ARTHRITIS

Arthritis is the inflammation of a joint and may be the oldest known ailment on earth. Mummies uncovered in Egypt, prehistoric man, and dinosaurs all show signs of having had arthritis. Close to 40 million Americans have this ailment, and a million more will have it a year from now.

TYPES OF ARTHRITIS

There are two forms of arthritis: osteoarthritis and rheumatoid arthritis. Both conditions cause varying degrees of pain, swelling, redness, and limited movement.

Arthritis is the leading cause of disability in Americans and accounts for more difficulty and dependence on other people, when climbing stairs or walking, than any other disabling condition. Osteoarthritis, the most common, typically affects the hands, hips, and knees of older Americans. Studies suggest weight loss and avoiding joint injuries can help prevent the disease or alleviate some of the symptoms, particularly in the knee. With improved education, both the pain and the number of visits to physicians can be reduced.

■ OSTEOARTHRITIS

As we age, we are all susceptible to osteoarthritis because its main cause appears to be the years of "wear and tear" placed on the cartilage that cushions the bones in our joints. Over time, this cartilage is broken down, becomes rough, and loses its cushioning effect. Nearly all people over age 60 show some evidence of osteoarthritis on x-rays — fewer than half of these people experience symptoms.

Joints are made to work in specific ways and any movement beyond the normal range, or in an unnatural direction, often causes an injury. Some injuries result from a blow, a fall, or occasionally, from overuse. Unlike rheumatoid arthritis (a disease that may affect more than one body system at a time), osteoarthritis may affect a single joint. Degeneration of the joint may encourage problems such as a congenital defect, injury, infection, or disorders resulting from obesity or a family history of arthritis. Weight has a powerful effect on osteoarthritis of the knee. Obesity is the leading risk factor for osteoarthritis of the knee in women 45 to 64 years of age.

Joints that only become inflamed occasionally are common and treatable. Fewer people have progressive joint damage. Several factors can cause irreparable damage to the cartilage. The synovial membrane (fluid-containing portion of a joint) becomes thick and causes narrowing of the joint cavity. At the same time, the bones overgrow and form spurs called osteophytes.

Primary osteoarthritis most commonly affects the joints of the fingers, hips, knees, spine, and the base of the thumb and big toe. Secondary osteoarthritis can affect any joint and may result from overuse. Because trauma or overuse hastens the degeneration of cartilage, symptoms of secondary osteoarthritis become apparent at a much younger age than symptoms of primary osteoarthritis.

SIGNS AND SYMPTOMS

The first symptoms are usually mild with morning stiffness for approximately 15 minutes.

The symptoms gradually are made worse by greater activity but are relieved by rest.

The later symptoms cause enlarged joints, particularly noticeable in the fingers.

The rate of progression and ultimate severity of osteoarthritis is unpredictable and varies in different individuals.

SELF-TREATMENT

Exercise The treatment of osteoarthritis requires both rest and exercise. Aerobics, fitness walking, exercising in water, and strengthening exercises are all important parts of therapy. Exercising to a point of feeling pain is not advised. Consultation with a physical therapist for specific instructions may also help. While rest is important when joints ache, appropriate exercise is equally essential to maintain joint motion, muscle strength, and fitness when symptoms have subsided. Three forms of exercise can be helpful: range of motion, muscle-strengthening, and endurance. These can be adjusted by your response and physician's advice.

Range of Motion These exercises involve moving a joint as far as possible in every direction without causing pain. The purpose is to maintain flexibility, reduce pain and stiffness, and improve joint function. These may be useful as "warming-up" exercises prior to workouts.

Muscle Strengthening Isometric exercises (pushing and pulling against a fixed object) can strengthen muscles without damaging joints which remain immobile during the exercise. Stronger muscles provide greater structural support for the joints.

Endurance/Fitness Aerobic activities such as swimming, walking, running, and bicycling improve overall body fitness. Patients should warm up properly before exercising (by walking briskly to get their heart rate up) and then do some gentle stretches.

Weight Control Lifestyle changes, particularly weight loss (reducing the stress on the hip and knee joints) are most often beneficial to manage osteoarthritis. Although being overweight is thought to place greater stress on weight-bearing joints, another study linked obesity to osteoarthritis in non weight-bearing joints in the hands. This suggests that excess body fat may have a direct and adverse metabolic effect on joint cartilage. People who are overweight should make every attempt to lose weight; normal weight people should strive to maintain their weight.

