AN ILLUSTRATED, EVIDENCE-BASED MANUAL & WORKBOOK

# *The* Gut Health MANUAL

*Support your gut health naturally*

DR MICHAEL KLEIN



# Before You Begin

*Gut problems can affect what you eat, how you feel and how you live. This manual brings together scientific evidence and practical guidance to help you understand your symptoms, make informed choices and take manageable steps towards feeling better.*

The problem-focused chapters cover bloating, constipation, IBS, low mood, weight and cravings, reflux, and recovery after antibiotics. Each explains what may be happening, what to discuss with your doctor, and which practical steps to consider. Clear evidence labels distinguish well-supported recommendations from early findings and expert guidance, so you can judge the strength of the advice.

To help you put the guidance into practice, a selection of free downloadable resources is available online, including printable checklists, symptom diaries and progress trackers. The complete Gut Health Companion Kit is free to download too, bringing together the chapter worksheets, practical plans, food-planning tools and reusable journal pages, alongside guided audio for breathing and gut-calming relaxation. These resources accompany the Natural Health Series and give you space to record your experiences, recognise patterns and prepare useful questions for your healthcare professional. You can print fresh copies whenever you need them and use the tools that suit you best.




## Your free companion app

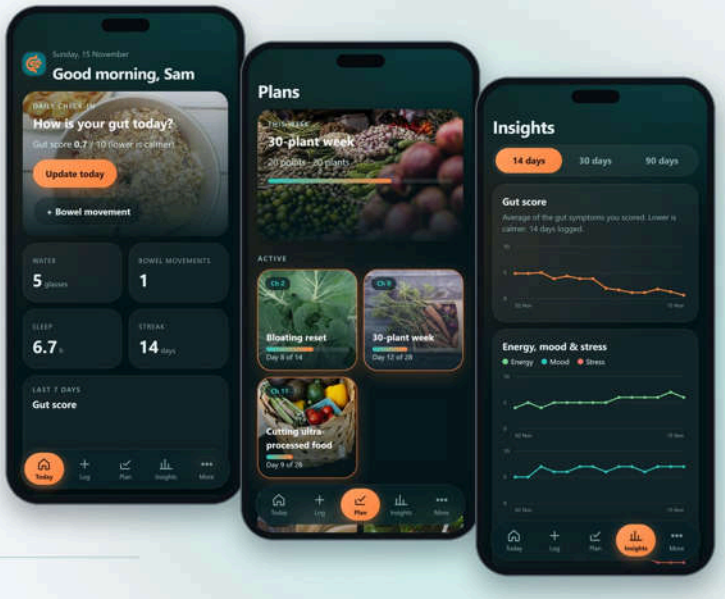
Every diary and tracker in this book is also available in **GutClarity™**, a companion app for your phone. It is free to download, and there are no subscriptions. You score your symptoms, log meals and bowel movements, tick off the steps of each 14-day plan, and see charts of your own pattern, with an optional reminder each day. Your entries stay on your phone. At the end of each chapter, a short panel shows the matching screens, for anyone who would rather not print and fill in the forms by hand.

THE COMPANION APP

# GutClarity™

Your free gut health tracker

- **Free to download. No subscriptions.**
- The diary and tracker from every chapter, on your phone
- Daily plans with a checklist and charts that show your own pattern
- Daily reminders, and your entries stay on your phone




QR CODE APP

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**IMPORTANT NOTICE**

This manual is for general information. It is not a diagnosis, and it does not replace advice from your own doctor, pharmacist or dietitian.

Read the **red flags** in each chapter first. If any apply to you, see a doctor before trying the plan.

Never stop or change a prescribed medicine without speaking to the person who prescribed it.

Check with a pharmacist before taking herbal products if you are pregnant, breastfeeding, take regular medicines, or have a long-term condition.

# How to Use This Manual

*Go straight to the chapter for your problem. You do not need to read the book in order.*

## The evidence labels

| Label | What it means |
|---|---|
| **Strong** | Several good randomised controlled trials, confirmed in meta-analyses. |
| **Moderate** | At least one good randomised trial, or several smaller trials pointing the same way. |
| **Early** | Small or laboratory studies, or traditional use with a plausible mechanism. |
| **Expert advice** | Recommended by specialist guidelines on the basis of experience rather than trials. |
| **Not supported** | Tested and found not to help, or advised against by specialists. |

## What the boxes mean

★ **KEY IDEA**

The single most important point of a section.

*i* **PRACTICAL TIP**

Advice that makes a step easier or more effective.

! **CAUTION**

Safety guidance, or a common mistake to avoid.

## The workbook pages

Every problem chapter ends with **Key takeaways**, a **checklist**, a **14-day plan** and a **tracker** page. Patterns in your own diary are often more useful than any general advice. Each tracker is also in the free GutClarity™ app (see Before You Begin).

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CHAPTER ONE

# Your Gut *in* Ten Minutes

*The four things worth knowing before anything else.*

**90%**

of the body's serotonin is produced in the gut.

GUT-BRAIN NEUROSCIENCE REVIEW

> *Gut symptoms are common, often confusing, and sometimes frightening. This chapter introduces the four things about your gut that matter most: the microbiome, the gut barrier, short-chain fatty acids and the gut-brain axis. It explains how the evidence labels in this manual work, what is inside the fifteen chapters, and how to find the chapter that fits your question.*

IN THIS CHAPTER


01 Why gut symptoms feel personal, and what is actually happening in your body

02 The microbiome: what it is, how diversity links to health, and what disrupts it

03 The gut barrier: the single-cell layer that helps control what passes into your body

04 Short-chain fatty acids: what bacteria make from fibre, and why it matters for the gut lining

05 The gut-brain axis: the two-way connection linking stress, mood and digestion

06 How the evidence labels in this manual work and what each label means

07 What this manual contains: 296 illustrated figures, 15 checklists, 15 diaries and trackers

08 A chapter-by-chapter guide and a start-with-your-question map


## 1.1 Something you already know

You have felt your gut react. Perhaps it is the bloating that appears by mid-afternoon and stays until morning, or the urgency that makes you scan for the nearest toilet before you leave the house. Perhaps it is the low mood that always seems to travel alongside your gut symptoms, and you have started to wonder whether the two are connected. Gut problems are physical, but they are also intensely personal. They change what you eat, where you go and how you feel in your own body.

What can be harder to find is a clear picture of what is actually going on. Not the Latin names and not the statistics, but the working parts: the things that can go wrong, and why the practical steps in the rest of this manual make sense once you understand how the system is supposed to operate. This chapter gives you that picture. It takes about ten minutes to read.

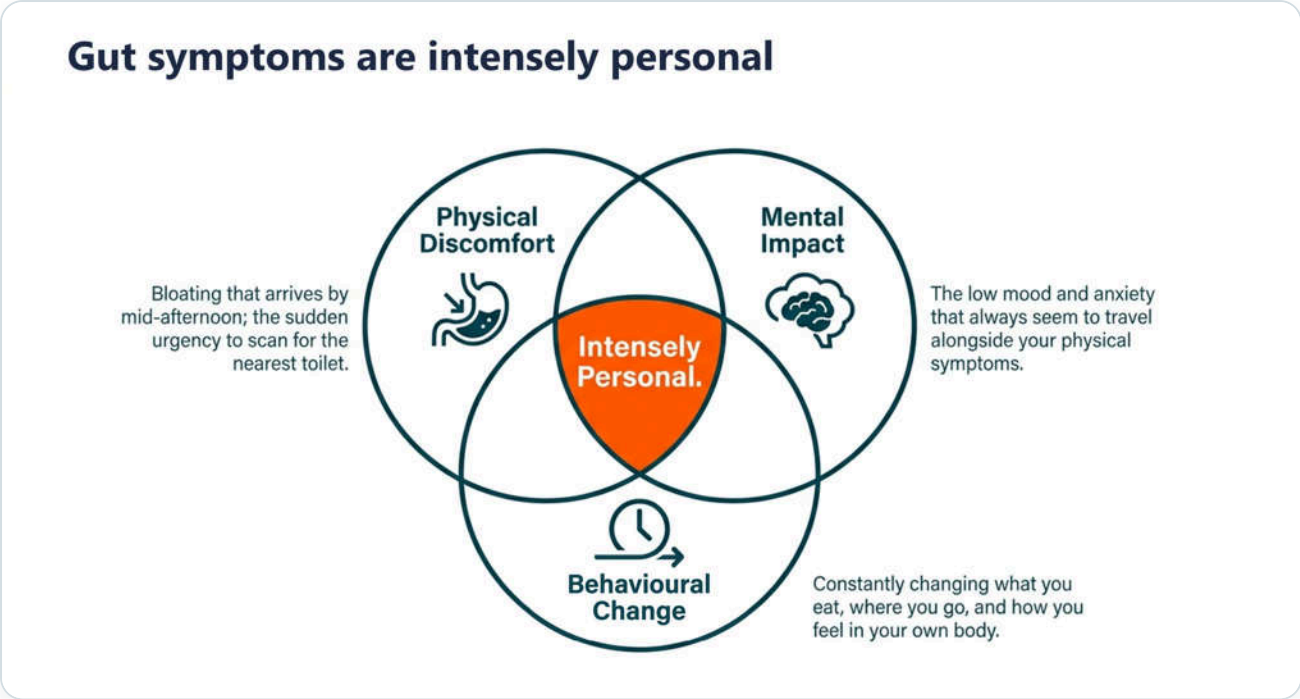


**FIGURE 1.1** **Gut symptoms are intensely personal** Gut symptoms can affect physical comfort, mood and everyday choices. Their causes differ from person to person; the problem chapters help you explore your own pattern.

## 1.2 The questions behind your symptoms

Whatever your gut problem, a small number of biological questions lie beneath it. Why does what you eat change how you feel so quickly? Why does stress often make your gut worse? Why does the same food cause no trouble for one person and days of discomfort for another? Why do antibiotics sometimes leave your gut in a different state for weeks afterwards?

These are not vague or unanswerable questions. They have biological explanations, and those explanations point to four systems that this manual returns to in almost every chapter: the microbiome, the gut barrier, short-chain fatty acids and the gut-brain axis. You do not need to memorise all four. By the time you have read one or two chapters of this manual, they will feel familiar.

## 1.3 Four things worth knowing

### The microbiome

Your large intestine is home to trillions of micro-organisms, mostly bacteria, and also viruses, fungi and other microbes. This community is called the gut microbiome. Its members help break down food that your own enzymes cannot digest. **Evidence level: Strong for these established biological functions.**

Diversity means the variety of microbes living alongside each other. Studies link differences in diversity with health, but a more diverse microbiome is not a diagnosis of good health, and raising diversity is not the same as relieving symptoms. **Evidence level: Early for diversity as a treatment target.** Even a single course of antibiotics can change gut bacteria within days (**Moderate evidence**, from small, closely fol-

lowed human studies). Fibre can change particular groups of gut bacteria (**Moderate**), but increasing fibre does not reliably raise overall diversity within weeks. The **Fibre and the 30-Plant Week** and **Repairing Your Gut After Antibiotics** chapters explain the distinction.

The microbiome is not fixed, but it is not the explanation for every benefit in this manual. Evidence that sleep, stress management or movement improves gut symptoms by changing bacteria is **Early**. These steps can work through other routes too, including bowel movement, sleep and gut-brain signalling.

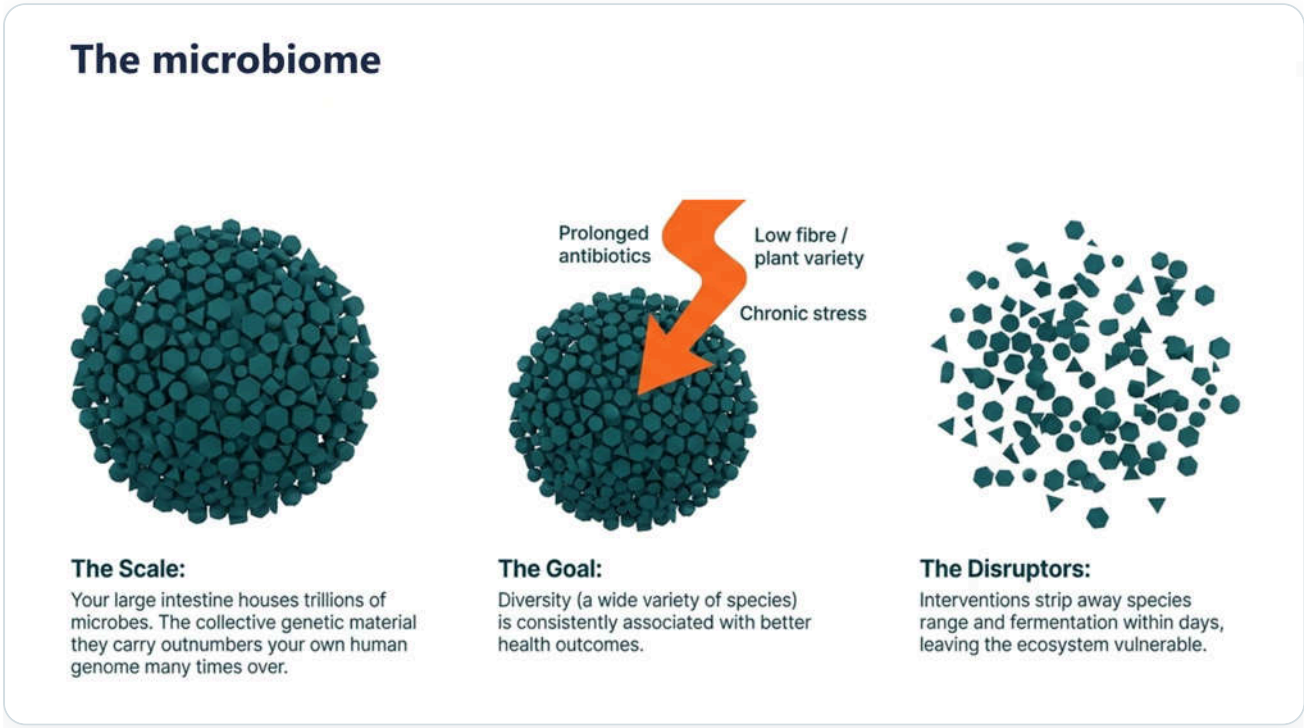


**FIGURE 1.2** **The microbiome** A diverse community lives in the large intestine. Antibiotics can change it within days; diet and stress may also affect it. A link with health is not proof that raising diversity will relieve a particular symptom.

## The gut barrier

The inside surface of your intestine is lined by a single layer of cells called epithelial cells. This layer helps control what passes from gut contents into the body, while allowing nutrients to be absorbed. Proteins called tight junctions regulate passage between neighbouring cells. **Evidence level: Strong for basic anatomy.** Changes in this barrier, sometimes called increased intestinal permeability, have been found in some people with IBS. That does not establish them as the cause of every symptom. **Evidence level: Early for barrier changes as a treatment target in IBS.**

A protective mucus layer also helps keep bacteria away from the intestinal lining. **Evidence level: Strong for basic anatomy.** Certain emulsifiers used in food have affected mucus and the position of bacteria in animal studies and a small human experiment. **Evidence level: Early; this does not show that every emulsifier causes gut disease.** The **Cutting Ultra-Processed Food** chapter reviews what is known.

