Patient information from the BMJ Group

Constipation in adults

In this section

Constipation in adults

When you're constipated, your stools become hard and going to the toilet is difficult. Many people have constipation from time to time. Not eating enough fibre is a common cause. You may need laxatives, but usually just for a short time.

We've brought together the best research about constipation in adults 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 constipation in adults?

If you have constipation, passing a stool is difficult, or you don't pass a stool very often. But it's hard to say exactly when someone's constipated.

There are two main types of constipation.

- You find passing a stool difficult or uncomfortable, but you go to the toilet fairly regularly
- You don't pass a stool often enough.

Lots of people get constipation from time to time. Occasionally it can last several weeks.

How do I know if I have constipation?

It's difficult to say exactly when someone's constipated. [1] People's bowel habits and what they think is normal vary a lot. For some people, passing a stool two or three times a week is normal, but for others, passing a stool two or three times a day is normal. A change from your usual pattern of bowel movements is often a better way of telling if you're constipated.

Your doctor will probably diagnose constipation by asking you questions about your symptoms. If you've had a bowel movement two or three times a week or less for at least two weeks, he or she will probably say you have constipation. [2] [3]

Your doctor may do a physical examination. He or she may also order tests to try to see what's causing your constipation. But most people don't need any tests. You'll need tests

only if your doctor wants to make sure there isn't something more serious that's causing your symptoms. To read more, see Tests you might need if you have constipation .

You should see your doctor if you have a sudden change in your bowel habits, if you lose weight for no obvious reason, or if you see blood mixed in with your stools. Blood in your stools is most often caused by haemorrhoids (piles). But occasionally it can be a sign of a more serious condition.

Why am I constipated?

There are lots of reasons why you can have constipation. Sometimes it's hard to know exactly what's causing it. But there are things that make constipation more likely. These are known as risk factors. Some risk factors for constipation include the following. [4]

Foods that contain a lot of fibre can help prevent constipation.

- Not eating enough fibre. Fibre is the part of fruit, vegetables, and grains that your body can't break down. It makes your stools more bulky and prevents them becoming hard and dry. This makes it easier for you to pass the stools.
- Not drinking enough fluids. Fluids can also add bulk to stools and make them softer.
- Lack of exercise. If you don't take much exercise or you aren't able to move around, you can get constipated. But doctors don't know exactly why this happens.
- Taking medicines. Lots of drugs can cause constipation as a side effect. These include some painkillers, especially strong ones such as morphine, and some

antidepressants . If you're taking medicine and you think it's making you constipated, you should tell your doctor.

- Pregnancy. Women are more likely to get constipated when they're pregnant.

Some illnesses can slow the movement of stools through your bowels. Here we look only at constipation that isn't caused by an underlying illness.

If you're a parent and your child has constipation, see our information on Constipation in children . Treatments for children are different from those for adults.

What are the symptoms of constipation in adults?

If you're constipated, you have difficulty passing a stool. And you may not pass a stool very often.

It's hard to say exactly when someone is constipated. People's bowel habits vary a lot. And people have different ideas about what's normal.

Many people get short bouts of constipation from time to time. But some people have constipation that doesn't go away. Doctors call this **chronic constipation**.

You may have chronic constipation if you have two or more of these symptoms for at least 12 weeks in a year: [3]

- You strain to pass a stool at least one-quarter of the time
- You pass stools that are lumpy or hard at least one-quarter of the time
- You feel your bowels aren't completely empty after going to the toilet at least one-quarter of the time
- You have three or fewer bowel movements a week.

You might also have discomfort or pain in your abdomen.

How common is constipation in adults?

Constipation is very common. Almost everyone has constipation at some time.

There hasn't been much research to tell us exactly how common constipation is. The studies we found showed that:

- In 2012, doctors in England wrote more than 17 million prescriptions for drugs that help people's bowels move (laxatives) [5]
- Women are more likely to get constipated than men. About 5 in 10 women strain at the toilet at least one-quarter of the time, compared with about 4 in 10 men [6]

- About 1 in 10 women have constipation for more than 12 weeks a year [7]
- Older people are also more likely to be constipated. About 2 in 10 older people have constipation. [6] [8] [9] [10]

What treatments work for constipation in adults?

