

Rheumatoid Arthritis



What is rheumatoid arthritis?

Rheumatoid arthritis (RA) is an autoimmune disease that causes chronic inflammation of the joints. Rheumatoid arthritis can also cause inflammation of the tissue around the joints, as well as in other organs in the body. Autoimmune diseases are illnesses that occur when the body tissues are mistakenly attacked by its own immune system. Because it can affect multiple organs of the body, rheumatoid arthritis is referred to as a systemic illness and is sometimes called rheumatoid disease. While rheumatoid arthritis is a chronic illness, meaning it can last for years, patients may experience long periods without symptoms. Typically, however, rheumatoid arthritis is a progressive illness that has the potential to cause joint destruction and functional disability.



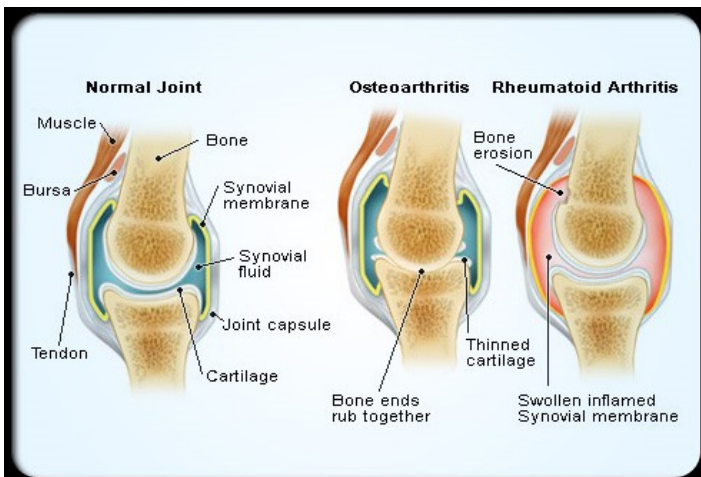
Who is at risk for rheumatoid arthritis?

Rheumatoid arthritis is a common rheumatic disease, affecting approximately 1.3 million people in the United States, according to current census data. The disease is **three times more common in women as in men.** It afflicts people of all races equally. The disease can begin at any age, but it most often starts after age 40 and before 60. In some families, multiple members can be affected, suggesting a genetic basis for the disorder.



What is juvenile rheumatoid arthritis?

Juvenile rheumatoid arthritis (JRA) is arthritis that causes joint inflammation and stiffness for more than six weeks in a child aged 16 or younger. It affects approximately 50,000 children in the United States. Inflammation causes redness, swelling, warmth, and soreness in the joints, although many children with JRA do not complain of joint pain. Any joint can be affected, and inflammation may limit the mobility of affected joints.



What is the difference between normal, healthy joints and arthritic joints?

A joint is where two bones meet to allow movement of body parts. Arthritis means joint inflammation. The joint inflammation of rheumatoid arthritis causes swelling, pain, stiffness, and redness in the joints. The inflammation of rheumatoid disease can also occur in tissues around the joints, such as the tendons, ligaments, and muscles. In some patients with rheumatoid arthritis, chronic inflammation leads to the destruction of the cartilage, bone, and ligaments, causing deformity of the joints. Damage to the joints can occur early in the disease and progress as the individual ages.



What causes rheumatoid arthritis?

The cause of rheumatoid arthritis is unknown. Even though infectious agents such as viruses, bacteria, and fungi have long been suspected, none has been proven as the cause. The cause of rheumatoid arthritis is a very active area of worldwide research. Some scientists believe that the tendency to develop rheumatoid arthritis may be genetically inherited. It is suspected that certain infections or factors in the environment might trigger the immune system to attack the body's own tissues; resulting in inflammation in various organs of the body such as the lungs or eyes. Environmental factors also seem to play some role in causing rheumatoid arthritis. Recently, scientists have reported that smoking tobacco increases the risk of developing rheumatoid arthritis.



