

# Rheumatoid arthritis

## Introduction

Rheumatoid arthritis is a condition that causes pain and swelling in the joints. Hands, feet and wrists are commonly affected, but it can also damage other parts of the body.

## What are the symptoms?

Rheumatoid arthritis can make your joints swell, feel stiff and leave you feeling generally unwell and tired. Symptoms usually vary over time, and range from mild to severe.

The condition can sometimes be very painful, making movement and everyday tasks difficult.

When symptoms become worse, this is known as a flare-up or flare. A flare-up is impossible to predict, making rheumatoid arthritis difficult to live with.

## Who is affected?

It is most common between the ages of 40 and 70, but can affect people of any age.

## Why does it happen?

Rheumatoid arthritis is an autoimmune disease. This is when your immune system – which usually fights infection – attacks the cells that line your joints, making them swollen, stiff and painful. Over time, this can damage the joint itself, the cartilage and nearby bone.

## Treating rheumatoid arthritis

There is no known cure for rheumatoid arthritis. However, early diagnosis and treatment can control symptoms and help prevent disability.

Treatment options include:

medication – to relieve symptoms or slow progress of the condition

surgery – to correct joint problems

supportive treatments – such as physiotherapy  
complementary therapies – such as massage or acupuncture, which some people find helpful

Currently, rheumatoid arthritis cannot be prevented as the exact trigger of the condition is unknown. Although viruses and bacteria may be involved, research is not yet conclusive.

## Complications

Having rheumatoid arthritis can lead to several other conditions that may cause additional symptoms.

The most common complications are carpal tunnel syndrome and inflammation of other areas of the body such as the lungs, heart and eyes.

## Symptoms of rheumatoid arthritis

Symptoms of rheumatoid arthritis usually develop gradually. Often they are first felt in small joints, such as your fingers and toes, although shoulders and knees can also be affected early, and muscle stiffness can be a prominent early feature.

### Flare-ups

The symptoms of rheumatoid arthritis vary from person to person. They can come and go, and may change over time. You will occasionally experience flare-ups when your condition will deteriorate and your symptoms will be more intense and severe.

You can experience a flare-up at any time of the day or night. However, it is likely your symptoms will be more painful when you first wake up and then begin to ease as the day progresses and you start using and flexing your joints.

### Symptoms

The symptoms of rheumatoid arthritis are outlined below.

#### Pain

This is usually a throbbing and aching sort of pain. Often worse in the mornings and after you have been sitting still for a while. Pain is often felt while you are resting, not after activity.

#### Stiffness

Joints affected by rheumatoid arthritis can feel stiff, especially in the morning. Morning stiffness associated with a kind of arthritis called osteoarthritis usually wears off within 30 minutes of getting up. However, rheumatoid arthritis morning stiffness usually lasts longer than half an hour.

#### Warmth and redness

The lining of the affected joint becomes inflamed, causing the joints to swell, and become hot, tender to touch and painful.

Rheumatoid arthritis can also cause inflammation around the joints, such as rheumatoid nodules, and in other parts of your body. The condition can also cause inflammation of your tear glands, salivary glands, the lining of your heart and lungs, and your blood vessels.

#### Causes of rheumatoid arthritis

The exact cause of rheumatoid arthritis is unknown. We know how the condition attacks the joints, but it is not yet known what triggers the initial attack.

Some theories suggest that an infection or virus may trigger rheumatoid arthritis, but none of these theories has been proven.

#### Autoimmune condition

Rheumatoid arthritis is an autoimmune condition. This type of condition causes the body's immune system to attack itself. Normally, your immune system makes antibodies that attack bacteria and viruses, helping protect your body against infection. If you have rheumatoid arthritis, your immune system sends antibodies to the lining of your joints, where instead of attacking harmful bacteria, they attack the tissue surrounding the joint.

