

Recognizing
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*Questions
& Answers*
about . . .

Reactive
Arthritis

*National Institute of Arthritis and Musculoskeletal and Skin Diseases (NIAMS)
National Institutes of Health
Public Health Service • U.S. Department of Health and Human Services*

For Your Information

This publication contains information about medications used to treat the health condition discussed in this booklet. When this booklet was printed, we included the most up-to-date (accurate) information available. Occasionally, new information on medication is released.

For updates and for any questions about any medications you are taking, please contact the U.S. Food and Drug Administration at 1-888-INFO-FDA (1-888-463-6332, a toll-free call) or visit their Web site at www.fda.gov.

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This booklet contains general information about reactive arthritis. It describes what reactive arthritis is and how it develops. It also explains how reactive arthritis is diagnosed and treated. Medical terms not defined in the text are defined in a list at the back of this booklet. (See “Key Words,” page 16.) If you have further questions after reading this booklet, you may wish to discuss them with your doctor.

What Is Reactive Arthritis?

Reactive arthritis is a form of arthritis, or joint inflammation, that occurs as a “reaction” to an infection elsewhere in the body. Inflammation is a characteristic reaction of tissues to injury or disease and is marked by swelling, redness, heat, and pain. Besides this joint inflammation, reactive arthritis is associated with two other symptoms: redness and inflammation of the eyes (conjunctivitis) and inflammation of the urinary tract (urethritis). These symptoms may occur alone, together, or not at all.

Reactive arthritis is also known as Reiter’s syndrome, and your doctor may refer to it by yet another term, as a seronegative spondyloarthropathy. The seronegative spondyloarthropathies are a group of disorders that can cause inflammation throughout the body, especially in the spine. (Examples of other disorders in this group include psoriatic arthritis, ankylosing spondylitis, and the kind of arthritis that sometimes accompanies inflammatory bowel disease.)

In many patients, reactive arthritis is triggered by a venereal infection in the bladder, the urethra, or, in women, the vagina (the urogenital tract) that is often transmitted through sexual contact. This form of the disorder is sometimes called genitourinary or urogenital reactive arthritis. Another form of reactive arthritis is caused by an infection in the intestinal tract from eating food or handling substances that are contaminated with bacteria. This form of arthritis is sometimes called enteric or gastrointestinal reactive arthritis.

The symptoms of reactive arthritis usually last 3 to 12 months, although symptoms can return or develop into a long-term disease in a small percentage of people.

What Causes Reactive Arthritis?

Reactive arthritis typically begins about 1 to 3 weeks after infection. The bacterium most often associated with reactive arthritis is *Chlamydia trachomatis*, commonly known as chlamydia (pronounced kla-MID-e-a). It is usually acquired through sexual contact. Some evidence also shows that respiratory infections with *Chlamydia pneumoniae* may trigger reactive arthritis.

Infections in the digestive tract that may trigger reactive arthritis include *Salmonella*, *Shigella*, *Yersinia*, and *Campylobacter*. People may become infected with these bacteria after eating or handling improperly prepared food, such as meats that are not stored at the proper temperature.

Doctors do not know exactly why some people exposed to these bacteria develop reactive arthritis and others do not, but they have identified a genetic factor, human leukocyte antigen (HLA) B27, that increases a person's chance of developing reactive arthritis. Approximately 80 percent of people with reactive arthritis test positive for HLA-B27. However, inheriting the HLA-B27 gene does not necessarily mean you will get reactive arthritis. Eight percent of healthy people have the HLA-B27 gene, and only about one-fifth of them will develop reactive arthritis if they contract the triggering infections.

Is Reactive Arthritis Contagious?

Reactive arthritis is not contagious; that is, a person with the disorder cannot pass the arthritis on to someone else. However, the bacteria that can trigger reactive arthritis can be passed from person to person.

Who Gets Reactive Arthritis?

