

Patient information from the BMJ Group

Rheumatoid arthritis

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Rheumatoid arthritis

Rheumatoid arthritis makes your joints swollen and painful. If you have this condition, you may worry that you will always be in pain and that you will stop being able to do simple things like getting dressed. You may also worry about how your joints look.

But there are treatments that help many people with this condition lead active lives. It's best to start taking these treatments soon after you're diagnosed. They can ease your pain and may help to stop your joints wearing down.

We've brought together the best research about rheumatoid arthritis and weighed up the evidence about how to treat it. You can use our information to talk to your doctor and decide which treatments are best for you.

What is rheumatoid arthritis?

If you have rheumatoid arthritis, your joints become painful, stiff and swollen. For some people, their symptoms come and go. But for others, their symptoms slowly get worse over many years.

You may worry about being in pain. You may also worry that your joints will become so damaged that you'll have to stop working. And you may be concerned about how your joints look.

There is no cure for rheumatoid arthritis, but there are treatments that can ease your pain and prevent your joints from wearing down. These treatments help many people with rheumatoid arthritis live active and happy lives.

Key points for people with rheumatoid arthritis

- In rheumatoid arthritis, your immune system, which normally fights infection, attacks the lining of your joints. This makes your joints swollen, stiff, and painful.
- The small joints of your hands or feet are usually affected first.
- Rheumatoid arthritis usually affects similar joints on both sides of your body.
- It is most common after the age of 40.

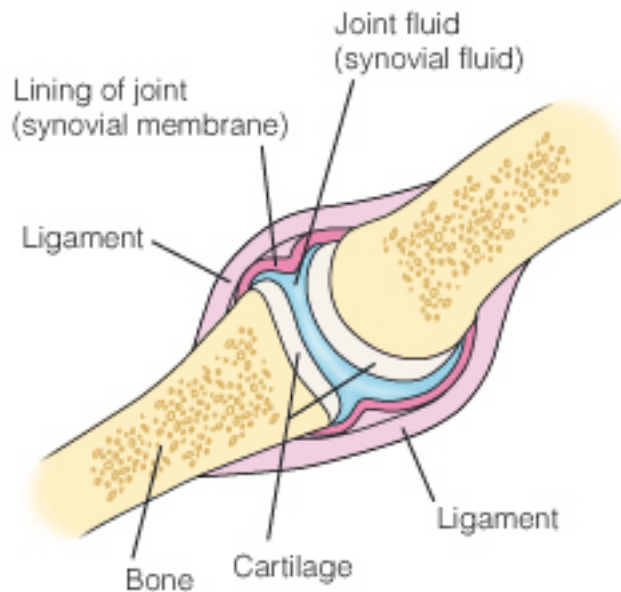
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- Doctors can sometimes find it difficult to diagnose rheumatoid arthritis because it often starts slowly.
- It's important to start treatments early to prevent your joints wearing down.

Your joints

To understand how rheumatoid arthritis affects you, it helps to know something about your joints.

A joint is where two bones meet.



A joint is where two bones meet.

- On the outside of a joint are the **ligaments**. They are strong fibres that keep the bones in place. The fibres around a joint are called the **joint capsule**.
- Inside the joint capsule is the lining of the joint. Doctors call it the **synovial membrane**. This lining makes a fluid called synovial fluid that keeps the joint moving smoothly, much like oil in a car engine.
- The ends of bones in the joint are covered with **cartilage**. This material is hard and slippery and makes the ends of the bones smooth so that they can move easily.

What happens in rheumatoid arthritis



In rheumatoid arthritis, your immune system attacks your joints, making them swollen and painful.

The body's immune system normally helps to defend us against infections and diseases. But in rheumatoid arthritis, the immune system goes wrong.

As well as attacking and destroying germs like **bacteria** and **viruses**, your immune system attacks your joints. This makes your joints swell and become painful.

Over many years, this can make your joints lose their shape and stop working properly. ^[1]

Rheumatoid arthritis: why me?

We don't know why some people get rheumatoid arthritis. But scientists think that it happens more often in people who have particular **genes**.

Many scientists think that a virus may cause rheumatoid arthritis. But they think you have to have certain genes to be affected by the virus in this way. ^[2] The research is still in an early stage and scientists haven't proved this yet.

Certain things make you more likely to get rheumatoid arthritis. These are called risk factors.

Here are the risk factors for rheumatoid arthritis.

- Family history and genes: rheumatoid arthritis can sometimes run in families. But if you have a close relative with rheumatoid arthritis, it does not mean you will definitely get the disease. ^[3]
- Being a woman: rheumatoid arthritis is twice as common in women than in men. ^[4] We don't know why this is, but researchers think that it may have something to do with the effects of female **hormones** like oestrogen. ^[5]
- Being middle-aged: people usually get rheumatoid arthritis in their 40s, but you can also get it in your 20s or 30s. ^[6]

What are the symptoms of rheumatoid arthritis?

Rheumatoid arthritis usually starts slowly. At first, you may notice that your joints feel a little stiff, especially in the morning. Later, your joints may become swollen and feel painful.

The disease usually affects the small joints in the fingers but it may also affect the joints in the feet. It tends to happen in similar areas on both sides of your body.^[7]

At the start of the disease, you may feel tired and lose your appetite.^[7] This is because rheumatoid arthritis can affect the rest of your body too.

The symptoms of rheumatoid arthritis can come and go. They may change from one day to the next.

The main symptoms of rheumatoid arthritis are:

- Pain
- Stiffness
- Joint swelling
- Lumps under the skin.

Here's an overview.

Pain

People describe the pain of rheumatoid arthritis as aching and throbbing. The amount of pain varies from person to person and also from day to day. Often the mornings are the worst times, but the pain may get better after half an hour or so, as your joints get moving.^[7] The pain in some joints tends to be worse after you've been sitting for a while.

If you've been diagnosed with rheumatoid arthritis, then it is normal to feel anxious about being in pain. But there are lots of ways that you can control your pain. Your doctor will give you painkillers, but other things, such as exercise, can also help.

If you want to read more about how you can control your pain, see [Managing pain](#) .

Stiffness

Joints that are affected by rheumatoid arthritis often feel stiff. The stiffness is usually worse first thing in the morning, and you may find it difficult to move around. But once you get going, the stiffness can get better.^[1]

Doctors aren't sure what makes your joints feel stiff. But it is probably because your cartilage becomes rough. This stops your joints moving smoothly. (Cartilage is the material covering the ends of your bones in your joints.)

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Joint swelling

Your joints can swell up in rheumatoid arthritis. Usually it happens in the small joints of your hands, wrists and feet. In your fingers, it can affect any joint, apart from the ones closest to your fingernails (with the exception of your thumb). Your joints can feel warm when you touch them, and they can look slightly red.

The reason your joints swell is because the lining of the joint becomes **inflamed** and makes too much fluid. This fluid, called synovial fluid, then makes the joints swell.

Lumps under the skin

Sometimes rheumatoid arthritis can spread to other parts of the body.^[8] One of the most common areas it can affect is your skin. About 1 in 5 people get firm lumps under the skin, called rheumatoid nodules. These lumps are often on the back of the elbows or on the finger joints. You can have them removed by surgery if they bother you.

How do doctors diagnose rheumatoid arthritis?

Doctors sometimes find it difficult to diagnose rheumatoid arthritis. This is because the symptoms can start very slowly, and there isn't a test that shows whether or not you have it. Your doctor will need to collect lots of types of information to make a diagnosis.

Your doctor may do the following things to see if you have rheumatoid arthritis.

- [Ask you questions about your joints](#) : Your doctor will want to know if your joints are stiff or if they get swollen, and how long you have had problems.
- [Examine your joints](#) : Your doctor will look to see if your joints are swollen and how easily they move.
- [Do a blood test](#) : Some people with rheumatoid arthritis have a protein in their blood called **rheumatoid factor**. Your doctor may test for this. But if you don't have this protein, you could still have rheumatoid arthritis.
- [Do x-rays of your joints](#) : X-rays can show whether your bones are getting thin or changing shape.

After collecting this information, your doctor may use the following list to make a diagnosis. If you have four or more of the signs of rheumatoid arthritis that are on the list below, it is very likely that you have the condition:^[22]

- Morning stiffness in your joints that lasts for more than an hour
- Swelling and **inflammation** in three or more joints, that lasts more than six weeks
- Swelling and inflammation in your hand joints or wrists, that lasts more than six weeks

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- Symptoms in the same joints on both sides of your body, that lasts more than six weeks
- Rheumatoid nodules (these are firm lumps under your skin)
- Rheumatoid factor in the blood (many people with rheumatoid arthritis have this protein in their blood)
- X-rays showing changes in your joints (x-rays can show if your bones are getting thin and changing shape).

How common is rheumatoid arthritis?

- Rheumatoid arthritis affects slightly fewer than 1 in 100 adults. ^[17]
- Altogether, between a quarter and half a million people in the UK have rheumatoid arthritis.
- It is more common in women. Two women get rheumatoid arthritis for every one man who gets it. ^[17]
- The number of women who get rheumatoid arthritis has gone down since the 1960s. ^[17] Doctors think that the contraceptive pill may have something to do with fewer women getting the condition now. But they're still not sure.

What treatments work for rheumatoid arthritis?

Rheumatoid arthritis makes your joints swollen and painful. It often starts with the joints in your fingers feeling stiff. It is an unpredictable disease, and it's hard to say how it will affect you. For most people, the symptoms come and go. In others, they get slowly worse.

But there are treatments that can reduce the swelling, pain and joint damage caused by rheumatoid arthritis. These treatments can help you to keep doing the things you normally would. ^[18]

Key points about treating rheumatoid arthritis

- Drugs can prevent your joints from wearing down and help to ease your pain and swelling. These are called disease-modifying anti-rheumatic drugs (or DMARDs for short). Most of the treatments for rheumatoid arthritis are DMARDs.
- If you start taking these drugs early on, they may slow your disease and stop your joints from wearing down. But you may need to take them for many years.

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- The first drug you're likely to take is called methotrexate. Doctors usually prescribe it together with at least one other drug. If the first drugs you try don't help, your doctor may suggest trying a higher dose or a different combination of drugs. Your doctor may be able to drop your dose once your symptoms have improved.
- Many of these drugs have side effects that stop some people from taking them.
- Your doctor may also give you [nonsteroidal anti-inflammatory drugs](#) (NSAIDs for short). These drugs also help to control the pain and swelling of rheumatoid arthritis.
- Some people find that [changing what they eat and exercising](#) helps their arthritis.
- Doctors usually recommend starting treatment soon after being diagnosed. To find out more about when to start treatment and how long you'll need to take medicines for, see [Treatment decisions](#) .

Treatment Group 1

Treatments for rheumatoid arthritis

Which treatments work best? We've carefully weighed up the research and divided these treatments into the following categories. All of these drugs are used to help ease the pain and swelling of rheumatoid arthritis. Some can also help stop your joints from wearing down.

For help in deciding which treatment is best for you, see [How to use research to support your treatment decisions](#).

Treatments that work

- [Methotrexate](#) : The brand name for this drug is Maxtrex. [More...](#)
- [Sulfasalazine](#) : The brand names for this drug are Sulazine and Salazopyrin. [More...](#)
- [Infliximab plus methotrexate](#) : If methotrexate alone doesn't help, your doctor may prescribe infliximab (brand name Remicade) as well. [More...](#)
- [Taking sulfasalazine plus hydroxychloroquine and methotrexate](#) : Doctors sometimes prescribe this combination of drugs, if sulfasalazine or methotrexate alone don't work. [More...](#)
- [Leflunomide](#) : The brand name for this drug is Arava. [More...](#)
- [Penicillamine](#) : The brand name for this drug is Distamine. [More...](#)

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Treatments that are likely to work

- [Antimalarials](#) : These drugs are usually used to treat [malaria](#) . But they can help for rheumatoid arthritis. Hydroxychloroquine (brand name Plaquenil) is a common antimalarial. [More...](#)
- [Steroid tablets](#) : The most common steroid used in rheumatoid arthritis is prednisolone. [More...](#)
- [Etanercept](#) : This is a type of drug that affects the way your immune system works. The brand name is Enbrel. [More...](#)
- [Azathioprine](#) : The brand name for this drug is Imuran. [More...](#)
- [Ciclosporin](#) : The brand name for this drug is Neoral. [More...](#)

Treatments that work, but whose harms may outweigh benefits

- [Injectable gold](#) : This is a form of gold that is given to you as an injection. The brand name for this injection is Myocrisin. [More...](#)

Treatments that need further study

- [Cyclophosphamide](#) : This drug is sometimes used for complications of rheumatoid arthritis. [More...](#)
- [Adalimumab](#) : The brand name is Humira. [More...](#)
- [Anakinra](#) : The brand name for this drug is Kinaret. [More...](#)

Other treatments

We haven't looked at the research on these treatments in as much detail as we've looked at the research on most of the treatments we cover. (To read more, see Our method.) But we've included some information because you may have heard of them or be interested in them.

- [Nonsteroidal anti-inflammatory drugs \(NSAIDs\)](#) : These drugs are a common treatment for rheumatoid arthritis. They help with pain and inflammation. Ibuprofen is a well-known NSAID. [More...](#)
- [Diet and exercise in rheumatoid arthritis](#) : Some people find that changing their diet or exercising helps their rheumatoid arthritis. [More...](#)
- [Rituximab](#) : This drug is usually used to treat people with cancer. But it's also given to some people with rheumatoid arthritis who haven't been helped by other drugs.

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It slows down the damage to your joints by affecting the way your immune system works. Drugs that do this are sometimes called biologic drugs. [More...](#)

- [Abatacept](#) : This drug's brand name is Orencia. It slows the damage to your joints by affecting the way your immune system works. Drugs that do this are sometimes called biologic drugs. [More...](#)
- [Tocilizumab](#) : This is a drug that helps stop your immune system attacking your joints. It tends to be used if other drugs haven't worked. The brand name is RoActemra. [More...](#)
- [Certolizumab](#) : This is a type of drug called an anti-TNF drug. It helps stop your immune system attacking your joints. The brand name for certolizumab is Cimzia. [More...](#)
- [Golimumab](#) : This is a type of drug called an anti-TNF drug. It helps stop your immune system attacking your joints. The brand name for golimumab is Simponi. [More...](#)

What will happen to me?

