

Understanding your **Bowels**

Dr Ken W. Heaton

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IMPORTANT

This book is intended not as a substitute for personal medical advice but as a supplement to that advice for the patient who wishes to understand more about his or her condition.

Before taking any form of treatment
**YOU SHOULD ALWAYS CONSULT YOUR MEDICAL
PRACTITIONER.**

In particular (without limit) you should note that advances in medical science occur rapidly and some information about drugs and treatment contained in this booklet may very soon be out of date.

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About the author



Dr Ken Heaton was until recently Reader in Medicine at the University of Bristol and Honorary Consultant Physician to the United Bristol Hospitals' Trust. His research interests are in bowel function and nutrition. He has been on many national committees and has published almost 300 scientific papers.

Introduction

A taboo subject

Have you ever wondered why bowel movements and stools are taboo subjects? There are many reasons. From earliest childhood we are conditioned to regard stools as dirty, disgusting and even dangerous, things that must be disposed of as quickly as possible.



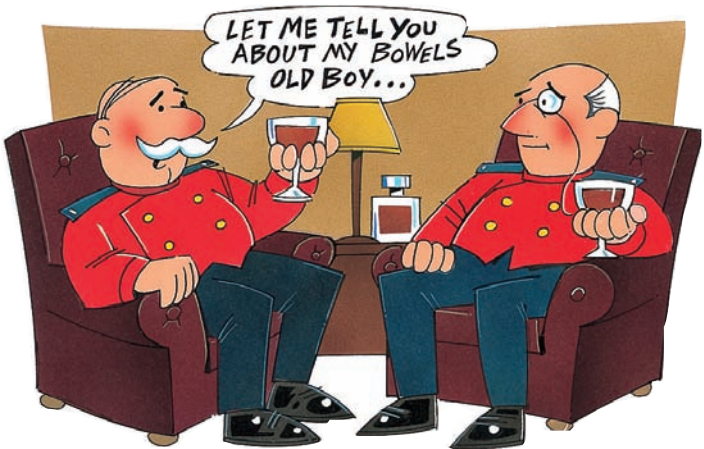
In western culture, the act of passing stools is an unfortunate necessity and an entirely private matter. As for the organs that produce stools, we prefer not to think about them and, if we do, we see them as mysterious, unpredictable and rather disgraceful.

Why is this?

There are grounds for some of these beliefs and attitudes. Stools are usually smelly – sometimes appallingly so. Diseases can be spread from people's stools to other people. The act of opening the bowels is an undignified affair, best done in private, and sometimes it is uncomfortable. The colon and rectum, which make the stools, are mysterious organs – perhaps the least understood organs in the body. And who has not been embarrassed by passing wind in company?

Let's look at it differently

Distaste and reticence, however, can go too far. Stools and wind do not have to be smelly – odour depends to some extent on what we eat. Stools spread disease





only when people are careless about washing their hands or when sewage gets into water supplies. Opening the bowels need not be uncomfortable. Our knowledge of the bowels has increased enormously in recent years and doctors can now actually diagnose and cure or relieve nearly all the disorders of the bowels.

Bowel problems

Disorders of the bowels are extremely common. In fact, most people suffer from problems with bowel function or from piles (haemorrhoids), or both, at some time in their lives. At any given time, one in five of the population is experiencing discomfort from the bowels, and, over a lifetime, one in 40 of us will develop cancer in the bowel.

The food that we eat and the way that we live our lives have enormous effects on our bowels. This book tries to explain all these matters: it will help you to keep the workings of your bowels comfortable and it

will tell you what to do if things go wrong. Medical terms are explained in the Glossary on pages 111–13.

Some words and phrases

The word 'bowels' is one of those vague words that can mean different things at different times.

Sometimes it is used to describe both the large and the small intestines. Often, as in this book, the term is limited to the large intestine or colon, which is the last part of the alimentary canal or digestive tube.

Bowel movements

When people speak of 'using the bowels', 'moving the bowels', 'emptying the bowels' or 'opening the bowels' they are trying to speak politely of that unmentionable activity that is correctly called defecation. A less technical way of saying the same thing is 'passing a stool'. Stools, faeces and bowel motions all mean the same thing to doctors. It is strange that these words are rarely used in polite conversation; most people use roundabout expressions instead.