Overall, men between the ages of 20 and 40 are most likely to develop reactive arthritis. However, evidence shows that although men are nine times more likely than women to develop reactive arthritis due to venereally acquired infections, women and men are equally likely to develop reactive arthritis as a result of food-borne infections. Women with reactive arthritis often have milder symptoms than men.

What Are the Symptoms of Reactive Arthritis?

Reactive arthritis most typically results in inflammation of the urogenital tract, the joints, and the eyes. Less common symptoms are mouth ulcers and skin rashes. Any of these symptoms may be so mild that patients do not notice them. They usually come and go over a period of several weeks to several months.

Urogenital Tract Symptoms

Reactive arthritis often affects the urogenital tract, including the prostate or urethra in men and the urethra, uterus, or vagina in women. Men may notice an increased need to urinate, a burning sensation when urinating, and a fluid discharge from the penis. Some men with reactive arthritis develop prostatitis (inflammation of the prostate gland). Symptoms of prostatitis can include fever and chills, as well as an increased need to urinate and a burning sensation when urinating.

Women with reactive arthritis may develop problems in the urogenital tract, such as cervicitis (inflammation of the cervix) or urethritis (inflammation of the urethra), which can cause a burning sensation during urination. In addition, some women also develop salpingitis (inflammation of the fallopian tubes) or vulvovaginitis (inflammation of the vulva and vagina). These conditions may or may not cause any arthritic symptoms.

Joint Symptoms

The arthritis associated with reactive arthritis typically involves pain and swelling in the knees, ankles, and feet. Wrists, fingers, and other joints are affected less often. People with reactive arthritis commonly develop inflammation of the tendons (tendinitis) or at places where tendons attach to the bone (ethesitis). In many people with reactive arthritis, this results in heel pain or irritation of the Achilles tendon at the back of the ankle. Some people with reactive arthritis also develop heel spurs, which are bony growths in the heel that may cause chronic (long-lasting) foot pain. Approximately half of people with reactive arthritis report low-back and buttock pain.

Reactive arthritis also can cause spondylitis (inflammation of the vertebrae in the spinal column) or sacroiliitis (inflammation of the joints in the lower back that connect the spine to the pelvis). People with reactive arthritis who have the HLA-B27 gene are even more likely to develop spondylitis and/or sacroiliitis.

Eye Involvement

Conjunctivitis, an inflammation of the mucous membrane that covers the eyeball and eyelid, develops in approximately half of people with reactive arthritis. Some people may develop uveitis, which is an inflammation of the inner eye. Conjunctivitis and uveitis can cause redness of the eyes, eye pain and irritation, and blurred vision. Eye involvement typically occurs early in the course of reactive arthritis, and symptoms may come and go.

Other Symptoms

Between 20 and 40 percent of men with reactive arthritis develop small, shallow, painless sores (ulcers) on the end of the penis. A small percentage of men and women develop rashes or small, hard nodules on the soles of the feet and, less often, on the palms of their hands or elsewhere. In addition, some people with reactive arthritis develop mouth ulcers that come and go. In some cases, these ulcers are painless and go unnoticed.

How Is Reactive Arthritis Diagnosed?

Doctors sometimes find it difficult to diagnose reactive arthritis because there is no specific laboratory test to confirm that a person has it. A doctor may order a blood test to detect the genetic factor HLA-B27, but even if the result is positive, the presence of HLA-B27 does not always mean that a person has the disorder.

At the beginning of an examination, the doctor will probably take a complete medical history and note current symptoms as well as any previous medical problems or infections. Before and after seeing the doctor, it is sometimes useful for the patient to keep a record of the symptoms that occur, when they occur, and how long they last. It is especially important to report any flu-like symptoms, such as fever, vomiting, or diarrhea, because they may be evidence of a bacterial infection.