Rheumatoid arthritis varies a great deal in how it affects people. One person's experience with the condition may be very different to another's. For this reason, it is difficult to say what will happen to you as an individual. But new treatments are helping people with rheumatoid arthritis stay mobile and able to do the things they normally would. ^[18]

- Some people (about 1 in 5) have very mild rheumatoid arthritis. Their symptoms come and go, but are always quite mild and never bother them very much. ^[19]
- Most people (about three-quarters of those with rheumatoid arthritis) have a more serious form of the disease. Here, symptoms also come and go, but they tend to be more painful. During a 'flare-up' (the time when you have symptoms) the joints become swollen and might look red. Sometimes you might be able to spot a reason for your symptoms. You might notice your symptoms get worse when you've been doing a lot more than usual, or when you're stressed or upset. But most of the time there's no reason why your symptoms suddenly get worse, and this can be very frustrating. ^[19]
- A very small number of people with rheumatoid arthritis (about 1 in 20) are very disabled by the condition. Their joints become very damaged and this stops them doing certain things. For example, they may not be able to use a tin-opener or find it easy to button up a shirt or coat. ^[19]

The more you know about your condition and how you can help yourself, the better you will cope. It also helps if you have the support of your friends and family. ^[20]

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And treatments can make a real difference. There are drugs that can help to stop your joints from wearing down. These are called **disease-modifying anti-rheumatic drugs**, or DMARDs for short. They can help you to carry on doing normal everyday things.

There are lots of different DMARDs and other drugs that can help if DMARDs don't work. So you may need to try a few treatments before you find one that is right for you. Also, sometimes drugs work for a while, then wear off. You'll then need to try another drug instead of, or as well as, the one you started with.

It's best to start taking these treatments soon after you're diagnosed, and you may need to keep taking them for many months or years. But once rheumatoid arthritis slows down, you may be able to stop taking them. See [What treatments work for rheumatoid arthritis?](#) to learn more about DMARDs.

You may have specific concerns about pain, joint damage and other issues. Here's what we know.

Pain

You may worry that your joints will always hurt. But DMARDs can help with the pain. There are also other things that you can do to help control your pain, such as taking a warm bath or shower, or putting an ice pack (or a bag of frozen vegetables) wrapped in a towel on a swollen joint. Exercise that does not stress the joints, like swimming, can also reduce your joint pain and stiffness. See [Managing pain](#) to learn more.

Joint damage

Even with drug treatments, there is a chance that over many years your joints will be permanently damaged. If your hands are affected, doing simple things like holding a cup or buttoning your coat can become difficult. Some people have to stop working because of rheumatoid arthritis. ^[21]

Your joints may never become as damaged as that. But it's still important to make plans for the future in case you can't work or you need extra help.

Depression

If you have rheumatoid arthritis, you may be more likely than other people to get depressed. ^[16] You may worry about how you will cope if you can't work or if you can't do certain things for yourself. See our section on [depression](#) to learn what treatments are helpful for this condition.

Spread of the disease

Rheumatoid arthritis can spread to other parts of your body. But this is very rare.

Just as your joints get swollen and inflamed, your blood vessels, nerves and lungs can also get swollen and inflamed. Rheumatoid arthritis can also stop you from making enough red blood cells. Red blood cells carry oxygen around your body. If you don't

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have enough of these cells, you may feel tired and worn out. Doctors call that **anaemia**

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Questions to ask your doctor

If you've been diagnosed with rheumatoid arthritis, you may want to talk to your doctor to find out more.

Here are some questions that you might want to ask.

- How do you know I have rheumatoid arthritis?
- Is it going to get worse?
- What can I do to stop it getting worse?
- Does rheumatoid arthritis run in families? Are my children at risk?
- How can I control my pain?
- Can I get addicted to painkillers?
- What else can I do to control my pain?
- When do I need to start treatment to help stop my joints wearing down?
- What are the side effects of the treatments you recommend?
- Is there anything I can do to help myself, such as exercising or changing what I eat?

Treatments:

Methotrexate

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[How good is the research on methotrexate?](#)

This information is for people who have rheumatoid arthritis. It tells you about methotrexate, a treatment used for rheumatoid arthritis. It is based on the best and most up-to-date research.

Does it work?

Yes. Methotrexate can reduce pain and swelling in your joints. It can also help to stop your joints wearing down. Methotrexate is one of the most commonly used drugs for rheumatoid arthritis, but 1 in 5 people stop taking it because of side effects. ^[27]

What is it?

Methotrexate belongs to a group of drugs used to help slow down rheumatoid arthritis. These drugs are called **disease-modifying anti-rheumatic drugs** (DMARDs for short). They also help to reduce the pain and swelling in your joints.

Methotrexate is often the first drug that is tried for rheumatoid arthritis, because doctors know it works. Doctors often combine it with other DMARDs, including [sulfasalazine](#) . Or you might start treatment with sulfasalazine and then start taking methotrexate as well. Methotrexate takes a few months to start working.

You may need to take a combination of drugs for many months. But once your symptoms improve, you may be able to stop taking some of them. If your arthritis is not getting better or you get severe side effects while taking methotrexate, your doctor may advise you to stop taking it or switch to another drug.

Methotrexate was first used to treat cancer. But in much lower doses it also helps people with rheumatoid arthritis.

You will probably take methotrexate as a tablet once a week. To start with, you will take a low dose. In studies, most people took between 5 milligrams and 20 milligrams once a week. It can also be given as a weekly injection.

When you are taking methotrexate, your doctor may also prescribe **folic acid**. Folic acid is a vitamin that helps to reduce the side effects linked with methotrexate. You will either take this vitamin every day or take a larger amount once a week. ^[28]

How can it help?

Most people who take methotrexate find that it eases their pain and reduces swelling in their joints. The drug may make it easier for you to do everyday things like working, doing the shopping, doing housework, having sex, seeing your friends and doing other things you enjoy.

Research shows that taking methotrexate for at least two months can help in the following ways. ^[28]

- It can reduce pain in your joints: If your joints are less painful, you may find it easier to do everyday things like walking or working. If you have rheumatoid arthritis in your hands, you may also find that gripping things, like cups, is easier.
- It can reduce swelling in your joints: You may have fewer swollen joints when taking methotrexate. You may also find that the swelling in your joints goes down. This

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should help your joints move more easily. You may find it easier to pick up small things or fasten your buttons.

- It can slow down the disease and keep your joints from wearing down.

Research also shows that methotrexate works at least as well as other DMARDs in controlling rheumatoid arthritis. ^{[29] [30] [31] [18]}

Researchers have looked at taking methotrexate alone and combined with sulfasalazine. Both these treatments work well. ^{[32] [33]}

Methotrexate works at least as well as other rheumatoid arthritis drugs, including [azathioprine](#) , [antimalarial drugs](#) , [sulfasalazine](#) , [injectable gold](#) , and [penicillamine](#). ^{[29] [34]}

Two other studies showed methotrexate, sulfasalazine, and a combination of the two drugs, all worked well. ^{[32] [33]}

Methotrexate can be helpful if it's the first drug you try, or if you've tried other drugs and they haven't worked.

How does it work?

Doctors are not sure how methotrexate works. But it seems to affect your **immune system** . Your immune system helps protect your body against infection. But in rheumatoid arthritis, it also attacks the lining of your joints. Methotrexate may help to reduce swelling in your joints by stopping the immune system attacking this lining. ^[35]

Can it be harmful?

About 1 out of 5 people have to stop taking methotrexate because of side effects. ^[27] But these side effects are not usually serious, and methotrexate has fewer side effects than some other DMARDs. Research also shows that people find it easier to keep taking methotrexate than some other DMARDs. ^[34]

The most common side effects are:

- Thin or brittle hair
- Acne or blisters on the skin
- Loss of appetite or weight
- Blisters in the mouth
- Tiredness.

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See your doctor if you get short of breath, or develop a cough or high temperature, as these symptoms can be a sign that methotrexate is harming your lungs.

Very rarely, methotrexate can damage the liver. While you're taking methotrexate, you should not take aspirin or ibuprofen because these drugs can increase the amount of methotrexate in the blood and increase the chances of liver damage. Your doctor will do regular blood tests to check this. If the blood tests show that the drug is damaging your liver, your doctor will take you off the drug.

You shouldn't plan to get pregnant while taking methotrexate, because it can harm your baby. And you shouldn't get pregnant for at least three months after you stop taking it, because it is a long-acting drug. If you become pregnant, talk to your doctor as soon as possible.

How good is the research on methotrexate?

There is good evidence that methotrexate works in treating rheumatoid arthritis.

One big summary of the research (a [systematic review](#)) compared methotrexate with a dummy treatment (a [placebo](#)). It found people taking methotrexate had fewer painful, swollen joints and could get around more easily. [X-rays](#) showed they had less damage to their joints. ^[27]

But there aren't many studies now comparing methotrexate with placebo drugs. That's because doctors know it works, so it wouldn't be fair for some people not to be offered the treatment.

Sulfasalazine

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[How good is the research on sulfasalazine?](#)

This information is for people who have rheumatoid arthritis. It tells you about sulfasalazine, a treatment used for rheumatoid arthritis. It is based on the best and most up-to-date research.

Does it work?

Yes. Sulfasalazine can reduce the pain and swelling of rheumatoid arthritis.

Sulfasalazine works as well as other drugs used to slow down the disease. But it can cause more side effects than a drug called [methotrexate](#).

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What is it?

Sulfasalazine has been used to treat rheumatoid arthritis for more than 50 years. It belongs to a group of drugs that are used to slow down the disease. These drugs are called **disease-modifying anti-rheumatic drugs** (DMARDs for short). They also help ease the pain and swelling in your joints.

Sulfasalazine is one of the first drugs your doctors may try. You may take it with another drug, probably methotrexate. Sulfasalazine takes a few months to work.

You may need to take a combination of drugs for many months. But once your symptoms improve, you may be able to stop taking some of them. If your arthritis is not getting better or you get severe side effects while taking sulfasalazine, your doctor may advise you to stop taking it.

You take sulfasalazine as a tablet, usually once or twice a day. You may start by taking 500 milligrams once or twice a day. If you have no side effects, then your doctor may increase the dose to 1,000 milligrams twice a day.

Sulfasalazine is also used to treat some bowel diseases, such as **ulcerative colitis** and **Crohn's disease**.

How can it help?

Taking sulfasalazine can ease the pain and swelling in your joints. The drug may make it easier for you to do things like going shopping, doing the housework, having sex, seeing your friends and doing other activities you enjoy.

Research shows that taking sulfasalazine helps in the following ways.

- It reduces joint pain for 6 out of 10 people: ^[36] If your joints are less painful, you may find it easier to do everyday things like walking or working. If you have rheumatoid arthritis in your hands, you may also find that gripping things, like cups, is easier.
- It reduces morning stiffness for 6 out of 10 people: ^[36] Many people find that their joints are more stiff in the morning than later in the day. This makes getting going in the morning hard. Most people who take sulfasalazine find that they have less stiffness in their joints when they wake up.
- It reduces joint swelling for about half of all people: ^[36] You may have fewer swollen joints when taking sulfasalazine. You may also find that the swelling in your joints goes down. This should help your joints move more easily. You may find it easier to pick up small things or fasten your buttons.

Studies have compared sulfasalazine with other drugs used for rheumatoid arthritis. ^[32]
^[33] We know it works about as well as methotrexate, another DMARD. The two drugs

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are often used together. This combination also works well, but you might be more likely to get side effects. ^[32]

Another study showed it worked as well as an antimalarial drug called [hydroxychloroquine](#). ^[37] It may work better than hydroxychloroquine to stop your joints from wearing down. ^[38]

Sulfasalazine can be helpful if it's the first drug you try, or if you've tried other drugs and they haven't worked.

How does it work?

Sulfasalazine helps to reduce the inflammation in the lining of your joints. But doctors don't know how it does this. Some scientists think it affects your immune system. ^[39] Your immune system normally protects your body against infection. But in rheumatoid arthritis, it also attacks the lining of your joints. Sulfasalazine may stop this from happening.

Can it be harmful?

Many people get side effects when they take sulfasalazine. But these side effects are not usually serious. About 1 out of every 5 people stops taking the drug because of side effects. ^[40]

Side effects are more common if you take sulfasalazine and methotrexate together. About 7 in 10 people taking sulfasalazine get side effects, but about 9 in 10 people taking both drugs together get at least one side effect. ^[32]

Research shows that the most common side effects are:

- Diarrhoea
- Stomach pain
- Loss of appetite
- Vomiting
- Skin rash
- Itching.

Sulfasalazine can also make men temporarily unable to father a child (infertile). But this should go away when they stop taking the drug. If you are planning to have a family, you should discuss this with your doctor.

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There's a small chance that sulfasalazine will turn your skin a pale or yellow colour. This may look a little strange but it is harmless. If you wear soft contact lenses, these can become stained when you take sulfasalazine.

While taking the treatment, you need to have regular blood tests. This is because sulfasalazine can stop your body making enough white blood cells. These help to defend your body against infections caused by **viruses** and **bacteria**. Sulfasalazine can also harm your liver.

But these side effects are not common: Only 2 in every 100 people have to stop taking the drug because of problems with their blood or liver.

How good is the research on sulfasalazine?

There's good evidence that sulfasalazine works. However, some of the studies involving sulfasalazine were not good-quality, and others used various different methods to measure whether the drug worked. This makes it hard to compare their results.

We found two summaries of the research (called **systematic reviews**) that compared sulfasalazine with a dummy treatment (a **placebo**). The first review included six studies and 252 people.^[40] The second looked at eight studies and 903 people.^[36]

Both reviews found that people taking sulfasalazine for six months had fewer swollen and tender joints than those taking a dummy treatment.

Infliximab plus methotrexate

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[How good is the research on infliximab plus methotrexate?](#)

This information is for people who have rheumatoid arthritis. It tells you about taking infliximab along with methotrexate, which are both treatments for rheumatoid arthritis. It is based on the best and most up-to-date research.

Does it work?

Yes. If other drugs have not worked, there's good evidence to show that taking infliximab and methotrexate together can help.

You'll usually only be offered these drugs if other treatments haven't helped, or have stopped working.

What is it?

Infliximab is a type of medicine called an anti-TNF drug. (TNF stands for tumour necrosis factor.) Like some of the other treatments for rheumatoid arthritis, anti-TNF drugs don't

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just help with pain. They also slow down the damage to your joints. Drugs that do this are called **disease-modifying anti-rheumatic drugs** (DMARDs for short). Anti-TNF drugs are a newer type of DMARD. You may also hear them called biologic drugs, or biologics.

Several anti-TNF drugs are available in the UK. This information is about infliximab. To find out about the others, see [etanercept](#) , [adalimumab](#) , [certolizumab](#) , and [golimumab](#) .

The brand name for infliximab is Remicade. It is given as a drip into your vein (also called an IV or **intravenous infusion**). You'll have your first infusion followed by more at two and six weeks. After that you'll have an infusion every eight weeks.

You'll be given infliximab along with a drug called methotrexate.^[41] ^[42] Methotrexate is also a DMARD, and you'll take it as a tablet once a week. To learn more, see [Methotrexate](#) .

Guidelines for doctors say you should only be prescribed infliximab if you have not been helped by two other DMARDs. One of the DMARDs that you should have tried is methotrexate. You may also be offered infliximab if you can't take other drugs because of side effects.^[43] You should also have a check-up every six months to make sure the drug is working.

How can it help?

Taking infliximab and methotrexate together can reduce the pain and swelling in your joints. This may make it easier for you to do things like going shopping, doing the housework, having sex, seeing your friends and doing other things you enjoy.