Heat and Cold A warm bath or shower, a heat lamp, or warm compresses may relieve pain and ease stiffness by relaxing muscles. Paraffin (warm wax) baths can lessen pain and stiffness in fingers and feet. In some persons, however, application of cold packs or “blue ice” provides better relief of pain, especially when pain and inflammation follow physical activity. Warm compresses or ice should not be applied longer than 20 minutes. Ice should be wrapped in a towel and removed if the joint starts feeling numb.

Topical Analgesics Cream preparations that are applied to the skin for arthritis will not completely stop pain but can offer temporary relief. Most of these preparations can be purchased over the counter.

DRUG TREATMENT

Acetaminophen For most, the pain of osteoarthritis can be treated with acetaminophen (the generic name for Tylenol). This can provide adequate pain relief with fewer side effects than nonsteroidal anti-inflammatory drugs.

Nonsteroidal Anti-inflammatory Drugs (NSAID) These are the next drug option. Adequate pain relief can often be obtained with NSAID that have fewer side effects of abdominal discomfort, such as aspirin, salsalate (Disalcid) or naproxen (Naprosyn, Alleve).

SURGICAL TREATMENT

Severely disabling arthritis can be aided by a variety of surgical procedures. As in conservative (nonsurgical) treatments — risk, side effects, and expense should be weighed. The most successful outcomes occur in highly motivated individuals who do not smoke, are not overweight, and whose physical and emotional status is healthy and stable.

Arthroscopy This procedure entails the insertion of an arthroscope — a thin lighted tube that allows the surgeon to see directly into the joint.

Osteotomy An affected area of the bone tissue in the knees or spine is cut away and the remaining bones are then reset in the proper position.

Resection All or part of a bone is removed in a joint of the hands, wrists, elbows, toes, or ankles. Usually this is in conjunction with the replacement of the joint with a prosthetic joint.

Arthrodesis In this procedure, a surgeon fuses together two bones in a joint to form a single bone. This naturally results in the loss of flexibility but it may relieve pain caused by two bones rubbing against each other in the damaged joint. The new fused bone is more stable and can bear weight much better than the two separate bones.

Resurfacing This is a type of joint replacement. Damaged cartilage is removed at the ends of the hip joint bone and capped with metal; the joint capsule is sometimes lined with plastic.

Total Joint Replacement (Arthroplasty) Arthroplasty relieves pain and restores function by removing the entire diseased or damaged joint and replaces it with a mechanical joint. Most joint replacements are done in the hip and knee; however, other joints of the elbow, shoulder, hands, and feet can also be replaced. For many patients, the new technology and improved operative techniques and materials have made joint replacement the best treatment alternative.

RHEUMATOID ARTHRITIS

Less common than osteoarthritis, rheumatoid arthritis affects one to two percent of the population. This type of arthritis strikes multiple joints as well as other tissues and organs throughout the body. Three times more women than men suffer from rheumatoid arthritis. Although the symptoms begin most often between ages 20 and 40, rheumatoid arthritis may start at any age. Unlike osteoarthritis, which is the result of "wear and tear," rheumatoid arthritis is thought to be an autoimmune disease that causes the immune system to attack the joints. This causes pain, inflammation, and often deformity in joints and usually affects the joints in pairs (eg, both hands or both feet). People with rheumatoid arthritis often go through cycles of increased pain and inflammation called "flare-ups."

As rheumatoid arthritis progresses, the production of excess fibrous tissue can limit joint motion. Inflammation of tissue surrounding the joint also contributes to joint damage.

SIGNS AND SYMPTOMS (Early)

Fatigue; weakness; low-grade fever; loss of appetite and weight; possible mild joint stiffness or pain.

Inflamed joints (red, warm, swollen and painful). The joints most often affected are the fingers, wrists, knees, ankles and toes, typically on both sides of the body. This symmetrical pattern, as well as the signs of inflammation, differentiates rheumatoid arthritis from osteoarthritis.

(Progressive)

Joints eventually become deformed and their range of motion becomes increasingly more limited.

Rheumatoid nodules are found under the skin in about 20 percent of patients.