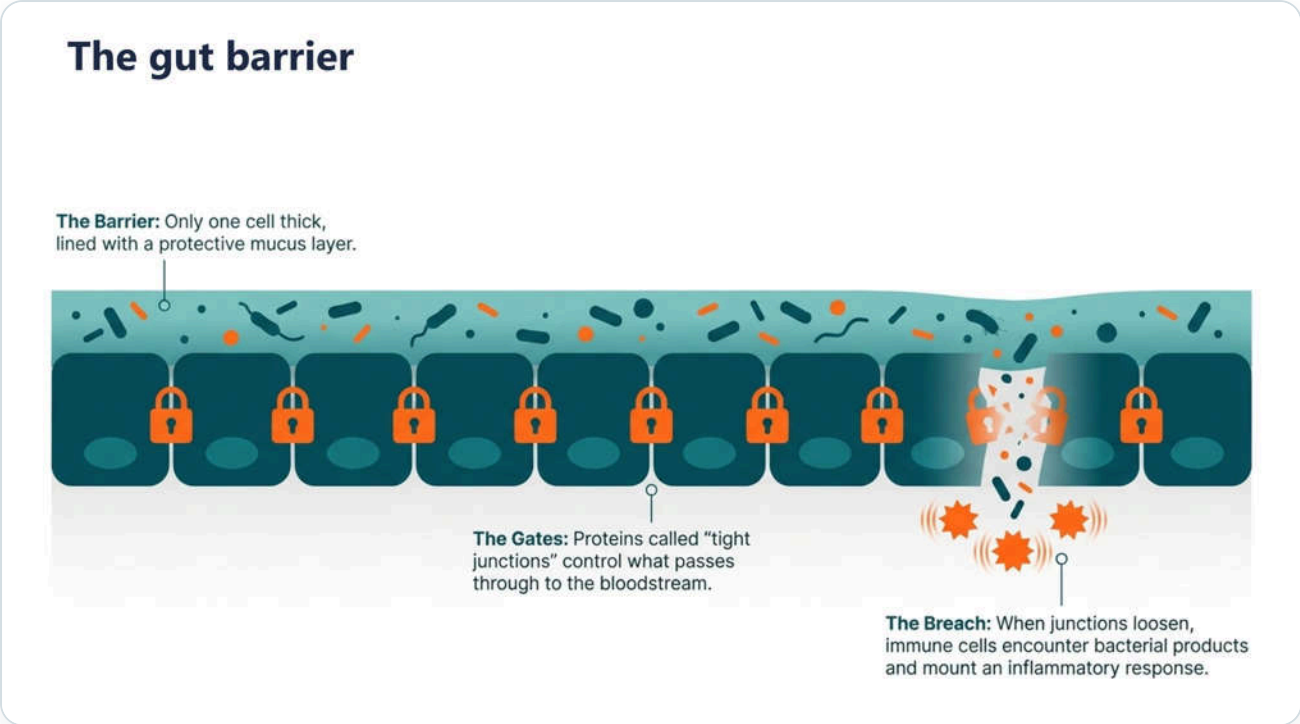


**FIGURE 1.3** **The gut barrier** The epithelial layer, its tight junctions and protective mucus help separate gut contents from the body. This is a simplified mechanism, not a test for the cause of your symptoms.

## Short-chain fatty acids

When gut bacteria ferment dietary fibre, they produce short-chain fatty acids (SCFAs), mainly butyrate, propionate and acetate. Butyrate is a main fuel for colonocytes, the cells that form the large intestine's inner lining. **Evidence level: Strong for established physiology.** Laboratory and animal studies show effects on the barrier and inflammatory signalling, but they do not prove that raising butyrate through food will treat gut inflammation in people. **Evidence level: Early for that treatment claim.**

The type of fibre reaching the colon and the bacteria present affect what is produced. Plant variety is a practical way to try different fibre sources, but the specific target of thirty plants a week has **Early** evidence. Total fibre intake still matters. The **Fibre and the 30-Plant Week** chapter explains food sources, gradual changes and what the trials do and do not show.

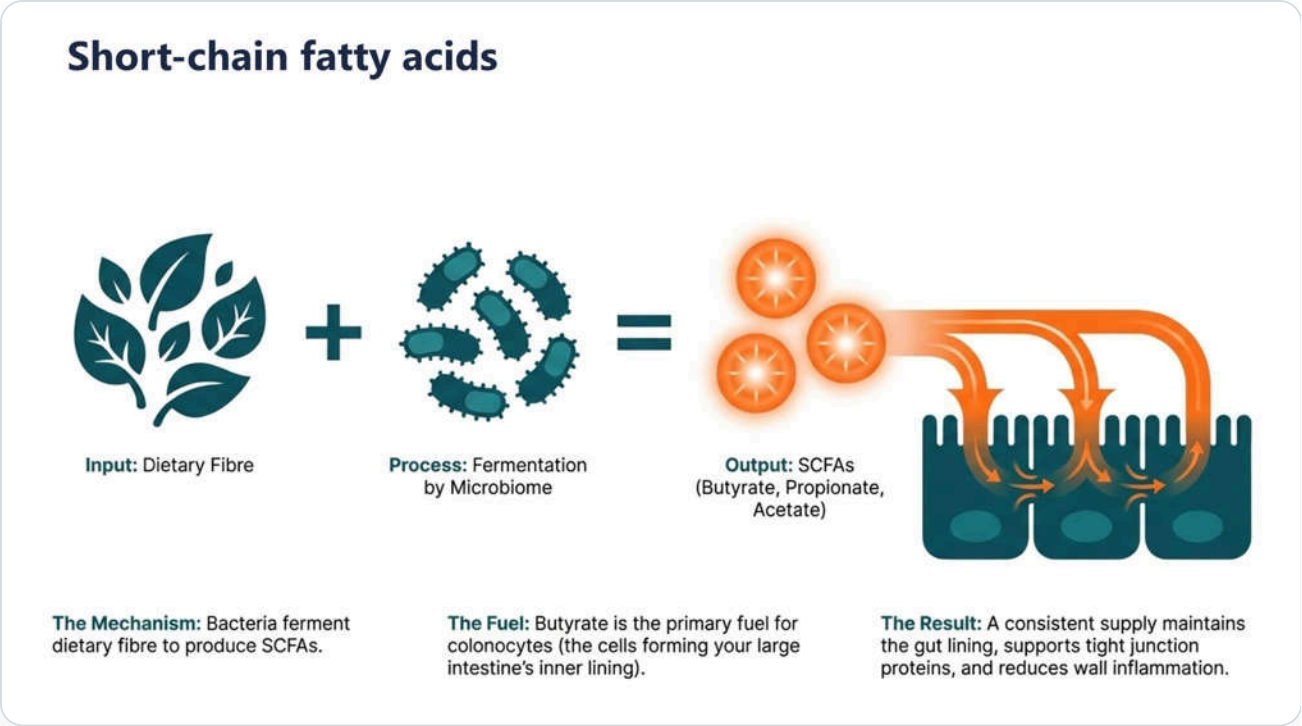


**FIGURE 1.4** **Short-chain fatty acids** Gut bacteria ferment fibre into acetate, propionate and butyrate. Butyrate fuels cells lining the colon; barrier and anti-inflammatory effects are mechanisms, not a promise that a food will treat inflammation.

## The gut-brain axis

Your gut and your brain are in constant two-way communication through a network called the gut-brain axis. The gut contains its own network of nerve cells, the enteric nervous system. The vagus nerve carries signals between the gut and the brainstem in both directions. Most of the body's serotonin is made in the gut, mainly by the gut's own cells, not by bacteria. Gut serotonin does not cross the blood-brain barrier; the brain makes its own. Bacteria can influence signalling, but that is not the same as sending serotonin to the brain. **Evidence level: Strong (basic neuroscience and anatomy); Early (microbial mechanisms as an explanation for changes in human mood).**

Stress activates the body's stress-response system, including the hypothalamic-pituitary-adrenal axis and the hormone cortisol. Stress can change how quickly the gut moves and how strongly you feel its signals. Animal studies also suggest that gut bacteria influence this response. **Evidence level: Early for the microbial mechanism in people.** This does not make gut symptoms imaginary. IBS-specific cognitive behavioural therapy and gut-directed hypnotherapy have **Moderate** evidence for easing IBS symptoms, although trial certainty is low; evidence that treating poor sleep eases gut symptoms remains **Early**. The **Low Mood, Anxiety and Stress**, **Sleep and Stress** and **Mind-Gut Practices** chapters explain these different routes.

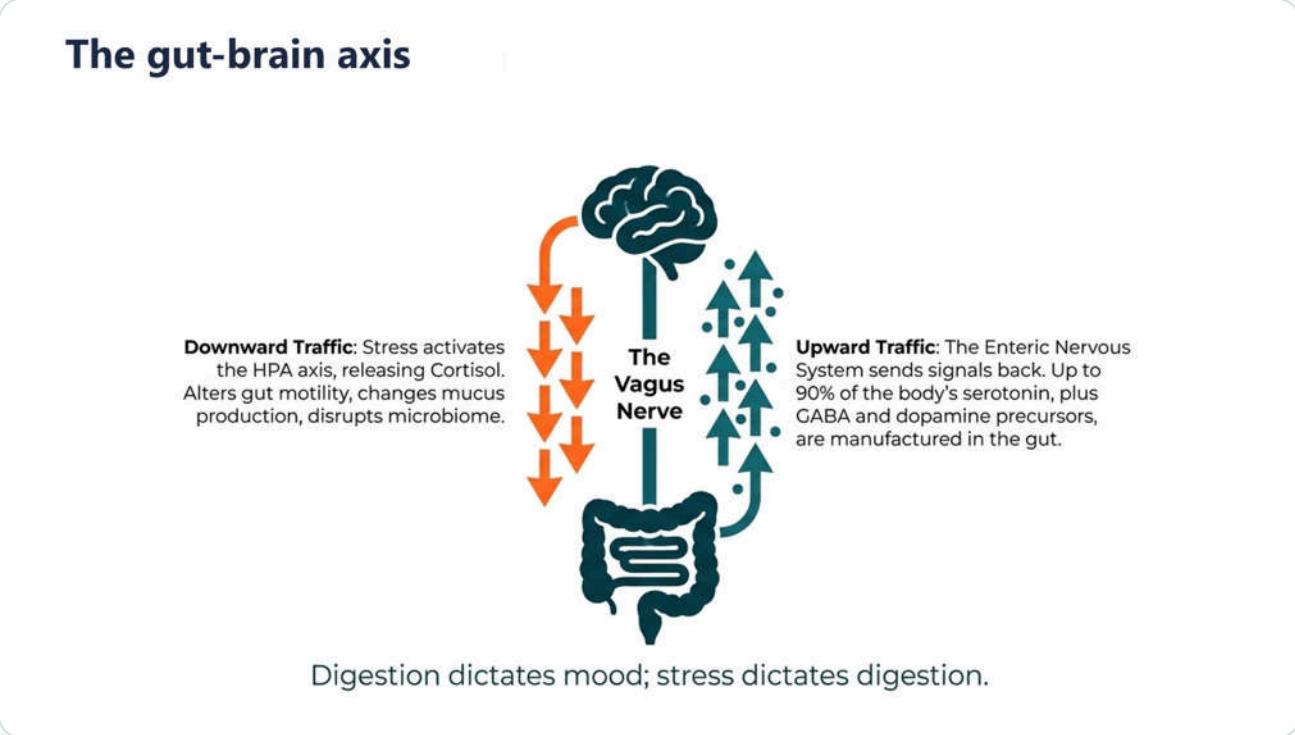


**FIGURE 1.5** **The gut-brain axis** Signals travel both ways through nerves and other routes. Serotonin made in the gut is mainly produced by the gut's own cells and does not enter the brain. The arrows show possible routes, not that digestion dictates mood or stress dictates digestion.

These four systems interact, but they do not give every gut symptom a single cause. A change in bacteria, a barrier measurement and relief of symptoms are different outcomes. The chapters that follow distinguish them when judging what a treatment can do. **Evidence level: Early for many proposed links between these mechanisms and treatment benefits in people.**

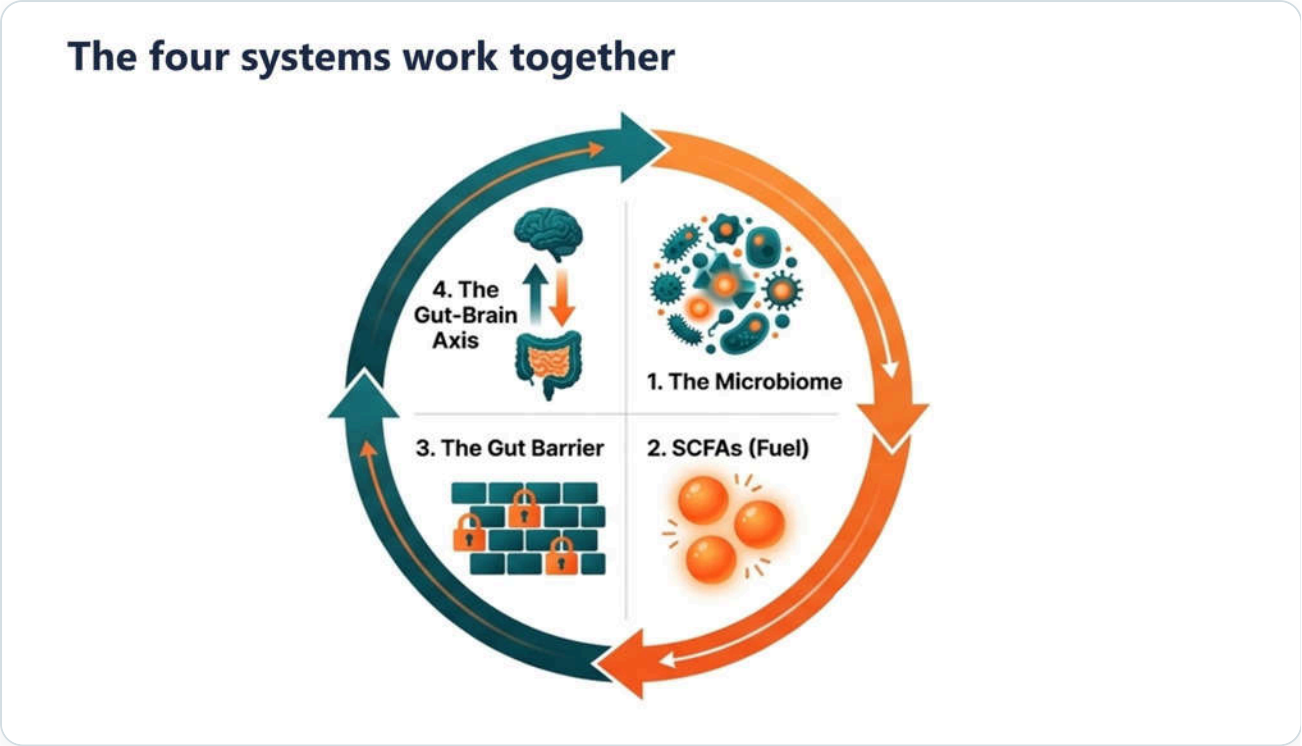


**FIGURE 1.6** **The four systems work together** A simplified map of connections between microbes, short-chain fatty acids, the gut barrier and gut-brain signalling. It is not a tested treatment sequence; changing one part does not guarantee improvement in the others.

## 1.4 How this manual works

Key claims and recommendations carry an evidence label. For treatments, **Strong** means several good randomised controlled trials confirmed in meta-analyses. **Moderate** means at least one good randomised trial, or several smaller trials pointing the same way. **Early** covers small, laboratory or animal studies, preliminary human findings, or traditional use with a plausible mechanism. **Expert advice** means specialist guidance based on experience rather than trials. **Not supported** means tested and found not to help, or advised against by specialists. These are the same labels introduced in **How to Use This Manual**.

Read the words beside a label. Where the evidence concerns an observational link or basic physiology rather than a treatment trial, the text says so. Strong evidence that a biological process exists is not strong evidence that changing it will improve your symptoms.