In studies, more than half the people taking this combination of drugs had some improvement in their symptoms after six months, compared with only 2 in 10 who took just methotrexate.^[44]

Taking infliximab plus methotrexate may also help to stop your joints wearing down.^[44]

How does it work?

TNF (or tumour necrosis factor) is a chemical in your blood. Anti-TNF drugs stop this chemical working. Scientists think that this chemical makes your **immune system** attack the lining of your joints. This causes swelling and pain.

Doctors are not sure how methotrexate works. But it seems to also affect your immune system, stopping it from attacking the lining of your joints.^[35]

Can it be harmful?

Side effects from infliximab and other anti-TNF drugs are quite common. But they are usually very mild and should not stop you from using these treatments.

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About 5 in every 100 people stop taking infliximab because of side effects. ^[45]

If you take infliximab, you may get some of the following side effects: ^[45] ^[46]

- Chest infections
- Headache
- Diarrhoea and stomach pains.

About 1 out of 5 people stop taking methotrexate because of side effects. ^[27] But these side effects are not usually serious.

The most common side effects are:

- Thin or brittle hair
- Acne or blisters on the skin
- Loss of appetite or weight
- Blisters in the mouth
- Tiredness.

Other concerns

Infliximab and other anti-TNF drugs may slightly increase the risk of some kinds of cancer, including lymphoma and leukaemia. ^[47] It's difficult to say how big the risk is. In the US from 2001 to 2008, there were 48 reports of cancer in children and teenagers taking anti-TNF drugs, and 147 cases of leukaemia in both adults and children. That's out of many thousands of people who were taking these medicines. Most people were also taking other drugs that affected their immune system, so it's not clear how much of a part anti-TNF drugs played. We also found a summary of the evidence ([systematic review](#)) that looked at 21 studies and eight shorter reports of the effects of anti-TNF drugs. ^[48] It didn't show that patients using anti-TNF drugs were more likely to get most sorts of cancer, but they did have a higher risk of getting some types of skin cancer. A more recent [systematic review](#) , which included 63 studies, did not find a link between anti-TNF drugs and an increased chance of getting any type of cancer. ^[49]

If you have had [tuberculosis](#) in the past, then there is a slight risk that anti-TNF drugs can make your tuberculosis come back.

There's a possibility that you may feel your heart beating irregularly while you are having the infliximab drip. In one study, 8 in 100 people taking infliximab had an irregular heart

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beat, compared with 3 in 100 people taking a dummy (placebo) drip. But the numbers weren't big enough to be sure that they weren't just down to chance. ^[50]

Another study showed that people taking infliximab may be more likely to get a condition called shingles, which causes painful blisters. Shingles can only happen if you've had chickenpox in the past. It happens when the immune system no longer keeps the virus that caused chickenpox, called the herpes zoster virus, in check. ^[51]

Very rarely, methotrexate can damage the liver. While you're taking methotrexate, you should not take aspirin or ibuprofen because these drugs can increase the amount of methotrexate in the blood and increase the chances of liver damage. Your doctor will do regular blood tests to check this. If the blood tests show that the drug is damaging your liver, your doctor will take you off the drug.

There's also a small chance that methotrexate will harm your lungs. See your doctor if you get short of breath, or develop a cough or high temperature.

You shouldn't plan to get pregnant while taking methotrexate, because it can harm your baby. And you shouldn't get pregnant for at least three months after you stop taking it, because it is a long-acting drug. If you become pregnant, talk to your doctor as soon as possible.

How good is the research on infliximab plus methotrexate?

We found one review of the research into infliximab plus methotrexate. ^[44] It included two good-quality studies, with 529 people in total.

The studies compared taking infliximab plus methotrexate, with taking methotrexate alone. The results showed that people were more likely to have some improvement in their symptoms if they took the two drugs together.

Taking sulfasalazine plus hydroxychloroquine and methotrexate

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[How good is the research on taking sulfasalazine, hydroxychloroquine, and methotrexate together?](#)

This information is for people who have rheumatoid arthritis. It tells you about taking sulfasalazine, hydroxychloroquine, and methotrexate together. It is based on the best and most up-to-date research.

Does it work?

Yes. There's good evidence that this combination of drugs can be helpful, if other treatments haven't worked.

What is it?

Methotrexate and sulfasalazine belong to a group of drugs used to help slow down rheumatoid arthritis. These drugs are called **disease-modifying anti-rheumatic drugs** (DMARDs for short). They also help to reduce the pain and swelling in your joints.

Hydroxychloroquine is an antimalarial drug. Antimalarial drugs are also used to reduce the pain and swelling in your joints.

To find out more about the individual drugs, see our information on [methotrexate](#) , [sulfasalazine](#) and [antimalarials](#) . You take them as tablets.

You'll only have this combination of three drugs if other drugs haven't helped.

How can it help?

Taking these three drugs together can reduce the pain and swelling in your joints, and help if your joints feel stiff first thing in the morning.

This may make it easier for you to do things like going shopping, doing the housework, having sex, seeing your friends and doing other things you enjoy.

Studies have compared taking the three drugs together with taking them separately, or taking two of the drugs together. The studies showed that taking the three drugs together worked for more people. ^[52] ^[53]

One study compared people who started off on all three drugs, with people who started on one then had the other two added when their symptoms got worse. The study showed that, after a year, both groups of patients were doing equally well. So adding treatments when you need them works at least as well as starting off with all of them. ^[54]

A study looked at people whose symptoms weren't any better after taking methotrexate. Taking the three drugs together seemed to work as well as taking another treatment, a type of biologic drug called etanercept. ^[55] [Find out more about etanercept](#) .

How does it work?

Scientists are not sure exactly how these three drugs work. They seem to affect the immune system. Usually, your immune system protects you from infection. But if you have rheumatoid arthritis, the immune system attacks the lining of the joints.

Can it be harmful?

Each of these drugs can have side effects. To learn more, see our information on taking [sulfasalazine](#) , [hydroxychloroquine](#) , and [methotrexate](#) separately.

The most common side effects for sulfasalazine are:

- Diarrhoea

Rheumatoid arthritis

- Stomach pain
- Loss of appetite
- Vomiting
- Skin rash
- Itching.

The most common side effects for hydroxychloroquine are:

- Nausea
- Diarrhoea or constipation
- Headache and dizziness
- Loss of appetite
- Skin rash
- Blurred vision.

The most common side effects for methotrexate are:

- Hair that's thin or brittle
- Acne or blisters on the skin
- Loss of appetite or weight
- Blisters in the mouth
- Tiredness.

But in the research we looked at, taking the drugs together didn't seem to increase the side effects much. People were no more likely to stop taking the combined treatment because of side effects, than to stop taking one of the treatments alone. ^[52] ^[53]

How good is the research on taking sulfasalazine, hydroxychloroquine, and methotrexate together?

We found two good-quality studies looking at this combination of drugs. ^[53] ^[52] The studies included 273 people in total. Some people took all three drugs, while others took one or two of the drugs.

In both studies, more than 7 in 10 people taking all three drugs had a big improvement in pain and swelling in their joints. The results weren't as good for the people who took the drugs separately.

Leflunomide

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[How good is the research on leflunomide?](#)

This information is for people who have rheumatoid arthritis. It tells you about leflunomide, a treatment used for rheumatoid arthritis. It is based on the best and most up-to-date research.

Does it work?

Yes. Leflunomide can help to reduce the pain and swelling of rheumatoid arthritis. It also helps to keep your joints from wearing down.

Leflunomide is a fairly new drug compared with other treatments for rheumatoid arthritis. So we know less about how well it works than we do about other drugs.

What is it?

Leflunomide belongs to a group of drugs that are used to slow down the disease. These drugs are called **disease-modifying anti-rheumatic drugs** (DMARDs for short). They also help control the pain and swelling in your joints.

Leflunomide takes a few months to work, and your doctor may prescribe it together with other DMARDs. You may need to take a combination of drugs for many months. But once your symptoms improve, you may be able to stop taking some of them. If your arthritis is not getting better or you get severe side effects with leflunomide, your doctor may advise you to stop taking it or switch to another drug.

Leflunomide comes as a tablet that you take once a day. Its brand name is Arava. You'll probably take 10 milligrams to 20 milligrams a day. But when you start taking it, your doctor may prescribe larger doses (such as 100 milligrams a day) for the first three days.

How can it help?

Taking leflunomide can reduce the pain and swelling in your joints. The drug may make it easier for you to do things like going shopping, doing the housework, having sex, seeing your friends and doing other activities you enjoy. X-rays also show that leflunomide can help to stop your joints from wearing down.

Research shows that taking leflunomide can help in the following ways. ^[56] ^[31] ^[57] ^[58]

- It can reduce pain in your joints: If your joints are less painful, you may find it easier to do everyday things like walking or working. If you have rheumatoid arthritis in your hands, you may also find that gripping things, like cups, is easier.
- It can reduce swelling in your joints: You may have fewer swollen joints when taking leflunomide. You may also find that the amount of swelling in your joints goes down. This should help your joints move more easily. You may find it easier to pick up small things or fasten your buttons.
- It can help to keep your joints from wearing down. ^[59]

Leflunomide works as well as other DMARDs, including [sulfasalazine](#) and [methotrexate](#). ^[60] But it has more side effects than methotrexate.

How does it work?

Leflunomide gets inside the **white blood cells** of your **immune system**. These cells normally protect your body against infection, but in rheumatoid arthritis they also attack the lining of your joints. Leflunomide keeps these cells from attacking your joints and also makes the cells less sticky. This stops them forming clumps in your joints. So your joints become less swollen and less painful. ^[61]

Can it be harmful?

Studies show that quite a few people get side effects when taking leflunomide. These side effects are rarely serious but do stop up to 1 in every 5 people taking the drug. ^[59]

The most common side effects are:

- Diarrhoea (3 in 10 people get this) ^[31] ^[30]
- Nausea (2 in 10 people) ^[31] ^[30]
- Loss of some hair (1 in 10 people) ^[31] ^[30]
- Dizziness

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- Loss of appetite
- Mouth ulcers
- Skin rash
- Rise in blood pressure.

Leflunomide can also cause **liver** problems. But this only happens to 2 in every 100 people who take the drug. You will need to have a blood test to make sure your liver is working normally.

Leflunomide seems to have more side effects than another drug called methotrexate. In studies, 20 percent of people taking leflunomide stopped taking it because of side effects over the course of a year, compared with 14 percent of people taking methotrexate. ^[60]

How good is the research on leflunomide?

There is quite good evidence that leflunomide works.

We found one summary of the research (called a **systematic review**) that included three large good-quality studies (called **randomised controlled trials**). ^[59]

All three studies found that people taking leflunomide had fewer swollen and tender joints than those taking a **placebo** (a dummy treatment). ^{[62] [31] [57]}

Penicillamine

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[How good is the research on penicillamine?](#)

This information is for people who have rheumatoid arthritis. It tells you about penicillamine, a treatment used for rheumatoid arthritis. It is based on the best and most up-to-date research.

Does it work?

Yes. Penicillamine can help to reduce the pain and swelling of rheumatoid arthritis. But it is not used very often because side effects from this drug are quite common and can be serious. You'll probably try another drug first. Studies show that up to a quarter of people stop taking the drug because of side effects.

What is it?

Penicillamine belongs to a group of drugs that are used to slow down the disease. These drugs are called **disease-modifying anti-rheumatic drugs** (DMARDs for short). They also help ease the pain and swelling in your joints.

Penicillamine takes a few months to work, and your doctor may prescribe it together with other DMARDs. You may need to take a combination of drugs for many months. But once your symptoms improve, you may be able to stop taking some of them. If your arthritis is not getting better or you get severe side effects with penicillamine, your doctor may advise you to stop taking it.

You take penicillamine as a tablet once a day. The brand name is Distamine. You will start on a low dose, probably 125 milligrams. Then your doctor will increase your dose every one or two months until your arthritis starts to improve. The maximum dose you can take is about 1,500 milligrams every day.

How can it help?

Penicillamine can reduce the pain and swelling in your joints. This may make it easier for you to do everyday things like going shopping, doing the housework, having sex, seeing your friends and doing other activities you enjoy.

Research shows that taking penicillamine can help in the following ways. ^[63]

- It can reduce pain in your joints: If your joints are less painful, you may find it easier to do everyday things like walking or working. If you have rheumatoid arthritis in your hands, you may also find that gripping things, like cups, is easier.
- It can reduce swelling in your joints: You may have fewer swollen joints when taking penicillamine. You may also find that the amount of swelling in your joints goes down. This should help your joints move more easily. You may find it easier to pick up small things or fasten your buttons.

Other studies show that penicillamine reduces pain and swelling as well as many other drugs used for rheumatoid arthritis. ^{[29] [36] [64] [65]}

How does it work?

Scientists don't know exactly how penicillamine works. Research so far shows that it stops the cells involved with causing inflammation from working properly. ^[35] This prevents the joints from swelling and becoming painful.

Can it be harmful?

Side effects from this drug are quite common. At high doses, 25 in every 100 people have to stop taking it because of side effects. ^[63] Sometimes the side effects can be

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serious. Your doctor will regularly test your blood and urine to make sure the treatment is not harming you.

The most common side effects are: ^[63]

- Nausea and vomiting (2 in every 100 people get this side effect)
- Skin rashes or mouth ulcers (5 in every 100 people)
- Loss of sense of taste (5 in every 100 people)
- Blood problems, such as low numbers of red blood cells and white blood cells (7 in every 100 people)
- Kidney problems (4 in every 100 people).

If while taking penicillamine you get a sore throat, a fever, unexpected or unexplained bruising or bleeding, mouth ulcers, or a rash, you should see your doctor straight away. If you are planning to get pregnant, or become pregnant while taking penicillamine, you should talk to your doctor straight away.

How good is the research on penicillamine?

The evidence that penicillamine works is quite good.

Antimalarials

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[How good is the research on antimalarials \(hydroxychloroquine\)?](#)

This information is for people who have rheumatoid arthritis. It tells you about antimalarials, treatments used for rheumatoid arthritis. It is based on the best and most up-to-date research.

Do they work?

Yes. Antimalarials reduce pain and swelling in your joints. But some people who take them feel sick or get diarrhoea or constipation.

What are they?

Antimalarials are drugs that are used to prevent people getting malaria and to treat it. But doctors found that antimalarials also benefited people with rheumatoid arthritis. They have been used for more than 50 years to treat the condition. ^[35]

Rheumatoid arthritis

Antimalarials belong to a group of drugs used to slow down rheumatoid arthritis. These drugs are called **disease-modifying anti-rheumatic drugs** (DMARDs for short). They also help reduce the pain and swelling in your joints.

However, most doctors use [methotrexate](#) or [sulfasalazine](#) first, because they usually work better. ^[28] ^[36]

The antimalarial most often used in rheumatoid arthritis is called hydroxychloroquine. Its brand name is Plaquenil. Chloroquine is another antimalarial, but it isn't used very often.

