends on many factors, including age, genetics, and injury. Most of these

factors are beyond our control. But we all have a say in how we personally respond to osteoarthritis—again, a positive attitude combined with exercise and knowledge can tip the balance in your favor. This emphasis on a “wellness lifestyle” can also ward off depression, which can be a serious side-effect of arthritis.

How Physical Therapy Can Help (And How You Can Help Yourself)

Whatever your condition—whether it’s OA, RA, or a related condition—there are physical therapists with expertise in treating it. Some physical therapists specialize in the rheumatic diseases, while others treat a range of age-related conditions including osteoarthritis. Still other physical therapists specialize in juvenile arthritis. Your physical therapist will often work as part of a multidisciplinary health care team (which may include family physicians, internists,

Chair Rise Exercise

This exercise strengthens your legs and makes standing and sitting safer.

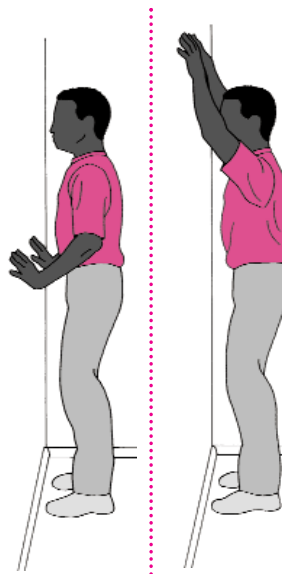
1. Hinge forward on your hips. Feel the weight on your toes.
2. Point your feet straight ahead and “grip” the floor with your toes.
3. Keeping your back straight, slowly rise from the chair. Keep your hips hinged while you gradually stand erect.
4. To sit, stand close to the chair and hinge as you bend your knees. Let your buttocks lead you to the front of the chair.



Wall Walking Exercise

This exercise targets the shoulder joints.

1. Stand straight and let your toes almost touch a wall.
2. Keep your stomach in, chin tucked, gaze forward, head straight, and knees slightly bent.
3. Place your hands at waist level with your palms facing the wall. Inhale.
4. Keeping your arms straight, use your fingers to walk both of your arms up the wall as far as you can comfortably go. Exhale as you stretch.
5. Hold for 5-10 seconds, then walk your arms back down to the starting position.
6. Repeat.



rheumatologists, orthopedic surgeons, psychologists, dieticians, and other professionals).

The goals of physical therapy in treating arthritis are to reduce pain; to help restore mobility, function, strength, and flexibility; and to prevent unnecessary disability. Physical therapy can also help you learn **self-management skills**—how to cope with arthritis in your day-to-day life. In addition to giving you a practical strategy for living with arthritis, self-management also yields a sense of confidence, empowerment, and hope.

In consultation with your physician, a licensed physical therapist can tailor a program of therapy and exercise just for you. Here’s how it works:

Evaluation. Your physical therapist will begin by taking a detailed medical history. He or she will observe your general body mechanics, and may ask you to perform a series of simple tests to assess your condition and capabilities. Problems with range of motion, flexibility, strength, posture, endurance, respiratory function, and body

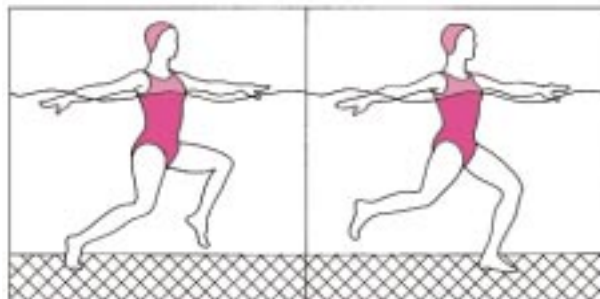
mechanics may be discovered during these tests.

Treatment. Your treatment will depend to a large extent on the precise nature of the condition—whether you have OA or RA or something else. Even so, there are certain common denominators in the treatment of arthritis, such as special exercises for strength, flexibility, and range of motion. Other treatments (or *modalities*) that may be used by your physical therapist include heat, cold, massage, and hydrotherapy. If necessary, your physical therapist may fit you with orthotics, splints, or other devices to allow you to rest inflamed joints. Some of these modalities, such as the application of heat and cold, can be performed at home as long as you have guidance from your physical therapist.

Exercise. Physical therapists emphasize that exercise for strength, flexibility, and range of motion is the cornerstone of successful arthritis management. While physical therapy clinics are often equipped with special exercise equipment, many of the exercises recommended by physical therapists in the treatment of arthritis are easily performed at home with no special equipment. A sampling of these physical-therapist-approved exercises are illustrated in this booklet.