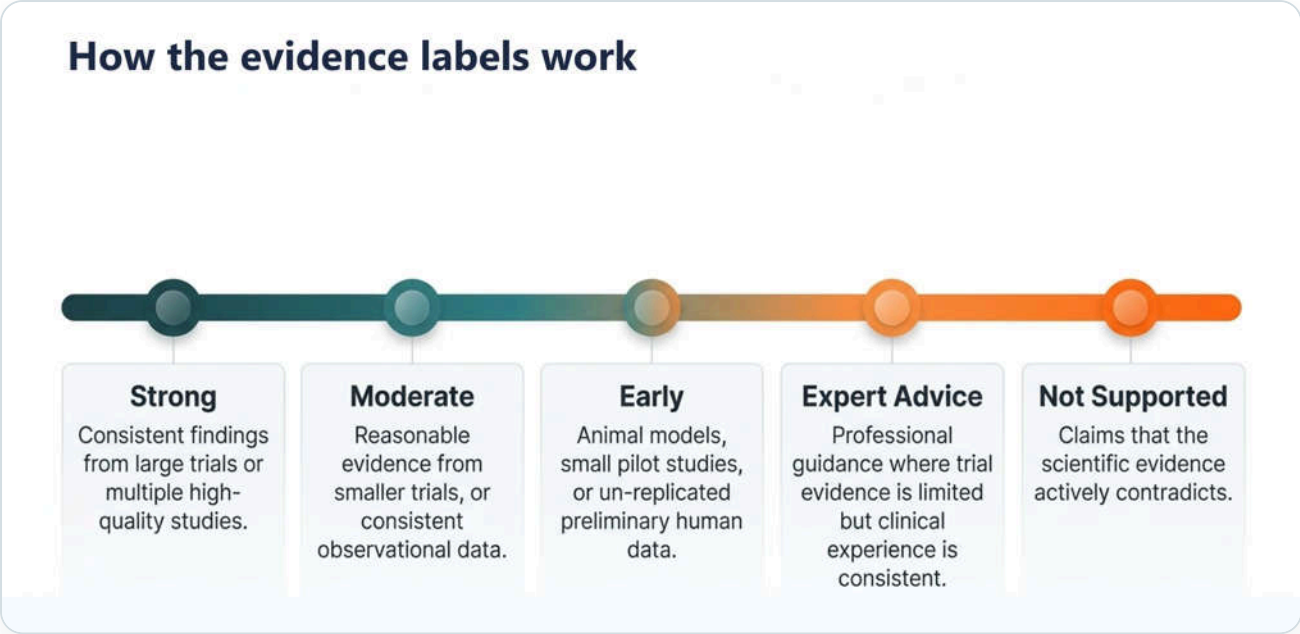


**FIGURE 1.7** **How the evidence labels work** The five labels describe the evidence for a particular claim or outcome. Read the qualification beside each label too: a mechanism or an observational link is not proof that a treatment improves symptoms.

The manual is illustrated, including this opening chapter. There are 296 figures in total across the book. Each of the fifteen problem and foundations chapters contains a practical plan, a checklist and a diary or tracker: fifteen checklists and fifteen diaries and trackers in all. The plans run for fourteen days in most chapters, and for four weeks in the chapters on fibre, movement and mind-gut practices, where building a sustainable habit takes a little longer. This manual is not a substitute for medical advice. If you have symptoms that are new, rapidly changing, or accompanied by blood, unexplained weight loss or pain that wakes you at night, see your doctor first.

## 1.5 What the fifteen chapters cover

After this introduction, the fifteen chapters fall into two groups. **Problems** covers bloating and gas, constipation, IBS, low mood and anxiety linked to the gut, weight and cravings, heartburn and reflux, and recovery after antibiotics. **Foundations** covers the evidence and practical changes relevant to gut health: fibre and plant variety, fermented foods, cutting ultra-processed food, movement, sleep and stress, medications and the gut, time outdoors, and mind-gut practices.

- **Chapter 2: Bloating and Gas.** What causes bloating, when it is normal and when it warrants investigation, and what the evidence shows for dietary changes, probiotics and movement.
- **Chapter 3: Constipation and Sluggish Bowels.** Fibre, fluid, movement and laxatives: what works, what does not, and when to see a doctor.
- **Chapter 4: IBS: Pain, Urgency and Unpredictable Bowels.** The low-FODMAP diet, gut-directed hypnotherapy and antispasmodics: the evidence reviewed.
- **Chapter 5: Low Mood, Anxiety and Stress: the Gut-Brain Connection.** How the gut-brain axis operates in practice, and what the evidence says about diet and mood.
- **Chapter 6: Weight, Cravings and Energy.** The gut microbiome and weight regulation, and the evidence for dietary approaches to cravings and energy.

- **Chapter 7: Heartburn and Reflux.** Lifestyle changes, over-the-counter remedies and when medication is appropriate.
- **Chapter 8: Repairing Your Gut After Antibiotics.** What antibiotics do to the microbiome, and what the evidence says about recovery.
- **Chapter 9: Fibre and the 30-Plant Week.** How to raise fibre intake gradually, and the different evidence for total fibre and plant variety.
- **Chapter 10: Fermented Foods.** The evidence for kefir, yoghurt, kimchi and other fermented foods as sources of live bacterial cultures.
- **Chapter 11: Cutting Ultra-Processed Food.** What ultra-processed food is, how it affects the gut, and a practical approach to reducing it.
- **Chapter 12: Movement.** Exercise and gut motility, microbiome diversity and mental health: the evidence.
- **Chapter 13: Sleep and Stress.** How poor sleep and chronic stress affect the gut, and what the evidence says about practical improvements to both.
- **Chapter 14: Medications and Your Gut.** NSAIDs, antibiotics, proton pump inhibitors and other common medicines: their effects on gut health and what to do about them.
- **Chapter 15: Getting Outside.** Green space, sunlight and vitamin D: what the evidence says about their connection to gut health and microbial diversity.
- **Chapter 16: Mind-Gut Practices.** Gut-directed hypnotherapy, mindfulness-based approaches and breathing techniques: the evidence for each.

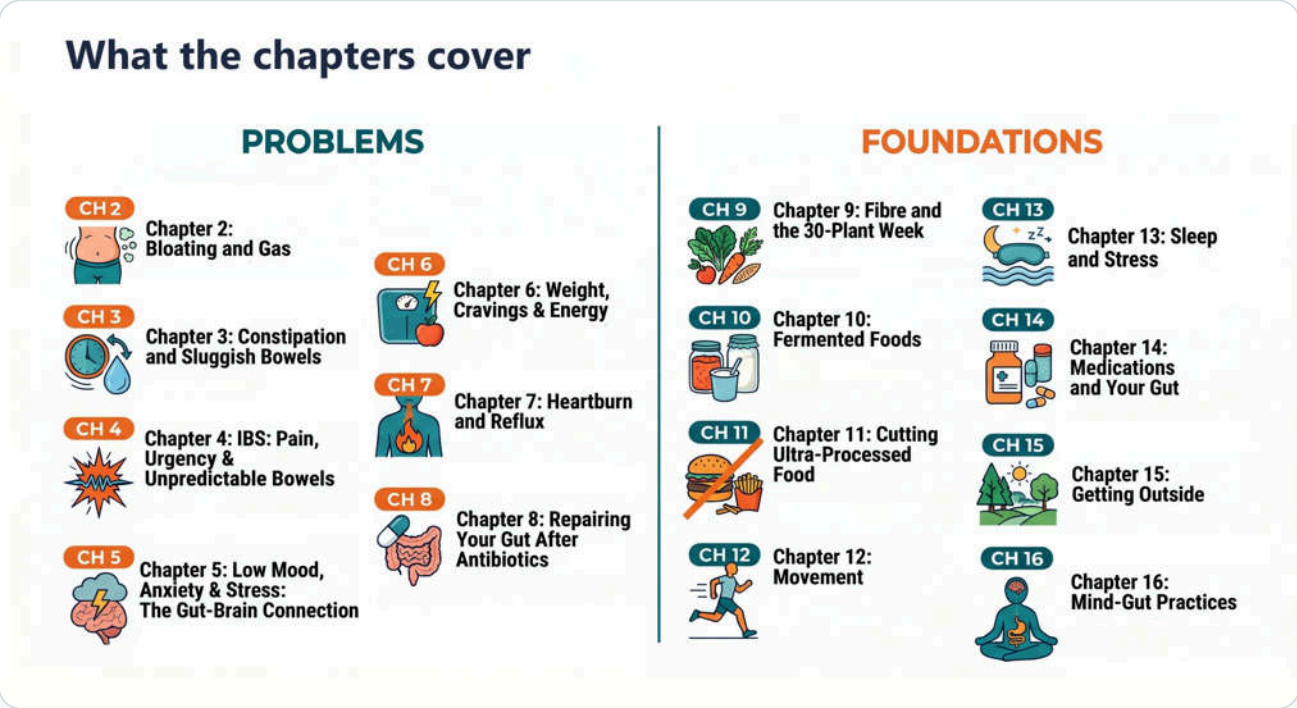


**FIGURE 1.8** **What the chapters cover** Seven problem-focused chapters are followed by eight foundations chapters. Use this overview to find the subjects that matter to you; you do not need to read them in order.

If you have a specific symptom or question, use the guide below to go directly to the most relevant chapter. You do not need to read the manual from beginning to end.

- **I wake up bloated, or feel distended by the end of the day.** Start with Chapter 2, Bloating and Gas.
- **I go fewer than three times a week, or straining is normal for me.** Start with Chapter 3, Constipation and Sluggish Bowels.
- **My bowels are unpredictable: cramping, urgency, or switching between constipation and diarrhoea.** Start with Chapter 4, IBS: Pain, Urgency and Unpredictable Bowels.
- **I notice my gut is worse when I am stressed or anxious.** Start with Chapter 5, Low Mood, Anxiety and Stress, and read Chapter 13, Sleep and Stress, alongside it.
- **I have recently had a course of antibiotics and my gut has not felt right since.** Start with Chapter 8, Repairing Your Gut After Antibiotics.
- **I want to improve my gut health generally, without a specific symptom.** Start with Chapter 9, Fibre and the 30-Plant Week, for food sources, gradual changes and the different evidence for fibre and for a weekly plant target.

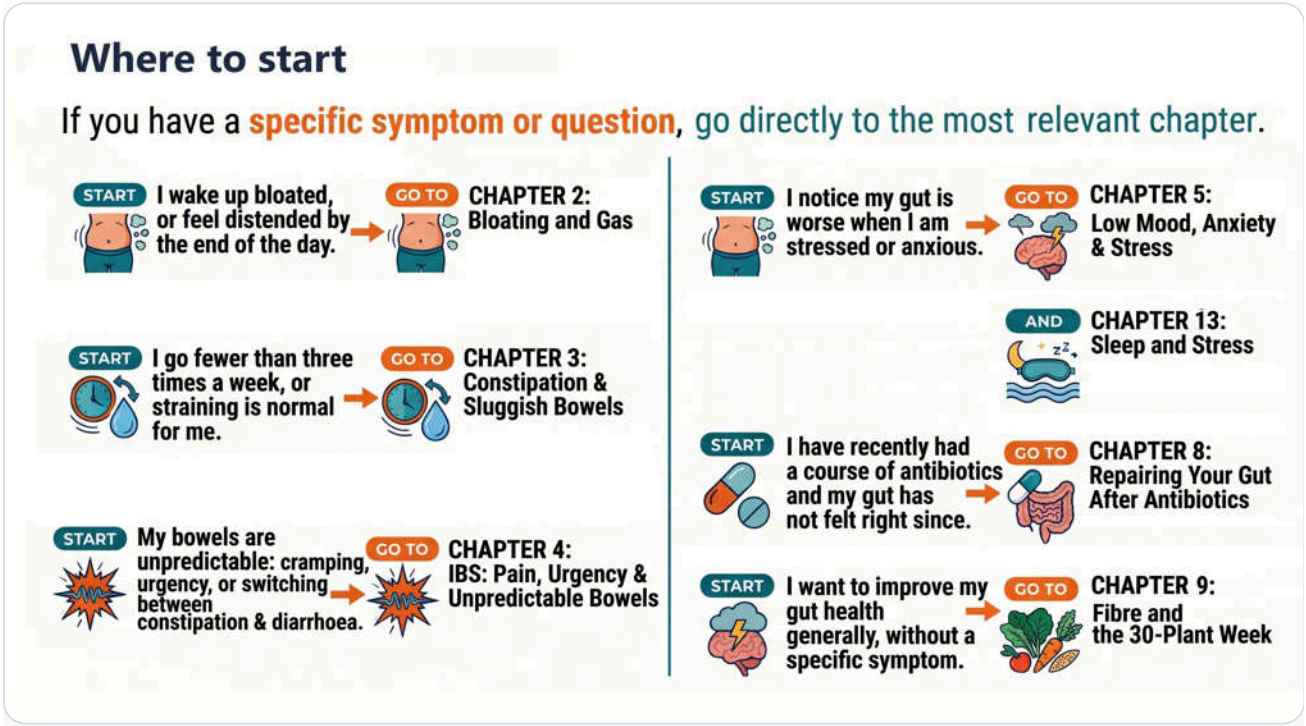


FIGURE 1.9 **Where to start** Six reader questions lead to relevant chapters. This guide is a reading aid, not a diagnosis: check the chapter's red flags before trying its plan.

## 1.6 Where to begin

Trying to change everything at once can be difficult to sustain. Each problem and foundations chapter gives you a small, specific set of changes in a fourteen-day or four-week starter plan. The checklists let you review what you have understood and applied, rather than what you have memorised. The diaries and trackers give you a way to notice patterns over time, not because you need to record everything permanently, but because two weeks of observation may help you notice patterns between food, stress, sleep and symptoms. A pattern in a diary can guide a question or a change to try, but it does not prove what caused a symptom. This is the book's practical advice, not a diagnostic test.

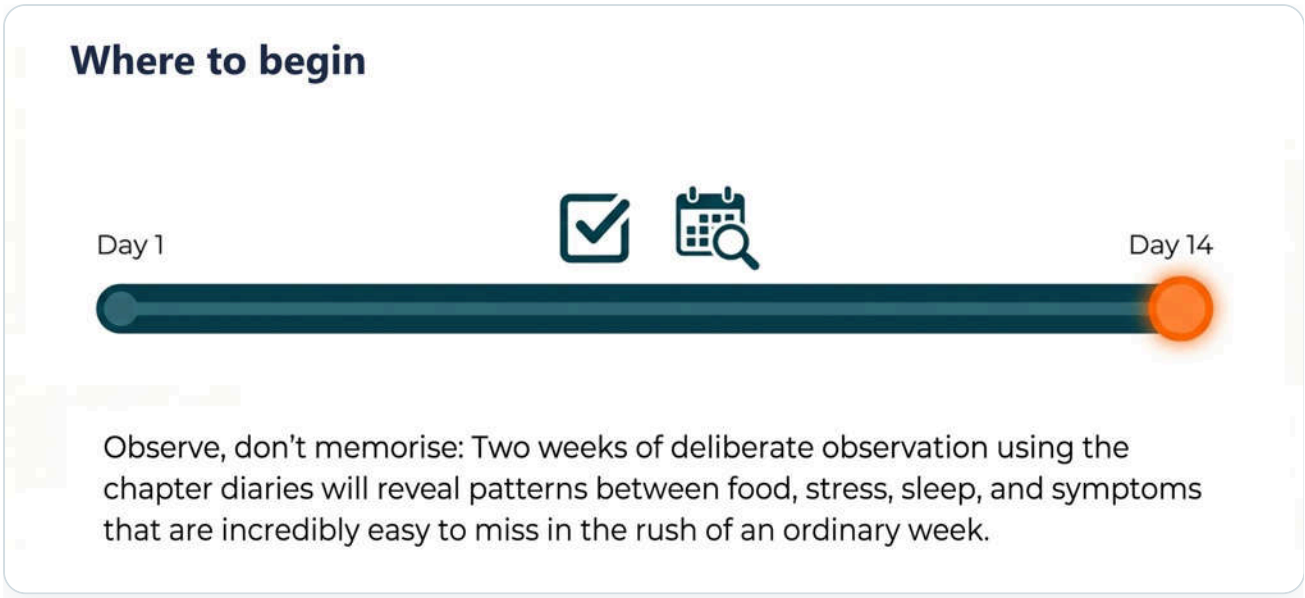


**FIGURE 1.10** **Where to begin** Use a chapter diary for a short period, then review what you notice. Two weeks is a starting point, not a guarantee that a pattern will appear or that symptoms will improve.

You do not need to complete every chapter before starting the one that is relevant to you. If bloating is your main concern, start with **Bloating and Gas**. If you have no particular symptom but want a food-based starting point, try **Fibre and the 30-Plant Week**. If a recent course of antibiotics has left your gut unsettled, **Repairing Your Gut After Antibiotics** explains what may have happened and what the evidence says about recovery.

Read the chapters that are relevant to you. Use the tools that fit your situation. Return to others when you are ready. None of the changes in this manual require you to transform your life in a week.

## 1.7 Moving on

The next chapter, Bloating and Gas, begins with a common experience you may recognise: a familiar morning feeling, followed by the gradual return of discomfort through the day. From there, it explains where bloating actually comes from, what the evidence shows for the approaches most often recommended, and what a realistic fourteen-day plan looks like when you build from where you are rather than from where you think you should be.

If bloating is not your starting point, the chapter guide and the question map above will take you where you need to go.

