



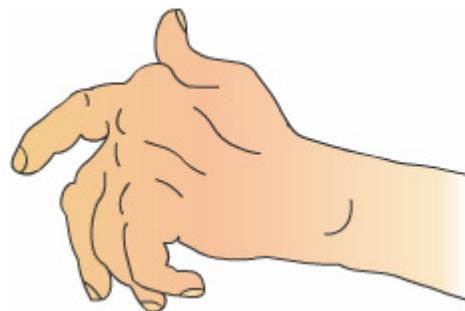
## *X-Plain* *Rheumatoid Arthritis* **Reference Summary**

### **Introduction**

Rheumatoid arthritis is a fairly common joint disease that affects up to 2 million Americans. Rheumatoid arthritis is one of the most debilitating forms of arthritis. It can cause joint pain, deformities, and severe joint stiffness.

Understanding rheumatoid arthritis is important for the patient to be able to manage and cope with the disease.

This reference summary describes how rheumatoid arthritis develops, how it is diagnosed, and how it is treated. It also summarizes what patients can do to help manage their disease.



### **Joint Anatomy**

Arthritis is a disease of the joints. This section reviews the anatomy of a joint.

The bones of the body help us stand up straight and our muscles help our bones move together. Bones connect at the joints. The most obvious joints are the shoulders, elbows, wrists, hips, knees, and ankles. We have joints between the various bones of our fingers and toes. We also have joints that allow our vertebrae to move.

A material called cartilage, which keeps the bones from rubbing against each other during motion, covers the ends of the bones in a joint. Between the 2 pieces of cartilage in a joint, there is a little bag lined by special tissue known as synovium. The synovium secretes fluid that helps lubricate the joint. The combination of cartilage and synovium allows for smooth, painless motion in any given joint.

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## Rheumatoid Arthritis

There are many types of arthritis. Osteoarthritis is a type of arthritis that is due to chronic wear and tear of a joint. Another type of arthritis, called post-traumatic arthritis, occurs after a trauma involving a joint.

In rheumatoid arthritis, the synovium is inflamed. This leads to destruction of the synovium as well as the underlying joint. Typically, arthritis leads to pain and restriction of movement of the involved joint. In rheumatoid arthritis, there is usually also swelling, redness, and tenderness in the joints.

Rheumatoid arthritis is three times more common in women than in men. It generally strikes between the ages of 20 and 50, but can affect very young children and older adults.

Rheumatoid arthritis most commonly affects the following joints:

- Between the palm of the hand and the fingers, also called metacarpo-phalangeal joints
- Between the vertebrae of the spine.
- Hips
- Knees
- Wrists

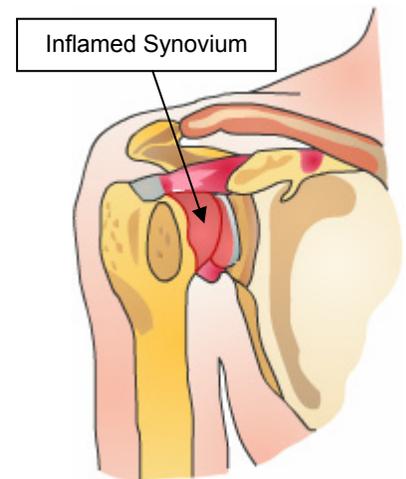
Rheumatoid arthritis is usually a chronic condition, which means it is on-going. However, flare-ups occur, during which there is increased inflammation and more severe symptoms.

## Symptoms & Complications

Early signs of rheumatoid arthritis include pain and swelling in the joints of the hands and feet. The disease generally affects both sides of the body at the same time.

Other symptoms of rheumatoid arthritis include:

- Aching and stiffness in the muscles and joints, especially after sleeping
- Loss of motion or strength in the affected joints
- Fatigue or low-grade fever



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When the arthritis is very severe, both bones in the joint may actually grow into each other, leading to fusion of the joint. Small lumps, called rheumatoid nodules, may form under the skin near an affected joint. The size of the nodules can range from that of a pea to walnut size.

In some cases, rheumatoid arthritis can cause inflammation in body parts other than joints, such as tear glands, salivary glands, and the lining of the heart and lungs.

## Causes

Rheumatoid arthritis is a disease of the immune system. The immune system protects the body from foreign substances, such as viruses and bacteria that try to invade it. White blood cells are part of the immune system. They attack foreign substances, such as viruses and bacteria. In rheumatoid arthritis however, white blood cells move into the synovium and release protein. Proteins released in the synovium cause it to become thick and cause damage to the bone, ligaments, and cartilage of the joint. This happens over months and years. The joint first loses its correct alignment then its function.