Lots of people get constipated from time to time. Usually it lasts for just a few days and clears up without any treatment. But occasionally constipation doesn't go away, and it may get worse.

Key points about constipation in adults

- Exercising and eating more fibre are likely to help. You could also try drinking more fluids, although there's less research to show this is likely to ease your constipation.
- Constipation that lasts a long time is often treated with medicines called **laxatives**. Laxatives help your bowels to move.
- There are several types of laxatives. Some make your stools softer. Others stimulate your bowel muscles. Fibre supplements make your stools bigger and easier for your bowels to push along. Researchers haven't looked at all the different types of laxatives. But studies have been done on some of them and show that they work.
- The type of laxative that might work for you depends on your symptoms. Some laxatives can give you diarrhoea if you take them too often. So it may be best to see your doctor before starting treatment.

Which treatments work best? We've looked at the best research and given a rating for each treatment according to how well it works. We've looked separately at treatments for children who are constipated. To read more, see our information on Constipation in children .

Treatment Group 1

Treatments for constipation in adults

Treatments that work

- Polyethylene glycol

Treatments that are likely to work

- Exercise
- Eating more fibre

- Ispaghula husk
- Lactulose
- Laxatives that help push stools out
- Prucalopride

Treatments that need further study

- Drinking more fluids
- Biofeedback
- Glycerol suppositories
- Methylcellulose
- Mineral oils
- Enemas

What will happen to me?

Most constipation lasts for just a few days. It rarely becomes serious. But occasionally constipation goes on and on. If this isn't treated properly, it can get worse.

Constipation that lasts a long time is sometimes called **chronic constipation**. The word 'chronic' describes any medical condition that you have for a long time.

It's hard to say what will happen if you have constipation that lasts a long time. There haven't been many studies. Here's what we do know.

- Constipation can be uncomfortable, but it usually isn't serious. Having constipation doesn't mean that you will get bowel problems (such as bowel cancer) later on.
- Being constipated could mean you're more likely to have haemorrhoids, or weakness and inflammation in the wall of your bowels (diverticular disease).[11] But there isn't much evidence for this.
- Rarely, constipation that isn't treated may lead to large, hard stools that block your bowels. This is more likely to happen if you're older.[11] Your doctor will probably prescribe medicines called laxatives to clear your bowels. As a last resort, you may need to go to hospital. Your doctor can clear your bowels with an enema (fluid passed into your back passage) or suppositories (medicine placed into your back passage). But most people won't need this.

Treatments:

Polyethylene glycol

In this section

Polyethylene glycol is a laxative that helps your bowels add water to your stools. This makes your stools softer and easier to pass.

Polyethylene glycol comes in sachets of powder that you dissolve in water. One brand name is Movicol. You buy this treatment over the counter from a pharmacist.

There's been good research to show that people who take this type of laxative become less constipated. We found several good-quality studies (called randomised controlled trials) that showed people were no longer constipated after taking polyethylene glycol. [12] [13] [14] [15]

Some of the studies included people who had constipation for a long time.

After treatment with polyethylene glcyol, the people in the studies: [12] [13]

- Went to the toilet more often
- Felt their bowels had been emptied
- Strained less at the toilet.

In another study, more than 5 in 10 people found their constipation got better when taking polyethylene glycol. [16]

Studies have also found that polyethylene glycol works better than lactulose, which is another laxative that softens stools. [17] Studies also found that polyethylene glycol works better than the fibre supplement ispaghula husk. [18]

Polyethylene glycol doesn't seem to cause side effects. [12] [13] [16] [19] In the studies we looked at, some people got a mild pain in their abdomen, or wind. But people who took a dummy treatment (a placebo) also had similar problems. So we don't know if polyethylene glycol caused these problems.