Sources for this overview are shared with the detailed chapters: the IBS, Low Mood, Anxiety and Stress, Repairing Your Gut After Antibiotics, Fibre and the 30-Plant Week, Cutting Ultra-Processed Food, Sleep and Stress and Mind-Gut Practices chapters. Their reference lists identify the studies behind these explanations and evidence labels.

CHAPTER TWO



# Bloating *and* Gas

*Why the belly swells, what to rule out first, and six steps that help.*

**1 in 5**

Nearly one adult in five feels bloated at least once a week.

ROME FOUNDATION STUDY, 2023

> *You wake up with a flat stomach. By mid-afternoon your waistband is digging in, and by evening you look several months pregnant, feel tight and uncomfortable, and would rather not go out. Or the problem is gas: rumbling, belching, or wind that arrives at the worst possible moment. This chapter explains what is going on, what to check with your doctor, and a six-step plan that most people can start today.*

IN THIS CHAPTER


01 How common bloating is, and when it matters

02 Bloating, distension and gas: three different problems

03 The four drivers behind most bloating

04 Red flags and medical causes to rule out

05 The six-step bloating protocol

06 Herbs, probiotics and internet myths

07 Your 14-day bloating reset and diary


## 2.1 Bloating by the numbers

Bloating is one of the most common reasons people see a doctor about their gut, and one of the most searched-for symptoms online. One of the largest studies ever done, the Rome Foundation Global Epidemiology Study, surveyed more than 51,000 adults in 26 countries. Nearly **18%** reported bloating at least once a week. Women were about twice as likely to be affected as men, and bloating became less common with age.

Gas itself is part of normal life. In a 2025 survey of nearly 6,000 adults in the United States, the United Kingdom and Mexico, **89%** had at least one gas-related symptom in the previous 24 hours: 81% passed wind and 39% felt bloated. Gas becomes a problem when it is frequent, painful, or starts to shape your day.

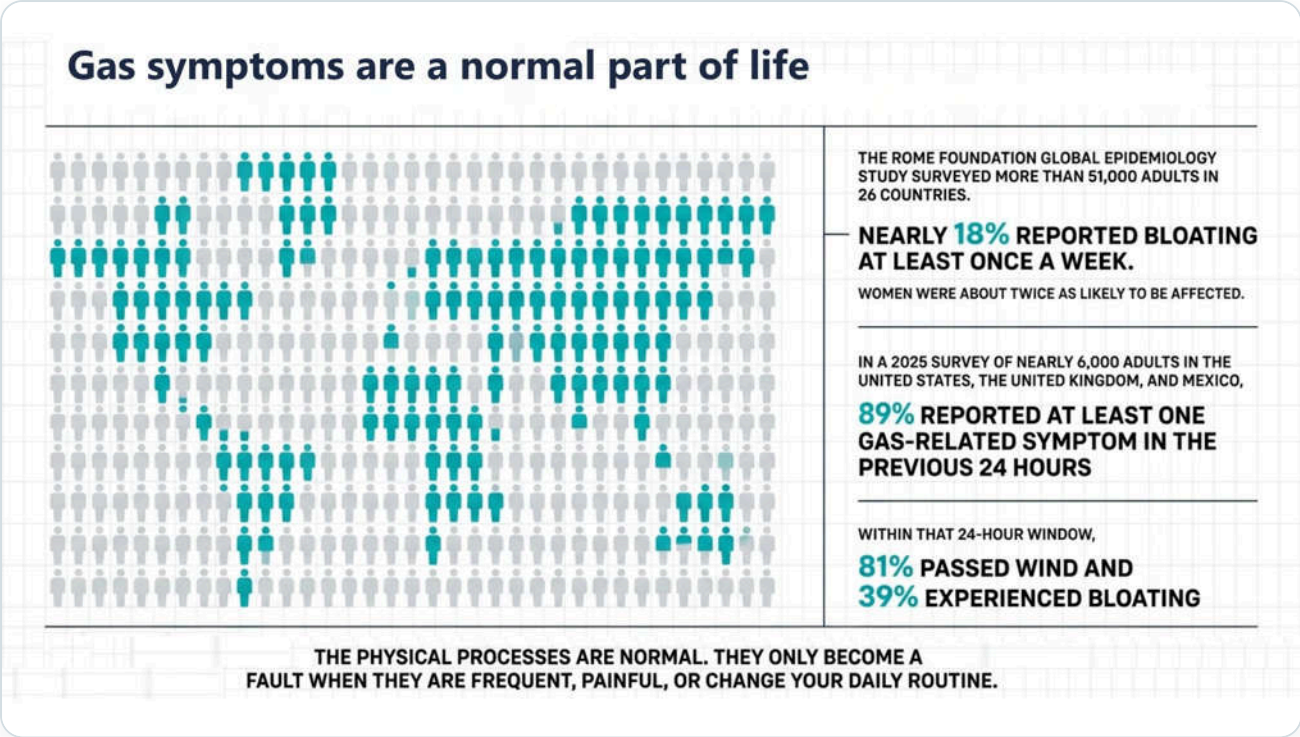


**FIGURE 2.1** **Gas symptoms are a normal part of life** Nearly one adult in five is bloated every week; almost everyone has some gas every day.

## 2.2 Three different problems

People use the word *bloating* for three different things, and the difference matters because each has its own causes and its own fixes.

- **Bloating** is a *feeling*: pressure, fullness or tightness inside the abdomen. You can feel bloated with a completely flat stomach.
- **Distension** is a *visible change*: the abdomen measurably gets bigger, and clothes feel tight.
- **Gas** is the *physical* air and fermentation gases in the gut, released by belching or passing wind.

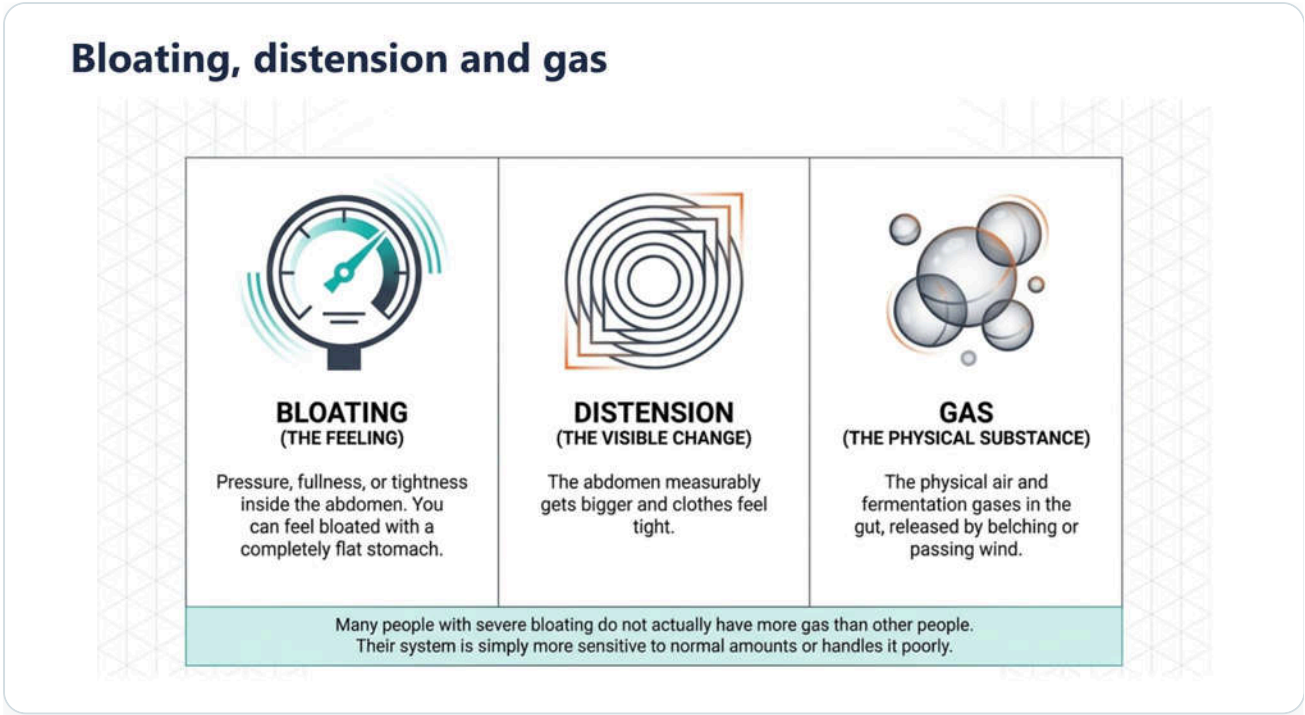


**FIGURE 2.2** **Bloating, distension and gas** A feeling, a visible change and a physical substance. They often occur together but are not the same.

**KEY IDEA**

Many people with severe bloating do not have more gas than anyone else. Their gut is more sensitive to normal amounts of gas, or moves it along poorly. That is why cutting out food after food often fails.

## The daily rhythm

A flatter belly in the morning and a rounder one by evening is normal. Food and drink add volume, fermentation builds after meals, and posture and muscle tone relax through the day. The question is not whether your abdomen changes, but how much, and how uncomfortable it becomes.

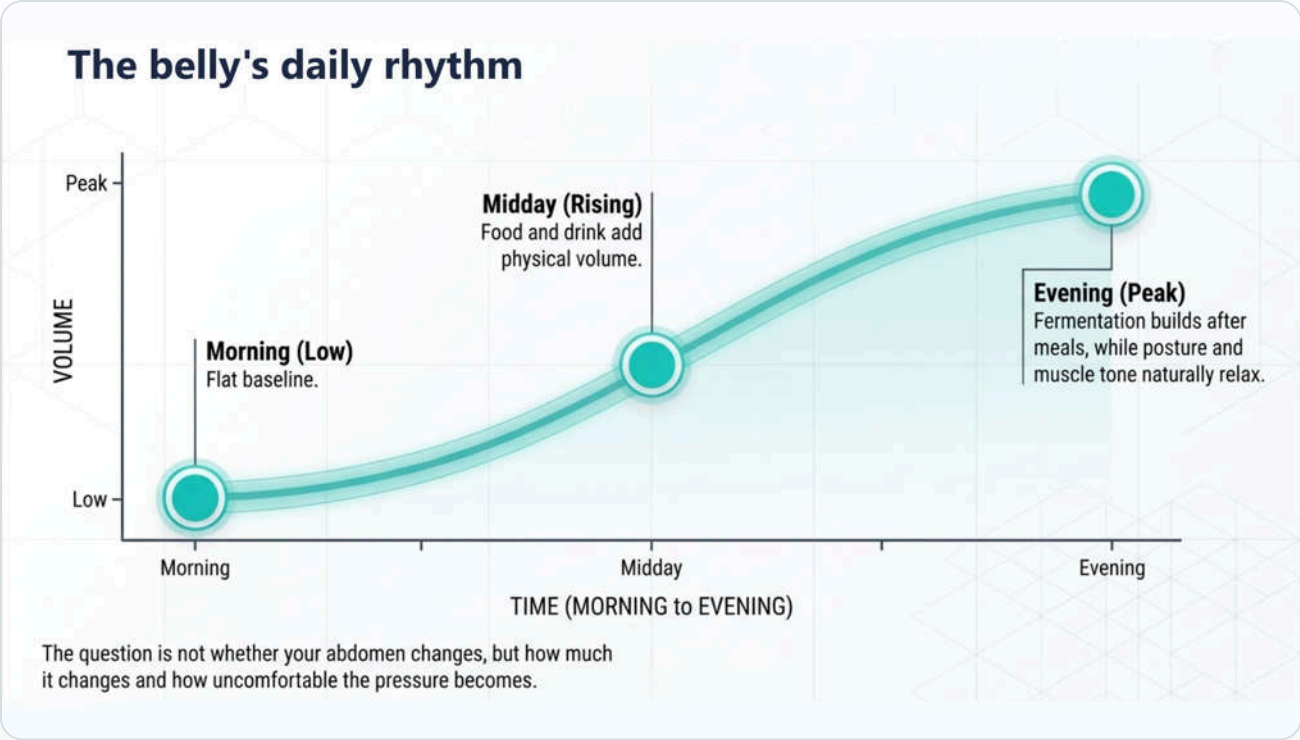


**FIGURE 2.3** **The belly's daily rhythm** Rising through the day is normal. What matters is how far it rises and how much it hurts.

## 2.3 Where gas comes from

Gas enters the gut from two directions. At the **top end**, we swallow air: eating quickly, talking while eating, chewing gum, drinking through straws, fizzy drinks and anxious air-gulping all put air into the stomach. Most of it comes back up as belching.

At the **bottom end**, bacteria in the large intestine (the colon) ferment the carbohydrates we cannot digest ourselves: fibre, resistant starch and the short-chain carbohydrates called **FODMAPs**. This produces hydrogen, carbon dioxide and, in some people, methane, which is passed as wind.



CHAPTER THREE

# Constipation *and* Slow Bowels

*What is normal, what to rule out first, and seven steps to get things moving.*

**1 in 10**

About one adult in ten lives with functional constipation.

GLOBAL REVIEW OF 45 STUDIES, 2021

> *You go less often than you used to. When you do go, it takes a long time, you strain, and what comes out is hard or in small lumps. Afterwards you still feel you have not quite finished, your belly feels heavy, and the whole business sits at the back of your mind all day. This chapter explains what is normal and what is not, what to check with your doctor, and a seven-step plan that starts with free changes you can make tomorrow morning.*

IN THIS CHAPTER


01 How common constipation is, and what counts as normal

02 The Bristol Stool Chart, and how the bowel moves stool

03 Three kinds of constipation and the drivers behind them

04 Medicines, red flags and medical causes to rule out

05 The seven-step constipation protocol

06 Laxatives in plain terms, probiotics and internet myths

07 Your 14-day bowel reset and diary


## 3.1 What the numbers show

Constipation is one of the most common gut problems there is. A 2021 review pooled 45 population studies covering more than 275,000 adults around the world. By today's diagnostic criteria, about **1 in 10 adults** (10.1%) had functional constipation, meaning constipation without another medical cause. In the studies that compared men and women, women were about twice as likely to be affected. In the United States, chronic constipation affects about 8 to 12% of the population.

The good news is that it is usually not serious and very treatable, and the first steps cost nothing.

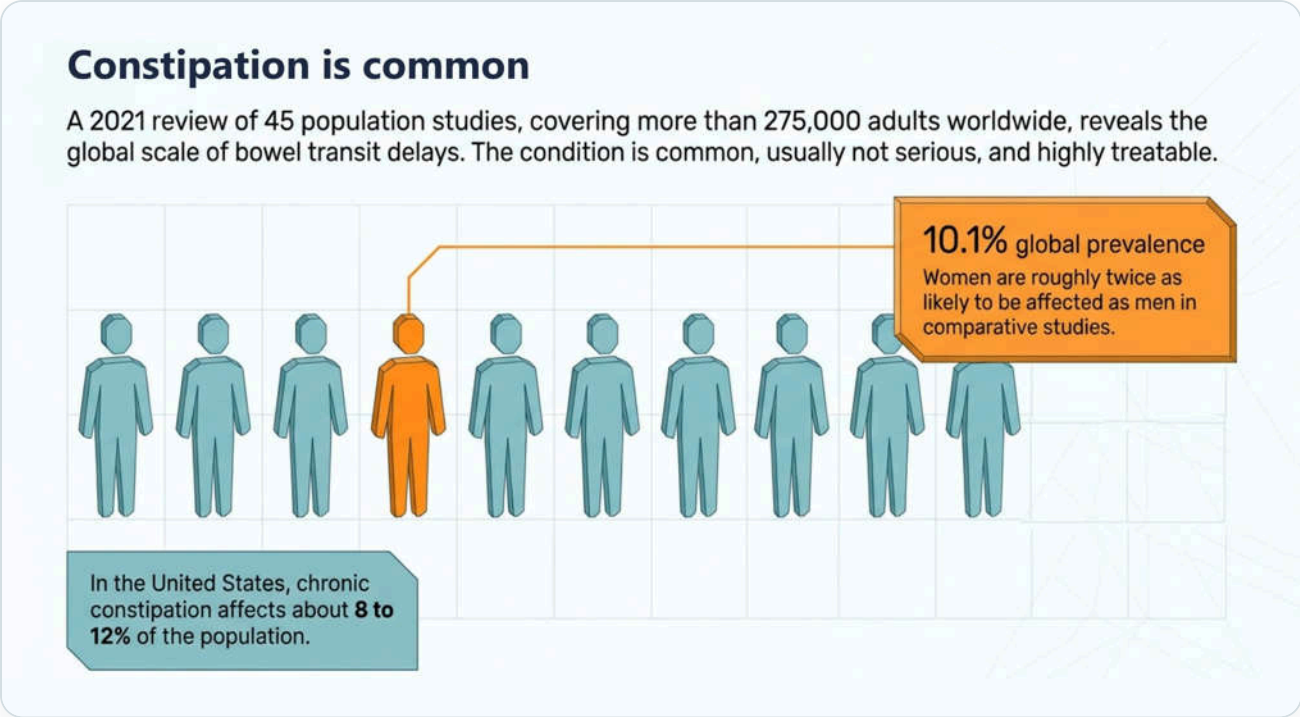


**FIGURE 3.1** **Constipation is common** About one adult in ten lives with constipation; women are affected about twice as often as men.

