

## Fact sheet: Irritable bowel syndrome



What is irritable bowel syndrome?

The bowel or intestine is a particularly complicated organ. It stretches out to a length of five metres with muscles, nerves and the immune system all working closely together. On one hand it is picking out nutrients for the body to use, while at the same time separating out toxins and protecting the body from illness.

Abdominal pain, constipation and diarrhea are all typical symptoms of irritable bowel syndrome (IBS). Other names for this disorder are irritable colon, mucous colitis, spastic colon or spastic colitis, and nervous stomach. Although IBS is not dangerous, the symptoms can be very painful and bothersome. Most people who have IBS have a mild form, which they can cope with quite well. But sometimes the symptoms are so strong that they significantly limit people's daily activities and can cause distress.

IBS mostly affects people between 35 and 50 years of age. Counting milder cases as well, the disorder affects about 2 out of every 10 women, and about 1 out of every 10 men. IBS cannot be cured, but there are different ways of relieving the symptoms. In the last few years more and more treatments have been tested in studies. We have summarized what researchers have discovered about the various therapies for treating IBS in this fact sheet.

## What are the signs of IBS?

The typical symptoms of IBS include pain and cramps in the abdomen (lower belly) as well as a change in the consistency of the stool. Some people mainly have constipation, others diarrhea. Some are affected by both. Feeling very full, flatulence (gas) or mucus discharge may also be signs of IBS.

These symptoms could be caused by other things too though, like lactose intolerance (where people cannot digest dairy products properly). They may also be signs of coeliac disease (sprue). This is an intolerance to gluten – a protein that is found in different types of grains and many other foods.

Severe bowel disorders such as ulcerative colitis, Crohn's disease or bowel cancer can also cause symptoms similar to those of IBS, but these diseases are much rarer than IBS. Also, people under the age of 50 very rarely have bowel cancer.

Doctors can do blood tests and other tests to determine whether the symptoms are being caused by one of these diseases or by a food intolerance. It sometimes takes quite a while to diagnose IBS. One reason for this is that people may have several disorders at the same time. For instance, it is quite common for people to have IBS as well as lactose intolerance or a sensitive stomach (dyspepsia).

There are several different medical criteria for diagnosing IBS. According to one of the latest definitions, you have

irritable bowel syndrome if you have had pain or discomfort in your bowel in the last three months, on at least three days a month, and these symptoms have lasted for at least six months. Two of the following criteria must also be fulfilled:

- Symptoms get better after a bowel movement
- When symptoms start, the frequency of bowel movements changes
- When symptoms start, the appearance of the stool changes

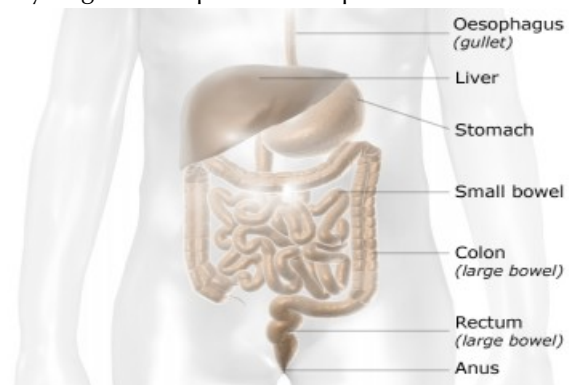
You can find out more about the symptoms of IBS here (URL: <http://www.informedhealthonline.org/index.196.en.html>).

## What are the possible causes of IBS?

The intestine (or bowel) is a particularly complex organ. It stretches out to a length of five meters, with muscles, nerves and the immune system all working closely together. It absorbs nutrients for the body to use, gets rid of toxins and protects the body from illness. You can read more about how the intestine works here (URL: <http://www.informedhealthonline.org/index.593.en.html>).

IBS mostly affects the large intestine. This is where the last phase of digestion takes place. The muscles of the large intestine move the food mass, which is still quite soft at first, slowly but steadily forward through the digestive tract. Extra water is taken out of it and the indigestible parts of the food thicken to form stool.

If the intestinal muscles move the food mass through the intestine too quickly, the food mass does not lose enough water and people get diarrhea. If, on the other hand, they transport the food mass too slowly, people might get constipation. If the intestinal muscles contract violently, they might cause painful cramps.