Exercise

In this section

Taking regular exercise might help you feel less constipated, especially if you don't currently do very much exercise.

In one study, people with constipation who took a brisk 30-minute walk every day and performed some exercises at home for several minutes a day were much less constipated after 12 weeks. [20] The exercises they did at home were designed to improve strength and flexibility. They involved running on the spot and jumping.

In general, it seems that the more exercise people do, the less likely they are to get constipation. [21]

Exercise is likely to be good for your health in lots of other ways, too.

Eating more fibre

In this section

Fibre makes stools bulkier and softer, so they travel through your bowels faster and more easily. High-fibre foods include wholemeal cereals, bread and pasta, root vegetables, nuts, and fresh or dried fruit. Many people sprinkle bran on their breakfast cereal as an easy way of eating more fibre. There's good research to show that eating more fibre is likely to help you feel less constipated.

In one small study, women who ate fibre-rich rye bread for three weeks found it easier to pass stools and went to the toilet more often. [22] Another large study also found that women who ate more fibre were less likely to have constipation. [21]

Eating more fibre and drinking more fluids may help even more than just eating more fibre. In one study, people who did both these things for two months passed more stools each week than those who just ate more fibre. [23]

Eating more fibre may make you feel bloated and cause wind. [24] But these problems are likely to go away after a few weeks. In one study, people who ate yoghurt that contained the bacterium *Lactobacillus GG* found these symptoms were less of a problem.

Ispaghula husk

In this section

You'll probably pass a stool more often if you take ispaghula husk. Ispaghula husk is a fibre supplement that makes your stools heavier and softer, so they pass out of your body faster. This kind of treatment is sometimes called a **bulk-forming laxative**.

Ispaghula husk comes as granules or a powder that you mix with water. It comes in several different flavours. Some brand names are Fibrelief, Fybogel, Isogel, and Regulan. You buy this treatment over the counter from a pharmacist.

We found one good-quality study that involved people with constipation that lasted a long time. The people in the study took ispaghula husk three times a day. [25] Almost 9

in 10 said it helped with their constipation. After two weeks of taking ispaghula husk, the people in the study:

- Had more bowel movements a week
- Had less pain in their abdomen
- Strained less at the toilet.

Some research has shown that ispaghula husk works better than lactulose, a laxative that you take to soften your stools. [25] [26] But it may not work as well as the laxative polyethylene glycol. [18]

Ispaghula husk may cause some mild side effects, but we don't know how often this happens. You may get: [2]

- Wind
- A bloated feeling
- A swollen abdomen.

You need to drink plenty of fluids while you're taking ispaghula husk. If you don't, your bowel could get blocked. [27] Also, you shouldn't take this treatment just before going to bed.

Lactulose

In this section

You'll probably find lactulose helpful if you have constipation that lasts a long time. Lactulose is a type of laxative that increases the amount of water in your stools. This makes your stools softer and easier to pass.

You usually take lactulose as a liquid or you can mix it with a drink. You can buy it over the counter from a pharmacist. Some brand names are Duphalac, Lactugal, and Regulose.

One good-quality study (a randomised controlled trial) showed people were likely to pass stools more often after taking lactulose. [28] We also found another good-quality study that included elderly people living in a nursing home. It found that people who took lactulose were less likely to have: [29]

- Pain
- Wind

- A feeling that their bowels haven't completely emptied
- Bloating.

But the research has shown that other laxatives may work better than lactulose. In the studies we looked at, people who took polyethylene glycol (another stool-softening laxative) felt better and had less constipation than people who took lactulose. [17] Ispaghula husk may also work better than lactulose. [25] [30]

You may get side effects from lactulose, such as: [31]

- Bloating
- Nausea
- Cramping
- Wind
- Diarrhoea.

But these side effects aren't usually serious.

Laxatives that help push stools out

In this section

Some laxatives help your bowel muscles to move and make it easier to push stools out. These include:

- Senna (brand name Senokot)
- Bisacodyl (Dulcolax tablets)
- Docusate (Dioctyl, Docusol)
- Sodium picosulfate (Dulcolax Pico).