## 3.2 What counts as normal?

There is no single normal. In a classic study of nearly 1,900 adults in Bristol, a regular once-a-day habit was found in only 40% of men and 33% of women. A third of the women went less often than once a day, and most bowel movements happened in the early morning. Going every day is common, but it is not a rule.

You are probably constipated if, over the last week or more:

- you have been fewer than three times in a week, or much less often than is usual for you;
- your stool is dry, hard or lumpy, or unusually large or small;
- you strain or feel pain when you go;
- you feel you have not fully emptied your bowel.

Doctors diagnose **chronic constipation** when two or more of these happen on at least a quarter of occasions, for at least three months. What matters most is a change from your own normal, and how much effort and discomfort going to the toilet takes.

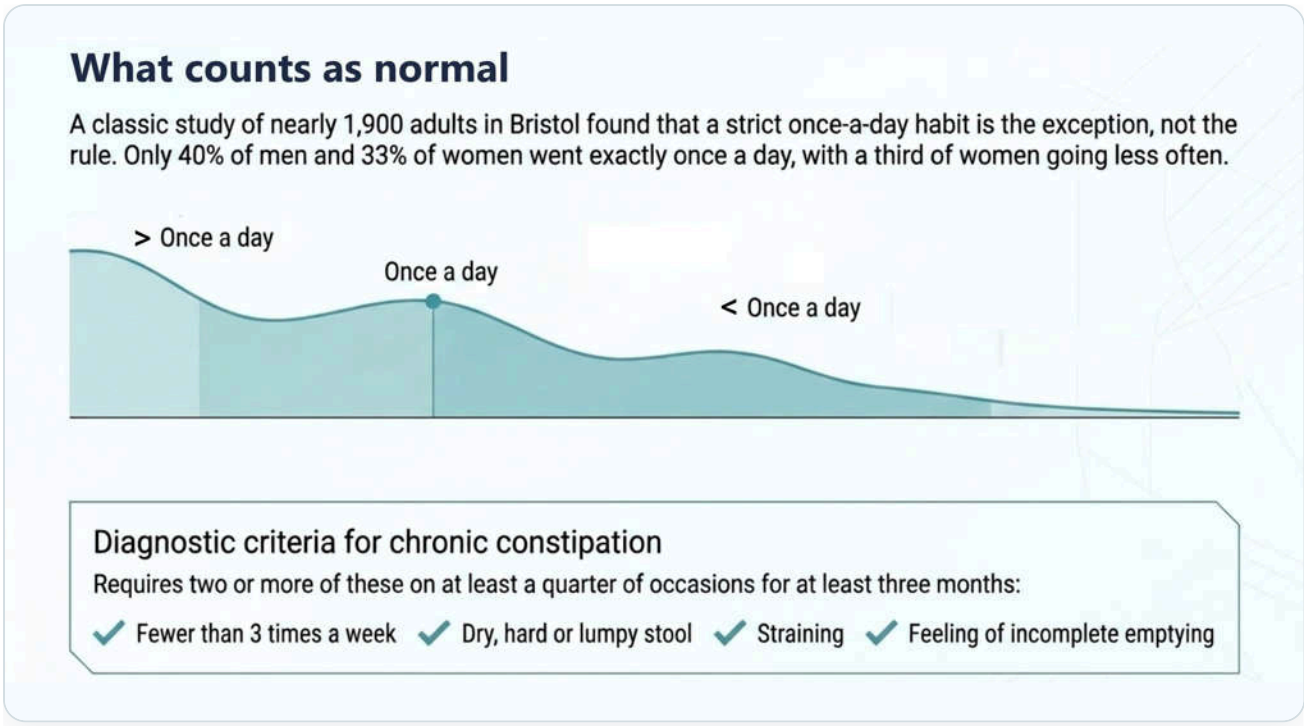


**FIGURE 3.2** **What counts as normal** Once a day is common but not a rule; frequency, effort and the feeling of emptying all count.

## The Bristol Stool Chart

The **Bristol Stool Chart** sorts stool into seven types, from separate hard lumps (type 1) to watery with no solid pieces (type 7). Types 1 and 2 point to constipation, types 3 and 4 are the comfortable middle, and types 5 to 7 are loose. It is worth learning, because stool type is a better guide to how fast food moves through your gut than how often you go. In a Bristol study of 66 volunteers, stool type tracked gut transit time more closely than bowel frequency did. You will use it in the diary at the end of this chapter.

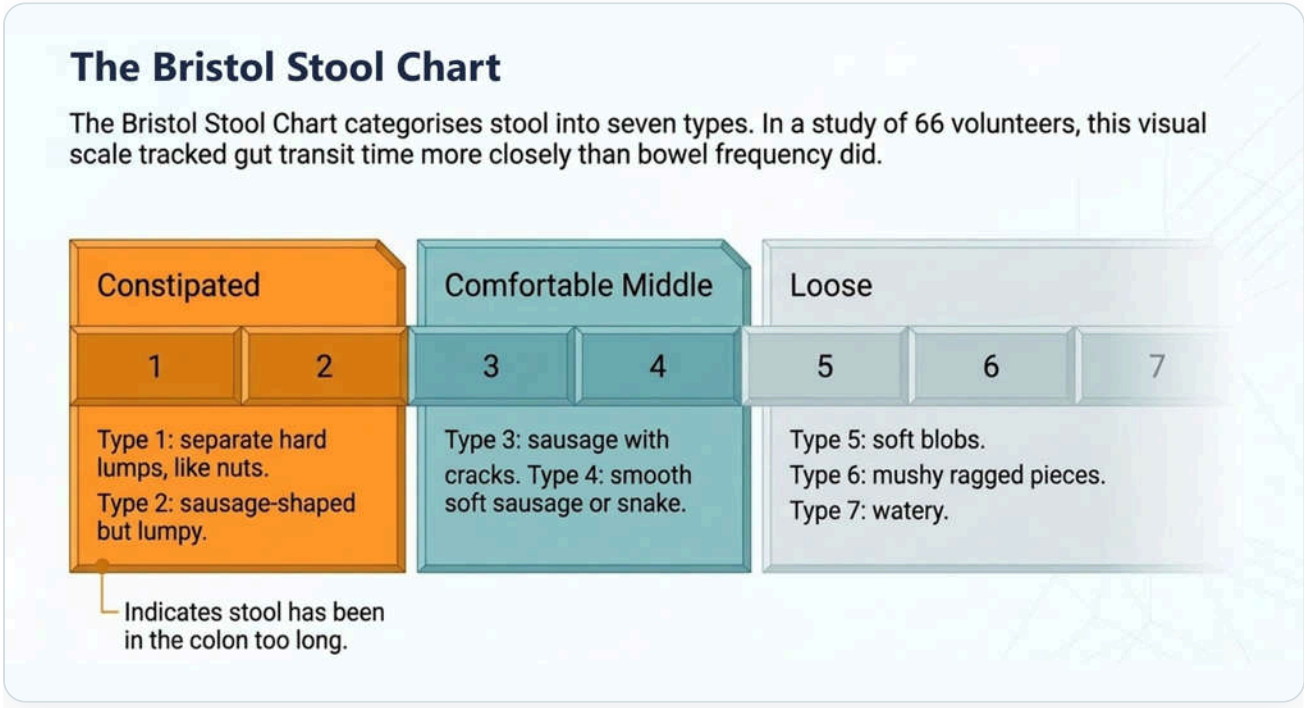


**FIGURE 3.3** **The Bristol Stool Chart** Seven stool types: 1 and 2 mean constipation, 3 and 4 are the goal.

## 3.3 How the bowel moves stool

The large intestine (the **colon**) absorbs water from what is left of your food and moves it slowly along. A few times a day, strong waves of muscle contraction push stool towards the rectum. These waves are strongest soon after waking and after a meal, which doctors call the **gastrocolic response**. When the rectum fills you feel the urge to go. To empty, the pelvic floor muscles and the anal sphincter must relax while the tummy muscles push gently.

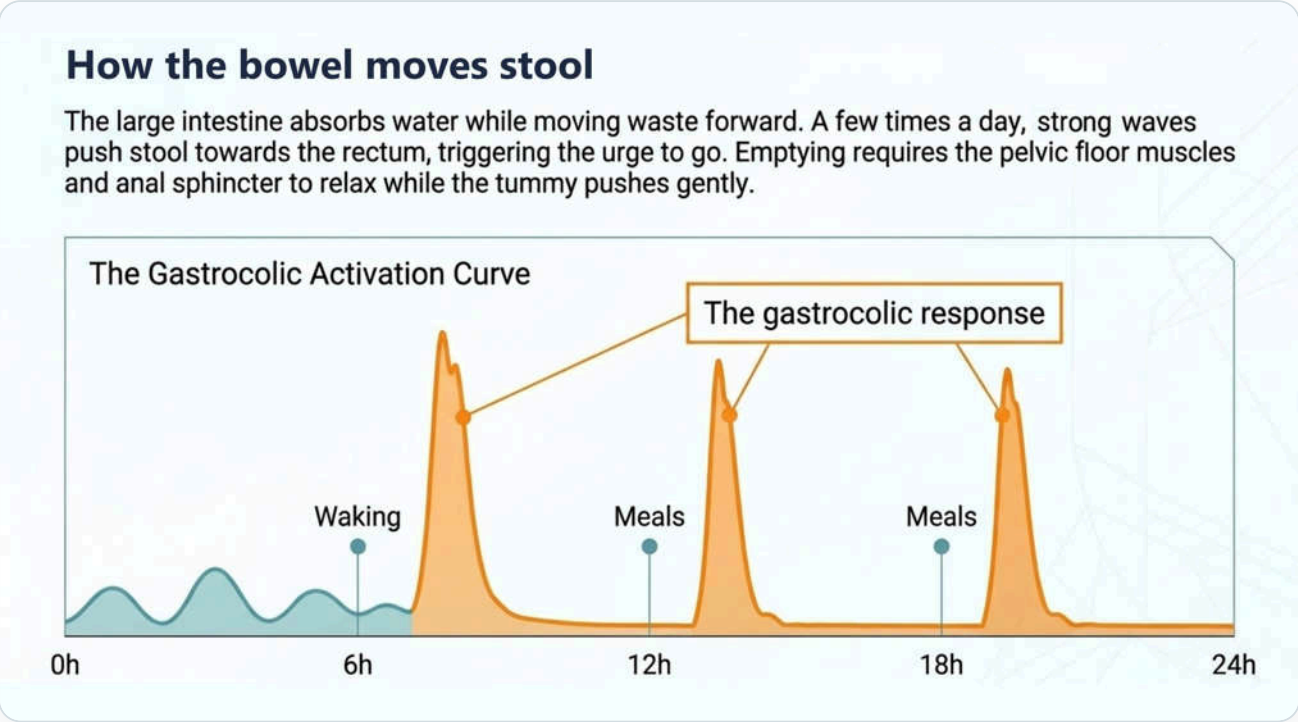


FIGURE 3.4 **How the bowel moves stool** Strong waves after waking and after meals move stool on towards the rectum.

The longer stool sits in the colon, the more water is drawn out of it, and the harder and smaller it becomes. Hard stool is harder to pass, so it sits even longer. Breaking this loop is the aim of every step in this chapter.

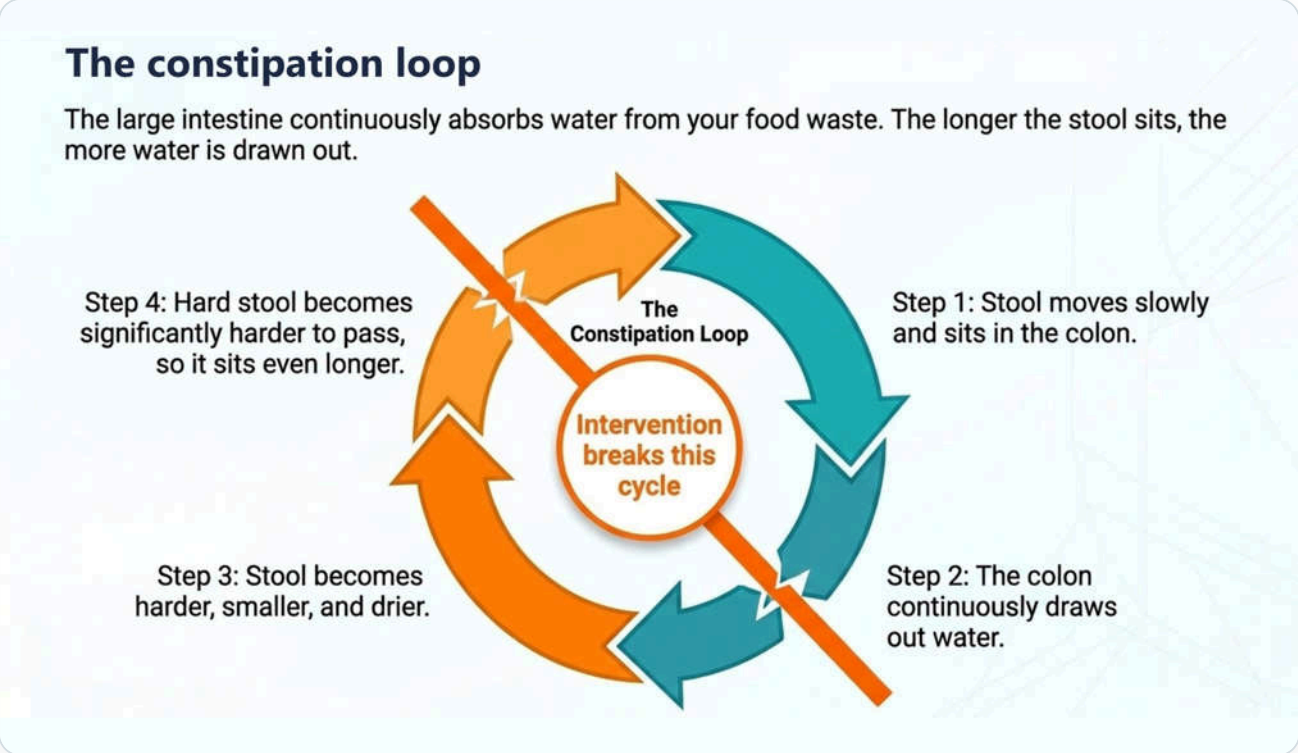


**FIGURE 3.5** **The constipation loop** Slow stool dries out, dry stool is harder to pass, so it waits longer still.

★ **KEY IDEA**

Your bowel is most ready to empty in the hour after breakfast. Much of this chapter is about working with that rhythm instead of against it.

## 3.4 Three kinds of constipation

1. **Slow transit.** Stool moves through the colon too slowly, so it dries out. You go rarely, and the stool is hard.
2. **Difficulty emptying.** The colon works, but at the exit the pelvic floor muscles tighten instead of relaxing when you push. Doctors call this **dyssynergic defecation**. Clues are long straining even when the stool is soft, a feeling of blockage, or needing to press around the back passage or vagina to empty.
3. **IBS with constipation.** Constipation together with recurring tummy pain linked to going to the toilet (see the IBS chapter).

Constipation can also be *secondary*, caused by a medicine or another condition, and many people have a mix of types.

