THE GUT HEALTH SERIES

ANTIBIOTICS AND YOUR GUT

What antibiotics do to your gut, the red flags, and seven steps to help it recover



DR MICHAEL KLEIN

Before You Begin

Gut problems can affect what you eat, how you feel and how you live. This book brings together scientific evidence and practical guidance on one of them: antibiotics and your gut.

It is one of the problem chapters of *The Gut Health Manual*, published on its own. Chapter 2 is that chapter, word for word. Chapter 1 adds the short background it relies on, and Where to Go Next shows what the full manual adds for a reader with this problem. Where the text says "the constipation chapter" or similar, it means a chapter of the full manual.

IMPORTANT NOTICE

This book 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 Chapter 2 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 Book

Start with Chapter 2. You do not need to read Chapter 1 first, but it is short and explains the labels used throughout.

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

Chapter 2 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 Free Downloads and the Companion Kit).

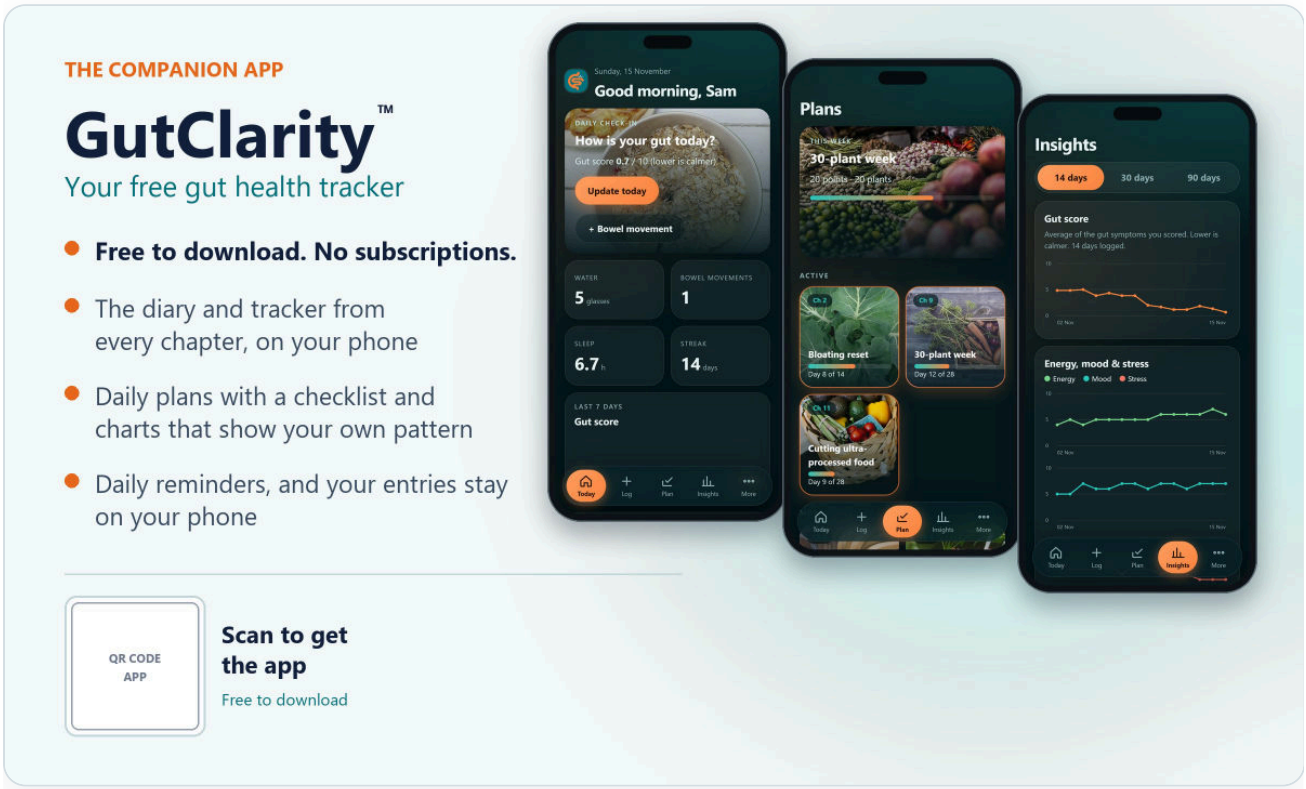
Free Downloads and the Companion Kit

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 Chapter 2, a short panel shows the matching screens, for anyone who would rather not print and fill in the forms by hand.



