

Patient information from the BMJ Group

Chronic fatigue syndrome

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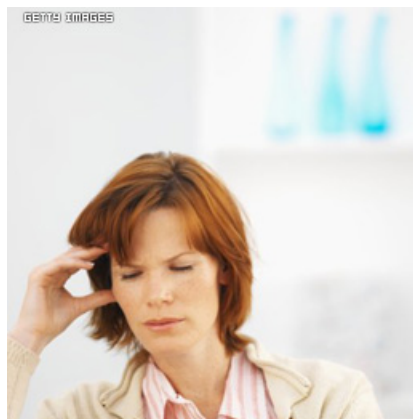
Chronic fatigue syndrome

Chronic fatigue syndrome is a frustrating and distressing illness that affects people of all ages. No one knows what causes it or why some people get it and others don't. There is no cure for the illness, but there are things you can try that may help you feel better.

We've brought together the best research about chronic fatigue syndrome 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 chronic fatigue syndrome?

Feeling tired is very common, especially if you have work or family problems or are under stress for other reasons. Many people say they feel tired most of the time, but very few of them really have chronic fatigue syndrome.



Doctors don't know what causes chronic fatigue syndrome.

People with chronic fatigue syndrome (CFS for short) feel exhausted and weak a lot of the time for no obvious reason. Often they have other symptoms too. CFS can affect people of all ages.

There is no simple test for the condition, but your doctor may say you have CFS if you:

[1] [2]

- Have been feeling exhausted for no known reason for more than six months

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- Also have other signs of illness, such as muscle pains, sleep problems, headaches, and trouble concentrating or remembering things.

There has been a lot of research into CFS, but doctors still don't know what causes it. It could have several different causes.

What doctors do know now is that CFS is a real illness and not imagined, as was once thought.

Another name for the illness is **myalgic encephalomyelitis** (ME for short). Sometimes it is also known as CFS/ME. If your doctor finds signs that you have been **infected** with a **virus**, he or she may call your illness **post-viral fatigue syndrome**.

Sometimes CFS starts after another illness, like a bad cold or **bronchitis**. And some people find it starts during a time of stress. But it can come on gradually for no obvious reason.

Some people with CFS have abnormal levels of certain **hormones**. Doctors have also found they have changes in their **immune system** (the immune system helps the body fight infection). But no one knows whether these are causes or effects of the illness.

CFS doesn't go on for a set period of time. It can last from a few months to many years, although the symptoms may come and go during that time.

CFS can make you feel extremely unwell, and can disrupt your life. But many people find their condition can be improved with treatment.

What are the symptoms of chronic fatigue syndrome?

People with chronic fatigue syndrome (CFS) feel extremely tired and weak most of the time. They often have other signs of illness too.

Your doctor may decide you have CFS if: ^[2]

- You have been feeling totally exhausted most of the time for at least six months
- The exhaustion affects you mentally as well as physically.

You may also have: ^[2] ^[3]

- Pain in your muscles
- Difficulty in sleeping
- Mood changes
- Headaches

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- A sore throat
- Dizziness or nausea (feeling sick).

Many people with CFS have a broad range of symptoms.

If you are worried that you or your child may have CFS, you should see your doctor. The doctor will probably first carry out some tests to rule out other causes of your tiredness. Because there's no one test to say you have CFS, it's a case of ruling out other things that may be causing your tiredness. You may need blood or urine tests. If your GP is unsure about the diagnosis, or if your symptoms are severe, you may need to see a specialist. ^[3]

Other conditions that can make you feel extremely tired include: ^[2] ^[1]

- A physical illness, such as an infection you've had for a long time, anaemia, problems with your thyroid gland, or diabetes
- Mental health problems, including some types of depression
- Dementia
- Eating disorders like anorexia and bulimia
- Alcohol or drug abuse
- Ongoing stress in your personal life, or at work
- Being seriously overweight (obese).