Atrophy (deterioration) of the skin and muscles around the affected joints may occur.

Carpal tunnel syndrome (wrist nerve disorder).

Dryness of the eyes, mouth, and other mucous membranes.

(Serious Systemic Problems)

Enlarged spleen; inflammation of the membrane covering the heart or the heart muscle; inflammation of the membranes surrounding the lung (pleurisy); inflammation of the outer layers of the eye that can lead to blindness.

TREATMENT GOALS

The goals in the treatment of rheumatoid arthritis are to control the disease activity, alleviate pain and inflammation, maintain function, maximize quality of life, stop or slow joint damage, and reduce mortality.

SELF-TREATMENT GOALS

Patients with rheumatoid arthritis can benefit from many of the treatments for osteoarthrits including:

Icing the affected joints to reduce pain and inflammation.

Exercising to build strength and flexibility.

Developing strategies to cope with the emotional and psychological factors associated with a chronic illness.

Fighting fatigue, which can be the most incapacitating feature of the disease. Proper rest and the use of splints and other assistive devices, when joints are inflamed, can help relieve fatigue.

Getting ample rest — at least ten hours of sleep a day (all night, or eight hours at night and two hours during daytime). Rest is essential for inflamed joints as they are easily damaged. Complete bed rest may be necessary during periods of severe inflammation involving multiple joints.

DRUG TREATMENT

Nonsteroidal Anti-inflammatory Drugs Unless there is some contraindication (such as an allergy), aspirin is usually the first drug used because it reduces inflammation and is less expensive than other NSAID. The dosage depends on a balance between the large amounts of a drug that may be needed to control symptoms and the development of side effects.

Antirheumatics The current trend is to move a patient's treatment to other more potent antirheumatic drugs when the basic anti-inflammatory fails to control symptoms.

Antimalarial The most commonly used antimalarial is hydroxy chloroquine sulfate (Plaquenil). Only about one in four patients with rheumatoid arthritis responds to this drug and improvement usually does not start for three to six months.

Azathioprine (Imuran) This is a substance that blocks a normal metabolic process. It is only used when severe symptoms fail to respond to safer drugs, since it can cause dangerous suppression of the immune system.

Corticosteroids Prednisone usually produces rapid improvement for symptoms by reducing inflammation, but these symptoms usually recur frequently once the steroids are stopped. As a result, physicians and patients have been tempted to continue steroid use for long periods, despite many serious side effects. Corticosteroid use is best reserved for the acute treatment of incapacitating flare-ups or other severe symptoms of rheumatoid arthritis.

Cyclophosphamide Cytoxan, an anticancer drug, has proven helpful in studies with rheumatoid arthritis patients who have not responded to any other therapeutic measures. It is essential for people taking this drug to drink a lot of fluids to maintain good urine flow, since serious inflammation of the bladder (hemorrhagic cystitis) is one of the side effects.

Methotrexate An antimetabolite, which acts as a mild immunosuppressant, may be the drug of choice for people whose severe rheumatoid arthritis does not respond to NSAID.

Gold Salts Chrysotherapy, used in patients who do not respond to NSAID and are unable to take methotrexate, is beneficial about 60 percent of the time. It appears to act by suppressing the inflammation during active rheumatoid arthritis. It takes about eight weeks for the benefits of treatment to become apparent. Gold is administered with intramuscular injections or daily oral dosages, although injectable gold is more effective. Side effects, which occur in about one-third of patients receiving gold injections, include dermatitis (skin disorders), inflammation of the mucous membranes of the mouth (stomatitis), protein in the urine, and a drop in white blood cell levels.

Penicillamine This has proven effective among patients who are unresponsive to all other measures.

STF (Soluble Tumor Necrosis Factor) Receptor Entanercept is a potent mediator of inflammation. The drug is administered by subcutaneous injection twice weekly.

Cyclosporine A potent immunosuppressant agent for the treatment of patients with severe, active rheumatoid arthritis that has not responded to methotrexate. The drug may cause kidney and liver damage, and requires careful monitoring.

SURGICAL TREATMENT

Patients with rheumatoid arthritis can benefit from the same surgical procedures as those with osteoarthritis (see Surgical Treatment for Osteoarthritis).