Antimalarials take a few months to work, and your doctor may prescribe them with other DMARDs. You may need to take a combination of drugs for many months. But once your symptoms improve, you may be able to stop taking some of them. If your arthritis is not getting better or you get severe side effects with antimalarials, your doctor may advise you to stop taking them.

People usually take a dose of 200 to 400 milligrams a day.

How can they help?

Just over half the people who take hydroxychloroquine find their joints become less painful and less swollen. The drug may make it easier for you to do things like going shopping, doing the housework, having sex, seeing your friends and doing other activities you enjoy.

Research shows that taking hydroxychloroquine can help in the following ways. ^[66] ^[67]

- It can reduce pain in your joints: If your joints are less painful, you may find it easier to do everyday things like walking or working. If you have rheumatoid arthritis in your hands, you may also find that gripping things, like cups, is easier.
- It can reduce swelling in your joints: You may have fewer swollen joints when you take hydroxychloroquine. You may also find that the amount of swelling in your joints goes down. This should help your joints move more easily. You may find it easier to pick up small things or fasten your buttons.

But other DMARDs called [methotrexate](#) and [sulfasalazine](#) seem to work better. ^[28] ^[36]

How do they work?

Scientists are not sure exactly how antimalarials reduce joint swelling, but these drugs seem to affect your immune system. ^[68]

Your immune system normally helps you fight infections, but in rheumatoid arthritis, it also attacks the lining of your joints. Antimalarials may stop some of the immune cells from getting into the tissues around your joints. They may also stop the release of some of the chemicals that cause swelling.

Can they be harmful?

Some people who take hydroxychloroquine get side effects.^[69] But these problems are not usually serious. Studies show that about 5 people in every 100 have to stop taking the drug because of side effects.^[66] But you are more likely to stop taking it because it is not working.^[34]

The most common side effects are:^[69]

- Nausea (this happens to 1 in 4 people taking hydroxychloroquine)
- Diarrhoea or constipation (1 in 4 people get these side effects)
- Headache and dizziness
- Loss of appetite
- Skin rash
- Blurred vision.

If you are taking hydroxychloroquine, you need to have regular eye checks, usually once a year. This is because, at high doses, the drug can damage your eyes.

But you should not worry too much about this side effect, because only low doses are used to treat rheumatoid arthritis. And no patients in studies have needed to stop taking the drug because their eyes have been harmed.^[66]

In studies, people were less likely to stop taking hydroxychloroquine because of side effects than they were to stop taking methotrexate or sulfasalazine.^[28] ^[36]

How good is the research on antimalarials (hydroxychloroquine)?

There's some evidence that the antimalarial drug hydroxychloroquine works.

We found two studies called **randomised controlled trials** which compared hydroxychloroquine with a dummy treatment (a **placebo**), for people who hadn't taken any disease-modifying anti-rheumatic drugs (DMARDs) before.^[67] ^[70]

Both studies showed people felt less pain, had fewer swollen joints and were better able to move around, if they took hydroxychloroquine. But the studies were quite small. One had 126 patients^[67], while the second had only 19 patients.^[70] Also, the difference between the antimalarial drug and the placebo treatment was not very big.

We also found two reviews of the research, comparing hydroxychloroquine with [methotrexate](#) and [sulfasalazine](#).^[28] ^[36]

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The first review found that methotrexate worked better than hydroxychloroquine.^[28] But there were problems with this review that mean it might not be reliable. The second was better-quality. It showed that sulfasalazine might work better than hydroxychloroquine, but the difference was not very big.^[36]

Steroid tablets

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[How good is the research on steroid tablets?](#)

This information is for people who have rheumatoid arthritis. It tells you about steroid tablets, which are treatments used for rheumatoid arthritis. It is based on the best and most up-to-date research.

Do they work?

Low doses of steroids may help to reduce the pain and swelling of rheumatoid arthritis, in the short term. But taking them for a long time can cause serious side effects.

What are they?

Steroids used to treat rheumatoid arthritis are not like the steroids used by some bodybuilders. Instead they are similar to the steroids your body makes to reduce swelling. Their full name is corticosteroids.

For rheumatoid arthritis, you may take a steroid tablet twice a day, once a day or every other day. If you're treated with a steroid you'll usually be prescribed the drug prednisolone.

You will probably take a dose of between 5 milligrams and 7.5 milligrams a day. This is a low dose, which should help reduce your pain and swelling but not cause side effects.

You may take steroids on their own, or your doctor may prescribe them along with another drug.

How can they help?

Taking steroids can reduce inflammation (when something is inflamed, it's red, swollen, hot or sore) in your joints. This may make it easier to do things like going shopping, doing the housework, having sex, seeing your friends and doing other activities you enjoy.

But although we know steroids can help in the short term, there's not enough research to say whether they help and are safe to take for a long time.

One study showed they worked about as well as an antimalarial drug called [chloroquine](#). Both drugs reduced the number of swollen joints, and reduced the amount of pain people felt.^[71]

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Two other studies showed that taking steroid tablets (prednisolone or prednisone) as well as the drug [methotrexate](#) may prevent damage to your joints better than taking methotrexate alone. ^[72] ^[73]

How do they work?

Steroids reduce inflammation by stopping the body making certain chemicals. Your body makes these chemicals in response to the damage being done by rheumatoid arthritis, but the chemicals actually make things worse.

One of the main chemicals that steroids block is called **prostaglandin**. Prostaglandin causes swelling. So by taking steroids, you can reduce the swelling in your joints.

Can they be harmful?

Nowadays, only low doses of steroids are usually used to treat rheumatoid arthritis. At these low doses, they cause few side effects. But if you take higher doses or take them for a long time, then you can get more serious side effects. ^[74]

Side effects from higher doses of steroids include:

- High blood pressure
- Diabetes
- Weak bones that are more likely to break
- Stomach ulcers
- Obesity
- Eye problems, such as cataracts or glaucoma
- Problems with your adrenal glands. Your adrenal glands make hormones, including adrenaline
- Increased body hair
- A weaker immune system, leaving you less able to fight off infections.

About 1 in 20 people find that steroid tablets affect their mood. ^[75] This can happen a few days or weeks after you start treatment. You may be irritable, anxious, confused or have trouble sleeping. Or you can get an unusually high mood (euphoria). Rarely, people get more serious side effects, such as thinking about suicide or seeing things that aren't really there. It's also possible to get these side effects when you stop taking steroids.

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Stopping steroids suddenly can make you ill and make your arthritis flare up. Don't stop taking your treatment suddenly. Usually, your doctor will recommend that you gradually reduce the dose over a few weeks. ^[76]

Your doctor should explain the benefits and risks of steroids before you start taking them. If you get any worrying symptoms while you're taking steroids, see your doctor straight away.

How good is the research on steroid tablets?

There is not much good-quality evidence about steroid tablets. The studies we have are quite old.

One small study compared steroid tablets with an antimalarial drug called [chloroquine](#). ^[77] It looked at 56 people who took the drugs for about two years. The study found that both drugs worked as well as each other.

Some studies have looked at people taking steroids for short periods of time. ^[77] ^[78] They found that steroids worked better than dummy ([placebo](#)) drugs.

But we need more longer-lasting studies to make sure steroids are safe and work well in the long term.

Etanercept

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[How good is the research on etanercept?](#)

This information is for people who have rheumatoid arthritis. It tells you about etanercept, a treatment used for rheumatoid arthritis. It is based on the best and most up-to-date research.

Does it work?

Yes. Etanercept reduces the pain and swelling of rheumatoid arthritis.

Etanercept and drugs like it are usually offered to people only when other treatments haven't helped.

What is it?

Etanercept is a type of medicine called an anti-TNF drug. (TNF stands for tumour necrosis factor.) Like some of the other treatments for rheumatoid arthritis, anti-TNF drugs don't just help with pain and swelling. They also slow down the damage to your joints. Drugs that do this are called **disease-modifying anti-rheumatic drugs** (DMARDs for short).

Rheumatoid arthritis

Anti-TNF drugs are a newer type of DMARD. You may also hear them called biologic drugs, or biologics.

The brand name for etanercept is Enbrel. It's given as an injection under your skin, usually twice a week.

Several anti-TNF drugs are available in the UK. To find out about the others, see [Infliximab](#) , [Adalimumab](#) , [Certolizumab](#) , and [Golimumab](#) .

How can it help?

Anti-TNF drugs can reduce the pain and swelling in your joints. This may make it easier for you to do things like going shopping, doing the housework, having sex, seeing your friends and doing other things you enjoy.

The studies on etanercept show that up to 7 in 10 people had at least some improvement in the swelling and pain in their joints. ^[79] About 1 in 4 people found that their arthritis got much better.

Studies show etanercept works at least as well as [methotrexate](#) to improve swelling and pain in joints. And it may work slightly better to prevent the joints wearing down. ^[80] Taking etanercept and methotrexate together works better than taking etanercept alone. ^[81]

One study looked at etanercept for people who'd not had good pain relief from methotrexate. It showed that etanercept alone, or in addition to methotrexate, worked well to reduce pain and stiffness. ^[82]

How does it work?

TNF (or tumour necrosis factor) is a chemical in your blood. Anti-TNF drugs stop this chemical working. Scientists think that this chemical makes your [immune system](#) attack the lining of your joints. This causes swelling and pain.

Can it be harmful?

Side effects from etanercept are quite common. But they are usually very mild and should not stop you using this treatment. Fewer than 1 in 100 people stop taking etanercept because of side effects. ^[83]

If you take etanercept, you may get some of the following side effects:

- Chest infections
- Headache
- Nausea

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- Runny nose
- Skin rash
- Diarrhoea
- Mouth ulcers
- A skin reaction. Nearly half of people taking etanercept sometimes get a skin reaction at the spot where etanercept is injected. But these reactions are usually mild and do not need any treatment.

One study looked at people who had taken etanercept for up to 10 years. It found people who took etanercept were no more likely to get serious infections than people who took other disease-modifying anti-rheumatic drugs (DMARDs).^[84]

Medicines such as etanercept that affect your immune system can cause serious side effects. But this is quite rare. These serious side effects include severe infections, nervous system diseases, blood problems, heart problems and [allergic reactions](#). We need more research to know how safe etanercept is in the long term.^[85]

Etanercept and other anti-TNF drugs may slightly increase the risk of some kinds of cancer, such as lymphoma.^[47] It's difficult to say how big the risk is. In the US from 2001 to 2008, there were 48 reports of cancer in children and teenagers taking anti-TNF drugs, and 147 cases of leukaemia in both adults and children. That's out of many thousands of people who were taking these medicines. Most people were also taking other drugs that affected their immune system, so it's not clear how much of a part anti-TNF drugs played. We also found a summary of the evidence ([systematic review](#)) that looked at 21 studies and eight shorter reports of the effects of anti-TNF drugs.^[48] It didn't show that patients using anti-TNF drugs were more likely to get most sorts of cancer, but they did have a higher risk of getting some types of skin cancer. A more recent [systematic review](#), which included 63 studies, did not find a link between anti-TNF drugs and an increased chance of getting any type of cancer.^[49]

If you have had [tuberculosis](#) in the past, then there is a slight risk that anti-TNF drugs can make your tuberculosis come back. Across the world, tuberculosis has been reported in about 1 in 10,000 people taking this treatment.^[86]

How good is the research on etanercept?

The evidence that etanercept works is quite good.

We found one good-quality study comparing etanercept with [methotrexate](#).^[80] The study looked at nearly 3,000 people taking one of these drugs for between six months and three years.

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The study showed that both drugs worked to improve people's symptoms.

Another good-quality study looked at what happened when people took both methotrexate and etanercept. It showed that this combination of drugs worked better than taking either drug on its own. ^[81]

Azathioprine

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[How good is the research on azathioprine?](#)

This information is for people who have rheumatoid arthritis. It tells you about azathioprine, a treatment used for rheumatoid arthritis. It is based on the best and most up-to-date research.

Does it work?

Yes. Azathioprine may help to reduce pain and swelling in your joints. But side effects from this drug are common and can be serious. Your doctor will probably only prescribe azathioprine if you have tried other drug treatments first.

What is it?

Azathioprine belongs to a group of drugs that are used to slow down rheumatoid arthritis. These drugs are called **disease-modifying anti-rheumatic drugs** (DMARDs for short). They also help to reduce the pain and swelling in your joints.

Azathioprine takes a few months to work, and your doctor may prescribe it together with other DMARDs. You may need to take a combination of drugs for many months. But once your symptoms improve, you may be able to stop taking some of them. If your arthritis is not getting better or you get severe side effects from azathioprine, your doctor may advise you to stop taking it.

The brand name for azathioprine is Imuran. You have it as a tablet, which you take once a day. You will start on a low dose, probably 25 milligrams or 50 milligrams. Your doctor will then increase the dose every one or two months until your arthritis starts to improve.

How can it help?

Taking azathioprine can ease the pain and swelling in your joints. This may make it easier for you to do everyday things like going shopping, doing the housework, having sex, seeing your friends and doing other activities you enjoy.

Research shows that taking azathioprine can help in the following ways. ^[87]

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- It can reduce swelling in your joints: You may have fewer swollen joints when taking azathioprine. You may also find that the swelling in your joints goes down. This should help your joints move more easily. You may find it easier to pick up small things or fasten your buttons.
- It can reduce pain in your joints: If your joints are less painful, you may find it easier to do everyday things like walking or working. If you have rheumatoid arthritis in your hands, you may also find that gripping things, like cups, is easier.

But studies show that azathioprine does not work as well as [methotrexate](#) .^[29] ^[88] It seems to work as well as [penicillamine](#) and [ciclosporin](#) .^[29] ^[89] ^[90]

How does it work?

Azathioprine reduces the number of [white blood cells](#) that your body makes. White blood cells fight off infection. But in rheumatoid arthritis, they also make substances that attack the lining of your joints. This makes your joints swell and become painful.

Can it be harmful?

Side effects are common with azathioprine and can be serious. Because azathioprine reduces the number of white blood cells that your body makes, you may have trouble fighting off infections. But your doctor will do regular blood tests to make sure that you are making enough white blood cells to stay healthy.

The most common side effects are:^[87]

- Low numbers of white blood cells (1 in every 10 people get this side effect)
- Nausea and vomiting (3 in 10 people get this side effect)
- Skin rashes and mouth ulcers (1 in 4 people get this side effect).

How good is the research on azathioprine?

There is not much evidence that azathioprine helps people with rheumatoid arthritis.

We found one summary of the research (called a [systematic review](#)) that compared azathioprine with a dummy treatment (a [placebo](#)).^[87] It included three studies with 81 patients. Patients taking azathioprine had fewer swollen and painful joints. But all the studies in the summary are quite old.

Ciclosporin

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[How good is the research on ciclosporin?](#)

This information is for people who have rheumatoid arthritis. It tells you about ciclosporin, a treatment used for rheumatoid arthritis. It is based on the best and most up-to-date research.

Does it work?