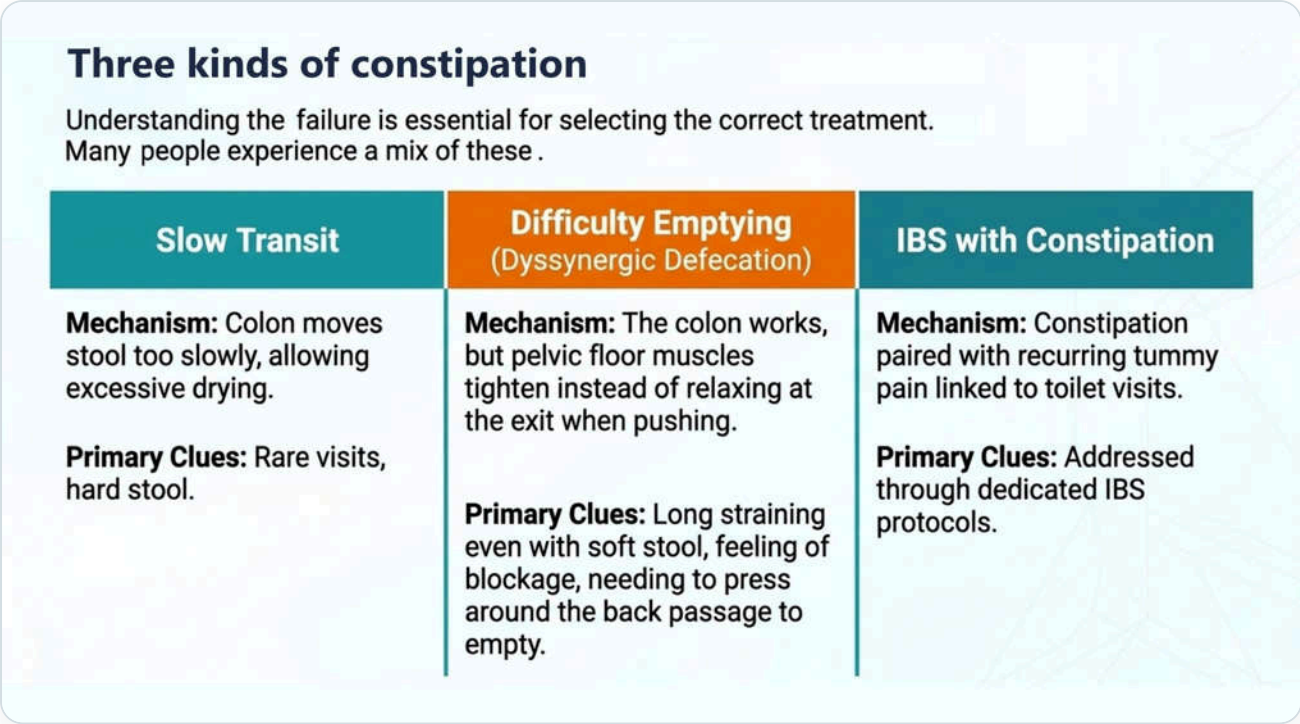


FIGURE 3.6 **Three kinds of constipation** Slow transit, difficulty emptying and IBS with constipation need different emphasis.

## 3.5 The main drivers

Five everyday drivers explain most constipation. Each one points to a step of the protocol.

1. **Low fibre.** Fibre holds water in the stool and keeps it soft (Steps 4 and 5).
2. **Too little fluid.** Fluid matters most when you are not drinking enough, or when you add fibre (Step 3).
3. **Too little movement.** Long periods of sitting slow the bowel (Step 3).
4. **Ignoring the urge.** In a study of 12 healthy men, putting off the urge for a week cut bowel movements from about nine to about four a week and nearly doubled the time stool took to pass through, from 29 to 53 hours (Step 1).
5. **Medicines and life changes.** Some medicines, travel, a new routine, pregnancy, stress and low mood can all slow things down.

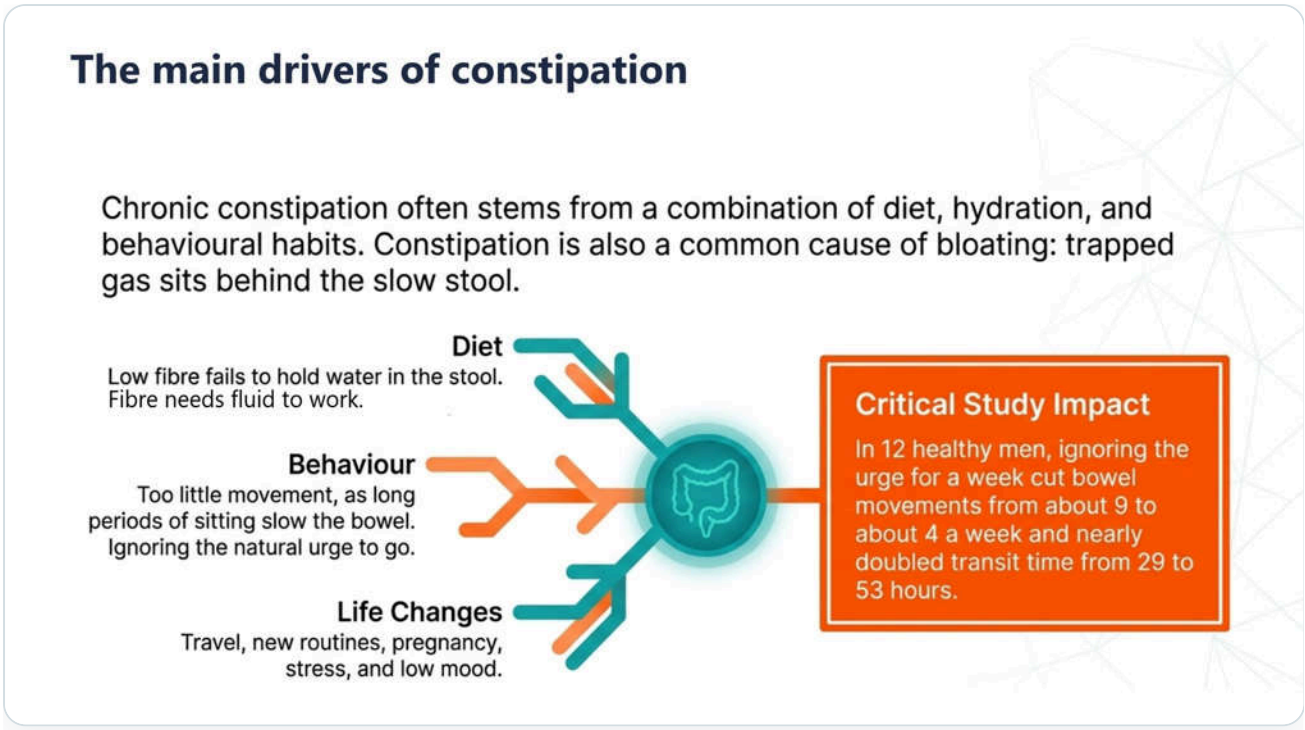


**FIGURE 3.7** **The main drivers of constipation** Low fibre, low fluid, sitting still, ignoring the urge and medicines: each has its own fix.

*i* **CONSTIPATION AND BLOATING**

Constipation is one of the commonest causes of bloating: when stool moves slowly, gas is trapped behind it. If you are bloated as well as constipated, treat the constipation first, and see the Bloating and Gas chapter for the rest.

## Medicines that can cause constipation

- **Opioid painkillers**, such as codeine and morphine.
- **Iron tablets.** In trials in women, iron doubled the chance of hard stools or constipation.
- **Medicines with anticholinergic effects**, including some antidepressants and some other medicines for mental health.
- **Calcium-channel blockers** for blood pressure or angina.
- **Diuretics** (water tablets) and **antacids containing aluminium**.
- **Some medicines for Parkinson's disease.**

! **DO NOT STOP PRESCRIBED MEDICINES**

Never stop a prescribed medicine on your own. Ask your doctor or pharmacist whether it could be the cause, and whether there is an alternative or a laxative to take alongside it.

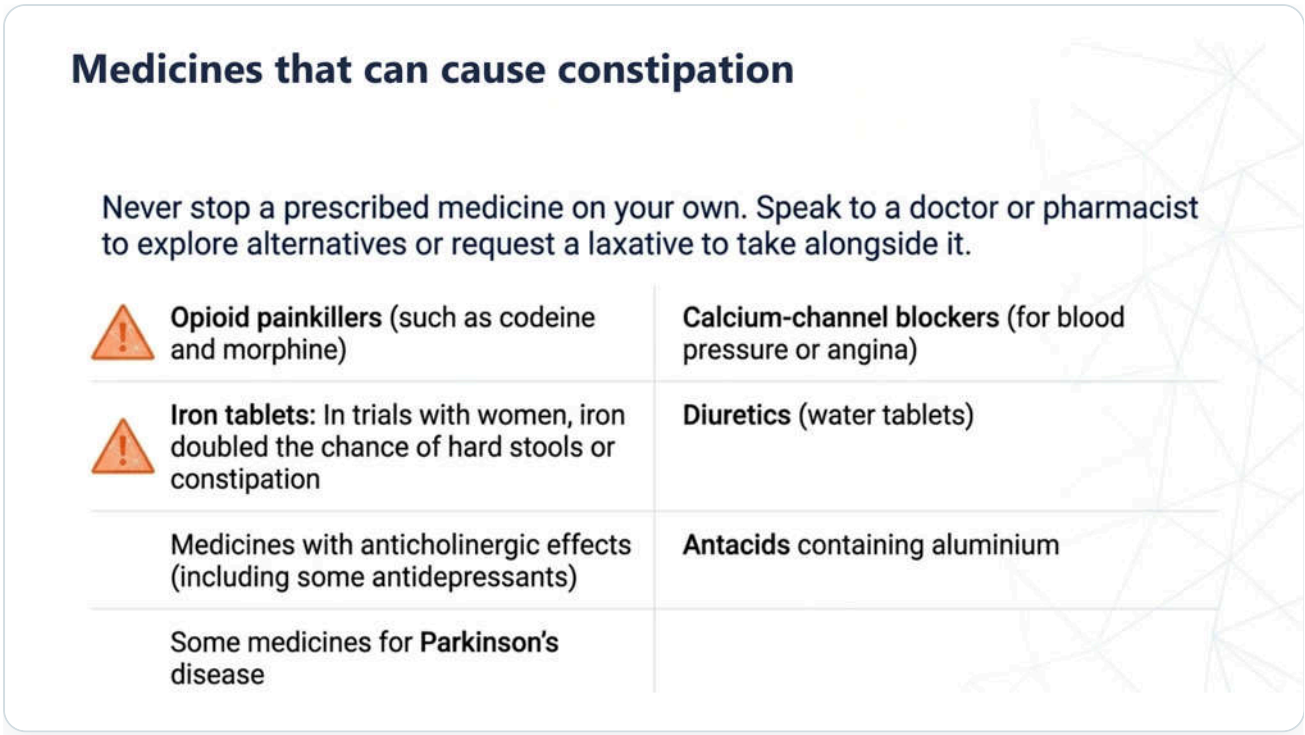


**FIGURE 3.8** **Medicines that can cause constipation** Opioids, iron and several everyday medicines slow the bowel: ask before you stop anything.

## 3.6 Rule out first

Constipation is rarely a sign of anything serious, but some symptoms need a doctor before you try this chapter.

**RED FLAGS: SEE A DOCTOR**

**See your doctor** if you are constipated and it is not getting better with treatment, or you are regularly constipated; you are regularly bloated or have tummy pain; you have blood in your poo or bleeding from your bottom; you have lost weight without trying; you are constipated and feel tired all the time; you notice a sudden change in how often or how you go; or a medicine you take is causing constipation.

**Get urgent medical advice** (an urgent appointment with your doctor, or your local urgent or out-of-hours medical advice line) if your poo is black or dark red, or you have bloody diarrhoea.

**Call your local emergency number or go to the nearest emergency department** if you are bleeding non-stop from your bottom, or there is a lot of blood or there are large clots.

Doctors look more closely when constipation starts at 50 or older, or there is a personal or family history of bowel disease.

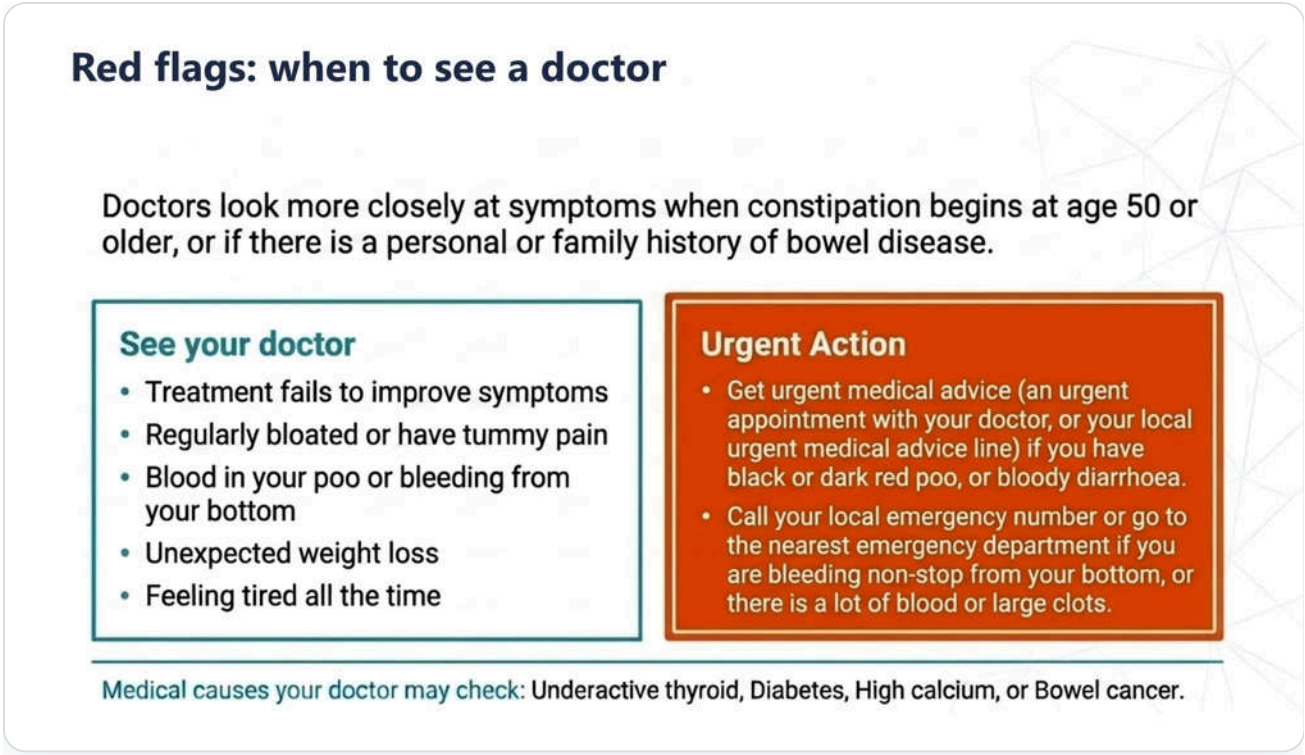


**FIGURE 3.9** **Red flags: when to see a doctor** The main warning signs; the full list is in the box above. They need a doctor, not a diet.