'Voiding' wind

Gas passed from the rectum (back passage) is properly called flatus. Many people refer to it as wind or flatulence, but this is confusing because other people use the terms wind and flatulence to mean belching (burping) or to mean bloated feelings or gurglings from the abdomen.

'Fart' has the advantage of meaning only one thing, but it is even less acceptable in polite conversation than faeces. Probably the nearest we have to an expression that is both unambiguous and reasonably polite is 'voiding' wind.



KEY POINTS

- We are conditioned from an early age to regard stools as dirty, disgusting and even dangerous
- Disorders of the bowel are extremely common: at any moment in time one in five of the population is experiencing bowel discomfort
- The food that we eat and the way that we live our lives have enormous effects on our bowels

A brief guide to the bowels

The large intestine

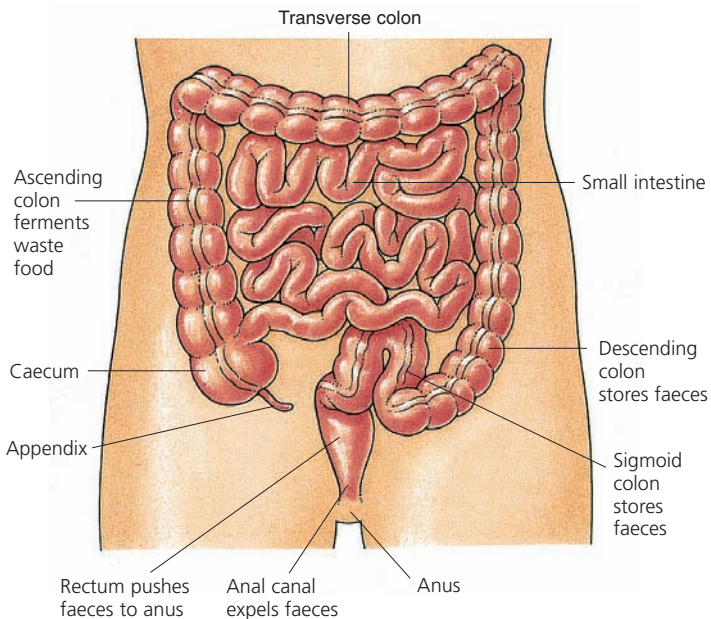
The large intestine consists of the colon, rectum and anal canal (see illustration on page 7). The colon begins just above the right groin where it is known as the caecum and from which springs the appendix.



It continues as the ascending colon, which climbs to just below the ribs on the right and then swings across to the opposite side as the transverse colon. With a second sharp bend it turns downward as the descending colon, and finally makes a curious loop known as the sigmoid (named after the squiggly Greek letter sigma or Σ) before joining on to the rectum.

The parts of the bowels

Food travels from the stomach, through the small intestine to the large intestine. It travels up the ascending colon where it is fermented, then across the transverse colon where water and salt are removed. It is stored in the descending colon and sigmoid colon, and passes to the rectum, along the anal canal and out of the anus when you have a bowel movement.



The word rectum comes from the Latin word for straight, which is odd because actually it bends sharply backwards just before it joins the anal canal. It does straighten out, however, while the bowels are being opened, when it functions simply as a tube conducting stools from the sigmoid colon to the outside world.

Strictly speaking it is the anal canal that does the last part of this job, but the canal is only an inch or so long and is really just a device for keeping stools and gas inside until their owner decides to let them out. Except for the throat, the anal canal is the only part of the alimentary tube that we can consciously control. The throat and the anal canal have muscles like those in our arms and legs.

The anal muscle fibres are arranged as a two-part closing system. First, there is a sling of fibres round the upper end of the tube. When this muscle contracts it exerts a forward pull and so maintains the sharp angle where the rectum joins the anus; at the same time it presses the front and back of the canal against each other. Second, there is a ring of fibres that on contraction makes the hole in the tube narrower.

Both sets of fibres are contracting gently all the time without any conscious effort on our part (just like many other muscles in the body). We have to relax these muscles in order to pass a stool or some wind. Some people find this difficult.