Although the causes of IBS are unknown, there are many theories. For example, it is thought that oversensitive nerves in the intestine, intestinal muscle disorders and inflammations of the intestinal wall could all play a role. It has also been observed that IBS is more common among people who have had an intestinal infection. Some people with irritable bowel syndrome have more bacteria in their small intestine. Psychological strain and stress, dietary habits and food intolerances are thought to be possible triggers too. Yet for many of these factors it is not clear whether they are a cause or result of IBS – and whether they actually contribute to the symptoms.

Because the exact causes of IBS are not known, people who have IBS and different doctors sometimes have different ideas about what is causing the symptoms, and which treatments help. Even though IBS is recognized as a disorder nowadays, there are still people who do not take those who have IBS seriously, or think that it is “all in their heads”.

### **What are the treatment options?**

For many people with IBS, the symptoms get better on their own over time. But they often come back after a while. There are a lot of treatments that aim to relieve the symptoms – not all of them have been tested in good-quality studies, though. Because the causes of IBS are not clear, it is difficult to find suitable treatments. But there are studies which suggest that at least some medications and treatments may be helpful.

One problem with most of these studies is that they only lasted a few weeks. This means that it is not clear if the treatments also help when they are used over a longer period of time. Also, there is not enough research on most of these treatments to be able to say whether the types of symptoms that people have play a role in the treatment. For example, people who have more diarrhea might benefit more from some treatments, and those who have more constipation might benefit more from other treatments. This has not been properly accounted for in many studies.

### **What role does diet play, and can fiber help?**

The role that diet plays in IBS has not yet been well researched. Not much is known about whether a change in diet helps, either. But this does not mean you should not try out different things. If you have the feeling that particular

foods make your symptoms worse, it may be useful to monitor this more closely and see if avoiding that food helps. Some people report fewer symptoms when they eat their meals in smaller portions throughout the day.

People with IBS are often advised to eat more fiber. There are two different types of dietary fiber: soluble fiber (for example psyllium, also called isphagula), which absorbs water in the intestine, and insoluble fiber (for instance, bran), which hardly absorbs any water. Bran and psyllium are the two dietary fibers whose benefit has been best studied. Studies were not able to show that bran can relieve IBS. Psyllium products, on the other hand, do seem to have a benefit: they were found to relieve symptoms in about 1 out of 10 people (10%). There is hardly any research on the adverse effects of fiber supplements.

### **What can I expect from complementary medicine treatments and dietary supplements?**

Complementary approaches used to treat IBS include acupuncture, reflexology and enemas (also called colon hydrotherapy). These have hardly been studied for people with IBS. Complementary medicine treatments may also have adverse effects. Especially enemas carry the risk of serious complications such as an electrolyte imbalance, infections and even perforations of the intestine.

#### *Peppermint oil*

Many people take peppermint oil products to relieve their symptoms. Peppermint oil is believed to relax the bowel muscles. Some studies do indeed show that some people profit from peppermint oil, at least temporarily: it relieves IBS symptoms in about 4 out of 10 people (40%). In these studies, peppermint oil was taken in capsules that are resistant to stomach acid. This means that it is not clear whether taking peppermint oil in other forms, such as in solutions or drops, can help. There is also hardly any research on the adverse effects of peppermint oil. You can read more about research on dietary fiber, peppermint oil and antispasmodics [here](http://www.informedhealthonline.org/index.86.en.html) (URL: <http://www.informedhealthonline.org/index.86.en.html>).

#### *Probiotics*

In the gut flora there are different types of bacteria that play an important role in the intestine. These include lactic acid bacteria (LAB) and bifidobacteria. Some people with IBS have gut flora that have changed. This is

why it is thought that probiotics might be able to help. Some studies do suggest that probiotics might help against IBS. They were shown to reduce symptoms in about 1 to 2 out of 10 people (10 to 20%). More research is needed to be able to say which type of bacteria and which doses help the most. Generally speaking, probiotics are well tolerated. But they can sometimes lead to infections in people who have a weakened immune system.

You can find more information on dietary supplements and complementary medicines in our fact sheet (URL: <http://www.informedhealthonline.org/index.383.en.html>) , including a list of questions to help you decide whether or not to use them.