Synovectomy When rheumatoid arthritis involves the elbows, shoulders, hips, or knees, a synovectomy may be effective. This consists of removing only the diseased synovial membranes from the joint.

ADVICE ON LIVING WITH RHEUMATOID ARTHRITIS

- Do not sit in a flexed position for an extended time.
- Relax and stretch the hip and knee muscles by lying facedown for about 15 minutes, several times daily.
- Apply removable supports to inflamed joints to alleviate a muscle spasm and diminish the possibility of deformities.
- If weight-bearing joints are involved, protect them by using crutches or braces when starting to walk.
- Prioritize daily activities and carry out only the most essential ones. Do not waste your energy.
- Minimal exercise when joints are inflamed (only passive range of motion exercises) is appropriate.
- Hydrotherapy (exercise in water) is a good exercise for people with rheumatoid arthritis since the buoyancy created by the water helps reduce stress on the joints.
- Splints and assistive devices (over the counter or custom made) are designed to relieve pain and stabilize and protect the joints during periods of acute inflammation when joints are more prone to injury.
- Relieve pain promptly with joint rest, application of heat or cold, and medications — continued pain results in fatigue.

RELATED DISORDERS

SYSTEMIC LUPUS ERYTHEMATOSUS

Systemic lupus erythematosus (SLE) is another chronic autoimmune disease that presents itself in varied ways and can affect the joints and many of the body's organs. SLE affects approximately one in 2,000 individuals and is about five times more common in women than men. Although typically occurring in young adults between the ages of 15 and 40, it may also strike older adults. Certain genetic factors increase susceptibility, but the causes of this autoimmune disorder are still not clearly understood.

SIGNS AND SYMPTOMS

Persistent joint and muscle aches; warm, swollen, and inflamed joints; fatigue; low grade fever; loss of appetite and weight loss; formation of mouth ulcers; rashes involving the face and other parts of the skin; inflammation of the kidneys, linings of the lungs, heart, and different parts of the neurological system.

TREATMENT

Patients with skin that is sensitive to sunlight should minimize prolonged outdoor exposure and protect their skin with the use of sunscreens and clothing (trousers, long dresses, long sleeve shirts, large-brimmed hats).

Appropriate exercise to sustain joint function cannot be overemphasized.

DRUG TREATMENT

Agents that suppress inflammation, including NSAID, antimalarial, corticosteroid, and some of the more powerful immunosuppressive drugs (Imuran, Cytoxan). The choice of medication is determined by the severity of the inflammation at the time of treatment.

GOUT

Gout is a systemic disease causing increased amounts of uric acid in the blood, which causes recurrent bouts of acute "gouty" arthritis. In the early stages, gout usually involves a single joint. As it progresses, chronic arthritis may occur that affects many more joints and is associated with joint deformity. Gout occurs more in men, often starting after the age of 30. In women, attacks of gout usually do not begin until after menopause. Being overweight increases the risk of developing gout. The acute attacks of gout usually occur suddenly and without warning — often at night. Gouty arthritis of the big toe is particularly common. The big toe is affected in 75 percent of people with gout.

SIGNS AND SYMPTOMS Progressive severe joint pain accompanied with swelling; extreme tenderness; warmth; redness of the skin overlying the joint; moderate fevers.

TREATMENT Recommended weight control, but do not fast — it raises uric acid levels; avoidance of excessive alcohol; sufficient fluid intake to maintain a normal urine output.

DRUG TREATMENT

Colchicine Daily doses of colchicine reduce the frequency of acute gouty arthritis attacks without lowering blood uric acid levels. Long-term colchicine treatment is most likely to benefit those who have frequent attacks and especially high levels of uric acid.

Uricosuric Agents These agents will increase excretions of uric acid by the kidneys.

Allopurinol (Zyloprim) These agents will inhibit the production of uric acid in the body.

Drugs to Avoid Hydrochlorothiazide, furosemide (both diuretics), low doses of aspirin (all decrease uric acid excretion), and nicotinic acid (niacin).

TREATMENT OF AN ACUTE ATTACK Patients should remain in bed for 24 hours after symptoms subside.

NSAID These have replaced colchicine as the treatment of choice for acute gout.

Colchicine Colchicine is effective when used early in the course of an acute gout attack. The drug is taken orally. The use of colchicine for the treatment of acute gout is limited, since side effects occur in about 80 percent of patients who take it.

