

Rheumatoid Arthritis

Arthritis According to the Centers for Disease Control and Prevention, the word “arthritis” actually means joint inflammation and is used to describe more than 100 rheumatic diseases and conditions that affect joints, the tissues which surround the joint and other connective tissue.

The symptoms and cause of arthritis vary depending on the specific form of arthritic disease. Some forms of arthritis include osteoarthritis, rheumatoid arthritis, septic arthritis, gout, pseudogout, juvenile idiopathic arthritis, Still's disease and ankylosing spondylitis.

The cause, symptoms, and severity of arthritic disease varies. However, arthritis generally has a few things in common. Arthritis causes pain, stiffness and swelling of the joints, joint lining, joint cartilage and connective tissues surrounding the joints. If untreated, arthritis can be destructive and lead to physical deformities, joint weakness, and instability.

Rheumatoid arthritis is an *inflammatory form of arthritis* that causes joint pain and joint damage. Rheumatoid arthritis occurs when white blood cells — whose usual job is to attack unwanted invaders, such as bacteria and viruses — move from your bloodstream into the membranes that surround your joints (synovium). The abnormal white blood cells lead to thickening and inflammation of the joint lining (synovium). The inflammation causes the release of proteins that over time lead to destructive changes in the joint. The inflammatory proteins contribute to damage to the cartilage, bone, tendons and ligaments near your joint. Gradually, the joint loses its shape and alignment. Eventually, the joint may be destroyed.

Other rheumatic or inflammatory diseases include such conditions as:

- Systemic lupus erythematosus
- Vasculitis
- Polymyalgia rheumatica
- Scleroderma
- Polymyositis
- Ankylosing spondylitis
- Juvenile rheumatoid arthritis
- Psoriatic arthritis
- Infection-related bone and joint diseases

Risk Factors Doctors do not know the cause of rheumatoid arthritis. The current view is that rheumatoid arthritis is a result of genetic risk an environmental exposure. This suggests a complex combination of factors, including your genes, lifestyle choices, such as smoking, and things in your environment, such as viruses.

Rheumatoid arthritis is two to three times more common in women than in men and generally occurs between the ages of 40 and 60. Rheumatoid arthritis can also affect young children and older adults.

Prevention While there are many different types of treatment used to decrease Rheumatoid Arthritis symptoms, there is no known cure for the disease. Thus, the best thing that we can do is to reduce potential risk factors (smoking) and treat the disease early.

Several steps can be taken to reduce the risk of developing:

- Control weight and/or maintain a healthy weight
 - Helps reduce stress or strain on the joints, especially in the knees.
- Regular exercise
 - Exercise improves muscle strength, joint support, and tone
- Eat a balanced diet
 - Avoid foods high in sugar and over processed
- Stop or do not start smoking

Symptoms Sometimes rheumatoid arthritis symptoms make even the simplest activities — such as opening a jar or taking a walk — difficult to manage. Signs and symptoms of rheumatoid arthritis may include:

- Joint pain and swelling
- Joints tenderness
- Red and puffy hands
- Firm bumps of tissue under the skin on the elbows/knees (rheumatoid nodules)
- Fatigue
- Morning stiffness that lasts at least 30 minutes
- Unexplained Fever
- Weight loss

Signs and symptoms appear in smaller joints first. Rheumatoid arthritis involves trouble with many joints at the same time. Early rheumatoid arthritis tends to affect your smaller joints first — the wrists, hands, ankles and feet. As the disease progresses, your shoulders, elbows, knee, jaw and neck can also become involved.

Signs and symptoms of a rheumatoid arthritis flare. Rheumatoid arthritis signs and symptoms may vary in severity and may even come and go. Periods of increased disease activity — called flare-ups or flares — alternate with periods of relative remission, during which the swelling, pain, difficulty sleeping, and weakness fade or disappear.

Diagnosis Diagnosing rheumatoid arthritis begins with a physical exam. Your doctor will ask you about your signs and symptoms and examine your affected joints.

In addition, your doctor may recommend:

- **Blood tests** People with rheumatoid arthritis tend to have an elevated erythrocyte sedimentation rate (ESR, or sed rate), which indicates the presence of an inflammatory process in the body. Other common blood tests look for antibodies called rheumatoid factor and anti-cyclic citrullinated peptide (anti-CCP) antibodies in the blood. While commonly found in the blood of people with rheumatoid arthritis, rheumatoid factor and anti-CCP antibodies aren't present in all cases.
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Laboratory at BHOSC

Black Hills Orthopedic and Spine Center offers fully accredited laboratory services. On site, we provide basic hematologic and chemistry lab testing as well as other arthritis and related inflammatory indicators. We use other local labs as reference labs for any other specific testing. We also use one of the premier labs in the United States, Rheumatology Diagnostic Laboratory (RDL) in Santa Monica, CA, for more advanced serologic testing needs.