## Which medications can relieve the symptoms?

### *Anti-cramping medications*

People who are mostly affected by cramps often use anti-cramping medications. These are meant to relax the bowel muscles to relieve the pain caused by the cramps. Anti-cramping medications are also called antispasmodics or spasmolytics. Many of these medications have not been studied enough in the treatment of IBS. At least for four of these drugs – called butylscopolamine, cimetropium, pinaverium and otilonium – there is some evidence that they may help

The antispasmodic mebeverine, often prescribed in Germany, has not been proven to help against IBS. Of the anti-cramping medications that have been shown to help, only butylscopolamine is available in Germany. This medication was able to relieve IBS symptoms in 1 to 2 out of 10 people in trials (10 to 20%). You can buy butylscopolamine in the pharmacy without a prescription.

The adverse effects of anti-cramping medications include a dry mouth, dizziness and blurred vision. About 5 out of 100 people (5%) in studies report these types of adverse effects. There were no serious adverse effects.

### *Medication for diarrhea or constipation*

Medications for constipation or diarrhea can also be used, depending on which of these symptoms a person has. But there is hardly any research on how well these medications can relieve the different symptoms of IBS. Many laxatives and anti-diarrhea medications are available in the pharmacy without prescription.

One problem with these medications is that they might just replace one problem with another: a medication for diarrhea may cause constipation if its effect is too strong. In the same way, a medication for relieving constipation can lead to diarrhea. Especially for people who have alternating diarrhea and constipation, it is important to make sure the medications do not make the symptoms even worse.

### *Antibiotics*

Antibiotics are sometimes considered as an option for people whose IBS causes diarrhea or flatulence. The best studied antibiotic is called rifaximin. This drug is approved in Germany only for treating travellers' diarrhea. Yet a doctor can still prescribe it to you "off-label" after thorough consultation. Off-label use means that a drug is used to treat a condition without being approved for that specific use. If you are prescribed a drug off-label, you will usually have to pay for it out of your own pocket. You can read more about this here (URL: <http://www.informedhealthonline.org/index.151.en.html>) .

In studies, rifaximin was shown to relieve IBS symptoms in about 1 to 2 out of 10 people (about 10 to 20%). But it is unclear whether it also has a positive effect in the long term. Antibiotics can have many different adverse effects such as allergic reactions, nausea and fungal infections. You can read more information about the safe use of antibiotics here (URL: <http://www.informedhealthonline.org/index.472.en.html>) .

### *Antidepressants*

Sometimes IBS is treated with drugs that are normally used for treating depression. These include so-called tricyclic antidepressants and selective serotonin reuptake inhibitors (SSRIs). These drugs are only available on prescription. In Germany, they are not approved for treating IBS, so they can only be used off-label.

There are different reasons why it is thought that certain antidepressants may help in IBS. For instance, some of these drugs are said to have a pain-relieving effect. They also partially influence the muscles of the digestive tract.

Research has shown that tricyclic antidepressants and SSRIs can help relieve IBS. About 2 out of 10 people who took one of these drugs had an improvement in symptoms (20%). But antidepressants can have various adverse

effects too, such as loss of appetite and nausea, as well as problems with sexual arousal and orgasm. So they are generally only considered if other therapies have not been successful. Some antidepressants can themselves lead to constipation or diarrhea. This should be taken into account when considering using this kind of drug.

#### *Other drugs*

Drugs from the group of 5-HT<sub>3</sub> and 5-HT<sub>4</sub> antagonists have been approved for the treatment of IBS in some countries. These drugs include alosetron and cilansetron, which have mostly been tested for the treatment of IBS with diarrhea, and tegaserod, which has mostly been tested for the treatment of IBS with constipation. These drugs have been shown to relieve IBS symptoms in about 1 to 2 out of 10 people (10 to 20%). But alosetron and cilansetron cause constipation in 2 out of 10 people (20%). Tegaserod sometimes causes diarrhea.

These drugs have not been approved in Germany. There are safety concerns because they have been associated with serious adverse effects such as heart attacks, strokes and vascular disorders of the bowel.