#### Synovium

The synovium is a membrane (thin layer of cells) that covers each of your joints. When antibodies attack the synovium, they leave it sore and inflamed. This inflammation causes chemicals to be released, causing the synovium to thicken. These chemicals can also damage bones, cartilage (the stretchy connective tissue between bones), tendons (tissue that connects bone to muscle) and ligaments (tissue that connects bone and cartilage). The chemicals gradually cause the joint to lose its shape and alignment and, eventually, can destroy the joint completely.

#### Genetic susceptibility

There is some evidence that rheumatoid arthritis can run in families. Your genes may be one factor in the cause of the condition. However, having a family member with rheumatoid arthritis does not necessarily mean you will inherit the condition. Even an identical twin of someone with rheumatoid arthritis only has a one in five chance of developing it, so genes do not explain much of the risk.

#### Hormones

Rheumatoid arthritis is three times more common in women than in men. This may be due to the effects of oestrogen (a female hormone). Research has suggested that oestrogen may be involved in the development and progression of the condition. However, this has not been conclusively proven.

#### Lifestyle factors

Although not a direct cause of rheumatoid arthritis, there is some evidence to show smokers are more likely to develop the condition. People who regularly drink more than the recommended maximum daily limit of alcohol are also at higher risk.

#### Diagnosing rheumatoid arthritis

Rheumatoid arthritis can be difficult to diagnose because many conditions cause joint stiffness and inflammation.

#### Seeing your DOCTOR

Your DOCTOR will carry out a physical examination, checking your joints for any swelling and to assess how easily they move. Your DOCTOR will also ask you about your symptoms.

It is important to tell your DOCTOR about all your symptoms, not just ones you think are important, as this will help the doctor make the correct diagnosis.

If your DOCTOR thinks you have rheumatoid arthritis, they will refer you to a specialist (rheumatologist).

After conducting a physical examination and consulting your medical history, your DOCTOR may carry out tests to help confirm the diagnosis, or they may refer you at the same time as requesting tests. Tests you may have are outlined below.

#### Blood tests

No blood test can definitively diagnose rheumatoid arthritis. While a number of tests can indicate you may have developed the condition, they will not necessarily prove or rule out the diagnosis. If you have persistent joint inflammation, you will need to see a rheumatologist.

#### Erythrocyte sedimentation rate (ESR)

In an ESR test, a sample of your red blood cells is placed into a test tube of liquid. The cells are then timed to see how fast they fall to the bottom of the tube (measured in millimetres per hour). If they are sinking faster than usual, you may have an inflammatory condition, such as rheumatoid arthritis.

#### C-reactive protein (CRP)

A CRP test can indicate if there is inflammation anywhere in the body by checking how much CRP is present in your blood. CRP is produced by the liver. If there is more CRP than usual, there is inflammation in your body.

#### Full blood count

The full blood count will measure your red cells to rule out anaemia. Anaemia is a condition where the blood is unable to carry enough oxygen, due to a lack of blood cells. Eight out of 10 people with rheumatoid arthritis have anaemia. However, anaemia can have many causes, including a lack of iron in your diet. Therefore, having anaemia does not prove that you have rheumatoid arthritis.

#### Rheumatoid factor

This blood test checks to see if a specific antibody, known as the rheumatoid factor, is present in your blood. This antibody is present in eight out of 10 people with rheumatoid arthritis. However, it cannot always be detected in the early stages of the condition. The antibody is also found in one in 20 people who do not have rheumatoid arthritis, so this test cannot confirm rheumatoid arthritis. If it is negative, another antibody test (for anti-CCP) may be done, which is more specific for the disease.

#### Joint imaging

X-rays of your joints can help differentiate between different types of arthritis. A series of X-rays can also help show how your condition is progressing. A chest X-ray may also be taken as both the disease and certain treatments (such as methotrexate) can affect the chest.

Musculoskeletal ultrasound may be used in the clinic to confirm the presence, distribution and severity of inflammation and joint damage.

Magnetic resonance imaging (MRI) scans can help show what damage has been done to a joint.