Yes. Ciclosporin can help to reduce the pain and swelling of rheumatoid arthritis. It may also help to stop your joints wearing down. But many people taking ciclosporin get side effects, so it is only used if other drug treatments haven't worked.

What is it?

Ciclosporin belongs to a group of drugs that are used to slow down the disease. These drugs are called **disease-modifying anti-rheumatic drugs** (DMARDs for short). They also help reduce the pain and swelling in your joints.

Ciclosporin takes a few months to work, and your doctor may prescribe it together with other DMARDs. You may need to take a combination of drugs for many months. But once your symptoms improve, you may be able to stop taking some of them. If your arthritis is not getting better or you get severe side effects with ciclosporin, your doctor may advise you to stop taking it or switch to another drug.

The brand name for ciclosporin is Neoral. You take this drug as a tablet, usually once a day. What dose you take depends on how much you weigh.

How can it help?

Taking ciclosporin can reduce pain and swelling in your joints. This may make it easier for you to do everyday things like go shopping, do the housework, have sex, see your friends and do other things you enjoy.

Research shows that taking ciclosporin for at least four months can help in the following ways. ^[91]

- It can reduce swelling in your joints: You may have fewer swollen joints when taking ciclosporin. You may also find that the amount of swelling in your joints goes down. This should help your joints move more easily. You may find it easier to pick up small things or fasten your buttons.
- It can reduce pain in your joints: If your joints are less painful, you may find it easier to do everyday things like walking or working. If you have rheumatoid arthritis in your hands, you may also find that gripping things, like a cup, is easier.
- It may slow down the disease and prevent your joints from wearing down.

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Ciclosporin seems to work as well as [penicillamine](#) and [azathioprine](#). ^[64] ^[89] ^[90]

One study showed it seemed to slow the damage to joints, when patients took it alongside [methotrexate](#). The combination worked better than methotrexate alone. ^[72]

How does it work?

Ciclosporin stops your **immune system** damaging your joints. Your immune system normally protects you against infections. But in rheumatoid arthritis, it also attacks the lining of your joints.

Can it be harmful?

Many people get side effects when taking ciclosporin. These side effects can be serious. For example, the drug can damage your **kidneys** and raise your blood pressure. But your doctor will do regular blood tests to make sure that the drug is not harming you.

The most common side effects are: ^[91]

- Nausea or vomiting (3 in every 10 people get this)
- Numbness in your arms or legs (1 in 10 people)
- Headaches (2 in 10 people)
- Shaking of the hands (3 in 10 people).

How good is the research on ciclosporin?

We found some evidence that ciclosporin can help patients with rheumatoid arthritis. But there have not been many studies.

We found one summary of studies (called a **systematic review**) that compared ciclosporin with a dummy treatment (a **placebo**). ^[91] The summary included three good-quality studies (called **randomised controlled trials**) that lasted for at least four months and included a total of 318 people. It showed ciclosporin reduced swelling damage and pain in the joints.

Injectable gold

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[How good is the research on injectable gold?](#)

Rheumatoid arthritis

This information is for people who have rheumatoid arthritis. It tells you about injectable gold, a treatment used for rheumatoid arthritis. It is based on the best and most up-to-date research.

Does it work?

Yes. Injectable gold can help to reduce the pain and swelling of rheumatoid arthritis. It can also help to stop your joints wearing down. But side effects are quite common and can be serious. Around 3 in 10 people stop using injectable gold because of side effects.

What is it?

This type of gold is given by an injection. Doctor usually inject it into the thigh or buttock muscles. The brand name for this drug is Myocrisin. It isn't used much nowadays, because it can have bad side effects. You'll probably only have injected gold if other treatments haven't helped.

Gold belongs to a group of drugs that are used to slow down rheumatoid arthritis. These drugs are called **disease-modifying anti-rheumatic drugs** (DMARDs for short). They can also help ease the pain and swelling in your joints.

Injectable gold takes a few months to work, and your doctor may prescribe it along with other DMARDs. You may need to use a combination of drugs for many months. But once your symptoms improve, you may be able to stop taking some of them. If your arthritis is not getting better or you get severe side effects with injectable gold, your doctor may advise you to stop using it, or to switch to another drug.

Your doctor will probably give you a small test dose of 10 milligrams first to see if you have any reaction to the drug. If you have no problems, your doctor will usually increase the dose every week until you are getting about 50 milligrams a week. If the treatment works for you, the number of injections may be reduced.

How can it help?

Most people who have gold injections find the pain and swelling in their joints gets better. The drug may make it easier for you to do things like going shopping, doing the housework, having sex, seeing your friends and doing other activities you enjoy.

Research shows that having gold injections can help in the following ways: ^[92]

- It can reduce pain in your joints: If your joints are less painful, you may find it easier to do everyday things like walking or working. If you have rheumatoid arthritis in your hands, you may also find that gripping things, like cups, is easier.
- It can reduce swelling in your joints: You may have fewer swollen joints when using injectable gold. You may also find that the amount of swelling in your joints goes down. This should help your joints move more easily. You may find it easier to pick up small things or fasten your buttons.

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- It may slow down the disease and keep your joints from wearing down.

Studies show that gold injections work as well as other drugs used to reduce the swelling and pain of rheumatoid arthritis, such as [methotrexate](#).^[28] ^[29] But gold injections have more side effects, so they are not used as much.

Injectable gold works better than gold pills (which aren't used much any more). But studies also show that injectable gold causes more side effects than gold pills.^[29] ^[18]

How does it work?

Gold has been used to treat rheumatoid arthritis for more than 70 years. But scientists don't know why it works. Some think that it stops the [immune system](#) attacking your joints.^[93] (Your immune system normally protects your body against infection. But in rheumatoid arthritis, it also damages the lining of your joints.)

Can it be harmful?

This treatment does have side effects and they can be serious. About 3 in 10 people have to stop having gold injections because of side effects.^[92]

The common side effects are:^[29]

- Mouth ulcers
- Skin rashes
- Diarrhoea
- Pain at the spot where it's injected
- Kidney problems
- Blood problems.

Your doctor will do regular blood tests to make sure that the injections are not harming you. He or she will also check your urine to make sure your kidneys are working properly. If any of the tests show any problems, your doctor will stop the treatment.

How good is the research on injectable gold?

We found evidence that gold injections can work for rheumatoid arthritis. But some of the studies were low quality, and some were too small to tell if injectable gold is better than other drugs used to treat rheumatoid arthritis.

One summary of the research (called a [systematic review](#)) compared gold injections with a dummy treatment (a [placebo](#)). It included four studies with 415 people. People

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who had the gold injections had fewer swollen joints than those who had a dummy treatment. But 30 in 100 people who had gold injections got side effects, compared with 15 in 100 people who had the dummy treatment. ^[92]

Cyclophosphamide

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[How good is the research on cyclophosphamide?](#)

This information is for people who have rheumatoid arthritis. It tells you about cyclophosphamide, a treatment used for rheumatoid arthritis. It is based on the best and most up-to-date research.

Does it work?

We're not sure. Cyclophosphamide is mainly used to treat complications of rheumatoid arthritis, such as lung problems and inflammation of the veins. It isn't often used for joint pain and swelling, so there's not much research about how well it works.

Some research suggests cyclophosphamide can help to reduce the pain and swelling of rheumatoid arthritis. It may also stop your joints wearing down. But side effects from this drug are common and can be serious. Your doctor will probably only prescribe cyclophosphamide if you have tried other drugs first.

What is it?

Cyclophosphamide belongs to a group of drugs that are used to slow down rheumatoid arthritis. These drugs are called **disease-modifying anti-rheumatic drugs** (DMARDs for short). They also help to reduce the pain and swelling in your joints.

Cyclophosphamide takes a few months to work, and your doctor may prescribe it together with other DMARDs. You may need to take a combination of drugs for many months. But once your symptoms improve, you may be able to stop taking some of them. If your arthritis is not getting better or you get severe side effects with cyclophosphamide, your doctor may advise you to stop taking it or switch to another treatment.

Cyclophosphamide is also used to treat some cancers, such as lung cancer.

You will probably take it as a tablet, but your doctor may inject it into one of your veins. The dose you take depends on how much you weigh and how bad your arthritis is.

How can it help?

Taking cyclophosphamide may reduce the pain and swelling in your joints. This may make it easier for you to do everyday things like going shopping, doing the housework, having sex, seeing your friends and doing other activities you enjoy.

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Research shows that taking cyclophosphamide can help in the following ways. ^[94]

- It can reduce swelling in your joints: You may have fewer swollen joints when taking cyclophosphamide. You may also find that the amount of swelling in your joints goes down. This should help your joints move more easily. You may find it easier to pick up small things or fasten your buttons.
- It can reduce pain in your joints: If your joints are less painful, you may find it easier to do everyday things like walking or working. If you have rheumatoid arthritis in your hands, you may also find that gripping things, like cups, is easier.
- It may keep your joints from wearing down.

But it's not often used for standard rheumatoid arthritis nowadays, because it can cause bad side effects. It's more often used to treat complications.

How does it work?

Cyclophosphamide is a type of chemotherapy drug that's used to stop the spread of cancer cells. But in rheumatoid arthritis, it works by reducing the number of white blood cells that your body makes. White blood cells usually fight off infection. But in rheumatoid arthritis, they also make substances that attack the lining of your joints. This makes your joints swell and become painful.

Can it be harmful?

Side effects are very common with this drug and can be serious. Up to 9 out of 10 people get side effects, and 1 in 7 people have to stop taking the treatment because of them.

^[94]

The most common side effects are:

- Nausea and vomiting (6 in every 10 people get this)
- Hair loss (3 in 10 people)
- Pain when urinating (3 in 10 people).

Because cyclophosphamide reduces the number of white blood cells that your body makes, you may have trouble fighting off infections. But your doctor will do regular blood tests to make sure that you are making enough white blood cells to stay healthy.

One study also found that people taking cyclophosphamide for many years were one and a half times more likely to get cancers such as bladder cancer. ^[95]

How good is the research on cyclophosphamide?

There is limited evidence that cyclophosphamide works. We found only one summary of the research (called a [systematic review](#)) comparing cyclophosphamide with a dummy ([placebo](#)) drug. ^[94]

The summary included two studies that lasted for six months and involved 70 people.

- Researchers found that those people taking cyclophosphamide had fewer swollen joints and fewer painful joints than those taking the dummy treatment.
- [X-rays](#) also showed that cyclophosphamide helped stop joints wearing down more than the dummy treatment did.

We also found one small study comparing cyclophosphamide with [injected gold](#) and [azathioprine](#) . The treatments worked about as well as each other. But this study is quite old. ^[96]

Adalimumab

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[How good is the research on adalimumab?](#)

This information is for people who have rheumatoid arthritis. It tells you about adalimumab, a treatment used for rheumatoid arthritis. It is based on the best and most up-to-date research.

Does it work?

We know that adalimumab works better than a dummy drug (a [placebo](#)).

But we don't know if it works as well as the other drugs used for rheumatoid arthritis. There hasn't been enough research to tell.

You'll probably be offered adalimumab only if you've already tried other types of drug.

What is it?

Adalimumab is a type of medicine called an anti-TNF drug. (TNF stands for tumour necrosis factor.) Like some of the other treatments for rheumatoid arthritis, anti-TNF drugs don't just help with pain. They also slow down the damage to your joints. Drugs that do this are called **disease-modifying anti-rheumatic drugs** (DMARDs for short). Anti-TNF drugs are a newer type of DMARD. You may also hear them called biologic drugs, or biologic.

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Adalimumab (brand name Humira) is given as an injection under your skin, usually every two weeks.

Several other anti-TNF drugs are also available in the UK. To find out about these, see our information on [infliximab plus methotrexate](#) , [etanercept](#) , [certolizumab](#) , and [golimumab](#) .

Guidelines for doctors say you should only be offered adalimumab if you have not been helped by two other DMARDs. One of the DMARDs that you should have tried is [methotrexate](#) . You may also be offered these drugs if you can't take other drugs because of side effects.^[43] You should also have a check-up every six months to make sure the drug is working.

How can it help?

Adalimumab can help reduce pain and swelling in your joints more than a dummy (placebo) drug.^{[97] [98] [99]}

One study found taking adalimumab with methotrexate works better than taking adalimumab on its own. People who took the two treatments in combination had less joint damage than people who only took adalimumab.^[100]

Two studies that compared people taking adalimumab with people who took abatacept, another biologic drug for rheumatoid arthritis. It found the two drugs worked about as well as each other.^{[101] [102]}

How does it work?

TNF (or tumour necrosis factor) is a chemical in your blood. Anti-TNF drugs stop this chemical working. Scientists think that this chemical makes your immune system attack the lining of your joints. This causes swelling and pain.

Can it be harmful?

Studies suggest adalimumab is safe in the short term.^{[97] [98] [99]} But we need more long-term studies to be sure it's safe to take for a long time.

One study showed that people taking adalimumab may be more likely to get a condition called shingles, which causes painful blisters. Shingles can only happen if you've had chickenpox in the past. It happens when the immune system no longer keeps the virus that caused chickenpox, called the herpes zoster virus, in check.^[51]

Adalimumab and other anti-TNF drugs may slightly increase the risk of some kinds of cancer, including lymphoma and leukaemia.^[47] It's difficult to say how big the risk is. In the US from 2001 to 2008, there were 48 reports of cancer in children and teenagers taking anti-TNF drugs, and 147 cases of leukaemia in both adults and children. That's out of many thousands of people who were taking these medicines. Most people were

Rheumatoid arthritis

also taking other drugs that affected their immune system, so it's not clear how much of a part anti-TNF drugs played.

We also found a summary of the evidence ([systematic review](#)) that looked at 21 studies and eight shorter reports of the effects of anti-TNF drugs. ^[48] It didn't show that patients using anti-TNF drugs were more likely to get most sorts of cancer, but they did have a higher risk of getting some types of skin cancer. A more recent systematic review, which included 63 studies, did not find a link between anti-TNF drugs and an increased chance of getting any type of cancer. ^[49]

How good is the research on adalimumab?

Some studies show adalimumab works better than a dummy treatment (a [placebo](#)). ^[99]
^[98] ^[97]

There's some evidence from two studies that adalimumab works as well as abatacept, another biologic drug for rheumatoid arthritis. ^[101] ^[102]

Anakinra

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[How good is the research on anakinra?](#)

This information is for people who have rheumatoid arthritis. It tells you about anakinra, a treatment used for rheumatoid arthritis. It is based on the best and most up-to-date research.

Does it work?

Anakinra works better than a dummy ([placebo](#)) drug to reduce pain and swelling, and to protect your joints from wearing down.

But we don't know how it compares with other drugs used for rheumatoid arthritis. There hasn't been enough research.

What is it?

Anakinra (brand name Kinaret) is quite a new drug. People having anakinra have it as an injection every day.