Corticosteroid Oral corticosteroids are effective, but generally are used only in people who do not tolerate NSAID. Pain may also be relieved by the injection of steroids directly into an affected joint.

Analgesics Codeine or meperidine (opiates that can provide more rapid relief of severe pain) may be used while waiting for the previously mentioned drugs to take effect. Unfortunately, the downside to repetitive use is addiction.

BURSITIS

The bursa is a small fluid-filled sac that acts as a cushion in areas of the body where muscles or tendons move over bones or other muscles. There are about 150 bursae in the body.

The bursae prevent friction by protecting muscles and tendons from coming in direct contact with bones. When the bursa becomes inflamed, the result is pain and swelling. Bursitis may be caused by excessive pressure or a by a bump, blow, or fall, but in most cases it results from joint overuse due to repetitive motions. Staying in good physical shape helps prevent bursitis because well-conditioned muscles are less susceptible to overuse injuries than tight or weak muscles. While some of the symptoms are similar to arthritis, bursitis affects the tissues surrounding the joint rather than the joint itself. Bursitis is not a chronic condition and most cases clear up by themselves within a few days; however, it can recur if preventive measures are not used.

SIGNS AND SYMPTOMS
Pain with movement; inflammation; swelling of muscle or tendon.

TREATMENT
Rest the affected area until the pain is gone.

Apply ice packs to the affected area for 20 minutes every hour or two.

After 48 hours, use heat to stimulate blood flow and help ease the pain.

After the pain is eased, begin gentle stretching exercises and gradually build up to your accustomed level of activity.

Do not massage the area, it will only irritate the bursa further.

If the pain is disabling or doesn't subside after three or four days, consult a physician.

DRUG TREATMENT
Aspirin, or over the counter NSAID, can be helpful in alleviating pain.

Cortisone injections or removal of fluid from the bursa with a needle and syringe can help reduce swelling and inflammation.

SURGICAL TREATMENT
In very rare instances, removal of the bursa may be necessary.

LATEST FINDINGS

In a 1996 study, it was found that people with arthritis, even severe rheumatoid arthritis, could safely increase their strength by roughly 60 percent in 12 weeks through a modest weight training program. They were careful not to exercise during flare-ups and to rest whenever they felt joint pain, returning to strength training once a flare-up had passed.

For patients with arthritis, the study showed that starting small (lifting a six-ounce soup can eight to ten times in twice-weekly workouts) may be enough to strengthen arms at first. If patients also do leg lifts (seated and wearing lightly weighted ankle cuffs), their legs will get the same easy workout. Then — as they get stronger — they can gradually increase the amount of weight every couple of weeks to keep building muscle. Padded weight cuffs with pockets that allow varied amounts of weight with each exercise are recommended.

The Arthritis Foundation's "People with Arthritis Can Exercise," or PACE, is an excellent starting program; it can be reached at 800-283-7800.

ON THE HORIZON

Drugs to control rheumatoid arthritis haven't worked for all patients, causing unpleasant side effects. A number of medications under development and are expected to ease inflammation and pain with few side effects by precisely targeting aspects of the immune system. The first in the wave of genetically engineered drugs, Enbrel, was just approved by the FDA.

AVAILABLE RESOURCES

The Arthritis Foundation
PO Box 19000
Atlanta, Georgia 30326

See also the local listings for your State Chapter of The Arthritis Foundation.

WHAT TO DO

SEVERITY LEVEL	SYMPTOM	POSSIBLE DIAGNOSIS
Make an appointment to see your doctor	Fatigue, weakness, low-grade fever, inflamed joints becoming deformed, loss of appetite	Rheumatoid arthritis
	Mild joint stiffness gradually worsening, dryness of eyes, mouth, and mucous membranes, joint and muscle pain, warm swollen joints, fatigue, low-grade fever, mouth ulcers, rashes, inflammation of internal organs	Systemic lupus erythematosus
	Severe joint pain with swelling (mostly in big toe), redness in skin overlying joint	Gout
Try the home treatment outlined in this chapter	Mild morning stiffness, pain relieved with rest, enlarged joints (mostly fingers)	Osteoarthritis
	Pain with movement, inflammation, swelling of muscle or tendon	Bursitis