## Rheumatoid arthritis - Treatment

The aim of rheumatoid arthritis treatment is to reduce inflammation in the joints, relieve pain, prevent or slow joint damage, reduce disability and provide support to help you live as active a life as possible.

What is good rheumatoid arthritis care?

There is good evidence that early treatment and support can reduce joint damage and limit the impact of rheumatoid arthritis. Lifestyle changes, drug and non-drug treatments and surgery can all help reduce the negative effects of rheumatoid arthritis.

## Medication

Many different medicines are used to treat rheumatoid arthritis. Some aim to relieve symptoms and others help slow the progression of the condition. Everyone with rheumatoid arthritis experiences it differently, so it may take time to find the best combination of medicines for your needs. Some of the different medicines that you may be prescribed are outlined below.

### Painkillers

Painkillers reduce pain rather than inflammation and are used to control the symptoms of rheumatoid arthritis. The most commonly prescribed painkiller is paracetamol, Codeine is another painkiller that is sometimes prescribed as a combined medicine with paracetamol (known as co-codamol).

### Non-steroidal anti-inflammatory drugs (NSAIDs)

Your DOCTOR may prescribe a non-steroidal anti-inflammatory drug (NSAID) to relieve pain and swelling in your joints. There are two types of NSAIDs and they work in slightly different ways. These are traditional NSAIDs – such as ibuprofen, naproxen or diclofenac and COX-2 inhibitors (often called coxibs) – such as celecoxib or etoricoxib. NSAIDs help relieve pain and stiffness while also reducing inflammation. However, they will not slow down the progression of rheumatoid arthritis.

Your doctor will discuss with you what type of NSAID you should take and the benefits and risks associated with each of them. NSAID tablets may not be

suitable if you have asthma, a peptic ulcer, angina or if you have had a heart attack or stroke. If you are taking low-dose aspirin, discuss with your DOCTOR whether you should use an NSAID.

Taking an NSAID tablet can increase the risk of serious stomach problems, such as bleeding internally. Taking an NSAID can break down the lining that protects against damage from acids in the stomach. While the risk is serious, it is not common. According to research, if between 2,000 and 3,000 people take NSAIDs, one person is likely to have a stomach bleed. The COX-2 agents have a lower risk of serious stomach problems, but carry a risk of heart attacks and strokes.

If you are prescribed an NSAID tablet, you will almost certainly have to take another medicine, such as a proton pump inhibitor (PPI), as well. Taking a PPI reduces the amount of acid in your stomach, which greatly reduces the risk of damage to your stomach lining caused by the NSAID.

#### Corticosteroids

Corticosteroids help reduce pain, stiffness and swelling. They can be used as a tablet (for example, prednisolone) or an injection into the muscle (to help lots of joints). They are usually used when NSAIDs fail to provide relief. If you have a single inflamed or swollen joint, your doctor may inject the steroid into the joint. Relief is rapid and the effect can last from a few weeks to several months, depending on the severity of your condition.

Corticosteroids are usually only used on a short-term basis, as long-term use of corticosteroids can have serious side effects. These can include weight gain, osteoporosis (thinning of the bones), easy bruising, muscle weakness and thinning of the skin. They can also make diabetes and glaucoma (an eye disease) worse.

#### Disease-modifying anti-rheumatic drugs (DMARDs)

DMARDs help to ease symptoms and slow down the progression of rheumatoid arthritis. When antibodies attack the tissue in the joints, they produce chemicals that can cause further damage to the bones, tendons, ligaments and cartilage. DMARDs work by blocking the effects of these chemicals. The earlier you start taking a DMARD, the more effective it will be.

There are many different conventional DMARDs including methotrexate, leflunomide, hydroxychloroquine and sulfasalazine.