The doctor may use various blood tests besides the HLA-B27 test to help rule out other conditions and confirm a suspected diagnosis of reactive arthritis. For example, the doctor may order rheumatoid factor or antinuclear antibody tests to rule out reactive arthritis. (See “Key Words,” page 16.) Most people who have reactive arthritis will have negative results on these tests. If a patient’s test results are positive, he or she may have some other form of arthritis, such as rheumatoid arthritis or lupus. Doctors also may order a blood test to determine the erythrocyte sedimentation rate (sed rate), which is the rate at which red blood cells settle to the bottom of a test tube of blood. A high sed rate often indicates inflammation somewhere in the body. Typically, people with rheumatic diseases, including reactive arthritis, have an elevated sed rate.

The doctor also is likely to perform tests for infections that might be associated with reactive arthritis. Patients generally are tested for a *Chlamydia* infection because recent studies have shown that early treatment of *Chlamydia*-induced reactive arthritis may reduce the progression of the disease. The doctor may look for bacterial infections by testing cell samples taken from the patient’s throat as well as the urethra in men or cervix in women. Urine and stool samples also may be tested. A sample of synovial fluid (the fluid that lubricates the joints) may be removed from the arthritic joint. Studies of synovial fluid can help the doctor rule out infection in the joint.

Doctors sometimes use x rays to help diagnose reactive arthritis and to rule out other causes of arthritis. X rays can detect some of the symptoms of reactive arthritis, including spondylitis, sacroiliitis, swelling of soft tissues, damage to cartilage or bone margins of the joint, and calcium deposits where the tendon attaches to the bone.

What Type of Doctor Treats Reactive Arthritis?

A person with reactive arthritis probably will need to see several different types of doctors because reactive arthritis affects different parts of the body. However, it may be helpful to the doctors and the patient for one doctor, usually a rheumatologist (a doctor specializing in arthritis), to manage the complete treatment plan. This doctor can coordinate treatments and monitor the side effects from the various medicines the patient may take. The following specialists treat other features that affect different parts of the body.

- **Ophthalmologist**—treats eye disease
- **Gynecologist**—treats genital symptoms in women
- **Urologist**—treats genital symptoms in men and women
- **Dermatologist**—treats skin symptoms
- **Orthopaedist**—performs surgery on severely damaged joints
- **Physiatrist**—supervises exercise regimens

How Is Reactive Arthritis Treated?

Although there is no cure for reactive arthritis, some treatments relieve symptoms of the disorder. The doctor is likely to use one or more of the following treatments:

- **Nonsteroidal anti-inflammatory drugs (NSAIDs)**—NSAIDs¹ reduce joint inflammation and are commonly used to treat patients with reactive arthritis. Aspirin, ibuprofen, naproxen, and naproxen sodium are examples of NSAIDs. They are often the first type of medication used. All NSAIDs work similarly: by blocking substances called prostaglandins that contribute to inflammation and pain. However, each NSAID is a different chemical, and each has a slightly different effect on the body.

Some NSAIDs are available over the counter, while more than a dozen others, including a subclass called COX-2 inhibitors, are available only with a prescription.

All NSAIDs can have significant side effects, and for unknown reasons, some people seem to respond better to one NSAID than another. Any person taking NSAIDs regularly should be monitored by a doctor.

¹ *Warning:* NSAIDs can cause stomach irritation or, less often, they can affect kidney function. The longer a person uses NSAIDs, the more likely he or she is to have side effects, ranging from mild to serious. Many other drugs cannot be taken when a patient is being treated with NSAIDs because NSAIDs alter the way the body uses or eliminates these other drugs. Check with your health-care provider or pharmacist before you take NSAIDs. Also, NSAIDs sometimes are associated with serious gastrointestinal problems, including ulcers, bleeding, and perforation of the stomach or intestine. People over age 65 and those with any history of ulcers or gastrointestinal bleeding should use NSAIDs with caution.