Your doctor may also look for medical causes:

| Possible cause | How it is usually checked |
|---|---|
| Underactive thyroid (hypothyroidism) | A blood test |
| Diabetes | A blood sugar test |
| High calcium, for example from overactive parathyroid glands | A blood test |
| Parkinson's disease and other nerve conditions | History and examination |
| Depression | A conversation; it often goes with constipation |
| Bowel cancer | A stool test for hidden blood; a camera test (colonoscopy) if there are warning signs |
| A pelvic floor problem | Specialist tests if the usual treatment does not work (Step 7) |

## 3.7 The constipation protocol

Work through the steps in order. The first five are free or cheap and safe, and many people need nothing more. Most of the trials behind the evidence labels were done in adults with chronic constipation and no other medical cause, and most of the volunteers were women. They did not include constipation caused by opioids: if you take an opioid, ask your prescriber which treatment suits you.

| Step | What to do | Targets | Evidence |
|---|---|---|---|
| 1 | A toilet routine after breakfast; never ignore the urge | Ignoring the urge | Expert advice |
| 2 | Feet on a footstool, knees above hips | Difficulty emptying | Early |
| 3 | Move every day and drink enough; magnesium-rich mineral water | Slow transit, low fluid | Early / Moderate |
| 4 | Fibre done right: psyllium, built up to more than 10 g a day | Low fibre, hard stool | Moderate |
| 5 | Two kiwifruit a day, or prunes | Slow transit, hard stool | Moderate / Early |
| 6 | A laxative if needed: osmotic first, stimulant as rescue | Persistent constipation | Strong / Moderate |
| 7 | Biofeedback for a confirmed pelvic floor problem | Difficulty emptying | Moderate |

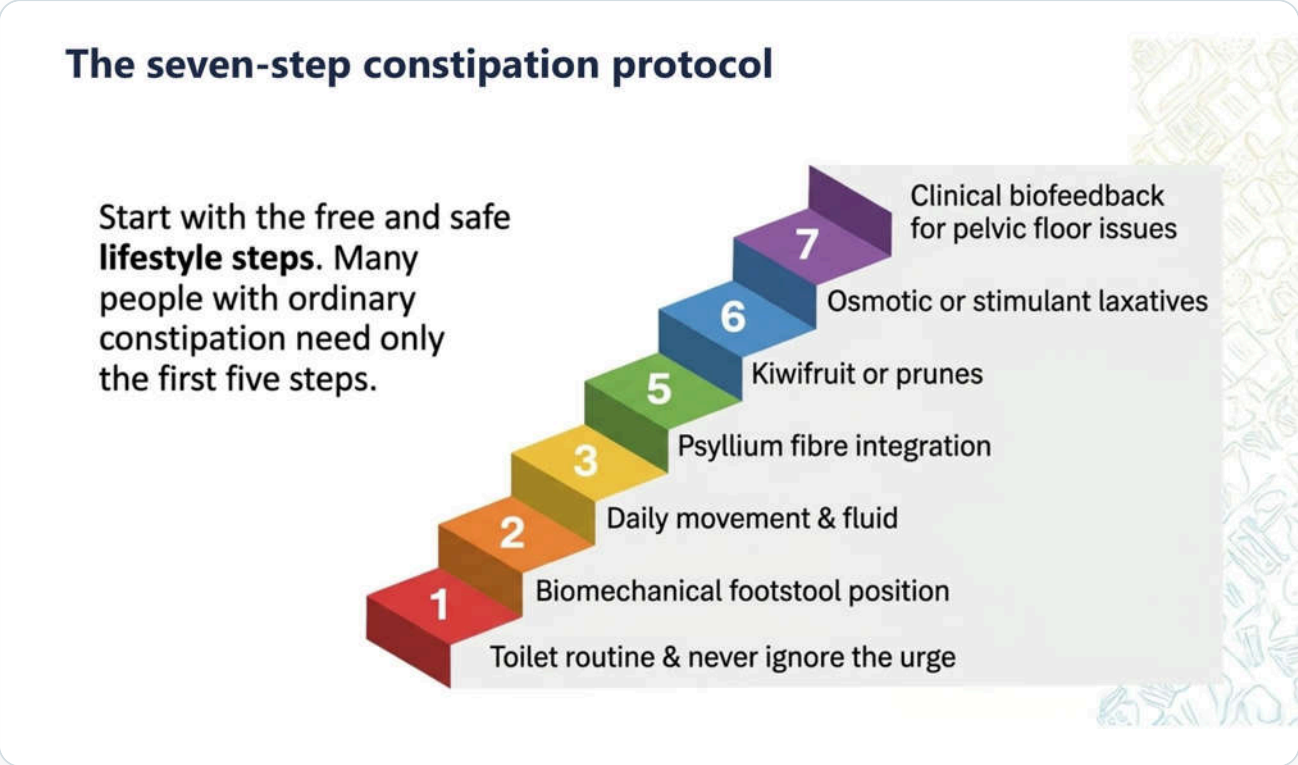


**FIGURE 3.10** **The seven-step constipation protocol** Free habits first, then fibre and fruit, then laxatives and specialist help if needed.

## Step 1: A toilet routine that uses your body's rhythm

- Eat breakfast, and a proper one: specialists suggest meals of about 500 calories or more to set off the gastrocolic response.
- Then give yourself unhurried time on the toilet after breakfast, at the same time each day, when the urge is most likely.
- Never ignore or put off the urge to go.
- Do not strain hard or sit for long. If nothing happens after a few minutes, get up and try again later.
- Leave your phone outside, so you do not sit longer than you need to.

This step is *expert advice*: it comes from the American College of Gastroenterology's guidance and from what we know about the bowel's daily rhythm, rather than from trials of the routine itself.

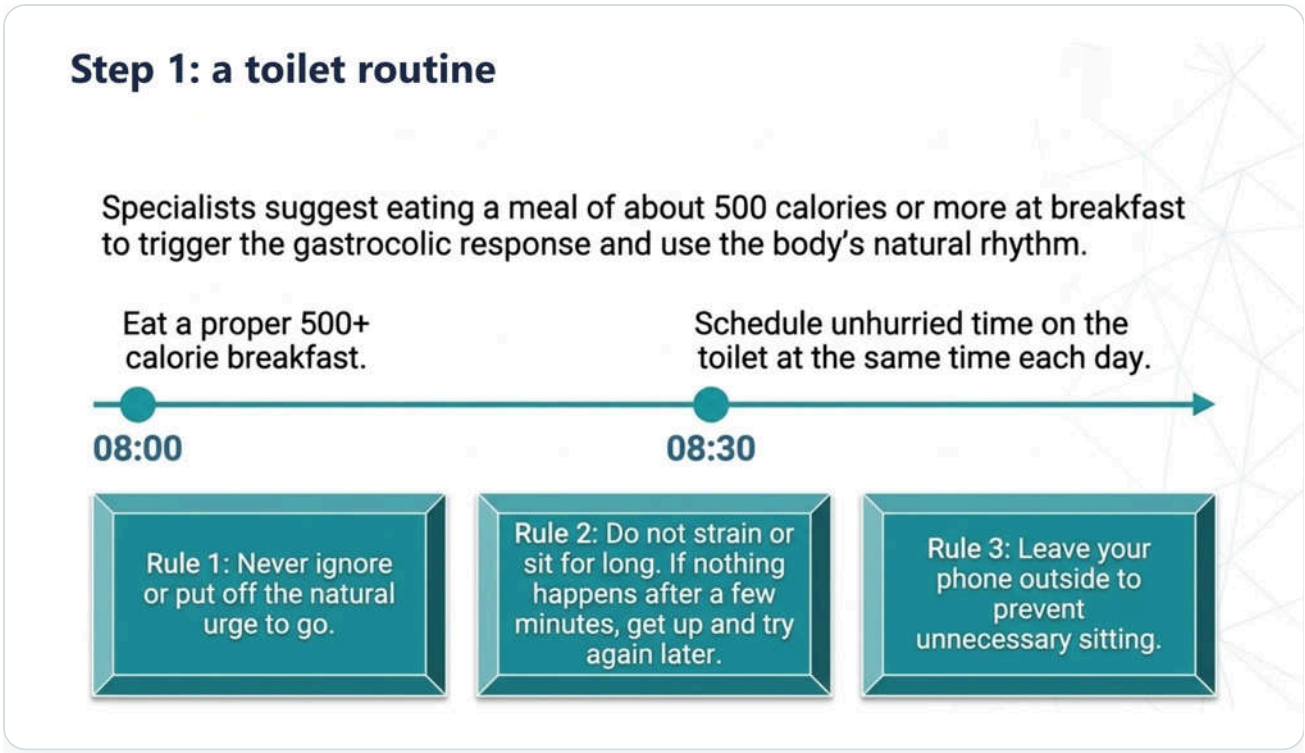


**FIGURE 3.11** **Step 1: a toilet routine** Breakfast, then unhurried time on the toilet: the bowel's strongest push comes after waking and eating.

## Step 2: The footstool position

Sitting on a modern toilet with your thighs level keeps a bend at the end of the bowel. Raising the knees is thought to straighten it.

1. Put your feet on a low stool so your knees are higher than your hips.
2. Lean forward, with your elbows on your knees and a straight back.
3. Let your belly relax and bulge forward. Breathe out gently rather than holding your breath.

In a study of 52 healthy volunteers who recorded 1,119 bowel movements, using a footstool reduced straining, gave a greater feeling of complete emptying and shortened the time spent on the toilet. The study was small and not randomised, so the evidence is early, but specialists note that a footstool has little if any risk.

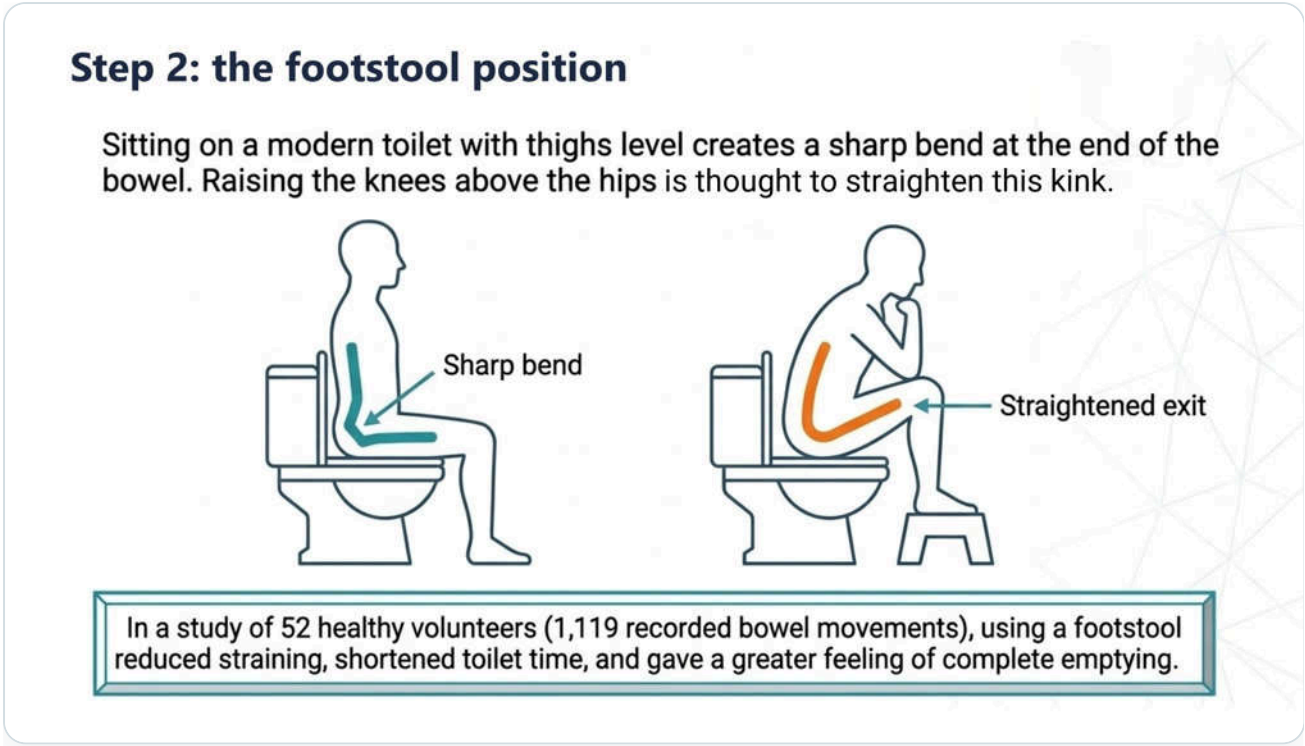


**FIGURE 3.12** **Step 2: the footstool position** Knees above hips, lean forward, relax the belly: less straining and fuller emptying.

## Step 3: Move every day, and drink enough

**Movement.** In a 2019 analysis of nine randomised trials (680 people), exercise roughly doubled the chance of constipation symptoms improving, and walking and other aerobic exercise helped most. The trials were of low quality and varied a lot, so the label is *early*, but the advice is safe: aim for a brisk 20 to 30 minute walk every day.

**Fluid.** Drinking more than you need does not fix constipation on its own. Fluid does help fibre to work: in a trial of 117 people with constipation eating 25 g of fibre a day, those who drank 2 litres of water a day had more bowel movements and used fewer laxatives than those who drank as they liked. Drink regularly through the day, and have an extra glass with every dose of fibre.

**Magnesium-rich mineral water.** In a French trial of 244 women with constipation, drinking 1 litre a day of a natural mineral water rich in magnesium sulfate helped 37.5% after two weeks, compared with 21.1% of those drinking ordinary low-mineral water. The trial was co-authored by the water's maker. Across four trials, high-mineral water made people more likely to respond, but did not change how often they went or their overall symptoms. If you try it, choose a water whose label shows it is rich in magnesium and sulfate, and give it two weeks.

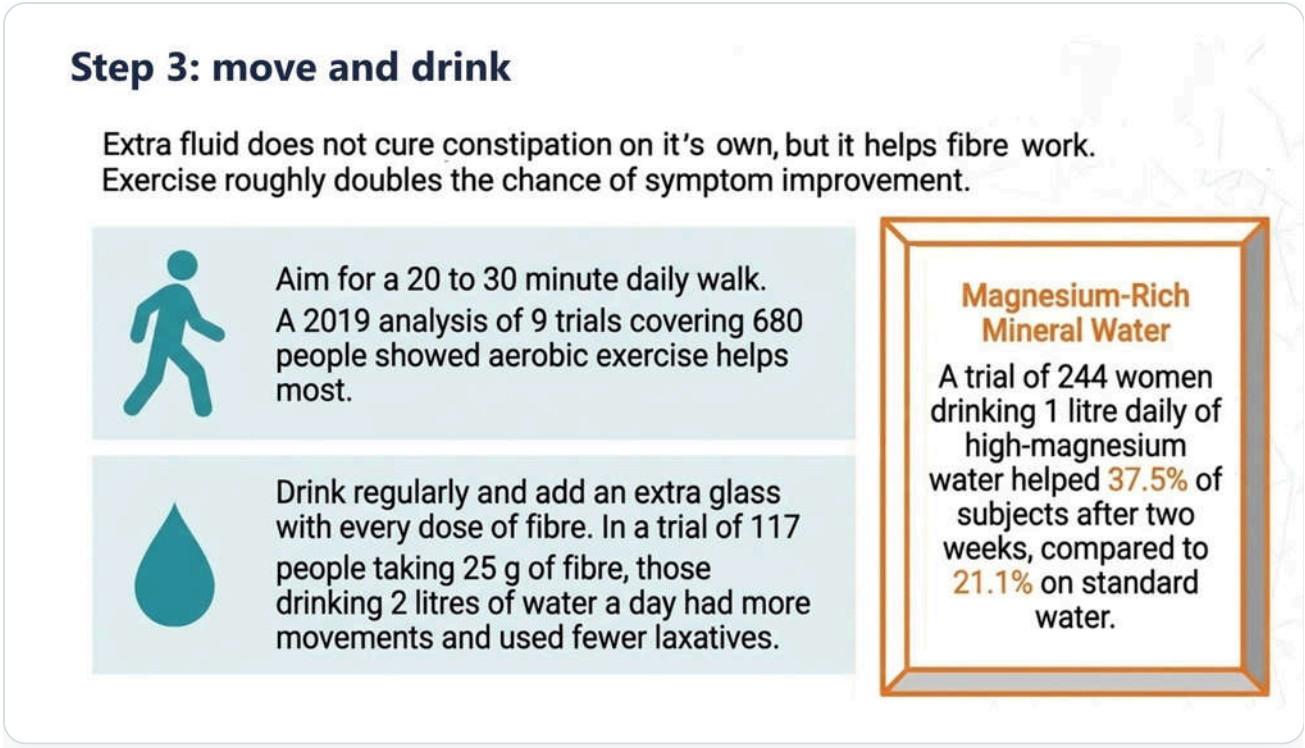


FIGURE 3.13 **Step 3: move and drink** A daily walk, steady fluids with your fibre, and magnesium-rich water as an optional extra.

