

Rheumatoid arthritis (RA) is a chronic inflammatory disease, primarily affecting the lining of the small joints in the hands, feet and wrists. As an autoimmune condition, rheumatoid arthritis occurs when the immune system mistakenly attacks its own tissue, resulting in painful swelling. The disorder can eventually result in bone erosion and joint deformity, and may affect other bodily organs, such as the skin, eyes, lungs and blood vessels. Although rheumatoid arthritis can occur at any age, it generally begins between the ages of 30 - 50. Women are 3 times more likely than men to develop the condition. Treatment focuses on symptom management and the prevention of joint damage. Early diagnosis and the initiation of treatment are associated with more effective outcomes.

### **Cause**

In healthy individuals, inflammation dies down fairly quickly but in rheumatoid arthritis it becomes a chronic process. There is uncertainty about what sets off the inflammation in RA. The immune system starts attacking bodily tissue, and in rheumatoid arthritis the joints are affected most. As a result, RA is classified as an autoimmune disease.

Lifestyle factors appear to play a contributory role in the development of RA. People who smoke, eat a lot of red meat, and have an excessive caffeine intake are more likely to develop the condition. Genetics may also increase your risk but genetic factors alone do not cause the disease. If one twin has RA, their identical sibling has 1 in 5 chance of developing it too. The severity of the condition can vary from one family member to another. The weather, particularly cold, damp conditions can worsen symptoms but do not cause them initially.

### **Risk factors**

Women are more prone to the condition than men. Rheumatoid arthritis most commonly occurs between the ages of 40 and 60. Family history may also play a role. If a member of your family has rheumatoid arthritis, you may have an increased risk of the disease.

### **Normal joint functioning vs. rheumatoid arthritis**

Joints are the point where two bones meet. Our joints function to allow bones to move in certain directions and within certain limits. At the end of each bone, is cartilage, a slippery surface, allowing the bones to move against one another almost without friction. A membrane called the synovium that is responsible for producing a thick fluid (synovial fluid) surrounds each joint. Synovial fluid nourishes cartilage and protects the joints. A tough outer layer called the capsule covers the synovium. The capsule, together with ligaments, holds the joint in place and controls bone movement. Tendons, consisting of strong, fibrous bands, hold the muscles to the bone.

In RA, inflammation occurs in the synovium, resulting in redness, swelling, the production of extra fluid, and pain. Redness appears due to increased blood flow to the area. The inflamed joint may also feel warmer. The inflammation is due to a build up of fluid and cells in the synovium. The capsule stretches due to swelling in the joint and the nerve endings become irritated, due to the chemicals produced by the inflammation. Both these processes result in pain. When the inflammation declines, the capsule remains stretched, becoming unstable and unable to effectively hold the joint. The joints may move into unusual or deformed positions. Some damage occurs every time the joints are inflamed, and the joints can become worn away with repeated flare-ups.

### Symptoms

RA symptoms vary from one person to another but the condition generally develops quiet slowly, with intermittent symptoms. The most common symptoms include:

- Joint pain and swelling
- Stiffness especially in the morning
- Fatigue
- Depression
- Irritability
- Anaemia
- Flu-like symptoms, such as feeling generally unwell, or hot and sweaty
- Difficulty doing everyday tasks

Less common symptoms may include:

- Weight loss
- Inflammation in the eyes
- Rheumatoid nodules - firm lumps, which grow beneath the skin in places such as the elbows or on hands and feet
- Inflammation of other parts of the body, such as the lungs, blood vessels or membrane around the heart

### Diagnosis

Blood tests, scans and x-rays are used to monitor the progression of the disorder, predict future prognosis, and assist in the development of a treatment plan. Your doctor will also perform a physical examination and take all your symptoms into account, as the disorder can affect other parts of the body and mimic other conditions.

Blood tests, such as erythrocyte sedimentation rate (ESR) and C-reactive protein (CRP), are used to measure inflammation. Blood tests can detect if you are anaemic and establish the presence of rheumatoid factor, an antibody produced by a reaction in your immune system. Approximately 4 in 5 people with RA test positively for rheumatoid factor. Another antibody test, anti-CCP (anti-cyclic citrullinated peptide) is also available. People with a positive result are very likely to develop RA. If both antibody tests are positive, a person is more likely to have severe rheumatoid arthritis.

X-rays indicate how much damage has occurred to the joints due to inflammation but may not show anything abnormal in the early stages of RA. MRI and ultra sound scans may be performed to assess the severity of the condition.

### Treatment

There is currently no cure for RA, however there are a variety of treatments designed to slow down disease progression and keep joint damage to a minimum. Once joints have been damaged, they don't heal very well. RA is primarily treated with medication, physical therapy and surgery if necessary.