Like some of the other treatments for rheumatoid arthritis, anakinra doesn't just help with pain. It also slows down the damage to your joints. Drugs that do this are called **disease-modifying anti-rheumatic drugs** (DMARDs for short). Anakinra is a newer type of DMARD. You may also hear it called a biologic drug, or a biologic.

Rheumatoid arthritis

Guidelines for doctors say people should only have anakinra if they are taking part in a clinical trial. It's not recommended as a routine treatment for rheumatoid arthritis.

How can it help?

We know that anakinra works better than a placebo drug, to improve pain and swelling in the joints. ^[103] ^[104] ^[105] ^[106]

In studies, nearly 2 in 10 people treated with anakinra got a 50 percent improvement in their symptoms of arthritis. ^[106] This compared with fewer than 1 in 10 people taking a placebo.

But we didn't find any good-quality studies, comparing it with other drugs for rheumatoid arthritis.

How does it work?

People with rheumatoid arthritis have too much of a chemical called interleukin-1 in their bodies. This chemical can increase inflammation and damage to the joints.

Anakinra blocks the effects of interleukin-1 in the body.

Can it be harmful?

Anakinra can cause a blood disorder called **neutropenia**. That's when your body doesn't make enough of one type of **white blood cells**. If you take anakinra, you'll need regular blood tests to make sure you're not getting problems.

Other side effects include headaches, infections and soreness where you have the injection. A study found that high doses of anakinra can increase your chances of getting a serious infection. ^[107]

How good is the research on anakinra?

Some studies show anakinra can reduce pain and swelling in the joints more than a dummy drug (a **placebo**). ^[103] ^[104] ^[105]

But we don't know how it compares with other drugs used for rheumatoid arthritis. There hasn't been enough research.

Rituximab

In this section

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This information is for people who have rheumatoid arthritis. It tells you about rituximab, a treatment used for rheumatoid arthritis.

Rheumatoid arthritis

We haven't looked at the research on rituximab in the same detail we have for most of the treatments we cover. (To read more, see Our method.) But we've included some information because you may have heard of this treatment or be interested in it.

What is it?

Rituximab is usually used to treat some kinds of cancer. But, more recently, it has been tried as a treatment for rheumatoid arthritis. Its brand name is Mabthera.

Rituximab has been approved for use on the NHS.^[108] But it's only suitable for people who haven't been helped by other treatments, including [etanercept](#) .

Rituximab is given as a drip (also called an [intravenous infusion](#) or IV). It's usually given at the same time as another drug called [methotrexate](#) . This treatment should only be given by a specialist doctor.

How can it help?

There's some evidence that rituximab can help people with rheumatoid arthritis.^[109] ^[110] But we need more research to know how well it works and how safe it is.

In one study, people had two doses of rituximab, two weeks apart.^[110] They went to hospital to be given the drug as a drip. They were also taking methotrexate tablets. Six months later, 5 in 10 people who had rituximab found their symptoms had improved. Only 2 in 10 people who took a dummy treatment (a [placebo](#)) improved.

How does it work?

Rituximab attacks a type of [white blood cell](#) , and aims to cut the number of these cells in your body. White blood cells are part of your [immune system](#) . They help your body fight disease. Doctors think that if you have rheumatoid arthritis, some white blood cells attack your joints. Reducing the number of these cells in your body may help your symptoms.

Drugs for rheumatoid arthritis that affect your immune system are sometimes called biologic drugs, or biologics.

Can it be harmful?

Rituximab can have serious side effects. Some people get a bad reaction after being given the drip (the intravenous infusion or IV), especially an hour or so after their first dose. It's quite common to get symptoms like chills or a fever.^[111] In one study of people taking rituximab for rheumatoid arthritis, about 2 in 100 people got a more serious reaction.^[110] Very rarely, people have died after a serious reaction.^[112]

The Medicines and Healthcare products Regulatory Agency (MHRA), the government body that checks the safety of drugs, has warned that a very small number of people taking rituximab for rheumatoid arthritis or other conditions developed a dangerous brain

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infection. Some of these people died. ^[113] But doctors don't know for sure if rituximab caused the illness. In some cases, the infection happened more than one year after people stopped taking rituximab.

One summary of the evidence (a [systematic review](#)) looked at 12 studies of biologic drugs, including three for rituximab. It looked to see whether people taking these drugs had a higher risk of infection. The results didn't show an increase in risk of serious infection for rituximab. But we need more, longer studies to be sure about the long-term effects of this drug. ^[107]

In a few cases, people taking rituximab and similar drugs for conditions like rheumatoid arthritis have had serious problems with their lungs or their breathing that weren't due to an infection. ^[114]

Abatacept

In this section

[What is it?](#)

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[Can it be harmful?](#)

This information is for people who have rheumatoid arthritis. It tells you about abatacept, a treatment used for rheumatoid arthritis.

We haven't looked at the research on abatacept in as much detail as we've looked at the research on most of the treatments we cover. (To read more, see [Our method](#).) But we've included some information because you may have heard of this treatment or be interested in it.

What is it?

Abatacept is a fairly new treatment for rheumatoid arthritis. Its brand name is Orencia. It's given as a drip into your vein (also called an [IV or intravenous infusion](#)). This takes about half an hour. You'll need a second dose after two weeks, and a third dose after another two weeks. After that, you'll be given abatacept once every four weeks. Abatacept is given at the same time as another drug called [methotrexate](#).

NICE, the government body that advises what treatments should be available on the NHS, says that abatacept should not be used for treating people with rheumatoid arthritis. But if you're already taking it you can continue to do so until your doctor decides you should stop. ^[115]

How can it help?

There's good evidence that abatacept can help people with rheumatoid arthritis. A big review of studies (called a [systematic review](#)) looked at 11 studies of people who took either abatacept or a dummy treatment (a [placebo](#)), along with methotrexate. After six months of treatment people who took abatacept were more able to do everyday things

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than people who took a dummy treatment. Abatacept works as well as [infliximab](#) , [adalimumab](#) , [etanercept](#) , [certolizumab](#) , and [golimumab](#) . These are all similar types of drugs. ^[116] ^[102]

One study looked at about 650 people who hadn't been helped by other drugs. ^[117] Some of the people were given abatacept, and others were given a dummy treatment (a [placebo](#)). Everyone also took methotrexate. The study found that after a year:

- 73 in 100 people who took abatacept were doing better, but 40 in 100 people who were given the dummy treatment were doing better.
- About 29 in 100 people taking abatacept felt their symptoms had reduced by more than two-thirds, but only 6 in 100 people taking the dummy treatment felt the same.

How does it work?

Abatacept attacks a type of [white blood cell](#) . The aim is to cut down the numbers of these cells in your body. White blood cells are part of your [immune system](#) . They help your body fight disease. Doctors think that if you have rheumatoid arthritis, some of your white blood cells attack your joints. Reducing the number of these cells in your body may help your symptoms.

Drugs for rheumatoid arthritis that affect your immune system are sometimes called biologic drugs, or biologics.

Can it be harmful?

Serious side effects

Abatacept can have serious side effects. Because it affects your immune system, you're more likely to get [infections](#) while you're taking it than other people. ^[118] In studies, about 4 in 100 people taking abatacept had infections, compared with 2 in 100 people who took a dummy treatment (a [placebo](#)). Some people had serious infections, such as [pneumonia](#) .

Your chance of getting infections seems to be bigger if you take abatacept with an [anti-TNF drug](#) such as etanercept. So you shouldn't take abatacept alongside anti-TNF drugs. ^[119]

There's a chance that taking abatacept could increase your risk of some kinds of cancer, such as [lung cancer](#) and [lymphoma](#) . ^[119] ^[120] One summary of the research found people who took abatacept for eight years were slightly more likely to have lung cancer, and about twice as likely to have lymphoma, as people who didn't have rheumatoid arthritis. The chance of lung cancer or lymphoma was about the same for people taking abatacept as other people with rheumatoid arthritis. ^[118]

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Minor side effects

Abatacept also has some minor side effects. You may: ^[120]

- Have a headache
- Feel dizzy
- Feel as if you've got a cold.

Each of these problems affects about 1 in 10 people.

Some people feel dizzy or get **high blood pressure** just after having treatment. You could possibly get an **allergic reaction** to abatacept. But in studies this happened to fewer than 1 in 100 people. ^[120] Some people get a serious allergic reaction, but this isn't common.

Tocilizumab

In this section

[What is it?](#)

[How can it help?](#)

[Can it be harmful?](#)

This information is for people who have rheumatoid arthritis. It tells you about tocilizumab, a treatment used for rheumatoid arthritis.

We haven't looked at the research on tocilizumab in the same detail we have for most of the treatments we cover. (To read more, see Our method.) But we've included some information because you may have heard of this treatment or be interested in it.

What is it?

Tocilizumab is a type of drug called a monoclonal antibody. It helps stop your immune system attacking your joints. It tends to be used if other drugs haven't worked.

Like some of the other treatments for rheumatoid arthritis, tocilizumab doesn't just help with pain. It also slows down the damage to your joints. Drugs that do this are called **disease-modifying anti-rheumatic drugs** (DMARDs for short). You may also hear tocilizumab called a biologic drug, or a biologic.

The brand name for tocilizumab is RoActemra.

Tocilizumab is given as a drip (also called an **intravenous infusion** or IV). It's usually given at the same time as another drug called [methotrexate](#) .

Guidelines for doctors say you should only be prescribed tocilizumab if you have not been helped by other DMARDs, which may include other anti-TNF drugs. ^[121] If anti-TNF drugs have not worked for you, the drug rituximab should be tried before tocilizumab,

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unless there is some reason you shouldn't be given rituximab. You should also have a check-up every six months to make sure the drug is working.

How can it help?

One study looked at 1,196 people who hadn't been helped by methotrexate. ^[122] After six months:

- Among people who were treated with tocilizumab on top of methotrexate, 3 in 10 people got a 50 percent improvement in their symptoms
- Among people who just carried on taking methotrexate, 1 in 10 people in 10 got a 50 percent improvement in their symptoms.

After one year:

- People who took tocilizumab and methotrexate had less joint damage and were able to do more than people who took methotrexate on its own. ^[122]

And after two years:

- People who took tocilizumab and methotrexate still had less joint damage and were able to do more than people who only took methotrexate. ^[122]

Can it be harmful?

Tocilizumab works by stopping your immune system working effectively. So, you might get more infections while you're taking it.

In one study, there were 36 serious infections among every 1,000 people who took tocilizumab for a year. ^[123] This compared with 15 serious infections per 1,000 people taking methotrexate.

In studies, the most common side effects people got were coughs and colds, headaches, an increase in their blood pressure, and increased levels of chemicals in their blood suggesting their liver was under strain. ^[123] ^[124]

Some drugs that affect your immune system can increase your risk of cancer. There haven't been any studies looking at the long-term safety of tocilizumab, so it's impossible to say how it might affect your cancer risk.

In a few cases, people taking tocilizumab and similar drugs for conditions like rheumatoid arthritis have had serious problems with their lungs or their breathing that weren't due to an infection. ^[114]

Certolizumab

Rheumatoid arthritis

In this section

[What is it?](#)

[How can it help?](#)

[How does it work?](#)

[Can it be harmful?](#)

This information is for people who have rheumatoid arthritis. It tells you about certolizumab, a treatment used for rheumatoid arthritis.

We haven't looked at the research on certolizumab in the same detail we have for most of the treatments we cover. (To read more, see Our method.) But we've included some information because you may have heard of this treatment or be interested in it.

What is it?

Certolizumab is a type of drug called an anti-TNF drug. (TNF stands for tumour necrosis factor.) It helps stop your immune system attacking your joints. It tends to be used if other drugs haven't worked.

Like some of the other treatments for rheumatoid arthritis, certolizumab doesn't just help with pain, it also slows down the damage to your joints. Drugs that do this are called **disease-modifying anti-rheumatic drugs** (DMARDs for short). You may also hear certolizumab called a biologic drug, or a biologic.

The brand name for certolizumab is Cimzia.

Certolizumab is given as an injection. You'll need an injection every two weeks. You'll probably have treatment with [methotrexate](#) too. Certolizumab is sometimes used on its own if you can't take methotrexate for some reason.

Several other anti-TNF drugs are also available in the UK. To find out about these, see our information on [infliximab plus methotrexate](#) , [etanercept](#) , [adalimumab](#) , and [golimumab](#) .

Guidelines for doctors say you should only be prescribed certolizumab if you have not been helped by two other DMARDs. One of the DMARDs that you should have tried is methotrexate. You may also be offered certolizumab if you can't take other drugs because of side effects.^[125] You should also have a check-up every six months to make sure the drug is working.

How can it help?

One study looked at 982 people.^[126] After 24 weeks:

- Among people who were treated with certolizumab on top of methotrexate, nearly 4 in 10 people got a 50 percent improvement in their symptoms
- Among people who just carried on taking methotrexate, 1 in 10 got a 50 percent improvement in their symptoms.

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We also found a summary of the research (called a [systematic review](#)) that compared anti-TNF drugs.^[127] The review found that certolizumab works better than [infliximab](#), [adalimumab](#), and [golimumab](#).

How does it work?

TNF (or tumour necrosis factor) is a chemical in your blood. Anti-TNF drugs stop this chemical working. Scientists think that this chemical makes your [immune system](#) attack the lining of your joints. This causes swelling and pain.

Can it be harmful?

In studies, 1 in 20 people stopped taking certolizumab because of side effects.^[126] The most common side effects were infections, headaches, high blood pressure, and inflammation of the liver.

Certolizumab stops your immune system working effectively. So, you might get more infections while you're taking it. In studies, there were six serious infections among every 100 people who took certolizumab for a year.^[123] This compared with two serious infections per 100 people taking methotrexate.

Anti-TNF drugs may slightly increase the risk of some kinds of cancer, including lymphoma and leukaemia.^[47] It's difficult to say how big the risk is. In the US from 2001 to 2008, there were 48 reports of cancer in children and teenagers taking anti-TNF drugs, and 147 cases of leukaemia in both adults and children. That's out of many thousands of people who were taking these medicines. Most people were also taking other drugs that affected their immune system, so it's not clear how much of a part anti-TNF drugs played. We also found a summary of the evidence ([systematic review](#)) that looked at 21 studies and eight shorter reports of the effects of anti-TNF drugs.^[48] It didn't show that patients using anti-TNF drugs were more likely to get most sorts of cancer, but they did have a higher risk of getting some types of skin cancer. A more recent systematic review, which included 63 studies, did not find a link between anti-TNF drugs and an increased chance of getting any type of cancer.^[49]

If you have had [tuberculosis](#) in the past, then there is a slight risk that anti-TNF drugs can make your tuberculosis come back.

Golimumab

In this section

[What is it?](#)

[How can it help?](#)

[How does it work?](#)

[Can it be harmful?](#)

This information is for people who have rheumatoid arthritis. It tells you about golimumab, a treatment used for rheumatoid arthritis.

Rheumatoid arthritis

We haven't looked at the research on golimumab in the same detail we have for most of the treatments we cover. (To read more, see Our method.) But we've included some information because you may have heard of this treatment or be interested in it.