The lining of the bowel

Between the muscular wall and the interior of the bowel (the lumen) there is an all-important lining. In the anal canal this lining is simply skin but under it are clumps of soft, spongy material called the anal

cushions. In the rest of the bowel the lining is a delicate mucous membrane or mucosa.

This fragile lining has the difficult task of being a barrier to dangerous things like bacteria and viruses, while at the same time letting through into the bloodstream the good things like water and salts which we cannot afford to lose in the stools.

It is a balancing act. If the mucosa absorbs too much water, the stools become hard and difficult to pass; if it absorbs too little, they are liquid and copious and the anal muscles have difficulty keeping them in. At one extreme there is constipation, at the other diarrhoea and incontinence.

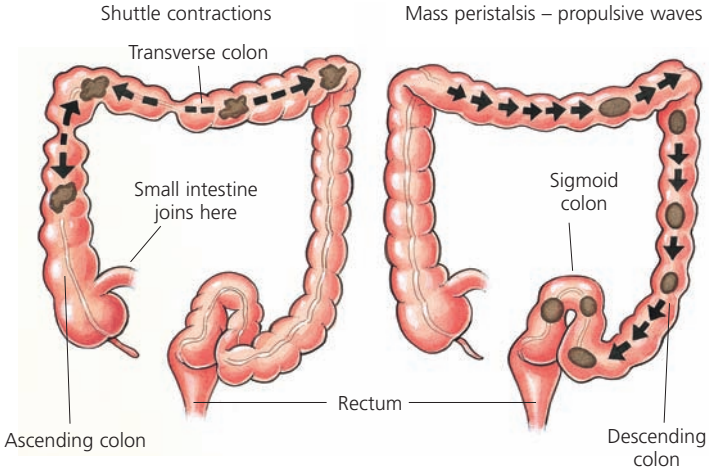
Movements

The muscles of the bowel seldom rest – every few seconds they contract briefly in short sections of bowel. These contractions make the bowel narrower and drive its contents into neighbouring sections which



How the bowel muscles work

When the muscles in the bowel wall contract, they move the contents along. When short sections contract and then relax, the contents move back and forth. If the contractions follow each other in a wave along the length of the bowel, the contents are moved towards the rectum. The difference is not in the strength of the contraction but in whether it keeps moving in the same direction, towards the rectum.



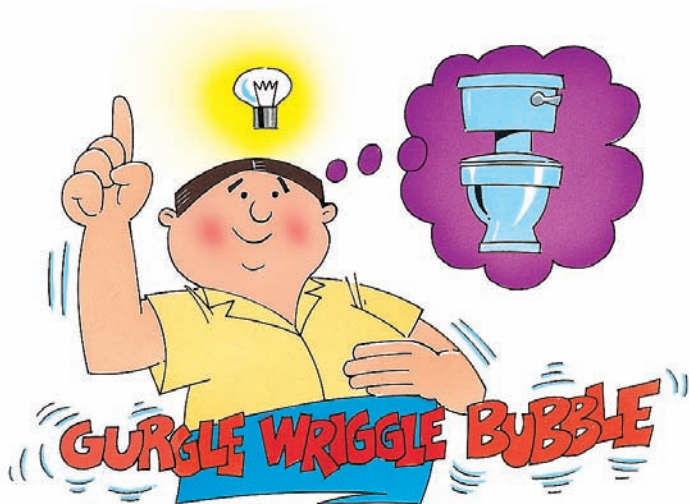
are relaxed. Most of these movements simply shuttle the contents back and forth, presumably to increase their exposure to the mucosa and so ensure the maximum absorption of valuable water and salts.