They help with symptoms in the short term, and there's also some research suggesting laxatives work for people with constipation that lasts a long time. [32] [33]

You can buy these treatments over the counter from a pharmacist. Make sure you check the packet for details of the correct dose. Some herbal products may have unpredictable amounts of the active ingredient. [34] (The active ingredient is the chemical that has an effect on your body.) This can make it hard to know how much you're taking.

Most of the research we found didn't mention any side effects from these laxatives. Some people get pain in their abdomen, but we don't know how common this is. And you may get diarrhoea if you take this type of laxative for a long time. [34] But there's no evidence of this in the research. [35] [36]

Drinking more fluids

In this section

Your bowels take water out of your stools. So drinking more fluids should make your stools heavier and more slippery. This might make going to the toilet easier for you.

There isn't very much research about how drinking more fluids can help constipation.The only study we found compared eating more fibre and drinking more fluids with just eating more fibre. It found that people who did both these things for two months passed more stools each week than those who just ate more fibre. [23]

Drinking more fluids is unlikely to be harmful.

Biofeedback

In this section

Biofeedback is based on the idea that you can learn to have more control over the things your body does automatically. There are different types of biofeedback treatments for constipation. They all involve training the muscles around your anus to relax.

- An electric sensor can measure how tense or relaxed the muscles around your anus are. [37] You'll be given feedback on a screen so you can get used to relaxing your muscles when you need to. The sensor may be a thin tube or a balloon that's put into your back passage (rectum), or electrodes that are attached to the skin around your anus.

- You may have a balloon filled with water put into your back passage and then pulled out slowly. [37] This lets you get used to the feeling of passing a stool. You can also practise using your muscles to speed up or slow down how quickly the balloon is moving.

Biofeedback is sometimes used to treat people who have constipation because of problems controlling the muscles around their anus. This is called **pelvic floor dysfunction**. However, there hasn't been much good-quality research on biofeedback for constipation. [38] [39] The research that has been done suggests that biofeedback might help, but most of these studies have had problems that make their findings less reliable. [39]

A few studies found this treatment seemed to help between 6 in 10 and 9 in 10 people. [40] Another study found biofeedback worked better than the laxative polyethylene glycol. [41] That study found that 8 in 10 people who had instructions about biofeedback said their symptoms were much better. Only 2 in 10 people who took polyetheylene glycol said their symptoms were much better.

Biofeedback is available only in a few specialised clinics. You might not be able to get it on the NHS.

We couldn't find any evidence that biofeedback can be harmful.

Glycerol suppositories

In this section

Glycerol is also sometimes called glycerin. It helps you to go to the toilet by stimulating your bowels. [34]

Glycerol comes as a suppository, which is a tablet that you insert into your back passage (rectum).

We couldn't find any studies looking at how well glycerol suppositories clear constipation. Nor could we find any evidence that they can be harmful.

Methylcellulose

In this section

Methylcellulose is a fibre supplement. It makes your stools heavier and softer, so they pass out of your body faster. This kind of treatment is sometimes called a **bulk-forming laxative**.

There hasn't been enough good research to say how well methylcellulose works as a treatment for constipation that lasts a long time. We found some studies that suggested that methylcellulose tablets (brand name Celevac) can help you pass stools more often and more easily, but they were poor quality. [2]

You'll need to drink plenty of fluids while you're taking methylcellulose. That's because it works partly by absorbing water. [27] You shouldn't take these tablets just before going to bed. There's a risk your bowel could get blocked.

You might also get some mild side effects if you take methylcellulose. These include:

- Wind
- Feeling bloated
- A swollen abdomen.

Mineral oils

In this section

Mineral oils, such as liquid paraffin, are used to make your stools more slippery and easier to pass. But these aren't often used any more.

There hasn't been much research to tell us how well mineral oils work if you're constipated. We couldn't find any good-quality studies (called randomised controlled trials). But doctors think liquid paraffin can help with constipation.