If you're a woman, your tiredness could also be caused by pregnancy or by changes in your hormones if you're close to the menopause.

It is important for your doctor to be sure that no other problems are causing your symptoms. If you do have another condition, your doctor may be able to cure it with the right treatment.

Some people can be treated successfully by their GP. But you may need to see a specialist doctor in hospital. Guidelines for doctors say your GP should refer you to see a specialist: ^[3]

- Immediately, if your symptoms are severe
- Within three to four months of first seeing your GP, if your symptoms are moderate
- Within six months of seeing your GP, if your symptoms are mild.

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Children with symptoms of CFS should be referred to see a specialist doctor (a paediatrician) within six weeks of seeing their GP.

How common is chronic fatigue syndrome?

It is not easy to say exactly how common chronic fatigue syndrome (CFS) is because it can be confused with lots of other illnesses.

Research shows CFS affects anywhere from 6 adults in every 100,000 to as many as 3,000 in every 100,000, depending on how the illness is defined.^[4] It is about as common in children (particularly teenagers) as it is in adults.^[5] Women get CFS more often than men do.^[6] CFS is more common in people who've had mental health problems in life, especially depression or anxiety.^[7]

What treatments work for chronic fatigue syndrome?

No one knows what causes chronic fatigue syndrome, and there is no real cure. But there are some treatments that may help you feel less tired so you can be more active and enjoy life more.

- Programmes of exercise that start gently and become gradually more energetic can help with chronic fatigue syndrome.
- A form of talking treatment (psychotherapy) known as cognitive behaviour therapy can also help.
- There is no reason to believe that resting in bed for a long time will make you feel better. It may even make you feel worse.
- The National Institute for Health and Care Excellence has published guidelines about how people with CFS should be treated. You can see what they say here: <http://www.nice.org.uk/nicemedia/live/11824/36198/36198.pdf> .

We've looked at the best research and given each treatment a rating according to how well it works.

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

Treatment Group 1

Treatments for chronic fatigue syndrome

Treatments that work

- [Cognitive behaviour therapy](#)
- [Graded aerobic exercise](#)

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Treatments that need further study

- [Antidepressants](#)
- [Steroids](#)
- [Dietary supplements](#)
- [Evening primrose oil](#)
- [Magnesium injections](#)
- [Homeopathy](#)
- [Resting for a long time](#)

Treatments that are unlikely to work

- [Galantamine](#)

Treatments that are likely to be ineffective or harmful

- [Immunotherapy](#)

Other treatments

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

- [Pacing](#)

What will happen to me?

Chronic fatigue syndrome (CFS) can go on for a long time, often for years. Although CFS can make you feel very ill and miserable, it is not dangerous.

One group of researchers looked at lots of different studies on how well people recover from CFS. ^[8]

- **Most children recover completely.** Four studies looked at chronic fatigue in children. The one that followed them up for longest (six years) found that almost all of the children recovered completely or got much better. Only 3 in 48 children didn't get better. ^[9]

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- **The outlook is less good for adults.** Research shows that most adults with chronic fatigue don't recover completely, and some even get worse. In most studies, only about 5 in 100 adults got completely better from CFS during the time that the study lasted. But about 40 in 100 had some improvement.^[10] The study that followed adults for longest showed the most hopeful results, with 65 in 103 people getting better, although only six recovered completely.^[11] This suggests that adults tend to get better gradually, although most don't return to full normal health.

Researchers have found that some things can delay a person's recovery. These include:

- Being older. The older you are, the less likely you are to recover
- Having more severe symptoms. The more ill you are, the less likely you are to recover
- Having a mental health problem as well as CFS
- Having fixed views about the cause of your illness.

One big summary of the research found that people are more likely to recover if they feel some sense of control over their symptoms, have less severe symptoms, and don't think their illness has a definite physical cause.^[10]

Treatments:

Cognitive behaviour therapy

In this section

Cognitive behaviour therapy (CBT) is a talking treatment that tries to change your thinking and behaviour in a positive way. You meet with a trained therapist for several sessions.