Contents

Before You Begin 2

How to Use This Book 3

Free Downloads and the Companion Kit 4

CHAPTER 1

1 The Gut Basics You Need First 7

1.1 Two things worth knowing 8
1.2 How the evidence labels work 9
1.3 The Bristol Stool Chart 9
1.4 Where to begin 10

CHAPTER 2

2 Repairing Your Gut After Antibiotics 11

2.1 Antibiotics by the numbers 12
2.2 What antibiotics do to your gut bacteria 13
2.3 How fast does the gut recover? 14
2.4 Antibiotics save lives: use them well 16
2.5 Rule out first: red flags 17
2.6 The recovery protocol 19
2.7 Vaginal thrush after antibiotics 26
2.8 Supplements and "gut repair" products 27
2.9 What specialists advise against 27
2.10 Myths versus evidence 28
2.11 Your 14-day recovery plan 29

Where to Go Next 34

About the Author 36

References 37

Glossary 39

List of Figures 40

CHAPTER 1

01

This short chapter gives the background that Chapter 2 relies on: two ideas about how the gut works, and how to read the evidence labels. It is adapted from the opening chapter of The Gut Health Manual.

IN THIS CHAPTER

01 The microbiome

02 Short-chain fatty acids

03 How the evidence labels work

04 The Bristol Stool Chart

05 Where to begin

1.1 Two things worth knowing

The full manual explains four systems that sit under almost every gut problem: the microbiome, the gut barrier, short-chain fatty acids and the gut-brain axis. Two of them matter most for recovery after antibiotics, so they are summarised here.

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.**

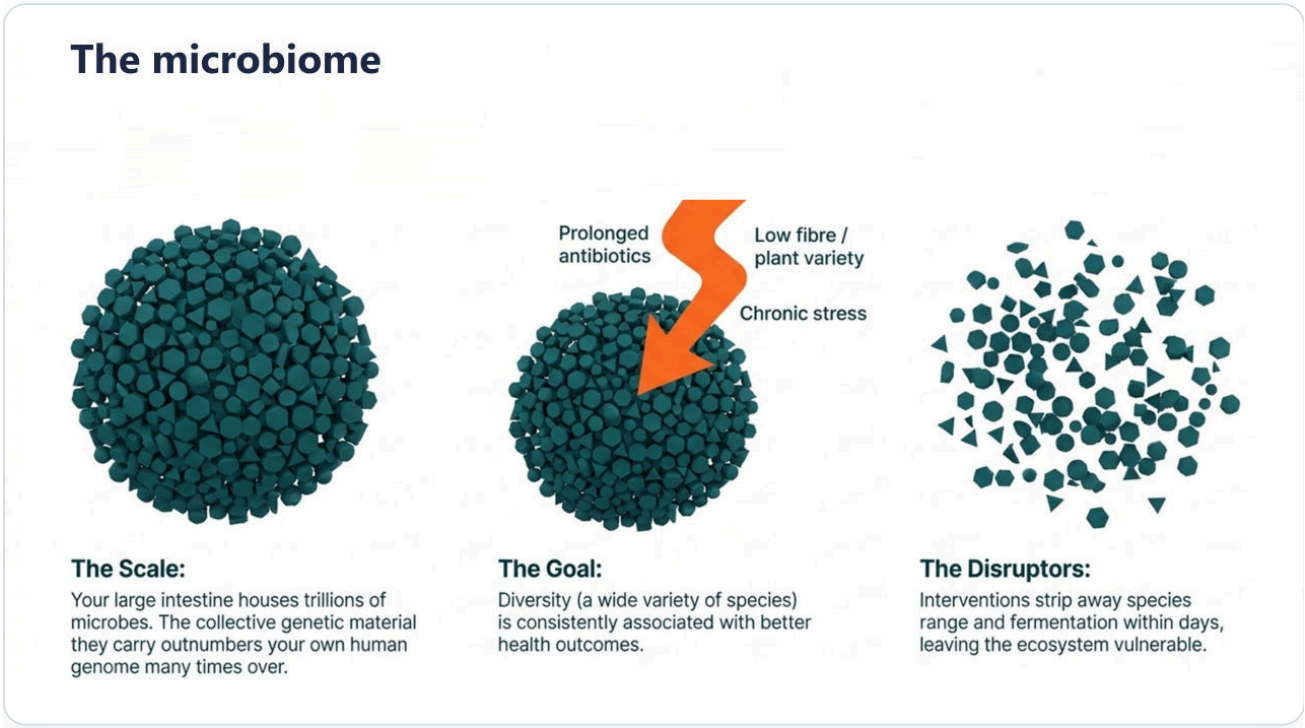


FIGURE 1.1 **The microbiome** A diverse community lives in the large intestine. Antibiotics can change it within days; diet and stress may also affect it. A link with health is not proof that raising diversity will relieve a particular symptom.