### Drugs

Your medication will be carefully monitored and adjusted according to your needs; such as how active your arthritis is, changing circumstances, surgical preparation, periods of physical stress, etc. Four main classes of drugs are used to reduce joint inflammation and ease symptoms – painkillers, non-steroidal anti-inflammatory drugs (NSAIDs), disease-modifying anti-rheumatic drugs (DMARDs) and corticosteroids.

Painkillers are useful in their ability to top up the pain-relieving effects of other more specific drugs. NSAIDs target pain and inflammation without using steroids, and start working within a few hours. NSAIDs offer symptomatic relief for a few hours and some varieties are effective all day. Most people with RA need to take DMARDs for several years or even for life. These drugs are designed to alter the underlying disease rather than treat symptoms. DMARDs slow down the disease and its effects on the joints, and should therefore improve symptoms long term. Short term you may need faster acting drugs like NSAIDs and/or steroids while the DMARDs start to work. Steroids have a powerful effect on inflammation and may be used for short periods during flare-ups. If the above medications are ineffective, you may be given “biological treatments” to stop certain chemicals in your blood from activating your immune system to attack your joints. These medications are given by injection, in combination with DMARDs.

### Physical therapy

Exercise is an essential element of RA treatment. A physiotherapist can recommend exercises to ease your symptoms, strengthen muscles and stretch your joints safely. Some patients benefit from hydrotherapy, finding it a soothing, relaxing way to improve joint mobility and build muscle tone. If you have problems with your feet and ankles, a podiatrist can advise how to relieve pain when walking or standing and recommend appropriate footwear for daily and sports activities. If you are struggling with day-to-day activities at home or work, an occupational therapist (OT) can suggest alternative ways of functioning without putting pressure on your joints. OT's can also provide information about splints, if your hands and wrists need extra support.

### Surgery

Sometimes surgery is necessary and minor operations are effective in correcting deformities of the hands and fingers. Hip, knee, elbow and shoulder replacements are highly successful in their ability to reduce pain and restore functioning of the joint.

### Prognosis

Current treatment offers most patients relief of symptoms and allows them to continue functioning at, or near, normal levels. With the correct medication, many people are able to achieve remission or have no active signs of the disease. Although there is no cure, treatment generally improves outcomes by controlling pain and swelling, and lessening joint damage. This results in increased functioning and quality of life. However, no single treatment works for all patients. Consult an arthritis expert, a rheumatologist, to design a customized treatment plan that is best suited for you. This may require some trial and error or changes in treatment over time. Early diagnosis and initiation of treatment are associated with greater and more frequent health, a more active lifestyle, and less chance of sustaining damage that requires joint replacement.

People with RA have a higher risk of heart disease and stroke, particularly if their disease is not well controlled. Discuss your risks and precautionary measures with your doctor.

### Daily living and self-help

Self-care is an essential part of daily life. It involves taking responsibility for your own wellbeing with the necessary support from your care team. Self-care includes what you do to maintain physical and mental health, prevent illness or accidents, and how you care for minor ailments and chronic conditions.

One of the difficulties of living with RA is the unpredictability of flare-ups. Relapses may have an obvious cause such as stress or another illness, but often there is no obvious trigger. You may feel tempted to overdo it on a good day but it is important to pace yourself to avoid relapses. Over time, you may recognize early signs of a flare-up and learn to take the necessary time out.

It is important to continue doing gentle exercise to alleviate stiffness and muscle weakness. If you are stiff upon waking, gently stretch your body while remaining in bed. Bend one leg so your foot is flat on the bed. Keep your other leg straight and slowly lift your foot just off the bed. Hold for 5 seconds and repeat 3-5 times with each leg. Lying on your back, pull one knee towards your chest, while keeping the other leg straight. Lastly, lie on your back with your hands behind your head (or by your sides if your shoulders are painful). Bend your knees with your feet on the bed. Gently roll your knees to one side, and hold for 10 seconds. Repeat this 3 times for each side. Apply a hot or cold pad to affected joints to ease the pain. Take a warm bath before bed to alleviate pain and help you wind down.

It is crucial to take your medication as prescribed to avoid flare-ups and prevent long term damage to your joints. Address any medication concerns or side effects with your doctor. Check with your healthcare team before taking any over-the-counter medications or supplements, due to drug interactions.

It is imperative that you have regular check-ups to ensure your condition is under control and your treatment is right for you.

The effects of chronic conditions have mental as well as physical side effects. People with RA are more likely to experience depression. Discuss your feelings with your doctor and join a support group to share information and experiences with other RA sufferers. Explain to your family and friends that not all days are the same. It is important that they realize you may enjoy activities one day and find them impossible the next. Open communication will hopefully lead to greater understanding of your illness and needs.

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