Methotrexate is often the first drug given for rheumatoid arthritis. You may take it in combination with another DMARD. The most common side effects of methotrexate are sickness, diarrhoea, mouth ulcers, hair loss or hair thinning,

and rashes on the skin. Sometimes, methotrexate can have an effect on your blood count and your liver, and you will have regular blood tests to monitor this. Less commonly, it can affect the lungs, so you will usually have a chest X-ray and possibly breathing tests when you start taking methotrexate, to provide a comparison if you develop shortness of breath or a persistent dry cough while taking it. However, most people tolerate methotrexate well and around half of those who start it will still be taking it five years later.

Methotrexate may also be combined with biological treatments (see below).

It can take four to six months to notice a DMARD working. Therefore, it is important to keep taking the medication, even if you do not notice it working at first. You may have to try two or three types of DMARD before you find the one that is most suitable for you. Once you and your doctor work out the most suitable DMARD, you will usually have to take the medicine in the long term.

Biological treatments

Biological treatments are a newer form of treatment for rheumatoid arthritis. They include TNF-alpha inhibitors (etanercept, infliximab, adalimumab and certolizumab), rituximab and tocilizumab.

They are usually taken in combination with methotrexate or sometimes with another DMARD. They work by stopping particular chemicals in the blood from activating your immune system to attack the lining of your joints.

Biological treatments are not suitable for use by everyone.

TNF-alpha inhibitors are usually only available on the NHS if you have already tried methotrexate and another DMARD at standard doses and your rheumatoid arthritis is still quite active.

Rituximab and tocilizumab are recommended by NICE, in combination with methotrexate, for severe rheumatoid arthritis only if you've tried DMARDs and one of the TNF inhibitors and still have quite active rheumatoid arthritis.

Side effects from biological treatments are usually mild and include skin reactions at the site of injection, infections, nausea, fever and headaches. Some people may be at risk of getting more serious problems, including people who have had tuberculosis (TB), septicaemia or hepatitis B in the past. There is a slight risk that biological treatments can reactivate these conditions and, in rare cases, trigger new autoimmune problems.

Want to know more?

NRAS: What drugs are used?

Arthritis Care: Taking medication

NICE: Certolizumab pegol for rheumatoid arthritis (PDF, 60kb)

NICE: Adalimumab, etanercept and infliximab for rheumatoid arthritis (PDF, 72kb)

NICE: Tocilizumab for rheumatoid arthritis (PDF, 62kb)

NICE: Adalimumab, etanercept, infliximab, rituximab and abatacept for rheumatoid arthritis (PDF, 61kb)

## Surgery

Sometimes, despite medication, damage to your joints may occur. You may need surgery to help restore your ability to use your joint. Surgery may also reduce pain and correct deformities.

Finger and hand surgery to correct joint problems

There are different types of surgery to correct joint problems in the hand. Examples include:

carpal tunnel release (cutting a ligament in the wrist to relieve pressure on a nerve)

release of tendons in the fingers to treat abnormal bending

removal of inflamed tissue that lines the finger joints

If surgery is needed on the wrist and fingers, the wrist is usually done first.

### Arthroscopy

Arthroscopy removes inflamed joint tissue. A thin tube with a light source is inserted into the joint through a small cut in the skin so that the surgeon can see inside. Instruments are inserted through other small cuts in the skin to remove the damaged tissue. You usually do not have to stay overnight in hospital for this kind of surgery. The joint will need to be rested at home for several days.

### Arthroplasty

Arthroplasty replaces part or all of a hip or knee joint, and may involve a long hospital stay. Depending on which joints are reshaped, it may take several weeks or months of rehabilitation to recover fully.

### Joint replacement

Replacement of hip, knee or shoulder joints is a major operation that involves four to 10 days in hospital followed by months of rehabilitation. The new joints have a limited lifespan of 10-20 years. They are not perfect and some function may not be restored after the damaged joint is replaced by a new one.

Want to know more?

## Supportive treatments

Your doctor may also refer you to other services that might be able to help you with your rheumatoid arthritis symptoms.