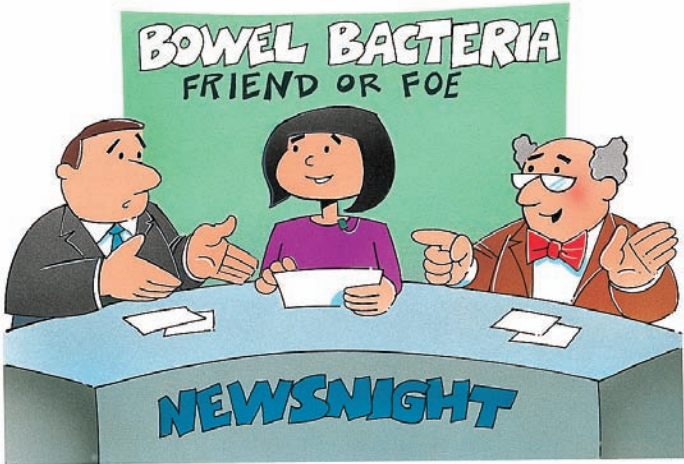
Now and again a wave of contraction passes round the entire colon, pushing its contents towards the rectum. This is known as mass peristalsis and it occurs mostly at meal times, especially during breakfast. This explains why many people feel the need to open their bowels after breakfast. In others, mass peristalsis is set off by getting out of bed and dressing. A cup of tea or coffee or a cigarette can also do this.

Sensations

The fortunate among us experience sensations from our bowel only when we need to pass stools or wind. In both cases, the sensations are signals from the rectum saying that it is receiving material from the sigmoid colon. The amazing thing is that we can tell from the signal whether the material is solid, liquid or gaseous. The distinction is probably made by miniature sensors at the top end of the anal canal.

Many people also feel wriggling movements in their abdomen when gas is moved from one part of the colon to another. At the same time, a gurgling sound may be heard. Other people feel a wave of discomfort, which may even be painful, when the need to open the bowels is strong, for example if the stool is looser than usual. All these sensations are perfectly normal, up to a point.





Discomfort and pain from the colon are extremely common in otherwise healthy people (see Irritable bowel syndrome, page 66). Usually this implies that the bowel is contracting strongly, but it may also mean that the bowel has become more sensitive for some reason.

Bacteria: friends and foes

A unique feature of the large intestine is that it is host to a huge number of bacteria. This is not as alarming as it sounds, because the bacteria are nearly all harmless.

Some animals – the herbivores – actually depend for their lives on the bacteria in their intestines; the grass that they eat is useless until it has been fermented by the bacteria. We do not need our bacteria for any vital function, but nor do we need to fear them despite their vast numbers.

They are scavengers, living off the undigested remnants of our food and the mucus and dead cells

that are constantly shed by the mucous membrane of the colon. They are also responsible for the gas that we pass from the rectum (flatus).

Laboratory experiments show that, if animals do not have bacteria in their gut, they are more prone to disease – germ-free animals are fragile creatures. The chances are that the same would be true of humans, so by all means respect your bowel bacteria but do not live in fear of them. Some of them are good for us, protecting us from disease, for example, the bacteria that are also present in yoghurt.

Bacteria in the bowel

If colonic bacteria have a bad reputation, it is not because of the gas that they produce, but for one of the following reasons:

- When, through injury or disease, the bacteria get into other parts of the body, they can produce infections such as cystitis.
- When, through bad hygiene, one person's colonic bacteria get into another person's food or drink they can cause gastroenteritis. A common example is travellers' diarrhoea.
- It is suspected that some of the chemical substances released by colonic bacteria cause disease, especially cancer of the bowel and gallstones. However, this may be a problem only when a high-calorie, low-fibre diet is eaten.

Some colonic bacteria help us resist disease, such as those that live in yoghurt. Others help to keep the bowel clear by cleaning up dead cells, mucus and food remnants.

Bowel movements – what is normal?

The large intestine and its products have never been popular subjects for research so, not surprisingly, scientific data on them are limited. However, thanks to recent research, we know the following facts and figures about the adult British population.

Most people claim to open their bowels once a day but, when they are asked to record all their bowel openings, it turns out that a regular 24-hour cycle is present in only 40 per cent of men and 33 per cent of women, and a twice or three times a day habit is present in another seven per cent and four per cent respectively. So most people are irregular in their habits. This is especially true of younger women. About ten per cent of women and three per cent of men go only two or three times a week, whereas one in 100 women goes once a week or less often.



Progress of food through the body

After swallowing, food is moved by muscular contractions through the digestive system. The time spent in each part depends on the stage of digestion. It also varies with food type and quantity, and from day to day. The usual total time can vary from 15 hours to 5 days.