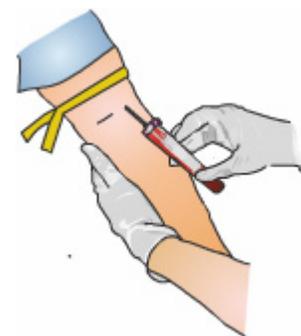
Researchers do not know what causes white blood cells to start attacking the synovium. A germ, such as a virus or bacterium, could trigger this.

Rheumatoid arthritis runs in families. Children of parents who have rheumatoid arthritis are more likely to have it, but not all of them will develop rheumatoid arthritis.

## Diagnosis

People who have persistent pain and swelling in joints on both sides of the body should visit a doctor for a rheumatoid arthritis screening.

To diagnose rheumatoid arthritis, the doctor usually conducts a physical examination, asks about the medical history, and orders blood tests. A specific chemical in the blood known as rheumatoid factor, or RF, is frequently found in patients with rheumatoid arthritis



The doctor may order x-rays of the involved joints. X-rays are usually obtained over time in order to find out how the arthritis is developing.

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## Treatment

Currently there is no cure for rheumatoid arthritis. However, significant progress has been made recently in managing the disease. Rheumatoid arthritis can be slowed down and controlled with various medications. In some cases, surgery can help decrease pain and restore the function of a joint.

Some rheumatoid arthritis medications are available over-the-counter. This includes anti-inflammatory medications, such as ibuprofen and aspirin. These medications reduce pain and inflammation, although side effects include damage to the stomach. A new family of anti-inflammatory drugs may cause less damage to the stomach.

Stronger medications may be needed; these include various types of steroid medications. Steroids reduce inflammation and slow joint damage but may have side effects. They should be taken as prescribed, and should not be stopped abruptly without the recommendation of a doctor.

Other medications, such as gold-based compound, may be used to slow down rheumatoid arthritis.

Sometimes medications used to treat cancer, such as methotrexate, may be used to reduce inflammation.

A relatively new family of medications known as biologic response modifiers has shown significant promise in decreasing the symptoms and slowing the progress of rheumatoid arthritis.

These drugs directly modify the immune system by inhibiting proteins called cytokines, which contribute to inflammation. Examples of these are etanercept, infliximab, adalimumab and anakinra. Recent research has shown that some of these drugs may cause an increased risk of cancer, especially in children and teenagers. Talk with your healthcare provider about the risks and benefits of these medications.

Physical therapy may be used to keep affected joints in adequate shape.

Splints to help prevent, slow down, or compensate for joint deformities are usually recommended. Various kinds are available to help you maintain an active lifestyle. Ask your doctor or physical therapist.



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When other methods fail, surgery may be used to fuse or replace joints to stop deformities and increase functionality in joints. For example, a flail wrist could cause the hand to become useless. If the flail wrist is fused, the hand could still be used.

In vertebral arthritis, a bone spur may cause pressure on the spinal cord or nerves, causing numbness and pain in the legs. Surgery could take the pressure off the spinal cord or nerves in the spine. It can also help fuse some of the involved vertebrae to prevent slippage of the vertebrae.

## Self-Care

Rheumatoid arthritis cannot be cured but it can be managed through medications and self-care. The following are important self-care tips:

*Exercise regularly.* Start a regular exercise program after checking with your doctor or physical therapist. Different types of rheumatoid arthritis require different exercises.

*Manage your weight.* Being overweight puts extra pressure on the joints. Exercising and eating a balanced, nutritious diet are important for weight control. No particular food group has been proven to reduce the pain and inflammation of rheumatoid arthritis.

*Apply heat or cold.* Heat can ease pain by increasing the flow of blood. A hot shower or a hot bath for 15 minutes can reduce arthritis pain. Cold treatment can also decrease the sensation of pain. Ice packs may be recommended during flare-ups. Check with your physical therapist or doctor.

*Do not over-exert your joints.* You can help your joints and muscles by maintaining good posture, lifting with both hands, and using large muscles to lift.

Rheumatoid arthritis is a chronic disease. In some people, the on-going pain can cause depression. It is important to keep a positive attitude, and to learn how to relax and rest. If needed, the doctor can prescribe anti-depressant medications.



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## Conclusion

Rheumatoid arthritis is a chronic inflammation of the joints. It can cause joint pain, deformities, and severe joint stiffness.

In the past, many people with rheumatoid arthritis were confined to a wheelchair. Thanks to recent medical and surgical advances, managing rheumatoid arthritis is becoming more and more successful and patients continue to lead productive lives.

There are several treatment options to choose from for rheumatoid arthritis, which include a range of medications and physical therapy.

The patient's willingness to participate in their own treatment and self-care plays a big role in controlling rheumatoid arthritis.



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