CBT aims to help you identify unhelpful thoughts or feelings you have about chronic fatigue. These thoughts may make you feel anxious about your illness and make it harder to recover. So overcoming these thoughts may help your symptoms.

One review of the research (a **systematic review**) looked at 15 good-quality studies of CBT for chronic fatigue syndrome.^[12] It found that:

- People who had CBT were more likely to feel less tired at the end of treatment than people who received usual care from their doctor or were on a waiting list for CBT. Overall, 40 in 100 people who had CBT showed improvement, compared with 26 in 100 of those who did not
- When researchers followed up with people one to seven months after their treatment had ended, those who'd had CBT still had less tiredness than those who had not

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- People having CBT were also more likely to feel less tired than those having other types of talking treatment, including relaxation therapy, general counselling, or education and support. Additionally, they were able to do more physically, and had less depression, anxiety, and symptoms of distress.

A study not included in the review also found that CBT helped young people (aged between 10 years old and 17 years old) feel less tired and able to do more, including going to school.^[13] A follow-up study found that around two years later CBT had continued to have a positive impact on these young people. They were still feeling less tired and able to do more.^[14]

Another study not included in the review looked at people who were given information about chronic fatigue syndrome, CBT exercises to do themselves, and regular access to an experienced CBT therapist, and compared them with people who were on a waiting list for CBT.^[15] The study found that people with guided instructions were less tired than those waiting to have CBT.

None of these studies found any harmful side effects from CBT. However, in one of the studies, one-quarter of the people having CBT or attending support groups dropped out of the study part way through. This could have been a sign that they found it too tiring to take part, or perhaps they just felt it was not helping them.^[16]

Graded aerobic exercise

In this section

Aerobic exercise is any continuous activity that makes your heart and lungs work faster to supply blood to your body's large muscles (such as those in your legs). It includes walking, cycling, and swimming. Graded aerobic exercise is exercise that builds up gradually from a gentle beginning. This type of exercise may help you feel less tired.

Good-quality studies (randomised controlled trials) have found that graded aerobic exercise for chronic fatigue syndrome was more likely to help people feel better than:

- A treatment that focused on stretching and relaxation^{[17] [18]}
- A treatment that provided general advice on aerobic exercise^[19]
- Normal care from their family doctor (that did not include advice about exercise).^[20]

Another study (a randomised controlled trial) found that people were more likely to feel better if they were taught graded aerobic exercise through an educational programme than if they got written advice on how to do this exercise.^[21]

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None of these studies found any harmful side effects from doing aerobic exercise. But doctors think that people with chronic fatigue syndrome may feel worse if they do too much exercise too soon. That's why doctors advise that you should only do graded exercise that is prescribed and supervised by a trained therapist, such as a physiotherapist or sports therapist. ^[22]

Antidepressants

In this section

Antidepressants are medicines that are normally used for depression but also used for other conditions. There are several different types. The ones used in the studies of people with chronic fatigue syndrome include fluoxetine (brand name Prozac), sertraline (Lustral), moclobemide (Manerix), and phenelzine (Nardil).

A few good-quality studies (randomised controlled trials) have looked at whether people with chronic fatigue syndrome feel better when they take these antidepressants, but the results of the studies aren't clear. ^[23]

Also, these drugs can cause side effects, such as sweating, shaking, dry mouth, constipation, dizziness, stomach upsets, anxiety, sleeping trouble, and headaches. In one study, one-third of people taking fluoxetine stopped taking the drug because of side effects, although one-fifth of people taking a dummy treatment (a placebo) for comparison also stopped because of side effects.