You take liquid paraffin by drinking it.

Mineral oils can have side effects. For example, they may seep out of your back passage (rectum). [27] This is unpleasant, and may cause irritation. Liquid paraffin can stop your body absorbing some vitamins so well. But in the research we looked at, people who took liquid paraffin seemed to be getting enough vitamins. [27]

Enemas

In this section

An enema is a liquid or drug that's put into your back passage (rectum). The treatment is used to soften your stools and clean out your bowel.

We couldn't find any good-quality studies that looked at enemas for constipation that lasts a long time.

But if your bowel is blocked and laxatives haven't helped you, you might need to go to hospital for an enema.

Prucalopride

In this section

Prucalopride is a newer treatment for some women with constipation. It's not recommended for men. It comes as a tablet and the brand name is Resolor.

Prucalopride is recommended for women only if the following two things are true: [42]

- They have tried at least two different types of laxatives at the highest possible recommended doses, for at least six months, and still have constipation
- They are considering more invasive treatments for their constipation, such as suppositories (tablets inserted into the back passage) or enemas (liquids or drugs put into the back passage).

Several studies have found that prucalopride helps people who have long-term constipation. [43] [44] [45] However, the studies looked mostly at women, so we can't say whether prucalopride works for men.

In studies, about 2 or 3 out of 10 people taking prucalopride stopped being constipated and had three or more bowel movements a week. [43] [45] Just 1 in 10 people taking a dummy treatment (a placebo) had three or more bowel movements a week.

The most common side effects people get are a headache, stomach pain, feeling sick, or diarrhoea. [46] Each of these problems affects about 1 in 5 people who take prucalopride. You're most likely to get side effects when you start treatment, and problems will usually go away after a few days.

In studies of prucalopride, a few people got heart palpitations (a feeling that your heart is beating irregularly). If this happens, talk to your doctor. [46]

Further informations:

Tests you might need if you have constipation

If you have constipation, your doctor may order some tests to find out what's causing your symptoms.

But most people with constipation don't need any tests. You may have them if your doctor wants to make sure that your constipation isn't because of a more serious medical condition. You'll probably need them only if you have other symptoms as well as being constipated, such as bleeding or losing weight suddenly.

Some of the tests you might have are listed below.

- Blood test. You may have a blood test to check that your thyroid gland is working properly. The thyroid is a small gland in your neck. You can become constipated if your thyroid is underactive. To read more, see our information on Underactive thyroid .
- A test to see how much calcium you have in your blood. This test helps check for lots of different conditions. And it can give your doctor an idea of how healthy you are in general.
- Barium enema. This helps to take an X-ray of your bowel. A thick, white liquid that contains a chemical called barium is passed through a tube into your back passage (rectum). Barium shows up on X-rays, so it helps your doctor see if your bowel is blocked.

- Proctogram. This is a bit like a barium enema. You sit on a toilet in the X-ray room. X-rays are taken when you pass the barium in the same way as you would pass a stool.

- Colonoscopy. This test is done to check for disease inside your bowel. A doctor puts a tube with a camera on the end (a **colonoscope**) into your back passage (rectum), and passes it into your colon. We've prepared some extra information for people thinking of having this test. To read more, see Colonoscopy.

- A test to measure how well your bowel muscles work. Your doctor may call this **anorectal manometry**. A thin tube with a balloon on its end is put into your back passage. The balloon is then slowly filled up. This makes the muscles in your rectum and anus squeeze, and a machine measures how strongly you squeeze. This test shows how well the muscles and nerves in your bowels are working. But this test isn't done often.

- A test that shows how well food moves through your bowels. For this test you swallow some capsules that show up on X-rays. Your doctor can then find out how long it takes for food to pass through your body. But it's rare for people to need this test.