### Physiotherapy

A physiotherapist may help you improve your fitness and muscle strength, and make your joints more flexible. They may also be able to help with pain relief using heat or ice packs, or transcutaneous electrical nerve stimulation (TENS). A TENS machine applies a small pulse of electricity to the affected joint, which numbs the nerve endings and can help ease the pain of rheumatoid arthritis.

### Occupational therapy

If rheumatoid arthritis causes you problems with everyday tasks, or is making it difficult for you to move around, occupational therapy may help. An occupational therapist can provide training and advice that will help you to protect your joints, both while you are at home and at work. Some type of support for your joints, such as a splint, may also be recommended, or devices that can help open jars or turn on taps.

### Podiatry

If you have problems with your feet, a podiatrist may be able to help. You may also be offered some type of support for your joints or shoe insoles that can ease

## Complementary and alternative therapies

Many people with rheumatoid arthritis try complementary therapies. In most cases, there is little or no evidence they are effective in the treatment of symptoms of rheumatoid arthritis. They include massage, acupuncture, osteopathy, chiropractic, hydrotherapy, electrotherapy and nutritional supplements including glucosamine sulphate, chondroitin and fish oil.

Want to know more?

## Complications of rheumatoid arthritis

Having rheumatoid arthritis can put you at a higher risk of developing other conditions.

These conditions are described below.

### Carpal tunnel syndrome

Carpal tunnel syndrome is when there is too much pressure on the nerve in the wrist. It can cause aching, numbness and tingling in your thumb, fingers and part of the hand. This is a common condition in people with rheumatoid arthritis. Inflammation

As rheumatoid arthritis is an inflammatory condition, it can sometimes cause inflammation to develop in other parts of your body. These areas are described below.

Lungs – inflammation of the lung lining is known as pleurisy, which causes chest pain, particularly when you breathe deeply.

Heart – inflammation of the tissue around the heart is known as pericarditis, which causes mild to severe chest pain.

Eyes – inflammation of the eye glands is known as Sjogren's syndrome which can cause dry eyes and mouth. When the white part of the eye is affected (the sclerae), it is known as scleritis.

Blood vessels – inflammation of the blood vessels is known as vasculitis. Vasculitis is a rare condition that causes inflammation of the blood vessels. It can lead to the thickening, weakening, narrowing and scarring of blood vessel walls. In serious cases, it can affect blood flow to your body's organs and tissues.

### Tendon rupture

Tendons are pieces of flexible tissue that attach muscle to bone. Rheumatoid arthritis can cause your tendons to become inflamed, which in severe cases can cause them to rupture. This most commonly affects the tendons on the backs of the fingers.

### Cervical myelopathy

If you have had rheumatoid arthritis for some time, you are at increased risk of developing cervical myelopathy and you may need special assessment of your neck before any operation where you are put to sleep.

This condition is caused by dislocation of joints at the top of the spine, which put pressure on the spinal cord. Although relatively uncommon, it is a serious condition that can greatly affect your mobility.

## Living with rheumatoid arthritis

Rheumatoid arthritis can be life-changing. You may need long-term treatment to control your symptoms and reduce joint damage.

Depending on how much pain and stiffness you feel and how much joint damage you have, you may have to adapt the way you carry out simple daily tasks. They can become difficult or take longer to complete.

### Self care

Self care is an integral part of daily life. It involves taking responsibility for your own health and wellbeing with support from the people involved in your care. Self care includes things you do each day to stay fit, maintain good physical and mental health, prevent illness or accidents, and effectively deal with minor ailments and long-term conditions.

If you're living with a long-term condition, self care can benefit you enormously. You can live longer with less pain, anxiety, depression and fatigue, experience a better quality of life and be more active and independent.

Read more about self care.

### Take your medication

It is important to take your medication as prescribed, even if you start to feel better. Continuous medication can help prevent flare-ups. If you have any questions or concerns about the medication you are taking or side effects, talk to your healthcare team.

It may also be useful to read the information leaflet that comes with the medication about possible interactions with other drugs or supplements. Check with your healthcare team before taking any over-the-counter remedies, such as painkillers or nutritional supplements. These can sometimes interfere with your medication.