What is it?

Golimumab (brand name Simponi) is a type of drug called an anti-TNF drug. (TNF stands for tumour necrosis factor.) It helps stop your immune system attacking your joints. It tends to be used if other drugs haven't worked.

Like some of the other treatments for rheumatoid arthritis, golimumab doesn't just help with pain. It also slows down the damage to your joints. Drugs that do this are called **disease-modifying anti-rheumatic drugs** (DMARDs for short). You may also hear golimumab called a biologic drug, or a biologic.

Golimumab is given as an injection under your skin. You'll need an injection every month on the same day of the month. You'll be given treatment with [methotrexate](#) too.

Several other anti-TNF drugs are also available in the UK. To find out about these, see our information on [infliximab plus methotrexate](#) , [etanercept](#) , [adalimumab](#) , and [certolizumab](#) .

Guidelines for doctors say you should only be prescribed golimumab if you have not been helped by other DMARDs, which may include other anti-TNF drugs. ^[128] One of the DMARDs that you should have tried is methotrexate. You should also have a check-up every six months to make sure the drug is working.

How can it help?

One study looked at 444 patients who hadn't been helped by methotrexate. ^[129] After six months:

- Among those who were treated with golimumab on top of methotrexate, 37 in 100 people had a 50% improvement in their symptoms
- Among those who were given a dummy injection ([placebo](#)) with methotrexate, only 14 in 100 people had a similar improvement

Another study looked at 445 patients who had also tried another anti-TNF drug (adalimumab, etanercept, or infliximab) without success, as well as other disease-modifying drugs. ^[129] After six months:

- Among those who were given golimumab, about 16 in 100 people had a 50% improvement in their symptoms
- Among those who were given a dummy treatment (placebo) only 4 in 100 people had a similar improvement

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Another study found people who took golimumab on top of methotrexate had less joint damage and more improvement in their symptoms after one year than people who carried on taking methotrexate on its own. ^[130]

How does it work?

TNF (or tumour necrosis factor) is a chemical in your blood. Anti-TNF drugs stop this chemical working. Scientists think that this chemical makes your immune system attack the lining of your joints. This causes swelling and pain.

Can it be harmful?

Golimumab works by stopping your immune system working effectively. So, you might get more infections while you're taking it. In studies, there were seven serious infections among every 100 people who took golimumab for a year. ^[129] This compared with four serious infections per 100 people given a dummy medicine (placebo). The most common side effects people got were sore throats and runny noses due to infections of their nose and throat. ^[131]

If you have had tuberculosis in the past, then there is a slight risk that anti-TNF drugs can make your tuberculosis come back.

In a few cases, people taking golimumab and similar drugs for conditions like rheumatoid arthritis have had serious problems with their lungs or their breathing that weren't due to an infection. ^[131] ^[114]

Anti-TNF drugs may slightly increase the risk of some kinds of cancer, including lymphoma and leukaemia. ^[47] It's difficult to say how big the risk is. In the US, from 2001 to 2008, there were 48 reports of cancer in children and teenagers taking anti-TNF drugs, and 147 cases of leukaemia in both adults and children. That's out of many thousands of people who were taking these medicines. Most people were also taking other drugs that affected their immune system, so it's not clear how much of a part anti-TNF drugs played. We also found a summary of the evidence (systematic review) that looked at 21 studies and eight shorter reports of the effects of anti-TNF drugs. ^[48] It didn't show that patients using anti-TNF drugs were more likely to get most sorts of cancer, but they did have a higher risk of getting some types of skin cancer. A more recent systematic review, which included 63 studies, did not find a link between anti-TNF drugs and an increased chance of getting any type of cancer. ^[49]

Nonsteroidal anti-inflammatory drugs (NSAIDs)

In this section

[What are NSAIDs?](#)

[How could they help?](#)

[Side effects](#)

This information is for people who have rheumatoid arthritis. It tells you about nonsteroidal anti-inflammatory drugs (NSAIDs), a treatment used for rheumatoid arthritis.

Rheumatoid arthritis

Nonsteroidal anti-inflammatory drugs (NSAIDs) are a common treatment for rheumatoid arthritis. But we haven't reviewed this treatment as thoroughly as the other treatments on our site. (See Our method to learn more.) Please bear this in mind when you read this information.

What are NSAIDs?

NSAIDs are painkillers that also reduce inflammation.

Here are some examples of NSAIDs. We've listed each drug's generic name (followed by examples of brand names):

- diclofenac (Voltarol, Dicloflex, Motifene)
- ibuprofen (Brufen, Nurofen)
- indometacin (Pardelprin)
- ketoprofen (Oruvail, Orudis)
- naproxen (Naprosyn, Arthoxen).

Your doctor may recommend that you take a nonsteroidal anti-inflammatory drug (NSAID) to ease the pain and swelling in your joints. This may help you move around more easily. For example, you may be able to use your hands again for tricky tasks like undoing buttons.

How could they help?

NSAIDs work by affecting your immune system. Your immune system normally helps you fight infections, but in rheumatoid arthritis it also attacks the lining of your joints. NSAIDs stop some of the immune cells from getting into the tissues around your joints.

NSAIDs also stop the release of some of the chemicals that cause swelling. This is good for your joints, but can cause side effects in other parts of your body.

Side effects

The authorities in the UK have published advice for doctors and patients about the safety of some NSAIDs. Research showed that people taking high doses of some NSAIDs for a long time had a slightly higher risk of a heart attack or a stroke. People with heart problems shouldn't take diclofenac.

To read more, see [Warnings about side effects of NSAIDs](#) .

If you take NSAIDs regularly, you may find that they upset your stomach. In some people, they can cause **stomach ulcers** . NSAIDs are particularly likely to cause problems if you are older or have had stomach problems before.

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We don't know for sure who is most likely to get side effects from NSAIDs, but doctors tend to be cautious about giving these drugs to:

- People taking steroids or drugs that thin the blood (NSAIDs can make the side effects of these drugs worse)
- People over age 65
- Smokers
- People with heart disease
- People with liver or kidney problems
- Heavy drinkers
- People on medicines such as ACE inhibitors and water tablets (diuretics), both of which are taken for heart failure and high blood pressure.

COX-2 inhibitors are newer NSAIDs that were developed to be less harmful to the stomach than other NSAIDs. But it's not clear yet if they are better.

Examples of COX-2 inhibitors used to treat rheumatoid arthritis (with brand names) are:

- celecoxib (Celebrex)
- etodolac (Lodine SR)
- etoricoxib (Arcoxia)
- meloxicam (Mobic)

You should not take etoricoxib if you have high blood pressure . However, you can take it once your blood pressure is under control. ^[132] If you're taking etoricoxib, your doctor will probably recommend regular checks to make sure your blood pressure doesn't become high.

The government body that advises doctors about treatments on the NHS (called the National Institute for Health and Care Excellence, or NICE) recommends that COX-2 inhibitors should be used in people with rheumatoid arthritis who have had stomach problems in the past or who are at high risk of getting them in the future. For example, people who have had a stomach ulcer, or have had bleeding in their stomach, may be treated with a COX-2 inhibitor. People who are at high risk of stomach problems include: ^[133]

- People over 65

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- People who are taking other drugs that might cause stomach problems
- People with other diseases related to rheumatoid arthritis
- People who need to take very high doses of normal NSAIDs for a long time.

Alternatively, if you are at risk of developing stomach problems when you take NSAIDs (for example, if you've had a stomach ulcer) your doctor may prescribe you a drug that also protects your stomach, as well as prescribing an NSAID. Doctors call these protective drugs **gastroprotectants**. Some gastroprotectants are (with brand names):

- cimetidine (Tagamet)
- lansoprazole
- misoprostol (Cytotec)
- omeprazole (Losec, Nexium)
- ranitidine (Zantac).

Diet and exercise in rheumatoid arthritis

In this section

This information is for people who have rheumatoid arthritis. It tells you about diet and exercise, treatments used for rheumatoid arthritis.

We haven't looked at the research on diet and exercise in the same detail we have for most of the treatments we cover. (To read more, see Our method.) But we've included some information because you may have heard of these treatments or be interested in them.

If you have been told you have rheumatoid arthritis, you will have a lot of information to take in. Your doctor will recommend treatments, and this may be enough for you to think about.

But you may also be interested in how exercise and changing what you eat can help your symptoms. Here's an overview of what we know.

Exercise

You may think that doing exercise would be bad for your joints and make things worse. But research shows that exercise may help to treat your arthritis. ^[141] ^[142] ^[143] ^[144]

Studies show that some form of regular, moderate exercise can:

- Reduce your joint pain and stiffness

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- Build strong muscles around your joints and help to keep your joints in line
- Increase flexibility and endurance
- Improve your energy level
- Help you sleep better
- Control your weight
- Decrease depression and improve your self-esteem.

Starting an exercise programme can be daunting. The key is to start slowly and make it fun. Talk to your doctor about different programmes and devices that can help you on your way.

Your exercise programme will depend on how old you are and how much arthritis you have. But a good programme will benefit you in a number of different ways. ^[142]

- Stretching exercises: These will improve your flexibility.
- Exercises that move your joints to their maximum: Your doctor or physiotherapist can show you how to do these.
- Strengthening exercises for your muscles: These are exercises that you can do in a gym. They may involve lifting light weights.
- Aerobic work: This is any exercise that gets your heart rate up a little, like walking or swimming. This helps to keep your muscles fit.

Diet

People often ask whether what they eat can affect their arthritis. Because symptoms of arthritis can vary from day to day, it is natural to think that what you eat can cause or reduce your pain.

Researchers have looked at how food can affect your arthritis. Specifically, they have looked at how oils in fish can affect the disease. Some experts think these oils contain special chemicals that help to reduce **inflammation** in the joints. And studies show that eating fish can help with the swelling and tenderness of your joints. ^[145]

The fish that have the best oils are salmon and mackerel. You may want to try to eat a couple of portions of fish a week. But if you don't like eating fish, you can buy capsules containing fish oil from health food shops.

There are lots of other diets advertised for rheumatoid arthritis, but we found no evidence to say whether they work.

Further informations:

Managing pain

If you have rheumatoid arthritis, you might worry about how you will cope with the pain in your joints. It's true that rheumatoid arthritis is a painful condition, but there are ways that you can control your pain.

What is pain?

Pain is a warning sign that your body is being damaged in some way. There are two types of pain.

- **Acute pain:** This pain is temporary, like what you feel after you fall over. It lasts until your body has healed itself.
- **Chronic pain:** This is the type of pain in rheumatoid arthritis. It can range from mild to severe and can last weeks, months or years.

Everyone gets different amounts of pain in rheumatoid arthritis. How much pain you get seems to depend a lot on how bad your disease is. Also, everyone copes differently with pain. Some people find it hard to handle any degree of pain, while others are able to put up with a lot of pain.

The way the body controls pain is a complex process. Doctors think that our level of stress and our emotions affect how much pain we feel.^[9] When pain lasts a long time, it can make you feel stressed and depressed. It is easy to be caught in a cycle of pain, stress and depression. But there are ways you can cope with pain and stop it from controlling you.

How is arthritis pain treated?

There is no one single way to treat pain. What works for one person may not work for another. Doctors often recommend [drug treatments](#) to control the pain and swelling of rheumatoid arthritis. Drug treatments can also help to keep your joints from wearing down.

But there are other ways to control pain, too. The following treatments may help.

Heat and cold

Some people find that a warm bath or shower helps. Others say that an ice pack (or a bag of frozen vegetables) wrapped in a towel and put on the swollen joint helps to reduce swelling and stop pain.^[10]

Nerve stimulation

Doctors call this **transcutaneous electrical nerve stimulation** or TENS for short. You use a small device that sends mild electrical impulses to the nerves under your skin. TENS seems to help some people by blocking the pain messages that are sent from the painful joint to the brain.

Exercise

You might think that exercise is bad for rheumatoid arthritis. But studies show that exercise that does not stress the joints, like swimming, can reduce your joint pain and stiffness. ^[10]

Alternative and complementary therapies

Many people are interested in ways of treating their pain beyond what their doctor may offer. Some people try herbal remedies. Other people try **acupuncture** (this is where fine needles are put under your skin).

There is not much research to prove that these remedies work. ^[11] It is important that you tell your doctor if you are going to try any type of alternative therapy. That way, your doctor can make sure it fits with your treatment plan and doesn't cause problems.

Two summaries of the research (**systematic reviews**) have looked at studies of acupuncture. They both found that the research was not good enough to be sure whether it works. Some small studies have found it can help, but others have found it doesn't help. We need to see better research into acupuncture for rheumatoid arthritis. ^[12] ^[13]

One summary of the research looked at 11 studies of acupuncture and other alternative and complementary therapies such as meditation, magnets, and tai chi. It found no good evidence that these treatments helped people with rheumatoid arthritis. ^[14]

How can I cope with arthritis pain over a long period?

Some people with rheumatoid arthritis have pain for many years. When you have pain for that long, it is easy to become stressed or even depressed. Coping with long-term pain is now a special branch of medicine, and there are many therapies that can help.

Here are some examples. Your doctor or support group will be able to tell you where to go for these treatments.

Physiotherapy

Studies show that certain exercise programmes can reduce pain and swelling in joints. A physiotherapist can show you special stretching and strengthening routines that can help your joints. ^[10]

Cognitive behaviour therapy

With a therapist's help, you can learn ways to relax, like deep breathing and meditation, and different ways of thinking about the emotions pain can cause. Studies show that these techniques help to reduce the amount of pain people feel and help them cope better with their pain. ^[15]

Treatment for depression

People with rheumatoid arthritis tend to suffer from depression more than people who don't have the condition. ^[16] It's quite common for people with long-term conditions to feel depressed. You may become depressed because of worries about how you'll cope with your illness in the future. See our section on [depression](#) to learn about which treatments are helpful for this condition.

Questions your doctor may ask

These are some of the questions your doctor may ask you in order to diagnose rheumatoid arthritis. ^[23]

- Are your joints swollen and painful?
- Which joints are affected?
- Are your joints more stiff in the morning than later in the day?
- Have your joints been painful for more than six weeks?
- Do you feel tired and generally unwell?

Examining your joints

Your doctor will want to look at your joints to see if they have been affected by rheumatoid arthritis. He or she will move them around to see how easily they move.

If you have rheumatoid arthritis, your joints can become swollen. This means they look and feel bigger than other joints. They may also feel warm to the touch and may look red.

The small joints of your fingers are usually affected, but not the ones closest to your fingernails (except in the thumb). Your feet also may be affected. Rheumatoid arthritis can affect other joints, too, like the elbow and shoulder joints.

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After a long time, damage to your joints can change the shape of your joints, especially in your hands. This can make it hard to do simple things, like pick up a cup or button your coat. ^[8]

Testing your blood

There is no test that can say you definitely have rheumatoid arthritis. But a blood test may help your doctor make the diagnosis.