Glossary:

haemorrhoids
Haemorrhoids are swollen veins in the anus. Sometimes you can see or feel them and sometimes they are inside the anus. Haemorrhoids can hurt and bleed. They usually happen when you strain a lot to pass a stool.

fibre
Fibre is all the parts of food that the body can't absorb. This is why foods that are high in fibre make you have more bowel movements. When your body can't absorb something, it leaves your body in your stools. Foods high in fibre include wholemeal bread and cereals, root vegetables and fruits.

antidepressant
Antidepressants are medicines used to treat depression and sometimes other conditions. They work by changing the levels of chemicals in your brain called neurotransmitters. There are three main types of antidepressants, which work in different ways: selective serotonin reuptake inhibitors (SSRIs), monoamine oxidase inhibitors (MAOIs) and tricyclic antidepressants (TCAs).

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.

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.

colon
Your colon is the first 2 metres (6 feet) of your large intestine. During digestion, food travels from your stomach to your small intestine and then to your large intestine. What's not digested then leaves your body as a stool.

rectum
The rectum is the last 15 to 20 centimetres (six to eight inches) of the large intestine, ending with the anus (where you empty your bowels from).

anus
The anus, which is at the end of the rectum, is where stools leave your body when you go to the toilet. Part of the anus is a muscle that helps you hold in the stool until you are on the toilet.

laxative

Laxatives are medicines that empty your bowels by making you go to the toilet more often than usual.

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.

enema
An enema is liquid that is poured into the rectum to clean it out. Many people find it uncomfortable and embarrassing, but it helps a doctor to see the inside of the bowels.

diarrhoea
Diarrhoea is when you have loose, watery stools and you need to go to the toilet far more often than usual. Doctors say you have diarrhoea if you need to go to the toilet more than three times a day.

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.

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.

active ingredient
An active ingredient is the substance in a medicine or supplement that causes changes to take place in your body.

biofeedback
When you have biofeedback, your doctor helps you use a device that measures how fast your heart beats, how fast you're breathing or how tense your muscles are. The information you get from the device is called 'biofeedback'. Biofeedback lets you see how your heartbeat, breathing or muscle tension change when you do things like stand or sit differently, or slow down your breathing. The idea is that you can learn to sense the messages from your body without the device and learn how to control the way you respond to stress.

Sources for the information on this leaflet:

1. National Institute of Diabetes and Digestive and Kidney Diseases.Constipation.September 2013. Available at http://digestive.niddk.nih.gov/ddiseases/pubs/constipation (accessed on 12 June 2014).

2. Frizelle F, Barclay B.Constipation in adults.July 2010. Clinical Evidence. (Based on October 2009 search.) Available at http://www.clinicalevidence.com/ceweb/conditions/dsd/0413/0413.jsp (accessed on 12 June 2014).

3. Thompson WG, Longstreth GF, Drossman DA, et al.Functional bowel disorders and functional abdominal pain.Gut. 1999; 45 (supplement 2): 43-47.

4. NHS Centre for Reviews and Dissemination.Effectiveness of laxatives in adults.Effective Health Care. 2001; 7: 1-12.

5. Health & Social Care Information Centre.Prescriptions dispensed in the community: England 2002-12.July 2013. Available at https://catalogue.ic.nhs.uk/publications/prescribing/primary/pres-disp-com-eng-2002-12/pres-disp-com-eng-2002-12-rep.pdf (accessed on 12 June 2014).

6. Heaton KW.Cleave and the fibre story.Journal of the Royal Naval Medical Service. 1980; 66: 5-10.

7. Probert CS, Emmett PM, Heaton KW.Some determinants of whole-gut transit time: a population-based study.Quarterly Journal of Medicine. 1995; 88: 311-315.

8. Donald IP, Smith RG, Cruikshank JG, et al.A study of constipation in the elderly living at home.Gerontology. 1985; 31: 112-118.

9. Campbell AJ, Busby WJ, Horwath CC.Factors associated with constipation in a community based sample of people aged 70 years and over.Journal of Epidemiology and Community Health. 1993; 47: 23-26.