Research has found that taking antidepressants of all kinds can make some people more likely to think about suicide or try to harm themselves. ^[24] Young people under 18 are especially at risk. You are more likely to think about self-harm in the early stages of your treatment, or if the dose of the antidepressant you're taking is changed. ^[25] If you're taking an antidepressant and are worried about any thoughts or feelings you have, **see your doctor or go to a hospital straight away.** ^[25]

Steroids

In this section

The full name for these drugs is corticosteroids. They are a group of drugs that are used to treat various illnesses, including ones that affect the immune system (your immune system helps protect you against infection). They are not like the steroids used by bodybuilders (those are called anabolic steroids).

Two of these drugs, fludrocortisone and hydrocortisone, have been studied to see whether they work any better for chronic fatigue than a dummy treatment (a placebo). ^[23] The results of the research aren't clear.

These drugs can cause side effects. In one study of fludrocortisone, 3 in 25 people found the medicine actually made their symptoms worse. ^[26] And in another study, high doses

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of hydrocortisone made 4 in 10 people's adrenal glands stop working properly. Adrenal glands make the body's own corticosteroids. ^[27]

About 1 in 20 people find that steroid tablets affect their mood. ^[28] This can happen a few days or weeks after you start treatment. You may be irritable, anxious, or 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.

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.

Dietary supplements

In this section

One small study (a randomised controlled trial) looked at whether a tablet containing vitamins, minerals, and other nutritional supplements worked better for chronic fatigue than a dummy treatment (a placebo). ^[29] The results weren't clear, possibly because the study was too small to give reliable results. But three people taking the tablet felt sick enough to stop taking part in the study.

Another good-quality study looked at a supplement called BioBran MGN-3. After eight weeks, people who took the supplement still felt just as tired as people who took a placebo. ^[30]

Evening primrose oil

In this section

Evening primrose oil contains an essential fatty acid called GLA. Essential fatty acids have this name because it's essential you get them from your food. Your body cannot make them. Evening primrose oil has been suggested as a treatment for several health problems. The idea is that it may help restore the body's natural balance of fatty acids.

You should talk to your doctor or pharmacist before taking evening primrose oil or other supplements. Some supplements can cause side effects. They may also affect how other supplements and medicines work.

One small study (a randomised controlled trial) looked at the effects of this treatment on people with chronic fatigue syndrome. The study found that evening primrose oil was no more helpful than a dummy treatment (a placebo). ^[31] Another small study found that evening primrose oil did improve how people felt, with more than 8 in 10 people feeling better. But the study had problems, so we can't be sure of its results. ^[32]

Magnesium injections

In this section

Magnesium is a mineral that every cell of the body needs. Some scientists believe that people with chronic fatigue syndrome don't have as much of it as they should.

One small study (a randomised controlled trial) found that people who had weekly injections of magnesium sulphate were more likely to feel better after six weeks than people who had injections of a dummy treatment (a placebo). The study did not report any harmful effects. ^[33]

But the study was too small for us to be sure the treatment really works. In any case, three later studies found that people with chronic fatigue syndrome have normal levels of magnesium, so there is no reason to think they need extra. ^{[34] [35] [36]}

Homeopathy

In this section

Homeopathy is a type of complementary medicine. It is based on a theory that 'like cures like'. For example, a substance that causes a symptom in healthy people may be used to make a remedy for people suffering from that symptom. Homeopaths also believe that remedies become more powerful the more they're diluted. These theories aren't supported by scientific evidence.

There's not enough good research to say whether homeopathy can help you if you have chronic fatigue. We found one study, but it found that homeopathy did not help with most symptoms of chronic fatigue. ^[37]

Resting for a long time

In this section

No one has done any research on whether people with chronic fatigue feel better if they rest completely for a long time. Studies on healthy people and people recovering from infections caused by viruses have found that long-term rest can make them feel worse. ^{[38] [39]} But we don't know enough to say whether this would be true for people with chronic fatigue.

Galantamine

In this section

Galantamine is a drug that's used to treat people with Alzheimer's disease and other types of dementia . It works by increasing the amount of a chemical in the brain called acetylcholine. The brand name is Reminyl.