Remission, relapse, and flares

The symptoms of rheumatoid arthritis come and go, depending on the degree of tissue inflammation. When body tissues are inflamed, the disease is active. When tissue inflammation subsides, the disease is inactive (in remission). Remissions can occur spontaneously or with treatment and can last weeks, months, or years. During remissions, symptoms of the disease disappear and patients generally feel well. When the disease becomes active again (relapse), symptoms return. The return of disease activity and symptoms is called a flare. The course of rheumatoid arthritis varies from patient to patient, and periods of flares and remissions are typical.



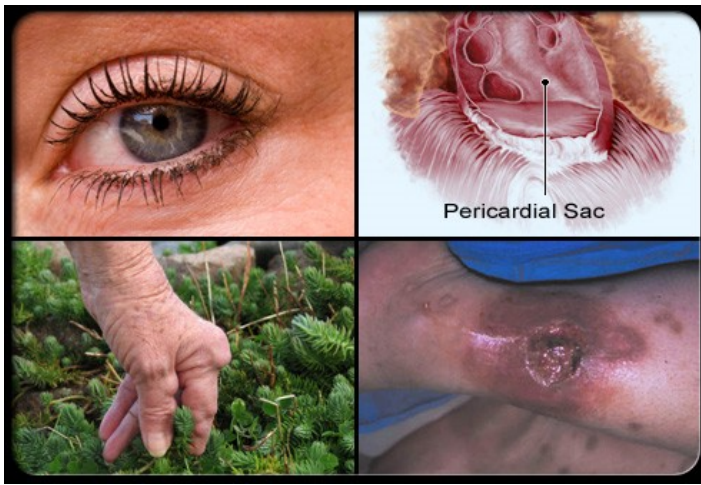
What are the symptoms of rheumatoid arthritis?

When the disease is active, symptoms can include fatigue, lack of appetite, low-grade fever, muscle and joint aches, and stiffness. Muscle and joint stiffness are usually most notable in the morning and after periods of inactivity. Arthritis is common during disease flares. Also during flares, joints frequently become red, swollen, painful, and tender. This occurs because the lining tissue of the joint (synovium) becomes inflamed, resulting in the production of excessive joint fluid (synovial fluid). The synovium also thickens with inflammation (synovitis).



What are the symptoms of rheumatoid arthritis? (cont.)

In rheumatoid arthritis, multiple joints are usually inflamed in a symmetrical pattern (both sides of the body affected). The small joints of both the hands and wrists are often involved. Simple tasks of daily living, such as turning door knobs and opening jars can become difficult during flares. The small joints of the feet are also commonly involved. Chronic inflammation can cause damage to body tissues, cartilage, and bone. This leads to a loss of cartilage and erosion and weakness of the bones as well as the muscles, resulting in joint deformity, destruction, and loss of function.



Rheumatoid arthritis and inflammation of organs

Since rheumatoid arthritis is a systemic disease, its inflammation can affect organs and areas of the body other than the joints.

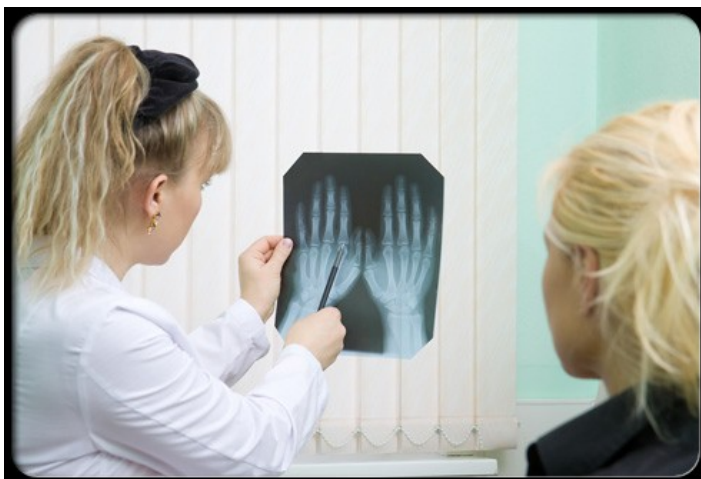
Examples of other areas that may be affected include:

- Sjogren's syndrome is inflammation of the glands of the eyes and mouth and causes dryness of these areas.
- Rheumatoid inflammation of the lung lining (pleuritis) causes chest pain with deep breathing or coughing.
- Tissue inflammation surrounding the heart, called pericarditis, can cause chest pain that typically changes in intensity when lying down or leaning forward.
- Rheumatoid disease can reduce the number of red blood cells (anemia) and white blood cells.
- Decreased white cells can be associated with an enlarged spleen (Felty's syndrome) and can increase the risk of infections.
- Firm lumps under the skin (rheumatoid nodules) can occur around the elbows and fingers where there is frequent pressure.
- A rare and serious complication is blood-vessel inflammation (vasculitis). Vasculitis can impair blood supply to tissues and lead to tissue death. This is most often initially visible as tiny black areas around the nail beds or as leg ulcers.



Who is a rheumatologist?

A rheumatologist is a medical doctor who specializes in the non-surgical treatment of rheumatic illnesses, especially arthritis. Rheumatologists have special interests in unexplained rash, fever, arthritis, anemia, weakness, weight loss, fatigue, joint or muscle pain, autoimmune disease, and anorexia. They often serve as consultants, acting like detectives for other doctors. Rheumatologists have particular skills in the evaluation of the over 100 forms of arthritis, and have special interest in rheumatoid arthritis, spondylitis, psoriatic arthritis, systemic lupus erythematosus, antiphospholipid syndrome, Still disease, dermatomyositis, Sjogren's syndrome, vasculitis, scleroderma, mixed connective tissue disease, sarcoidosis, Lyme disease, osteomyelitis, osteoarthritis, back pain, gout, pseudogout, relapsing polychondritis, Henoch- Schonlein purpura, serum sickness, reactive arthritis, Kawasaki disease, fibromyalgia, erythromelalgia, Raynaud's disease, growing pains, iritis, osteoporosis, reflex sympathetic dystrophy, and others.



How is rheumatoid arthritis diagnosed?

The first step in the diagnosis of rheumatoid arthritis is a meeting between the doctor and patient. A doctor with special training in arthritis and related diseases is called a rheumatologist. The doctor reviews the history of symptoms, examines the joints for inflammation and deformity, the skin for rheumatoid nodules, and other parts of the body for inflammation. Certain blood and X-ray tests are often obtained. The diagnosis will be based on the pattern of symptoms, the distribution of the inflamed joints, and the blood and x-ray findings. Several visits may be necessary before the doctor can be certain of the diagnosis. The distribution of joint inflammation is important to the doctor in making a diagnosis. In rheumatoid arthritis, the small joints of the hands, wrists, feet, and knees are typically inflamed in a symmetrical distribution (affecting both sides of the body). When only one or two joints are inflamed, the diagnosis of rheumatoid arthritis becomes more difficult. The doctor may then perform other tests which we'll discuss on the next slides.



RA diagnostic test: citrulline antibody test

Abnormal blood antibodies can be found in patients with rheumatoid arthritis. A blood antibody called "rheumatoid factor" can be found in 80% of patients. Citrulline antibody is present in most patients with rheumatoid arthritis. It is useful in the diagnosis of rheumatoid arthritis when evaluating patients with unexplained joint inflammation. **A test for citrulline antibodies is most helpful in detecting the cause of previously undiagnosed inflammatory arthritis** when the traditional blood test for rheumatoid arthritis, rheumatoid factor, is not present. Citrulline antibodies are also indicators of potentially more aggressive disease. Citrulline antibodies have been felt to represent the earlier stages of rheumatoid arthritis in this setting. Another antibody called "the antinuclear antibody" (ANA) is also frequently found in patients with rheumatoid arthritis.