10. Talley NJ, Fleming KC, Evans JM, et al.Constipation in an elderly community: a study of prevalence and potential risk factors.American Journal of Gastroenterology. 1996; 91: 19-25.

11. Petticrew M, Watt I, Sheldon T.Systematic review of the effectiveness of laxatives in the elderly.Health Technology Assessment. 1997; 1: 1-52.

12. DiPalma JA, DeRidder PH, Orlando RC, et al.A randomized, placebo-controlled, multicenter study of the safety and efficacy of a new polyethylene glycol laxative.American Journal of Gastroenterology. 2000; 95: 446-450.

13. Corazziari E, Badiali D, Habib FI, et al.Small volume isosmotic polyethylene glycol electrolyte balanced solution (PMF-100) in treatment of chronic nonorganic constipation.Digestive Diseases and Sciences. 1996; 41: 1636-1642.

14. Baldonedo YC, Lugo E, Uzcategui AA, et alEvaluation and use of polyethylene glycol in patients with constipation.G.E.N. 1991; 45: 294-297 [in Spanish].

15. Dipalma JA, Cleveland MV, McGowan J, et al.A randomized, multicenter, placebo-controlled trial of polyethylene glycol laxative for chronic treatment of chronic constipation.American Journal of Gastroenterology. 2007; 102: 1436-1441.

16. DiPalma JA, DeRidder PH, Orlando RC, et al.A randomized, placebo-controlled, multicenter study of the safety and efficacy of a new polyethylene glycol laxative.American Journal of Gastroenterology. 2000; 95: 446-450.

17. Heitland W, Mauersberger H.Study of the laxative effect of lactitol as opposed to lactulose in an open, randomized comparative study.Schweizerische Rundschau für Medizin Praxis. 1988; 77: 493-495 [in German].

18. Wang H-J, Liang X-M, Yu Z-L, et al.A randomised, controlled comparison of low-dose polyethylene glycol 3350 plus electrolytes with ispaghula husk in the treatment of adults with chronic functional constipation.Clinical Drug Investigation. 2004; 24: 569-576.

19. Castillo R, Nardi G, Simhan D.Lactulose in the treatment of chronic idiopathic constipation.Prensa Médica Argentina. 1995; 82: 173-176 [in Spanish].

20. De Schryver AM, Keulemans YC, Peters HP, et al.Effects of regular physical activity on defecation pattern in middle-aged patients complaining of chronic constipation.Scandinavian Journal of Gastroenterology. 2005; 40: 422-429.

21. Dukas L, Willett WC, Giovannucci EL.Association between physical activity, fiber intake, and other lifestyle variables and constipation in a study of womenAmerican Journal of Gastroenterology 2003; 98: 1790-1796.

22. Hongisto S-M, Paajanen L, Saxelin M, et alA combination of fibre-rich rye bread and yoghurt containing Lactobacillus GG improves bowel function in women with self-reported constipationEuropean Journal of Clinical Nutrition. 2006; 60: 319-324.

23. Anti M, Pignataro G, Armuzzi A, et al.Water supplementation enhances the effect of high-fiber diet on stool frequency and laxative consumption in adult patients with functional constipation.Hepato-Gastroenterology. 1998; 45: 727-732.

24. Hongisto S-M, Paajanen L, Saxelin M, et al.A combination of fibre-rich rye bread and yoghurt containing Lactobacillus GG improves bowel function in women with self-reported constipation.European Journal of Clinical Nutrition. 2006; 60: 319-324.

25. NHS Centre for Reviews and Dissemination.Effectiveness of laxatives in adults.Effective Health Care. 2001; 7: 1-12.

26. Rouse M, Chapman N, Mahapatra M, et al.An open, randomised, parallel group study of lactulose versus ispaghula in the treatment of chronic constipation in adults.British Journal of Clinical Practice. 1991; 45: 28-30.

27. British National Formulary.Gastro-intestinal system.Section 1. British Medical Association and Royal Pharmaceutical Society of Great Britain. Also available at http://bnf.org (accessed on 12 June 2014).