## Step 4: Fibre done right

Fibre is the foundation, but not all fibre is equal. **Psyllium** (ispaghula husk) is a soluble fibre that forms a gel, holds water and softens the stool. In a 2022 analysis of 16 trials (1,251 people with constipation), 66% of those taking a fibre supplement improved, compared with 41% on placebo, and psyllium was the type that worked. Doses above 10 g a day helped; lower doses did not. The benefit showed after at least four weeks.

**Coarse wheat bran** is an insoluble fibre. It adds bulk but holds little water, the evidence for it is very limited, and it often causes wind and bloating. Many people with more severe constipation feel worse when they simply add more fibre.

1. Start with a small dose of psyllium husk or ispaghula, stirred into a full glass of water. Drink it straight away, then drink another glass.
2. Build up over one to two weeks to more than 10 g a day, following the pack.
3. Expect some extra wind for the first week or two; it usually settles.
4. Give it a full four weeks before judging it.
5. Psyllium can affect how some medicines are absorbed: check the leaflet and take it apart from them.

## Step 5: Kiwifruit, prunes and rye bread

**Kiwifruit.** In an international trial of 184 people, eating two green kiwifruit a day for four weeks increased complete bowel movements by about 1.5 a week in people with constipation, and improved tummy comfort. In a US trial of 79 people, two kiwifruit a day, 100 g of prunes a day and 12 g of psyllium a day all helped; kiwifruit had the fewest side effects, eased bloating and left the fewest people dissatisfied. Both trials com-

pared kiwifruit with psyllium rather than with a placebo, and the larger one was co-authored by staff of a kiwifruit company. Kiwifruit capsules and powders did not help in the trials that tested them, so eat the fresh fruit.

**Prunes.** In a trial of 40 people, 50 g of prunes twice a day improved bowel movements and stool softness more than psyllium did. Prunes are rich in sorbitol, which ferments and can add wind: if bloating is also a problem for you, choose kiwifruit.

**Rye bread.** Wholegrain rye bread increased bowel movements a little, by about 0.4 a week compared with white bread, but people needed six to eight slices a day, and overall gut symptoms were slightly worse. There were only two small trials, one of them funded by food companies. Rye bread is a good everyday choice, but not a treatment on its own.

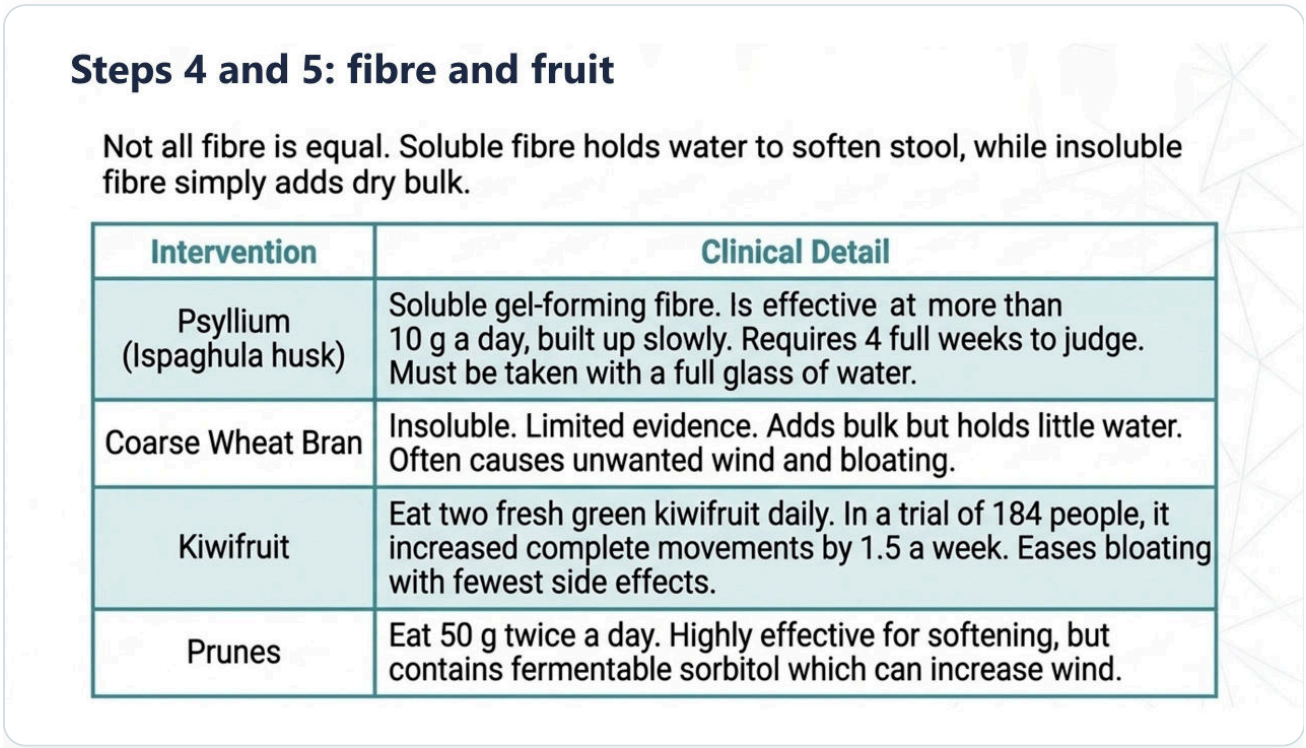


**FIGURE 3.14** **Steps 4 and 5: fibre and fruit** Psyllium softens stool; coarse bran mostly adds bulk and wind; two kiwifruit a day did as well as psyllium.

## Step 6: Laxatives in plain terms

If the first five steps are not enough, a laxative is a sensible next step, not a failure. There are four kinds.

| Type | Examples | How it works | What the evidence shows |
|---|---|---|---|
| Bulk-forming | Psyllium, ispaghula | Holds water in the stool | Step 4: works at more than 10 g a day (Moderate) |
| Osmotic | Macrogol; lactulose; magnesium oxide | Draws water into the bowel; 2 to 3 days to work | Macrogol is the usual first choice (Strong). Lactulose often causes wind. Magnesium oxide helped in two trials (Moderate); avoid it if you have kidney disease |
| Stimulant | Bisacodyl, sodium picosulfate, senna | Makes the bowel muscles push; 6 to 12 hours, so take at bedtime | Recommended for short-term use, up to four weeks, or as a rescue (Moderate). The evidence for senna is weaker |
| Stool softener | Docusate | Lets water into the stool | Little good evidence |

**USING LAXATIVES SAFELY**

If you buy a laxative without a prescription, stop when things improve and do not take it for longer than seven days. If it has not helped after three days, speak to a pharmacist or doctor. Check with a pharmacist first if you are pregnant or breastfeeding, have a heart or kidney condition or inflammatory bowel disease, or take opioid painkillers. Longer-term use is safe for many people, but agree it with your doctor.

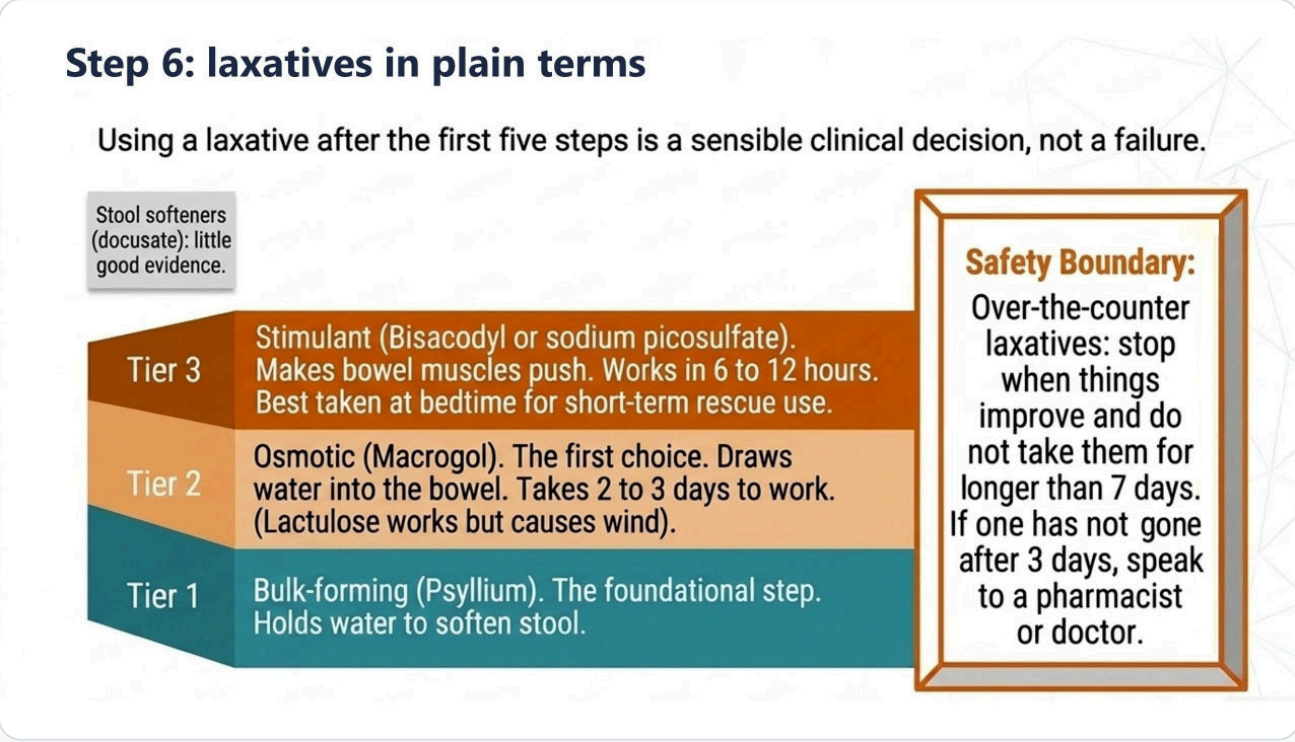


**FIGURE 3.15** **Step 6: laxatives in plain terms** Osmotic laxatives first; stimulants for a short course or a rescue.

## Step 7: Biofeedback for a pelvic floor problem

If you strain for a long time even with soft stool, feel blocked, or need to press to empty, the problem may be at the exit. Specialists confirm it with simple tests of the muscles and of how easily you can pass a small balloon (anorectal manometry and a balloon expulsion test).

The treatment is **biofeedback**: a therapist uses a sensor to show you on a screen what your pelvic floor muscles are doing, and teaches you to relax them while pushing gently. In a randomised trial of 109 people with this problem, 80% of those given five weekly biofeedback sessions reported major improvement at six months, compared with 22% of those given a laxative. The benefit lasted at least two years. The American College of Gastroenterology calls biofeedback the cornerstone of treatment. Ask your doctor for a referral if Steps 1 to 6 have not worked.

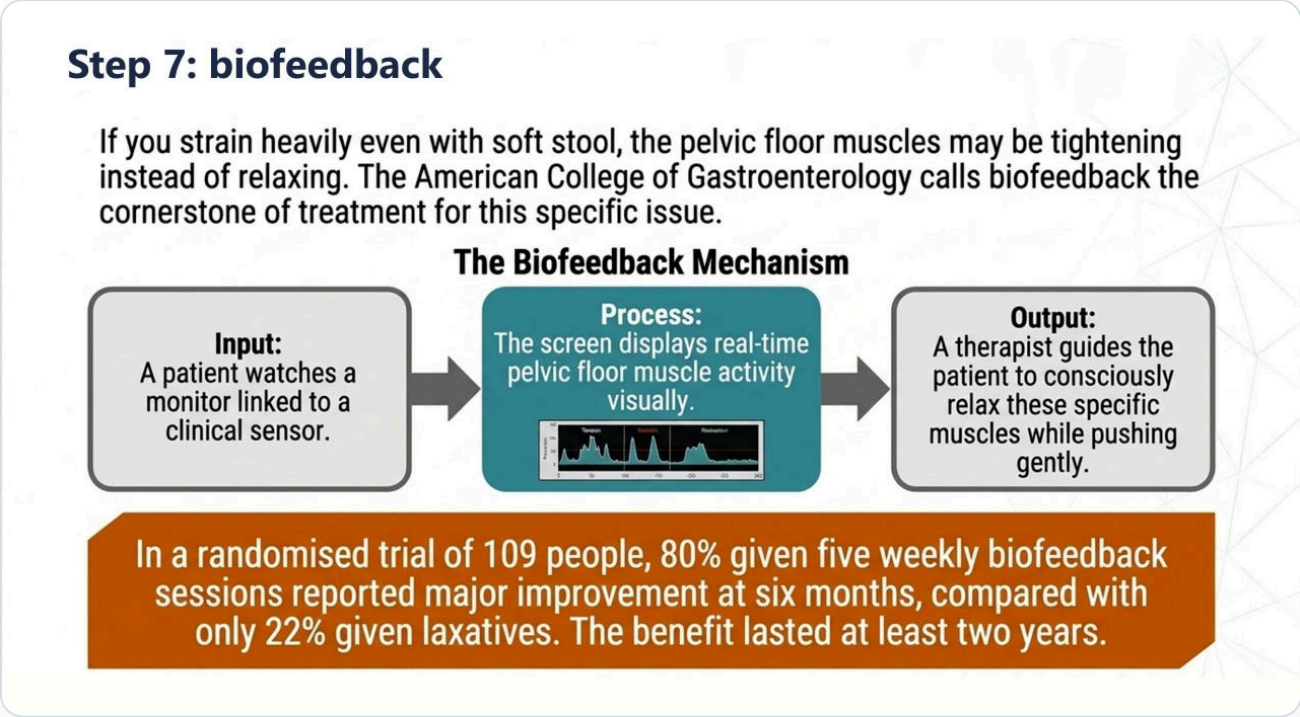


**FIGURE 3.16** **Step 7: biofeedback** When the pelvic floor tightens instead of relaxing, five sessions of retraining can fix it.

## 3.8 What about probiotics?

Probiotics are widely sold for constipation. The 2025 British Dietetic Association guideline looked at 30 trials with 2,804 people. Taken together, probiotics made people about 28% more likely to respond and increased how often they went, but no single species or strain was shown to work, and they did not help bloating, tummy pain or quality of life. The evidence was rated low. Probiotics combined with a fibre (synbiotics) did not help. The label is **early**: if you want to try one, treat it as a four-week experiment, after the steps above.

> *i* **FERMENTED FOODS**
>
> Yoghurt, kefir and other fermented foods support a diverse microbiome (see the fermented foods chapter), but they have not yet been properly tested as a treatment for constipation.

# Start with your problem, not the theory.

Seven common gut problems. A step-by-step plan for each, with every step graded by the strength of its evidence.

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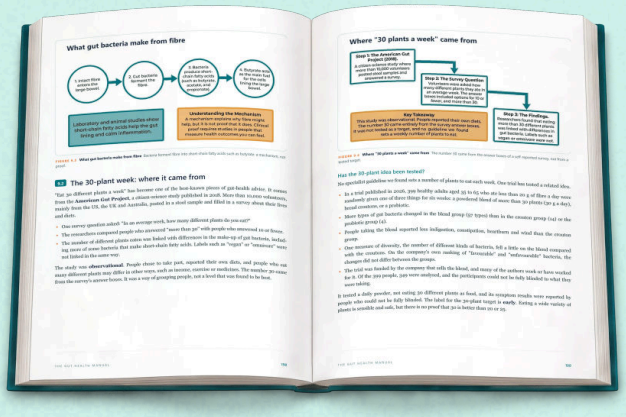
**Find your problem, check the warning signs first, then start your plan.**







Clear science. Strong diagrams.

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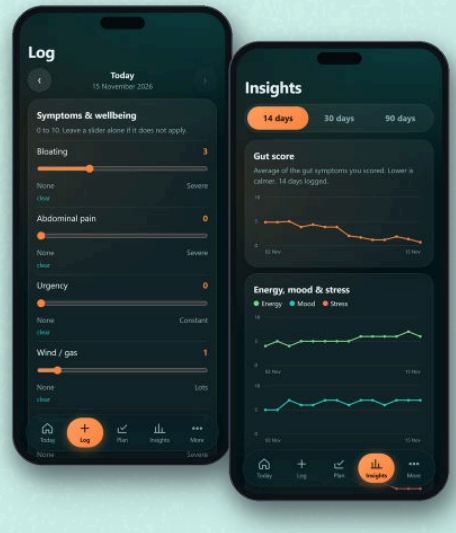


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