RA diagnostic test: sedimentation rate (sed rate)

A blood test called the sedimentation rate (sed rate), is a measure of how fast red blood cells fall to the bottom of a test tube. The sed rate is used as a crude measure of inflammation of the joints. The sed rate is usually faster during disease flares and slower during remissions. Another blood test that is used to measure the degree of inflammation present in the body is the C-reactive protein. The rheumatoid factor, ANA, sed rate, and C-reactive protein tests can also be abnormal in other systemic autoimmune and inflammatory conditions. Therefore, abnormalities in these blood tests alone are not sufficient for a firm diagnosis of rheumatoid arthritis.



RA diagnostic test: joint X-rays

Joint X-rays may be normal or only show swelling of soft tissues early in the disease. As the disease progresses, X-rays can show bony erosions typical of rheumatoid arthritis in the joints. Joint X-rays can also be helpful in monitoring the progression of disease and joint damage over time. Bone scanning, a radioactive test procedure, and MRI scanning can demonstrate inflamed or eroded joints.



RA diagnostic test: arthrocentesis

The doctor may elect to perform an office procedure called arthrocentesis. In this procedure, **a sterile needle and syringe are used to drain fluid out of the joint for study in the laboratory.** Analysis of the joint fluid can help to exclude other causes of arthritis, such as infection and gout. Arthrocentesis can also be helpful in relieving joint swelling and pain. Occasionally, cortisone medications are injected into the joint during the arthrocentesis in order to rapidly relieve joint inflammation and further reduce symptoms.



How is rheumatoid arthritis treated?

There is no known cure for rheumatoid arthritis. To date, the goal of treatment in rheumatoid arthritis is to reduce joint inflammation and pain, maximize joint function, and prevent joint destruction and deformity. **Early medical intervention has been shown to be important in improving outcomes.** Aggressive management can improve function, stop damage to joints as seen on X-rays, and prevent work disability. Optimal treatment for the disease involves a combination of medications, rest, joint-strengthening exercises, joint protection, and patient (and family) education. Treatment is customized according to many factors such as disease activity, types of joints involved, general health, age, and patient occupation. Treatment is most successful when there is close cooperation between the doctor, patient, and family members.



What medications are used to treat rheumatoid arthritis?

Two classes of medications are used in treating rheumatoid arthritis: fast-acting "first-line drugs" and slow-acting "second-line drugs" (also referred to as disease-modifying antirheumatic drugs or DMARDs).

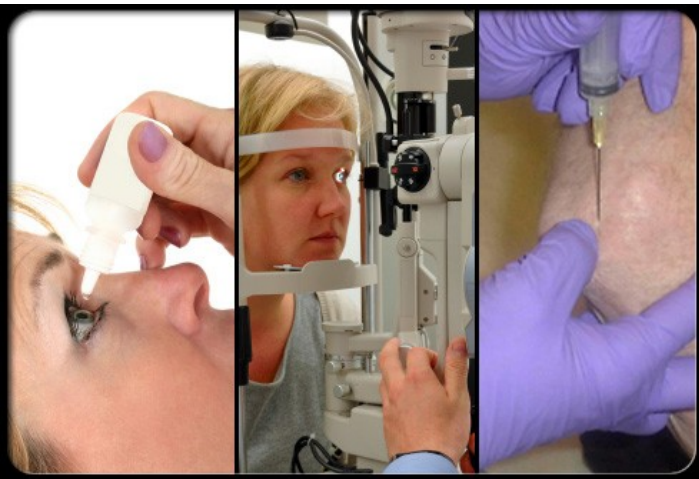
The first-line drugs, such as aspirin and cortisone (corticosteroids), are used to reduce pain and inflammation.