### Regular reviews

Because rheumatoid arthritis is a long-term condition, you will be in contact with your healthcare team regularly. The more the team knows, the more they can help you, so discuss your symptoms or any concerns with them.

### Keeping well

Everyone with a long-term condition, such as rheumatoid arthritis, is encouraged to get a yearly flu jab each autumn to protect against flu. They are also recommended to get a pneumococcal vaccination. This is a one-off injection that protects against a serious chest infection called pneumococcal pneumonia.

Get plenty of rest during a flare-up as this is when your joints can be particularly painful and inflamed. Putting further strain on very swollen and painful joints can often make the pain and inflammation worse.

### Healthy eating and exercise

Regular exercise and a healthy diet are recommended for everyone, not just people with rheumatoid arthritis. They can help prevent many conditions, including heart disease and many forms of cancer.

Exercising regularly can help relieve stress and reduce fatigue. A gentle form of exercise that does not put too much strain on your joints is best. Swimming, for example, helps exercise your muscles, but puts very little strain on your joints because the water supports your weight.

### Self management

Taking control of rheumatoid arthritis will help you cope with its impact on your lifestyle. Arthritis Care offers self management training courses to teach techniques for living positively with arthritis. Techniques include relaxation and breathing exercises to help pain control, goal-setting exercises and positive thinking to help give you some control over your condition.

A self management programme specifically for people with rheumatoid arthritis has been developed by the National Rheumatoid Arthritis Society (NRAS). The course helps people learn more about their condition and provides practical tips on how to manage everyday life.

### Talk to others in the same situation

Many people find it helpful to talk to others in a similar position, and you may find support from an individual or group of people with rheumatoid arthritis. Patient organisations have local support groups where you can meet others diagnosed with the same condition.

## Tackling pain

Pain is one of the most common symptoms of rheumatoid arthritis, but it can be managed in a number of ways, including:

drug treatment

heat treatment, such as warm baths or packs

cold treatment, such as cold packs or a TENS (transcutaneous electrical nerve stimulation) electrical device, which is thought to reduce pain by stimulating the nerves

relaxation techniques, for example simple methods of relaxation, massage or hypnosis

To manage your symptoms, it is possible to use more than one of these approaches at the same time (for example, using a drug treatment, heat pack and relaxation techniques). The experience of pain is unique to everybody, so what works for you may differ from what works for someone else.

## Understanding your feelings

It can be hard to deal with the unpredictable nature of rheumatoid arthritis. Some days, the pain and stiffness will be much worse than others, and there is no way of knowing when a flare-up will occur.

The difficult nature of rheumatoid arthritis can mean that some people develop depression or feelings of stress and anxiety. Sometimes, these feelings can be related to poorly controlled pain or fatigue. Living with any long-term condition makes you more likely to have a range of emotions such as frustration, fear, pain, anger and resentment.

## Starting and raising a family

If you are taking medicines for rheumatoid arthritis, let your healthcare team know if you want to start a family. Some drug treatments, such as methotrexate, leflunomide and biological treatments, should not be taken by men or women while they are trying for a baby. The doctors and nurses will work with you to ensure your rheumatoid arthritis is controlled while you are trying to get pregnant.

Talk to your healthcare team if you want to get pregnant or are worried about becoming pregnant while on rheumatoid arthritis drugs.

Babies and young children are physically and mentally demanding for any parent, but particularly if you have rheumatoid arthritis. If you are struggling to cope, talk to other people in the same situation as you. You may also be able to get additional support from your health visitor or occupational therapist to help you manage your young family.

## Sex and relationships

Pain, discomfort and changes in the way you look and feel can affect your sex life. Your self-esteem or thoughts about how you look may affect your confidence. Although many people find it difficult to talk about such private issues, there are resources that might help you. Talking to your partner or DOCTOR about the impact of rheumatoid arthritis on your sexuality and sexual relationships may help.