28. Tramonte SM, Brand MB, Mulrow CD, et al.The treatment of chronic constipation in adults: a systematic review.Journal of General Internal Medicine. 1997; 12: 15-24.

29. Petticrew M, Watt I, Sheldon T.Systematic review of the effectiveness of laxatives in the elderly.Health Technology Assessment. 1997; 1: 1-52.

30. Tramonte SM, Brand MB, Mulrow CD, et al.The treatment of chronic constipation in adults: a systematic review.Journal of General Internal Medicine. 1997; 12: 15-24.

31. Hammer B, Ravelli GP.Chronic functional constipation lactitol maintenance dose: a multicentre comparative study with lactulose.Therapie Schweiz. 1992; 8: 328-335 [in German].

32. Mueller-Lissner S, Kamm MA, Wald A, et al.Multicenter, 4-week, double-blind, randomized, placebo-controlled trial of sodium picosulfate in patients with chronic constipation.American Journal of Gastroenterology. 2010; 105: 897-903.

33. Kamm MA, Mueller-Lissner SA, Wald A, et al.Stimulant laxatives are effective in chronic constipation: multi-center, 4-week, double-blind, randomized, placebo-controlled trial of bisacodyl.Gastroenterology. 2010; 138: 228.

34. British National Formulary.Other stimulant laxatives.Section 1.6.2. British Medical Association and Royal Pharmaceutical Society of Great Britain. Also available at http://bnf.org (accessed on 12 June 2014).

35. Wald A.Is chronic use of stimulant laxatives harmful to the colon?Journal of Clinical Gastroenterology. 2003; 36: 386-389.

36. Müller-Lissner S.What has happened to the cathartic colon?Gut. 1996; 39: 486-488.

37. Bassotti G, Chistolini F, Sietchiping-Nzepa F, et al.Biofeedback for pelvic floor dysfunction in constipation.BMJ. 2004; 328: 393-396.

38. Koh CE, Young CJ, Young JM, et al.Systematic review of randomized controlled trials of the effectiveness of biofeedback for pelvic floor dysfunction.British Journal of Surgery. 2008; 95: 1079-1087.

39. Woodward S, Norton C, Chiarelli P.Biofeedback for treatment of chronic idiopathic constipation in adults (Cochrane review).In: The Cochrane Library. Wiley, Chichester, UK.

40. Heymen S, Jones KR, Scarlett Y, et al.Biofeedback treatment of constipation: a critical review.Diseases of the Colon and Rectum. 2003; 46: 1208-1217.

41. Chiarioni G, Whitehead WE, Pezza V, et al.Biofeedback is superior to laxatives for normal transit constipation due to pelvic floor dyssynergia.Gastroenterology. 2006; 130: 657-664.

42. National Institute for Health and Care Excellence.Prucalopride for the treatment of chronic constipation in women.December 2010. Technology appraisal 211. Available at http://guidance.nice.org.uk/TA211 (accessed on 12 June 2014).

43. Camilleri M, Kerstens R, Rykx A, et al.A placebo-controlled trial of prucalopride for severe chronic constipation.New England Journal of Medicine. 2008; 358: 2344-2354.

44. Tack J, Van OutryveM, Beyens G, et al.Prucalopride (Resolor) in the treatment of severe chronic constipation in patients dissatisfied with laxatives.Gut. 2009; 58: 357-365.

45. Quigley EM, Vandeplassche L, Kerstens R, et al.Clinical trial: the efficacy, impact on quality of life, and safety and tolerability of prucalopride in severe chronic constipation--a 12-week, randomized, double-blind, placebo-controlled study.Alimentary Pharmacology & Therapeutics. 2009; 29: 315-328.

46. European Medicines Agency.Summary of product characteristics: Resolor 1 mg film-coated tablets.September 2013. Available at http://www.medicines.org.uk/emc/medicine/23204/SPC (accessed on 12 June 2014).

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Last published: Jul 17, 2014