There is also another 5-HT<sub>4</sub> antagonist called prucalopride. Its use in the treatment of chronic constipation in women was approved in Germany in 2009, but only in people who already tried conventional laxatives and found that they did not help. Since prucalopride has not been on the market for long, not much is known about possible adverse effects and the long-term safety of this drug.

#### **Can I benefit from psychological treatments or hypnosis?**

Because it is suspected that stress and psychological strain may also contribute to the development of IBS, psychological techniques are sometimes used. The aim is to help people manage their stress better. It is hoped that this will reduce IBS symptoms and improve quality of life.

These psychological treatments include stress management techniques, relaxation exercises and psychotherapeutic interventions such as cognitive behavioral therapy. The aim of these treatments is to help people learn how to better cope with the symptoms of IBS. You can read more information about cognitive behavioral therapy here (URL: <http://www.gesundheitsinformation.de/index.588.56.en.html>) .

Psychological treatments have only been tested in a few

small trials. The trials did not prove that people with IBS benefit from these treatments. Because the trials were not very conclusive overall, though, it cannot be ruled out that these types of treatments might help. But some of them take a lot of time and motivation.

Some people who have IBS try hypnotherapy. During a hypnosis session, a therapist helps a person focus very intensely and solely on one thing, so that they stop being aware of other things. The idea is that the person is then more receptive to suggestions the therapist makes. For the treatment of IBS, an example of such a thought is imagining that you have a healthy, well-functioning bowel. Research has suggested that hypnotherapy can relieve symptoms in some people. You can read more about hypnotherapy for IBS here (URL: <http://www.informedhealthonline.org/index.327.en.html>) .

#### **How do other people deal with IBS?**

Most people who have a milder form of IBS cope quite well with it. Yet for some the symptoms are so strong that their quality of life is severely affected. People often describe the feeling of losing control of their own body because they never know exactly when they will need to go to the toilet. This can make daily activities very difficult, for instance because people's meals and appointments have to be carefully coordinated. As a result, many people feel it is practically impossible to be spontaneous.

People are also often ashamed of having IBS. No one enjoys talking about intestinal problems, and many are embarrassed about having to go to the toilet so frequently. What is more, IBS is not always taken seriously by others – including doctors – perhaps because it is not a dangerous condition or because many consider it to be merely “in your head”. This can be very hurtful for those affected.

Nevertheless, most people find ways of living with IBS without having to limit themselves too much. It might be the little things that make everyday life easier and help them stop worrying all the time: for example bringing along their own food to a party, finding out right away where the toilets are, or taking an aisle seat at the cinema.

**This additional information has been provided by the U.S. National Library of Medicine:**

In the U.S., antidepressants may be prescribed to relieve some of the symptoms of IBS. However, antidepressants can worsen constipation, so some doctors will also prescribe medications that relax muscles in the bladder and intestines.

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## Glossary

### Crohn's disease

Crohn's disease is one of two similar forms of chronic inflammatory disease. The other is ulcerative colitis. Crohn's disease usually affects the small bowel, and rarely, the large bowel. There are times of symptom-free remission, but also active periods with pain in the abdomen, diarrhoea and weight loss that can be so severe that people cannot go to work or undertake their daily activities. Attacks can be so severe that people need to go to hospital.

### antibiotics

Antibiotics are medicines that can be used for bacterial and some fungal infections. Antibiotics do not work against viruses. Well-known antibiotics include penicillin, tetracycline and chloramphenicol.

### bacteria

Bacteria are micro-organisms that, unlike viruses, can exist on their own. Viruses, on the other hand, can only exist inside a living cell. Most bacteria are not harmful to people, and some are actually beneficial. Bowel bacteria support bowel health. However if they get into the urinary system, they can cause an infection there. Doctors prescribe antibiotics for illnesses where bacteria need to be stopped or killed off. Immunisation is also possible against some bacterial infections, such as diphtheria, tetanus or whooping cough.

### evidence

Evidence is what we call scientific proof from well-conducted, good-quality scientific trials that have been carefully designed to answer specific questions. Depending on the types of questions, different scientific research methods (types of study) are most appropriate to find reliable answers to these questions. Randomized controlled trials (RCTs), for example, are the best way to get reliable evidence on the effectiveness of medical treatments (interventions). This type of study, however, is not the best form of evidence for all possible questions, and does not provide the best answers to all kinds of questions, either. Epidemiological studies, for example, are very suitable for establishing well-founded proof for the spreading of a disease in the population.