Our lab is staffed by two full time medical technologists, [Lynette Foerster, M.T.](#) and [Kelli Halls, MLT](#). The laboratory is accredited by COLA and has also received the highest commendation of COLA, The Laboratory Excellence Award. Our high quality standards are maintained by proficiency testing under the guidelines of the American Association of Bio-analysts.

- **Joint fluid analysis** Your doctor may draw fluid from your joint using a needle. The fluid can be tested to help rule out other diseases and conditions.
 - **X-rays** Your doctor may recommend X-rays to help track the progression of rheumatoid arthritis in your joint over time.
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X-Ray Services at BHOSC

For the convenience of BHOSC patients, our facility provides four x-ray suites to obtain all diagnostic x-rays that are necessary at the time of the patient's visit. Our staff of Registered Radiologic Technologists are specialized in orthopedic radiography to aid our physicians in diagnosing the patient.

Treatment & Therapies There is no cure for rheumatoid arthritis. Treatment for rheumatoid arthritis leads to reduce joint inflammation, pain, and joint damage prevention. Early and aggressive rheumatoid arthritis treatment is recommended to prevent joint damage and reduce the risk of disability. Treatment typically involves medications. Surgery may be necessary in cases of severe joint damage to maintain function and control pain.

Medications Rheumatoid arthritis medications can relieve pain and slow or halt the progression of joint damage. Medications used to treat rheumatoid arthritis include:

- **NSAIDs** Nonsteroidal anti-inflammatory drugs (NSAIDs) can relieve pain and reduce inflammation. Over-the-counter NSAIDs include ibuprofen (Advil, Motrin, others) and naproxen sodium (Aleve). Stronger (I would eliminate "stronger" as this is not accurate...maybe alternative?) versions of NSAIDs and others are available by prescription. NSAIDs have risks of side effects that increase when used at high dosages for long-term treatment. Side effects may include ringing in your ears, gastric ulcers, heart problems, stomach bleeding, and liver and kidney damage. Consuming alcohol or taking corticosteroids while using NSAIDs also increases your risk of gastrointestinal bleeding. NSAIDs are not used as primary therapy for rheumatoid arthritis.
- **Steroids** Corticosteroid medications, such as prednisone and methylprednisolone (Medrol), reduce inflammation and pain, and slow joint damage. In the short term, corticosteroids can make you feel dramatically better. But when used for many months or years, they may become less effective and cause serious side effects. Side effects may

include easy bruising, thinning of bones, cataracts, weight gain, a round face and diabetes. Doctors often prescribe a corticosteroid to relieve acute symptoms, with the goal of gradually tapering off the medication.

- **Disease-modifying antirheumatic drugs (DMARDs)** Doctors prescribe DMARDs to limit the amount of joint damage that occurs in rheumatoid arthritis. These drugs are typically used in the early stages of rheumatoid arthritis in an effort to slow the disease and save the joints and other tissues from permanent damage. You may need to take DMARDs for weeks or months before you notice clinical benefit. For that reason, they may be combined with other medications that give you more immediate relief from signs and symptoms, such as NSAIDs or corticosteroids.
 - **Immunosuppressants.** These medications act to “tame” your immune system, which is out of control in rheumatoid arthritis. In addition, some of these drugs attack and eliminate cells that are associated with the disease.
 - **TNF-alpha inhibitors** TNF-alpha is a cytokine, or cell protein, that acts as an inflammatory agent in rheumatoid arthritis. TNF inhibitors target or block this cytokine and can help reduce pain, morning stiffness, and tender or swollen joints — usually within one or two weeks after treatment begins. There is evidence that TNF inhibitors reduce erosions or joint damage in rheumatoid arthritis patients.
 - **Anakinra (Kineret)** Anakinra is similar to a naturally occurring chemical in your body — interleukin-1 receptor antagonist (IL-1Ra) — that stops a certain chemical signal from causing inflammation. Anakinra may be considered if you have moderate to severe rheumatoid arthritis and haven't been helped by conventional DMARD therapy.
 - **Abatacept (Orencia)** Abatacept reduces the inflammation and joint damage caused by rheumatoid arthritis by inactivating T cells — a type of white blood cell. Abatacept is administered monthly through a vein in your arm (intravenously).
 - **Rituximab (Rituxan)** Rituximab reduces the number of B cells in your body. B cells are involved in inflammation. Rituximab is administered as an infusion into a vein in your arm.
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Infusion Therapy at BHOSC

Individuals with certain medical conditions such as rheumatoid arthritis are being treated with new medications that significantly improve symptoms and quality of life. These medications may be given intravenously or by injection. Shari A. Fechner, C.N.P., M.S.N. of BHOSC administers the infusion therapy services in addition to providing patient education and follow up care.

Treatment Plan What medications are right for you will depend on your disease severity, duration of symptoms, blood tests and X-rays results, your overall physical function, and interaction with other medical problems. Doctors use these factors to determine the the best combination of medication for you and your lifestyle.