Your doctor will take a sample of your blood and send it to a laboratory for testing. If you have rheumatoid arthritis, the test may show that you have a protein in your blood called **rheumatoid factor**.

This protein is made by the white blood cells in your immune system. Your white blood cells usually fight infections by making proteins that stick to germs and then kill them. In rheumatoid arthritis, the white blood cells may also make rheumatoid factor. This sticks to the lining of your joints and tries to destroy it.

Around 7 out of 10 people with rheumatoid arthritis have rheumatoid factor in their blood. ^[8] But if you don't have it in your blood, you may still have the disease.

Doing x-rays of your joints

X-rays help doctors see if rheumatoid arthritis has started to wear down the bones in your joints. ^[24]

- Early on in the disease, x-rays often look normal.
- Later on, x-rays may show that the space between your bones has become smaller. This is because the cartilage that covers the ends of your bones has worn away. (Cartilage is the material that makes the ends of the bones smooth so that they can move easily.)
- The bones may also get thin. This makes the bones look patchy on x-rays and more see-through than normal.

Treatment decisions

Researchers have looked at when to start treatment for rheumatoid arthritis. They found that people who start treatment early with disease-modifying anti-rheumatic drugs (DMARDs) have fewer swollen and painful joints than those who start treatment later on.

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Starting treatment early means you start taking these drugs soon after you're diagnosed with rheumatoid arthritis. The drugs can get to work straight away. They may help prevent your joints from getting damaged and worn, although we don't know that for sure.

If you start taking DMARD drugs within a year of diagnosis, you're likely to have less painful, swollen joints. You may also be able to move around more easily. ^[25]

There's not much information about how long you need to take DMARD drugs. Most of the studies are quite short (a year or less). So we don't know how well these drugs work in the long term.

It's probably best to keep taking the drugs as long as they are helping you. This may help you avoid a flare-up of symptoms. ^[26]

But DMARD drugs often have side effects that mean you have to stop taking them. If you need to stop taking one drug because of side effects, your doctor will probably suggest you try another one. It may take a while before you find a drug, or a combination of drugs, that helps your symptoms but doesn't give you bad side effects.

Warnings about side effects of NSAIDs

Nonsteroidal anti-inflammatory drugs (NSAIDs) are used to treat pain and inflammation. Ibuprofen is probably the best-known NSAID. Although they are often useful, they can have side effects, including causing stomach upsets and ulcers, or more rarely, allergies or problems with your kidneys or liver. ^[134]

As well as these other side effects, people who take high doses of some NSAIDs for a long time may have a slightly higher risk of getting a heart attack or a stroke. High doses of NSAIDs may be used over a long period of time to treat conditions such as arthritis. People with heart problems shouldn't take diclofenac. ^[135]

It's not always clear what counts as a long time for taking NSAIDs. In some research, two-thirds of the heart attacks happened in studies where people took NSAIDs for a year or longer. ^[136]

Below, we look at the different kinds of NSAIDs and what the research that has been done so far shows about their safety.

NSAIDs you can buy over the counter

You can buy low doses of an NSAID called ibuprofen at a pharmacy. Taken at this lower dose and for a short time, ibuprofen doesn't seem to increase people's risk of a heart attack or stroke. ^[137]

You can also get larger doses of ibuprofen on prescription from a doctor (see our information on prescription ibuprofen below). Taking these larger doses every day may

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slightly increase your risk of a heart attack or stroke. But these doses are higher than the amount you'd take for a headache or other kinds of short-term pain.

NSAIDs your doctor may prescribe

Selective COX-2 inhibitors

Selective COX-2 inhibitors are a newer type of NSAID. Some people got stomach problems as a side effect of taking older NSAIDs. COX-2 inhibitors were designed to cause less irritation to your stomach. But research has found that these newer drugs can slightly increase your risk of a heart attack or a stroke.

COX-2 inhibitors called valdecoxib (brand name Bextra) and rofecoxib (Vioxx) have been taken off the market because of their side effects. ^[137]

Other COX-2 inhibitors are still available in the UK. These include:

- celecoxib (Celebrex)
- meloxicam (Mobic).
- etoricoxib (Arcoxia).

The overall risk of having a heart attack or stroke when taking these drugs is fairly small. For every 1,000 people regularly taking high doses, an extra three people will have a heart attack or stroke. ^[136] Your doctor can help you weigh up the risks and benefits these drugs will have for you.

Also, you should not take etoricoxib if you have high blood pressure. ^[138] But you can take it once your blood pressure is under control.

Other NSAIDs

There are several NSAIDs that aren't COX-2 inhibitors, which may also be prescribed by your doctor. They include (with brand names):

- diclofenac (Diclomax, Motifene, Voltarol)
- etodolac (Eccoxolac, Etopan, Lodine)
- ibuprofen (Brufen)
- ketoprofen (Oruvail, Orudis)
- mefenamic acid (Ponstan)
- naproxen (Naprosyn, Arthrofen).

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Some of these NSAIDs may cause a small increase in your risk of a heart attack or stroke. Research has found that regularly taking high doses of ibuprofen or diclofenac over a long period of time may increase your risk of these problems.^[137]

The body that regulates medicines in the UK to make sure that they work and that they are safe is the Medicines and Healthcare products Regulatory Agency (MHRA). It has issued a warning about diclofenac.^[135] The MHRA says that people should not take diclofenac if they have serious heart conditions, such as heart failure, heart disease, or circulatory problems, or if they have ever had a heart attack or stroke.

Taking diclofenac has a similar risk of heart attack to some COX-2 inhibitors.^[137] That would mean three extra heart attacks or strokes for every 1,000 people taking high doses every day

Naproxen may be safer than COX-2 inhibitors.^[137] Most studies so far seem to show that naproxen doesn't increase people's chances of getting a heart attack or a stroke. One study did suggest a small increase in the risk of stroke in people who took naproxen, but it was less than the increased risk with a COX-2 inhibitor.^[139]

Guidelines for doctors say that for most people, the benefits of these drugs outweigh the risks.^[140] The risks are probably lower for people who only take NSAIDs for a short time or take smaller doses.^[137]

Guidelines for doctors

Doctors have guidelines about how they should prescribe COX-2 inhibitors and other NSAIDs. They say that:^[137]

- People should take the lowest dose of an NSAID that works for them
- People should only take NSAIDs for as long as they need to. People taking them for a long time should have their treatment reviewed regularly
- People who already have heart disease shouldn't take COX-2 inhibitors
- Doctors should weigh up the risks and benefits of NSAIDs for each person. For example, your doctor may suggest a COX-2 inhibitor if you're at risk of stomach problems, but not of a heart attack
- People are more likely to get stomach problems if they take aspirin as well as an NSAID. People should only take aspirin and an NSAID together if they really need to.

If you're worried about the medicine you're taking, talk to your doctor.

Rheumatoid arthritis

Glossary:

immune system

Your immune system is made up of the parts of your body that fight infection. When bacteria or viruses get into your body, it's your immune system that kills them. Antibodies and white blood cells are part of your immune system. They travel in your blood and attack bacteria, viruses and other things that could damage your body.

bacteria

Bacteria are tiny organisms. There are lots of different types. Some are harmful and can cause disease. But some bacteria live in your body without causing any harm.

viruses

Viruses are microbes (tiny organisms) that need the cells of humans or other animals to exist. They use the machinery of cells to reproduce. Then they spread to other cells in the body.

genes

Your genes are the parts of your cells that contain instructions for how your body works. Genes are found on chromosomes, structures that sit in the nucleus at the middle of each of your cells. You have 23 pairs of chromosomes in your normal cells, each of which has thousands of genes. You get one set of chromosomes, and all of the genes that are on them, from each of your parents.

hormones

Hormones are chemicals that are made in certain parts of the body. They travel through the bloodstream and have an effect on other parts of the body. For example, the female sex hormone oestrogen is made in a woman's ovaries. Oestrogen has many different effects on a woman's body. It makes the breasts grow at puberty and helps control periods. It is also needed to get pregnant.

inflammation

Inflammation is when your skin or some other part of your body becomes red, swollen, hot, and sore. Inflammation happens because your body is trying to protect you from germs, from something that's in your body and could harm you (like a splinter) or from things that cause allergies (these things are called allergens). Inflammation is one of the ways in which your body heals an infection or an injury.

acupuncture

If you have acupuncture, an acupuncturist puts thin, sterile needles into your skin. People who perform traditional acupuncture believe that it removes blockages along energy channels in your body. Other acupuncturists say that the needles help your body release natural chemicals that block pain.

systematic reviews

A systematic review is a thorough look through published research on a particular topic. Only studies that have been carried out to a high standard are included. A systematic review may or may not include a meta-analysis, which is when the results from individual studies are put together.

red blood cells

Red blood cells are the part of your blood that makes it red. Their main job is to carry oxygen from your heart and lungs to the tissues of your body. Once these cells unload oxygen, they pick up carbon dioxide. They take carbon dioxide back to your lungs so it can be breathed out of your body.

anaemia

Anaemia is when you have too few red blood cells. Anaemia can make you get tired and breathless easily. It can also make you look pale. Anaemia can be caused by a number of different things, including problems with your diet, blood loss and some diseases.

X-ray

X-rays are pictures taken of the inside of your body. They are made by passing small amounts of radiation through your body and then onto film.

white blood cells

White blood cells are the cells in your blood that help your body fight infections. They are part of your immune system. The other cells in your blood, red blood cells, carry oxygen around your body.

malaria

Malaria is a dangerous but treatable disease caused by a parasite. This parasite lives in mosquitoes in parts of Asia, Africa and South America. You can catch it if you are bitten by an infected mosquito. Malaria can give you symptoms similar to flu (influenza). The most common symptom is a fever.

placebo

A placebo is a 'pretend' or dummy treatment that contains no active substances. A placebo is often given to half the people taking part in medical research trials, for comparison with the 'real' treatment. It is made to look and taste identical to the drug treatment being tested, so that people in the studies do not know if they are getting the placebo or the 'real' treatment. Researchers often talk about the 'placebo effect'. This is where patients feel better after having a placebo treatment because they expect to feel better. Tests may indicate that they actually are better. In the same way, people can also get side effects after having a placebo treatment.

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Drug treatments can also have a 'placebo effect'. This is why, to get a true picture of how well a drug works, it is important to compare it against a placebo treatment.

ulcerative colitis

Ulcerative colitis is a disease that affects the wall of your large intestine. Ulcerative colitis causes you to have diarrhoea and get blood in your stools. Ulcerative colitis is an autoimmune disease. This means that you get it when your body attacks part of itself.

Crohn's disease

Crohn's disease causes inflammation in your bowel. It usually affects your small intestine, but can happen anywhere in your digestive tract. It causes diarrhoea and bloody stools.

intravenous infusion

When a medicine or a fluid, such as blood, is fed directly into a vein, it's called an intravenous infusion (or IV). To give you an intravenous infusion, a nurse, technician or a doctor places a narrow plastic tube into a vein (usually in your arm) using a needle. The needle is then removed and the fluid is infused (or dripped) through the tube into the vein.

tuberculosis

Tuberculosis (also known as TB) is an infection caused by certain bacteria. The most common type of tuberculosis affects your lungs. This can give cause chest pain, tiredness and a severe cough.

liver

Your liver is on the right side of your body, just below your ribcage. Your liver does several things in your body, including processing and storing nutrients from food, and breaking down chemicals, such as alcohol.

randomised controlled trials

Randomised controlled trials are medical studies designed to test whether a treatment works. Patients are split into groups. One group is given the treatment being tested (for example, an antidepressant drug) while another group (called the comparison or control group) is given an alternative treatment. This could be a different type of drug or a dummy treatment (a placebo). Researchers then compare the effects of the different treatments.

kidney

Your kidneys are organs that filter your blood to make urine. You have two kidneys, on either side of your body. They are underneath your ribcage, near your back.

high blood pressure

Your blood pressure is considered to be high when it is above the accepted normal range. The usual limit for normal blood pressure is 140/90. If either the first (systolic) number is above 140 or the lower (diastolic) number is above 90, a person is considered to have high blood pressure. Doctors sometimes call high blood pressure 'hypertension'.

diabetes

Diabetes is a condition that causes too much sugar (glucose) to circulate in the blood. It happens when the body stops making a hormone called insulin (type 1 diabetes) or when insulin stops working (type 2 diabetes).

stomach ulcer

A stomach ulcer is a break in the surface that covers the inside of your stomach.

obesity

If your body stores more energy than you need, this can make you overweight. The excess energy is stored in your fat cells. If your weight goes above a certain level, doctors call this obesity. Obesity is considered a medical condition. The excess weight can be a strain on your bones and joints. And if you are obese, you're more likely to get other diseases. Doctors have developed a scale for telling how much excess weight you have. This measure, called the body mass index (BMI), depends on your height.

cataract

A cataract is when your eye's lens, which is normally clear, gets cloudy. This makes your vision blurred or fuzzy, like trying to see through a fogged-up window.

glaucoma

Glaucoma is a condition that affects the eyes. If you have glaucoma, your vision slowly gets worse. It happens when certain nerves in your head get damaged. These nerves carry images of what you see to your brain. Glaucoma is often caused by high pressure inside your eye.

adrenaline

Adrenaline is a chemical that makes your heart race and makes you feel alert. It is sometimes called the 'fight-or-flight' hormone.

allergic reaction

You have an allergic reaction when your immune system overreacts to a substance that is normally harmless. You can be allergic to particles in the air you are breathing, like pollen (which causes hay fever) or to chemicals on your skin, like detergents (which can cause a rash). People can also have an allergic reaction to drugs, like penicillin.

chemotherapy

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The use of chemicals or drugs to treat or prevent disease, usually cancer.

infection

You get an infection when bacteria, a fungus, or a virus get into a part of your body where it shouldn't be. For example, an infection in your nose and airways causes the common cold. An infection in your skin can cause rashes such as athlete's foot. The organisms that cause infections are so tiny that you can't see them without a microscope.

pneumonia

Pneumonia is an infection in your lungs. Anything that causes infections (bacteria, viruses or fungi, for example) can give you pneumonia.

ACE inhibitors

ACE inhibitors are drugs used mainly to lower blood pressure and reduce strain on your heart. ACE stands for 'angiotensin converting enzyme'. Angiotensin is a chemical that can make your blood vessels narrower. ACE inhibitors stop this happening, which helps to lower your blood pressure.

diuretics

Diuretics are a type of medicine that reduce the amount of fluid in your body. The extra fluid is removed in your urine.

heart attack

Doctors call a heart attack an acute myocardial infarction (or acute MI). This is the name for the damage that occurs to the heart muscle if it isn't getting enough blood and oxygen because a branch of the coronary arteries is blocked. During a heart attack, you may have pain or heaviness over your chest, and pain, numbness or tingling in your jaw and left arm.

stroke

You have a stroke when the blood supply to a part of your brain is cut off. This damages your brain and can cause symptoms like weakness or numbness on one side of your body. You may also find it hard to speak if you've had a stroke.

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