### acupuncture

Acupuncture is a complementary form of therapy used in traditional Chinese medicine. A doctor inserts thin needles at precisely defined points on the body. This is supposed to loosen what are thought to be blockages in the body or to stimulate or calm different organs.

### infection

In medicine, we speak of an infection when a person has caught a germ (an infectious agent). This germ can be a bacterium, a virus, a fungus or a worm. The germ multiplies and then either spreads throughout the body or only attacks one particular organ. As long as there are no signs of a disease, this is called an asymptomatic infection. When the body shows a reaction to the germ in the form of symptoms, this is called a symptomatic infection (an infectious disease). The period between the moment the germs enter the body and the moment the first symptoms of the disease appear, is called the incubation period. It may last a few hours or days, or even many years. An infection does not necessarily have to lead to the onset of a disease.

### depression

Depression is one of the most common mental illnesses, and it can be mild, moderate or serious. There are several different types of depression that can be recognised by different signs. Which symptoms of depression occur and how strong and frequent they are vary from person to person. People in any social or age group can be affected, both women and men. If someone has had at least two of the following symptoms for longer than two weeks, it might mean that they are depressed: deep sadness; listlessness; loss of interest in the things they usually care about.

### immune system

The immune system is the body's defense system and its task is to protect the body against germs or degenerated cells (like cancer cells). The immune system is very complex and has not been understood in every detail yet. There are two components: the cellular immune defense (for example "scavenger cells" and "killer cells") and the complement system ("antibodies", for example).

### irritable bowel syndrome

Irritable bowel syndrome (IBS) is a long-term disease that leads to abdominal pain and flatulence and is associated with constipation and/or diarrhoea. Irritable bowel syndrome is not dangerous, but can be very bothersome and restrict daily activities. Sometimes the symptoms can last for a long time, but they generally go away after a while on their own. The exact causes of IBS are unknown. In some people, it seems to be brought on by certain foods or stress.

## ulcerative colitis

Ulcerative colitis is one of two similar forms of chronic inflammatory disease of the bowel (the other is Crohn's disease). Ulcerative colitis affects the large bowel. There are periods without symptoms, but also phases of pain in the left abdomen, diarrhoea and weight loss that may be so severe that people cannot go to work or even need to go to the hospital.

## dietary supplement

Dietary supplements (also known as food supplements or nutritional supplements) are concentrated vitamins, minerals, trace elements, fibers and/or other substances that are intended to supplement the diet. Advocates of dietary supplements claim that they have a certain, often preventive or strengthening effect on the body. They are available as capsules, pills, powder or ampules, for example. From a legal point of view, dietary supplements rank among foods and therefore – as opposed to medications – do not need official approval. More information is available on the website of the German Federal Institute for Risk Assessment (Bundesinstitut für Risikobewertung, BfR): [To the BfR website \(in English\)](#)

## Sources

IQWiG health information is based on research in the international literature. We identify the most scientifically reliable knowledge currently available, particularly so-called “systematic reviews”. These summarize and analyze the results of scientific research on the benefits and harms of treatments and other health care interventions. You can read more about systematic reviews and why these can provide the most trustworthy evidence about the state of knowledge here (URL: <http://www.informedhealthonline.org/index.61.en.html>) . The authors of the major systematic reviews on which our information is based are always approached to help us ensure the medical and scientific accuracy of our products.

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## **The German Institute for Quality and Efficiency in Health Care (IQWiG)**

The German Institute for Quality and Efficiency in Health Care (IQWiG) was established by legislation to provide evaluations of the effectiveness, quality and efficiency of healthcare services. This includes the assessment of medicines as well as the publication of health information for consumers and patients.

## **Evidence basis of our health information**

Our information is based primarily on systematic reviews of the effects of health care. Systematic reviews are necessary to gain an objective picture of health care. In order to do this, a clear question is formulated. Researchers then find all the relevant studies that could answer this question. They then evaluate those studies.

You can find a list of the evidence and other scientific literature on which this information is based at [\*\*www.informedhealthonline.org\*\*](http://www.informedhealthonline.org)

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