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.**

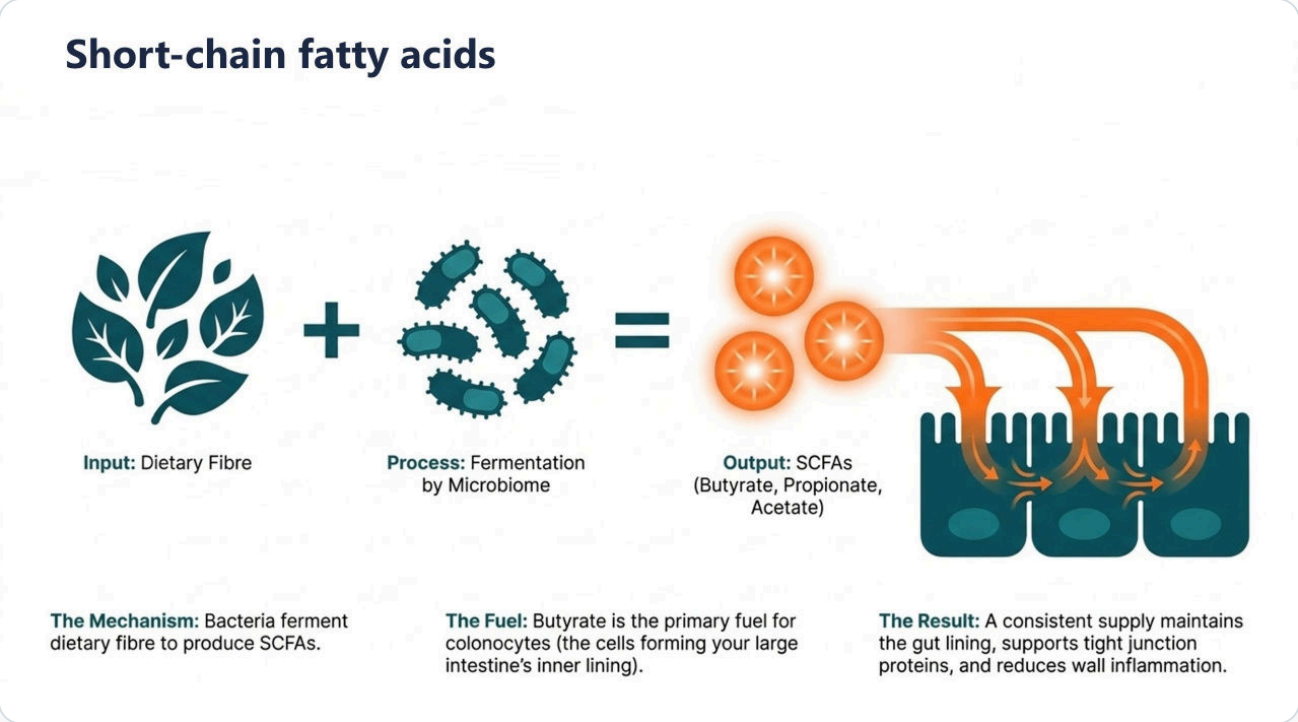


FIGURE 1.2 **Short-chain fatty acids** Gut bacteria ferment fibre into acetate, propionate and butyrate. Butyrate fuels cells lining the colon; barrier and anti-inflammatory effects are mechanisms, not a promise that a food will treat inflammation.

1.2 How the evidence labels work

The labels in the table in How to Use This Book (Strong, Moderate, Early, Expert advice and Not supported) sit beside the key claims in Chapter 2. 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.

1.3 The Bristol Stool Chart

Chapter 2 asks you to describe your stools using the Bristol Stool Chart, which the constipation chapter of *The Gut Health Manual* explains. It is reproduced here for reference: types 1 and 2 are hard lumps, types 3 and 4 are the comfortable middle, and types 5 to 7 are progressively looser.