- **Corticosteroid injections**—For people with severe joint inflammation, injections of corticosteroids directly into the affected joint may reduce inflammation. Doctors usually prescribe these injections only after trying unsuccessfully to control arthritis with NSAIDs.
- **Topical corticosteroids**—These corticosteroids come in a cream or lotion and can be applied directly on the skin lesions, such as ulcers, associated with reactive arthritis. Topical corticosteroids reduce inflammation and promote healing.
- **Antibiotics**—the doctor may prescribe antibiotics to eliminate the bacterial infection that triggered reactive arthritis. The specific antibiotic prescribed depends on the type of bacterial infection present. It is important to follow instructions about how much medicine to take and for how long; otherwise the infection may persist. Typically, an antibiotic is taken for 7 to 10 days or longer.

Some doctors may recommend a person with reactive arthritis take antibiotics for a long period of time (up to 3 months). Current research shows that in most cases, this practice is necessary.
- **Immunosuppressive medicines**—A small percentage of patients with reactive arthritis have severe symptoms that cannot be controlled with any of the above treatments. For these people, medicine that suppresses the immune system, such as sulfasalazine or methotrexate, may be effective.

- **TNF inhibitors**—Several relatively new treatments that suppress tumor necrosis factor (TNF), a protein involved in the body’s inflammatory response, may be effective for reactive arthritis and other spondyloarthropathies. They include etanercept and infliximab. These treatments were first used to treat rheumatoid arthritis.
- **Exercise**—Exercise, when introduced gradually, may help improve joint function. In particular, strengthening and range-of-motion exercises will maintain or improve joint function. Strengthening exercises build up the muscles around the joint to better support it. Muscle-tightening exercises that do not move any joints can be done even when a person has inflammation and pain. Range-of-motion exercises improve movement and flexibility and reduce stiffness in the affected joint. For patients with spine pain or inflammation, exercises to stretch and extend the back can be particularly helpful in preventing long-term disability. Aquatic exercise also may be helpful. Before beginning an exercise program, patients should talk to a health professional who can recommend appropriate exercises.

What Is the Prognosis for People Who Have Reactive Arthritis?

Most people with reactive arthritis recover fully from the initial flare of symptoms and are able to return to regular activities 2 to 6 months after the first symptoms appear. In such cases, the symptoms of arthritis may last up to 12 months, although these are usually very mild and do not interfere with daily activities. Approximately 20 percent of people with reactive arthritis will have chronic (long-term) arthritis, which usually is mild. Studies show that between 15 and 50 percent of patients will develop symptoms again sometime after the initial flare has disappeared. It is possible that such relapses may be due to reinfection. Back pain and arthritis are the symptoms that most commonly reappear. A small percentage of patients will have chronic, severe arthritis that is difficult to control with treatment and may cause joint deformity.

What Are Researchers Learning About Reactive Arthritis?

Researchers continue to investigate the causes of reactive arthritis and study treatments for the condition. For example:

- Researchers are trying to better understand the relationship between infection and reactive arthritis. In particular, they are trying to determine why an infection triggers arthritis and why some people who develop infections get reactive arthritis while others do not. Scientists also are studying why people with the genetic factor HLA-B27 are more at risk than others.
- Researchers are developing methods to detect the location of the triggering bacteria in the body. Some scientists suspect that after the bacteria enter the body, they are transported to the joints, where they can remain in small amounts indefinitely.
- Researchers are testing combination treatments for reactive arthritis. In particular, they are testing the use of antibiotics in combination with TNF inhibitors and with other immunosuppressant medicines, such as methotrexate and sulfasalazine.

Where Can People Get More Information About Reactive Arthritis?

- **National Institute of Arthritis and Musculoskeletal and Skin Diseases (NIAMS)**

National Institutes of Health

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Phone: 301-495-4484 or

877-22-NIAMS (226-4267) (free of charge)

TTY: 301-565-2966

Fax: 301-718-6366

E-mail: NIAMSInfo@mail.nih.gov

www.niams.nih.gov

NIAMS provides information about skin diseases, arthritis and rheumatic diseases, and bone, muscle, and joint diseases. It distributes patient and professional education materials and refers people to other sources of information. Additional information and updates can be found on the NIAMS Web site.

