

## Rheumatoid Arthritis

Rheumatoid arthritis (RA) is a common form of arthritis (*arth* means joint, *itis* means inflammation) that causes inflammation in the lining (synovium) of the joints and/or other internal organs. The joint lining thickens and may produce warmth, swelling (inflammation) and pain in the joint.

Rheumatoid arthritis tends to persist for many years, typically affects many different joints throughout the body, and can cause damage to the cartilage, bone, tendons and ligaments of the joints.

In the United States, approximately 1 percent of the population, or 2.1 million people, have RA. The cause of RA is not yet known, and the disease differs from person to person.

Anyone can get RA, including children and the elderly. However, the disease usually begins in the young- to middle-adult years. Among people with RA, women outnumber men three-to-one. The disease occurs in all ethnic groups and in all parts of the world.

### How Is RA Different from Other Forms of Arthritis?

One important way to distinguish RA from other forms of arthritis is by the pattern of joint involvement. For example, RA affects the wrist and many of the hand joints but usually not the joints that are closest to the fingernails. Osteoarthritis, a more common form of arthritis, in contrast, involves the joints closest to the fingernails more often than other areas of the hand.

Other joints that may be affected by RA include the elbows, shoulders, neck, jaw, hips, knees, ankles and feet. Other than the neck, the spine is usually not directly affected by RA. But, because RA and osteoarthritis are both common, it is quite possible for a person to have both of these conditions.

In people with RA, the joints tend to be involved on both sides of the body. That is, if knuckles on the right hand are swollen, it is likely that some knuckles on the left hand will be swollen as well.

The overall pattern of the joint involvement, along with certain findings on laboratory tests, makes it possible to differentiate between RA and other conditions.

### What Causes RA?

When the immune system works properly, it is the body's defense against bacteria, viruses and other foreign cells. In an immune disorder like RA, the immune system works improperly and attacks the body's own joints and other organs.

In RA, white blood cells move from the bloodstream into the joint tissues. Fluid containing inflamed cells accumulates in the joint. The white cells in the joint tissue and fluid produce many substances, including enzymes, antibodies and other molecules (cytokines) that attack the joint and can cause damage.

### The Role of Genes

Rheumatoid arthritis is not inherited in the usual sense; that is, it is not passed directly from parents to children. Instead, genes creating a susceptibility or tendency to develop RA are inherited. The genes that influence the tendency to have RA include those that control the

function of the immune system. Scientists are currently conducting research to increase our understanding of these genes and other factors (such as infection, injury, hormonal changes and environmental factors) that may activate the genes and cause RA to develop. Not everyone with these genes will have RA.

## **Is Infection a Trigger?**

Many physicians and scientists believe that RA might be triggered by an infection, but there is currently no proof of this. Rheumatoid arthritis is not contagious. It is possible that a germ to which almost everyone is exposed may cause the immune system to react abnormally in individuals who are susceptible to RA.

## **What Are the Symptoms?**

The effects of RA will vary from person to person. In almost all people who have RA, joint inflammation fluctuates but generally persists. In some people the disease may be mild with periods of activity (worsening joint inflammation) called flares. In others, the disease is continuously active and gets worse, or progresses, over time. About one in 10 people with RA has a single episode of disease activity (or joint inflammation) followed by a long-lasting remission when no symptoms are present.

If you have RA, you will likely experience inflamed joints that are warm, swollen, tender, often red and painful, and difficult to move. These physical signs of arthritis are due to inflammation of the lining, or synovium, of the joints. If this inflammation persists or does not respond well to treatment, destruction of nearby cartilage, bone, tendons and ligaments can follow. This often leads to joint deformity and disability, and can be permanent.

Rheumatoid arthritis may cause you to feel sick all over, especially during flares. You may lose your appetite, lose weight, run a low-grade fever, and have little energy. You may become anemic; that is, you may have a lower-than-normal number of red blood cells. About one-fifth of people with RA also develop rheumatoid nodules, which are lumps of tissue that form under the skin, often over bony areas exposed to pressure. These occur most often around the elbow but can be found elsewhere on the body and even in internal organs.

## **How Is RA Diagnosed?**

To diagnose RA, your physician will take a medical history and perform a physical examination. The doctor will look for certain features of RA, including swelling, warmth and limited motion in joints throughout your body, as well as nodules or lumps under the skin. Your doctor also may ask if you have experienced fatigue and an overall feeling of stiffness, especially when you first get up, both of which are associated with RA.

Your physician also may recommend certain blood tests and X-rays. The presence of an antibody called rheumatoid factor may indicate RA. Other lab test abnormalities include anemia and an elevated erythrocyte sedimentation rate (ESR), which indicates that inflammation or another disease may be present.

While these blood tests can be helpful in making a diagnosis, there is no single test that can establish or exclude an RA diagnosis.

## **How Is RA Treated?**

Right now, there is no cure for RA. Until the cause of RA is known, it may not be possible to eliminate the disease entirely. Current treatment methods focus on relieving pain, reducing inflammation, stopping or slowing joint damage, and improving patient function and well-being. Modern treatments have substantially improved the quality of life for people with RA.

Your treatment program will be tailored to meet your needs, taking into account the severity of your arthritis, other medical conditions you may have, and your individual lifestyle.

Your doctor and other members of your health-care team will work with each other and with you to find the best treatment program, which may include medications to relieve symptoms or modify the disease itself; regular, therapeutic exercise, adequate rest, physical and occupational therapy; a health diet; and participation in self-help groups.

## **Your Health-Care Team**

Treating RA often requires a team approach in which you benefit from the expertise of health professionals from different disciplines. A family physician, a physician specializing in internal medicine, or a physician who is familiar with arthritis may act as your health-care team leader.

Consultation with a rheumatologist is recommended when the diagnosis is in doubt, or if your symptoms worsen or fail to improve. A rheumatologist is a physician with special training in arthritis and other diseases of the bones, muscles and joints. The rheumatologist may continue to act as a consultant or may assume primary responsibility for the medical treatment of your arthritis.

Other health professionals such as physical therapists, occupational therapists, nurses, psychologists, orthopaedic surgeons and social workers often play important roles in helping you to manage the disease.

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