Some exercises are better than others for people with arthritis. Generally speaking, **low-impact exercises** are desirable. High-impact activities that put undue stress on the joints—running, jumping, bouncy aerobic exercise, etc.—can cause joint pain and may cause injury. **Walking, bicycling, golf, and cross-country skiing** are good examples of appropriate activities for those living with arthritis.

Aquatic exercise and swimming are also



The Rocking Horse Aquatic Exercise

This exercise strengthens your legs and buttocks.

1. In at least waist-high water, position yourself so that your left foot is about one foot ahead of your right.
2. Lift arms away from your sides to comfortably maintain balance.
3. Raise your left leg, with knee bent. Push off with your right leg, and land on your left foot. When landing, keep your knee slightly bent.
4. Rock back and forth on the right foot (toe up) while lifting the front knee up.
5. Do several times on one leg, then switch legs. The arms can be simultaneously pushing and pulling.

excellent choices for people with arthritis. The water offers support to the joints and prevents abrupt, high-impact movements. It also offers gentle resistance that can help build strength. Classes in aquatic exercise are easy to find in many areas; check with your physical therapist or with your local YMCA or YWCA, recreation center, community college, or health club for information. Be aware, though, that no one type of exercise is right for every person. Consult your physical therapist if you have questions about the benefits of aquatic exercise.

Physical therapists emphasize strengthening as well as stretching exercises. In most cases **isometric strengthening exercises** are safe. Isometric exercises are static exercises that do not involve weights or exercise machines, but instead harness resistance within your own body. As with aquatic exercise, isometric exercise may not be right for all patients,

particularly those with severe arthritis. Again, ask your physical therapist for guidance.

Dynamic strengthening exercises—exercises that involve movement and the use of weights—may also be prescribed by your physical therapist. Dynamic exercises need to be approached with caution because of the potential for excessive stress and strain on the muscles and joints. Even so, dynamic exercises can be more efficient than isometric exercises in building strength, and they have the added benefit of introducing movement to the joint—an important factor in restoring range of motion and flexibility. Be sure to check with your physical therapist before introducing dynamic exercises into your exercise routine.

T'ai Chi is an ancient Chinese martial art that has found renewed popularity in the West among all age groups, but which can be especially beneficial to older people with arthritis and osteoporosis (see below). The gentle, graceful movements of T'ai Chi promote flexibility and balance. An added benefit of T'ai Chi is the sense of control, well-being, and peace of mind it can instill—important components in a program of self-management that emphasizes overall wellness.

Secondary diseases. Both OA and RA may be accompanied by secondary diseases.

Osteoporosis—the disease that causes a decrease in bone strength and density and that may lead to fractures—is a common secondary condition in osteoarthritis (although it is not clear that there is a direct link between the two diseases). Osteoarthritis is especially common in post-menopausal women, who

comprise the majority of osteoporosis patients. Osteoporosis may also be associated with rheumatoid arthritis, often as the result of long-term use of steroidal or anti-inflammatory drugs.

Physical therapists, in consultation with your physician or health care team, can effectively treat arthritis and osteoporosis in tandem. In addition, many exercises prescribed for osteoporosis are also good for arthritis. Treatment for osteoporosis puts an emphasis on proper posture, balance, and exercise, all of which are beneficial in the treatment of arthritis. (Proper posture and balance reduce stress on inflamed joints.)

Education And Self-Management. Even if you're undergoing physical therapy for arthritis, there will be many days when you will be making important decisions on your own. That's why physical therapists emphasize teaching people about their disease and about how to cope with it on a day-to-day basis.

Physical therapists can teach you to recognize the times when you need to rest and also help you make safe and reasonable decisions about activities that may aggravate flare-ups. For example, there are some RA patients who enjoy sports and who aren't about to let arthritis deprive them of this pleasure. And yet an injury can greatly complicate arthritis treatment. There are many trade-offs involved in living with arthritis, and your physical therapist can give you the information you need to make reasonable choices and maintain a greater degree of control over your life.

Pacing yourself and conserving your energy are also significant concepts in self-management.

People with arthritis often function better if their daily activities are measured in small doses followed by short periods of rest. **Energy conservation** may involve re-thinking your home environment to minimize reaching, bending, and unnecessary trips up and down the stairs. Furthermore, special devices such as long-handled “grabbers” can eliminate the need for reaching into high shelves and closets, and canes and walkers can take pressure off your knees and hips. Kitchen utensils with larger handles can also help, as can carts for hauling laundry.

Work simplification—such as organizing your kitchen to eliminate unnecessary movement and reaching, and rearranging your bathroom so that items are at waist height—is another skill taught by physical therapists. In addition, your physical therapist will train you to **protect your joints** by using your larger, stronger joints to perform everyday tasks.