- **American College of Rheumatology/Association of Rheumatology Health Professionals**

1800 Century Place, Suite 250

Atlanta, GA 30345-4300

Phone: 404-633-3777

Fax: 404-633-1870

www.rheumatology.org

This association provides referrals to rheumatologists and physical and occupational therapists who have experience working with people who have a rheumatic disease. The organization also provides educational materials and guidelines about many different rheumatic diseases.

- **Arthritis Foundation**

P.O. Box 7669

Atlanta, GA 30357-0669

Phone: 404-872-7100 or 800-568-4045 (free of charge)

or call your local chapter (listed in the telephone directory)

www.arthritis.org

This is the main voluntary organization devoted to arthritis. The foundation publishes a monthly magazine for members that provides up-to-date information on arthritis. The foundation can also provide physician and clinical referrals.

- **Spondylitis Association of America**

P.O. Box 5872

Sherman Oaks, CA 91413

Phone: 800-777-8189 (free of charge)

E-mail: info@spondylitis.org

www.spondylitis.org

This is the main voluntary organization devoted to all forms of spondylitis, including reactive arthritis. The association publishes patient and professional materials and a newsletter for members.

Key Words

Antibodies—Special proteins produced by the body’s immune system that recognize and help fight infectious agents, such as bacteria, viruses, and other foreign substances that invade the body.

Antinuclear antibodies—Antibodies that are in the bloodstream of people who have connective tissue diseases or certain autoimmune disorders.

Arthritis—Literally means joint inflammation. It is a general term for more than 100 conditions known as rheumatic diseases. These diseases affect not only the joints but also other parts of the body, including important supporting structures such as muscles, tendons, and ligaments, as well as some internal organs.

Corticosteroids—Potent anti-inflammatory hormones that are made naturally in the body or synthetically (man-made) for use as drugs. They are also called glucocorticoids. The most commonly prescribed drug of this type is prednisone.

Erythrocyte sedimentation rate—Also referred to as the “sed” rate. A blood test that signals the presence of inflammatory disease by measuring the speed at which red blood cells settle to the bottom of a test tube.

HLA-B27—Human leukocyte antigen-B27. A genetic marker often—but not always—found in the blood of patients with certain forms of arthritis, such as reactive arthritis and ankylosing spondylitis.

Immune system—The system that protects the body from infections.

Range of motion—A measurement of the extent to which a joint can go through all of its normal movements.

Rheumatoid arthritis—A chronic inflammatory disease that causes pain, stiffness, swelling, and loss of function in the joints. The primary target of rheumatoid arthritis is the synovium, or joint lining. This tissue, which normally is smooth and shiny, becomes inflamed, painful, and swollen. The disease can also cause inflammation in the blood vessels and the outer lining of the heart and lungs.

Rheumatoid factor—A kind of antibody found in the blood of many individuals who have rheumatoid arthritis. Rheumatoid factor may be found in many diseases besides rheumatoid arthritis. However, some people without health problems will also test positive for rheumatoid factor.

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The mission of the National Institute of Arthritis and Musculoskeletal and Skin Diseases (NIAMS), a part of the Department of Health and Human Services' National Institutes of Health (NIH), is to support research into the causes, treatment, and prevention of arthritis and musculoskeletal and skin diseases; the training of basic and clinical scientists to carry out this research; and the dissemination of information on research progress in these diseases. The National Institute of Arthritis and Musculoskeletal and Skin Diseases Information Clearinghouse is a public service sponsored by the NIAMS that provides health information and information sources. Additional information can be found on the NIAMS Web site at www.niams.nih.gov.



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