Surgery If medications fail to prevent or slow joint damage, you and your doctor may consider surgery to repair damaged joints. Surgery may help restore your ability to use your joint. It can also reduce pain and correct deformities. Rheumatoid arthritis surgery may involve one or more of the following procedures:

- **Total joint replacement (arthroplasty)** During joint replacement surgery, your surgeon removes the damaged parts of your joint and inserts a metal and plastic prosthesis.
- **Tendon repair** Inflammation and joint damage may cause tendons around your joint to loosen or tighten. Your surgeon may be able to repair the tendons around your joint.
- **Removal of the joint lining (synovectomy)** If the lining around your joint (synovium) is inflamed and causing pain, your surgeon may recommend removing the lining of the joint.

Surgery carries a risk of bleeding, infection and pain. Discuss the benefits and risks with your doctor.

Therapies for Rheumatoid Arthritis You can take steps to care for your body if you have rheumatoid arthritis. These self-care measures, when used along with your rheumatoid arthritis medications, can help you cope with your signs and symptoms.

- **Exercise regularly** Gentle exercise can help provide strength to the joints, maintain healthy muscle tone, and help fight fatigue. Check with your doctor before you start exercising. You might start by taking a walk, swimming or performing gentle water aerobics. Avoid exercising tender, injured or severely inflamed joints. If you feel new joint pain, stop. New pain that lasts more than two hours after you exercise probably means you've overdone it. If pain persists for more than a few days, call your doctor.
- **Eat a healthy diet** A healthy diet emphasizing fruit, vegetables and whole grains can help you control your weight and maintain your overall health. Plus, a balanced diet provides the natural vitamins and nutrients needed by the body to function normally. There has been no proof that any particular food will make your joint pain or inflammation better or worse.
- **Control your weight/maintain a healthy weight** This may help lessen the stress or strain on the joints, especially in the knees.
- **Protect your joints** Find different ways to approach everyday tasks in order to take stress off your painful joints. For instance, if your fingers are sore, pick up an object using your forearms. Lean into a glass door, rather than pushing on the door with sore arms.
- **Use assistive devices** Assistive devices can make it easier to go about your day without stressing painful joints. For instance, using specially designed grabbing tools may make it easier to work in the kitchen if you have pain in your fingers.
- **Apply heat** One of the most effective ways to apply heat is to take a hot shower or bath for 15 minutes to ease pain and relax tense, painful muscles. Other options include using a hot pack or an electric heat pad set on its lowest setting. If your skin has poor sensation or if you have poor circulation, don't use heat treatments.
- **Apply cold** Cold may dull the sensation of pain. Cold also has a numbing effect and decreases muscle spasms. Techniques may include using cold packs, soaking the affected joints in cold water and ice massage. Don't use cold treatments if you have poor circulation or numbness.
- **Relax** Find ways to cope with pain by reducing stress in your life. Techniques such as deep breathing or muscle relaxation can be used to control pain.

Coping with Rheumatoid Arthritis The degree to which rheumatoid arthritis affects your daily activities depends in part on how well you cope with the disease. Talk to your doctor or nurse about strategies for coping. With time you'll find what strategies work best for you.

- **Make a plan with your doctor.** With your doctor, make a plan for managing your arthritis. This will help you feel in charge of your disease. Studies show that people who take control of their treatment and actively manage their arthritis experience less pain.
- **Know your limits.** Rheumatoid arthritis can make you prone to fatigue and muscle weakness. Rest when you're tired. A rest or short nap that doesn't interfere with nighttime sleep may help.
- **Connect with others.** Keep your family aware of how you're feeling. Connect with others who have rheumatoid arthritis — through a support group or online who can offer unique support during these times. Contact the Arthritis Foundation for more information.
- **Take time for yourself.** It's easy to get busy and not take time for yourself. Find time for what you like, whether it's time to write in a journal, go for a walk or listen to music. Use this time to

BHOSC Arthritis & Rheumatology Specialists

[James E. Engelbrecht, M.D., F.A.C.P., F.A.C.R.](#), Board-Certified in Internal Medicine and Rheumatology, is a rheumatologist who has helped patients in the Black Hills area for the past 25 years. [Jennifer K. May, M.D. M.A.C.R, M.A.C.P](#), Board-Certified in Internal Medicine and Rheumatology received Fellowship training in the discipline of Rheumatology from the Mayo Clinic.

Dr. Engelbrecht and Dr. May work closely with a patients' primary care doctors, orthopedic physicians and other specialists to provide accurate diagnosis and treatment plans for these diseases. They also provide patient's and their families with education and treatment plans intended to alter the course of the disease, prevent disability, or at least help them cope with the changes caused by their condition.

Individuals with certain medical conditions such as rheumatoid arthritis are being treated with new medications that significantly improve symptoms and quality of life. These medications may be given intravenously or by injection. [Shari A. Fechner, C.N.P., M.S.N.](#), administers the [infusion therapy](#) services in addition to providing patient education and follow-up care.

Additional information related to arthritis and rheumatic diseases may be found at

www.mayoclinic.com

www.blackhillsarthritis.org

www.arthritis.org