The slow-acting second-line drugs, such as gold (Solganal), methotrexate (Rheumatrex, Trexall), and hydroxychloroquine (Plaquenil) promote disease remission and prevent progressive joint destruction, but they are not antiinflammatory agents. Some newer "second-line" drugs for the treatment of rheumatoid arthritis include leflunomide (Arava) and the "biologic" medications etanercept (Enbrel), infliximab (Remicade), anakinra (Kineret), adalimumab (Humira), rituximab (Rituxan), and abatacept (Orencia).



Other treatments for rheumatoid arthritis

There is no special diet for rheumatoid arthritis. Fish oil may have antiinflammatory beneficial effects, but so far this has only been shown in laboratory experiments studying inflammatory cells. Likewise, the benefits of cartilage preparations remain unproven. **Symptomatic pain relief can often be achieved with oral acetaminophen (Tylenol and others) or over-the-counter (OTC) topical preparations,** which are rubbed into the skin.



The areas of the body, other than the joints, that are affected by rheumatoid inflammation are treated individually.

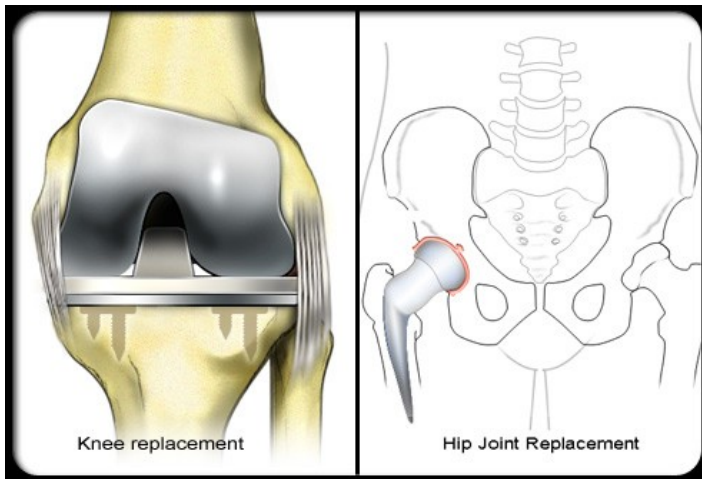
- Sjogren's syndrome (described above, see symptoms) can be helped by artificial tears and humidifying rooms in your home or office. Medicated eye drops, cortisporine ophthalmic drops (Restasis), are also available to help the dry eyes in those affected. Regular eye check-ups and early antibiotic treatment for infection of the eyes are important.
- Inflammation of the tendons (tendinitis), bursae (bursitis), and rheumatoid nodules can be injected with cortisone.
- Inflammation of the lining of the heart and/or lungs may require high doses of oral cortisone.



Why is rest and exercise important?

A balance of rest and exercise is important in treating rheumatoid arthritis. During flare-ups (worsening of joint inflammation), it is best to rest the joints that are inflamed. When joint inflammation is decreased, guided exercise programs are necessary to maintain flexibility of the joints and to strengthen the muscles that surround the joints.

- Range-of-motion exercises should be done regularly to maintain joint mobility.
- Swimming is particularly helpful because it allows exercise with minimal stress on the joints.
- Physical and occupational therapists are trained to provide specific exercise instructions and can offer splinting supports. For example, wrist and finger splints can be helpful in reducing inflammation and maintaining joint alignment.
- Devices, such as canes, toilet seat raisers, and jar grippers can assist daily living.
- Heat and cold applications can ease symptoms before and after exercise.



Is surgery an option for rheumatoid arthritis?

Surgery may be recommended to restore joint mobility or repair damaged joints. Doctors who specialize in joint surgery are orthopedic surgeons. The types of joint surgery range from arthroscopy (insertion of a tube-like instrument into the joint to see and repair abnormal tissues) to partial and complete replacement of the joint. **Total joint replacement is a surgical procedure whereby a destroyed joint is replaced with artificial materials.** For example, the small joints of the hand can be replaced with plastic material. Large joints, such as the hips or knees, are replaced with metals.

Source: http://www.medicinenet.com/rheumatoid_arthritis_pictures_slideshow/article.htm