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One study of galantamine in people with chronic fatigue found that it didn't help improve their symptoms.^[40] Galantamine can cause headaches, nausea, and depression.^[40]

Immunotherapy

In this section

Many people with chronic fatigue syndrome have changes in their **immune system** (the immune system helps the body fight infection). A few good-quality studies (**randomised controlled trials**) have looked at whether people with chronic fatigue syndrome feel better when they are given drugs to boost their immune system.^[23] ^[41]

Most research has been done on a drug called immunoglobulin G, but three other drugs, interferon alfa, aciclovir, and staphylococcus toxoid, have also been studied. The results have been too mixed to provide a clear answer.

These drugs can cause side effects, some of them serious. Studies have found that people taking immunoglobulin got more headaches, and their tiredness got worse. Also, some people got a condition called phlebitis, in which a vein becomes **inflamed**.^[23] And one study found that some people taking interferon had a low number of a type of **white blood cell** called a neutrophil (white blood cells help the body fight infection). This condition is called neutropenia.^[42]

Pacing

In this section

Pacing is a treatment that involves finding the right balance between rest and activity.^[22] The idea is that if people with chronic fatigue syndrome use what limited energy they have wisely, that energy will gradually increase.

Pacing involves checking your energy and activity levels daily so that you can work out the effects of your activity and then adjust it up or down. Although pacing is not a medical treatment, it should still be supervised by a doctor or therapist.

We can't say whether pacing works, because there has been no good-quality research on it. But it is a form of self-help that is popular with many patients and some doctors.

Further informations:

Glossary:

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.

viruses

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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.

bronchitis

Bronchitis is inflammation of one or both of the major airways (called bronchi) that lead in and out of your lungs.

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.

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.

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.

thyroid gland

Your thyroid gland is a small organ that sits in your neck, just in front of your windpipe. It sends out a hormone called thyroxine. This acts on receptors within cells. By acting on the receptors it gives the cells a message to speed up their metabolism and work harder.

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).

dementia

Dementia is when your brain stops working properly. Someone with dementia may become gradually more confused and forgetful. A common cause of dementia is Alzheimer's disease.

anorexia

Anorexia is an eating disorder. People who have anorexia starve themselves because they think they are too fat. They do this even when they are very thin. It is most common among teenage girls. Doctors may call it anorexia nervosa.

bulimia

Bulimia is a psychological illness. People who have it tend to eat too much at one time (called bingeing) and then do something to keep from gaining weight. For example, they may make themselves sick or do too much exercise.

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.

menopause

When a woman stops having periods, it is called the menopause. This usually happens around the age of 50.

psychotherapy

Psychotherapy is a talking treatment. It is given by trained therapists (such as a psychiatrists, psychologists or social workers). Psychotherapy usually consists of regular sessions (often weekly) between the therapist and the patient. There are many types of psychotherapy, including cognitive behavioural therapy and interpersonal therapy.

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.

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.

physiotherapist

A physiotherapist is a health professional who is trained to use physical activity and exercises to help people's bodies heal.

constipated

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When you're constipated, you have difficulty passing stools (faeces). Your bowel movements may be dry and hard. You may have fewer bowel movements than usual, and it may be a strain when you try to go.

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. 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.

adrenal glands

You have two adrenal glands. They are on top of your kidneys. Your adrenal glands make hormones that help control your blood pressure, how fast your heart beats and the way your body uses food.

Alzheimer's disease

People who have Alzheimer's disease slowly lose their memory and ability to think clearly. As the disease gets worse, they get more confused and start acting differently. Several changes happen in the brain that stop it working properly. Small lumps called amyloid plaques grow in the parts of the brain used for memory and thinking. And bundles of twisted threads called 'neurofibrillary tangles' form inside brain cells. These stop brain cells communicating with each other, and they can cause cells to die. Also, in Alzheimer's disease, the brain does not have enough chemical messengers (neurotransmitters), and holes or gaps appear where brain cells have died.

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.

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.

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