Clothing modification can also make living with arthritis easier—even something as simple as elastic shoelaces can help reduce stress on your joints. If you have problems in your legs, feet, or hips, your physical therapist may assist you in selecting appropriate shoes, or fit you for custom-made **orthopedic shoes** or **orthotic inserts**. This special footwear can help accommodate foot deformity or problems with movement linked to arthritis.

Weight control is another important component of self-management. Excessive weight puts stress on joints, including the lower back, hips, knees, and feet. Even a modest weight reduction—a loss of 5% to 10% of total body weight—can make a noticeable difference in the condition of your joints (as well as in your overall health). Physical

therapists encourage you to get at least 30 minutes of moderate exercise daily and to reduce the amount of fat and “empty calories” in your diet. In addition to a healthful, well-balanced diet, your physician may suggest certain vitamins or dietary supplements.

Medications. Physical therapists do not prescribe drugs. However, self-management of arthritis usually entails some use of drugs (whether prescription or over-the-counter) to control pain and inflammation. The most common of these medications are NSAIDs—non-steroidal anti-inflammatory drugs. This class of drugs includes readily available medications such as aspirin and ibuprofen. Another widely used over-the-counter medication, acetaminophen, is useful for controlling pain but does not control inflammation; acetaminophen may be a good first choice for OA patients who are not affected by inflammation. Ask your physician

Calf Stretch Exercise

Maintaining muscle strength and flexibility is important in managing arthritis. This exercise strengthens and stretches the calf muscles.

1. Stand about two feet away from the kitchen counter. Gently grip the edge of the counter.
2. Keep your stomach in, head upright, gaze forward, chin tucked, and knees slightly bent.
3. Place one leg forward and the other behind, keeping both feet flat and the back leg bent at the knee. Inhale.
4. Slowly bend the front leg, keeping the back foot on the floor and the knee bent until you feel a stretch in the lower calf area of the front foot. Exhale as you stretch.
5. Hold for 5 to 10 seconds and repeat with other leg.



or pharmacist for advice before using any over-the-counter medication, and be sure to find out if there are possible interactions with other medications you may be taking.

Remember that just because a drug is available over the counter does not mean that it is harmless or without side-effects. There is some evidence, for example, that NSAIDs may contribute to the deterioration of the cartilage over the long term. And NSAIDs may also cause stomach distress. On the other hand, these drugs do offer short-term relief from pain and swelling. It's ultimately up to you and your physician to decide whether a particular drug is appropriate.

Many promising new medications for RA are on the horizon, and researchers are hopeful that these drugs may provide long-term benefit for some patients.

Surgical aftercare. If your arthritis requires surgery, physical therapy will play a crucial role in your rehabilitation. The goal of rehabilitation is to get the affected joint(s) moving as soon as possible to prevent stiffness and muscle atrophy, and to minimize scar tissue (which can crowd the joint and limit motion). A program of physical therapy and exercise will be customized just for you, in close consultation with your physician and health care team.

Getting In Touch With A Physical Therapist

To find a physical therapist, ask your physician, call your local hospital, consult the Yellow Pages of your telephone book, or ask relatives or friends who may have sought the services of a physical therapist in the past. In some states you will be required to obtain a referral from your physician before you see a physical therapist. If

you are unsure what the regulations are in your state, ask a physical therapist in your area. To help select a physical therapist, you may consider asking the following questions:

- Are you a licensed physical therapist in my state?
- How much experience do you have treating people with my condition?
- Do you have specialized equipment, if needed, to treat my condition?
- Are you a member of a recognized professional association or organization concerned with the treatment of arthritis?
- Will you accept Medicare, and what are your payment policies?

Resources For More Information

The Arthritis Foundation is one of the best sources of information, support, and education for people with arthritis, with more than 150 local offices across the United States. To find one near you, log on to the Arthritis Foundation's Internet address at <http://www.arthritis.org/> or call **1-800-283-7800**.

The **Centers for Disease Control and Prevention (CDC)** provides information about arthritis on the Internet at <http://www.cdc.gov/> or call the CDC's Division of Adult and Community Health at **1-770-488-5269**.

About APTA

The American Physical Therapy Association (APTA) is a national professional organization that represents more than 74,000 members throughout the United States.

Physical therapists are vital members of the multidisciplinary health care team. They provide treatment and can refer clients to other health care specialists. APTA serves its members and the public by promoting understanding of the

physical therapist's growing role in the health care system. APTA also promotes excellence in the field with improvements in physical therapy education, research, and practice.

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