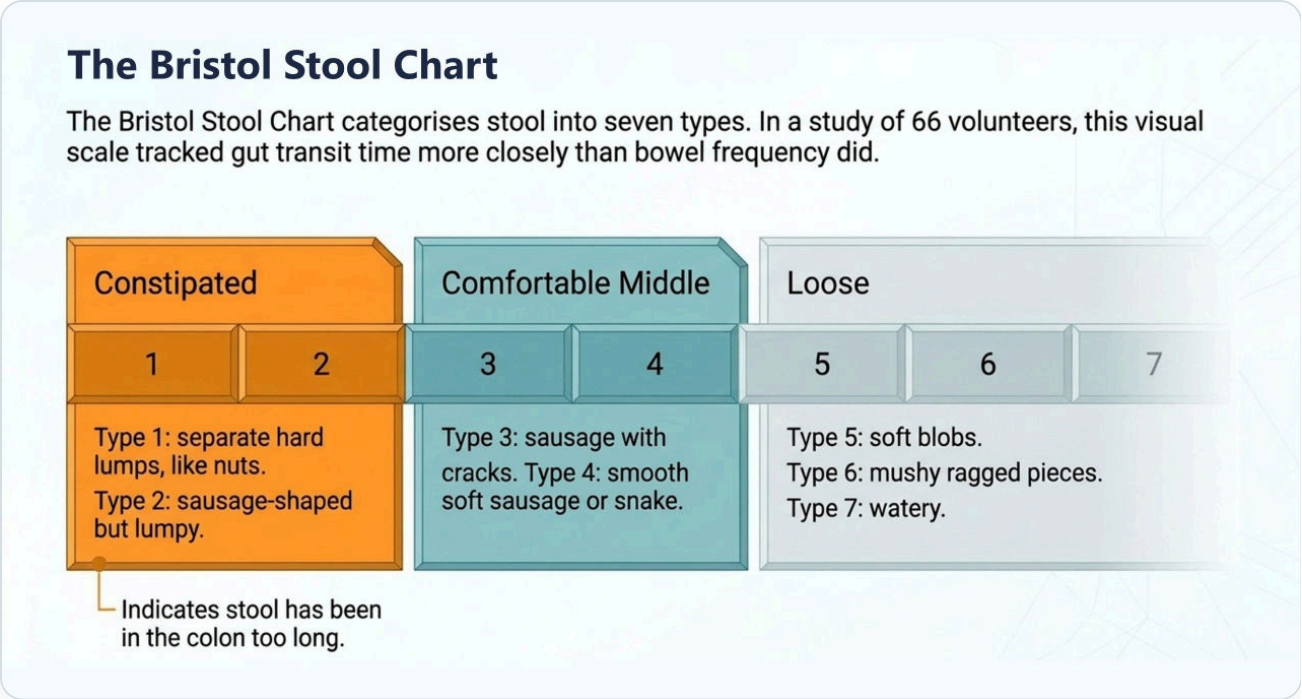


FIGURE 1.3 **The Bristol Stool Chart** Seven stool types: 1 and 2 mean constipation, 3 and 4 are the goal.

1.4 Where to begin

Chapter 2 is the main part of this book. Read its **Rule out first: red flags** section before anything else: if any of the warning signs apply to you, see a doctor before trying the plan. Then work through the seven steps in order, and use the 14-day plan and the diary at the end of the chapter to see what helps you.

This book 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.



CHAPTER TWO

Antibiotics *and* Your Gut

What antibiotics do to your gut, the red flags, and seven steps to help it recover.

1 in 4

One person in four in the trials had diarrhoea without a probiotic.

COCHRANE REVIEW, 2025

You start a course of antibiotics for a chest, ear, skin or urine infection. A few days later your stools turn loose, your belly feels bloated and gurgly, and some women notice the itch of thrush. You finish the course and wonder whether your gut has been ruined, and what you can do to help it recover. This chapter explains what antibiotics do to your gut bacteria, how well they come back, which symptoms need a doctor, and a seven-step plan that starts with free, safe steps and sets out what probiotics can and cannot do.

IN THIS CHAPTER

01 How common gut side effects are, and how often antibiotics are prescribed

02 What antibiotics do to your gut bacteria, and how fast they recover

03 Why repeated courses matter, and how to use antibiotics well

04 Red flags and C. difficile: when diarrhoea needs a doctor

05 The seven-step recovery protocol, from fluids to fermented foods

06 Probiotics during and after the course: what the evidence says

07 Thrush, supplements, myths, and your 14-day recovery plan and diary

2.1 Antibiotics by the numbers

Gut side effects are among the commonest reasons people dislike antibiotics. A 2025 Cochrane review pooled 40 trials with 13,419 people taking antibiotics. Among those who did not take a probiotic, **about one in four** (27.4%) developed diarrhoea. Many of the trials were done in hospital patients, who are more likely to be affected, so your own risk on a short course at home is probably lower. In an Australian trial of 235 women taking a short course of antibiotics, about one in four (23%) developed thrush afterwards.

Antibiotics are also among the most prescribed medicines in the world. In a large survey of United States clinics, doctors wrote about 506 antibiotic prescriptions for every 1,000 people in a year, about one for every two people, and an estimated 30% of them were not needed. For short-term chest, ear, nose and throat infections, only about half of the prescriptions were thought to be appropriate.

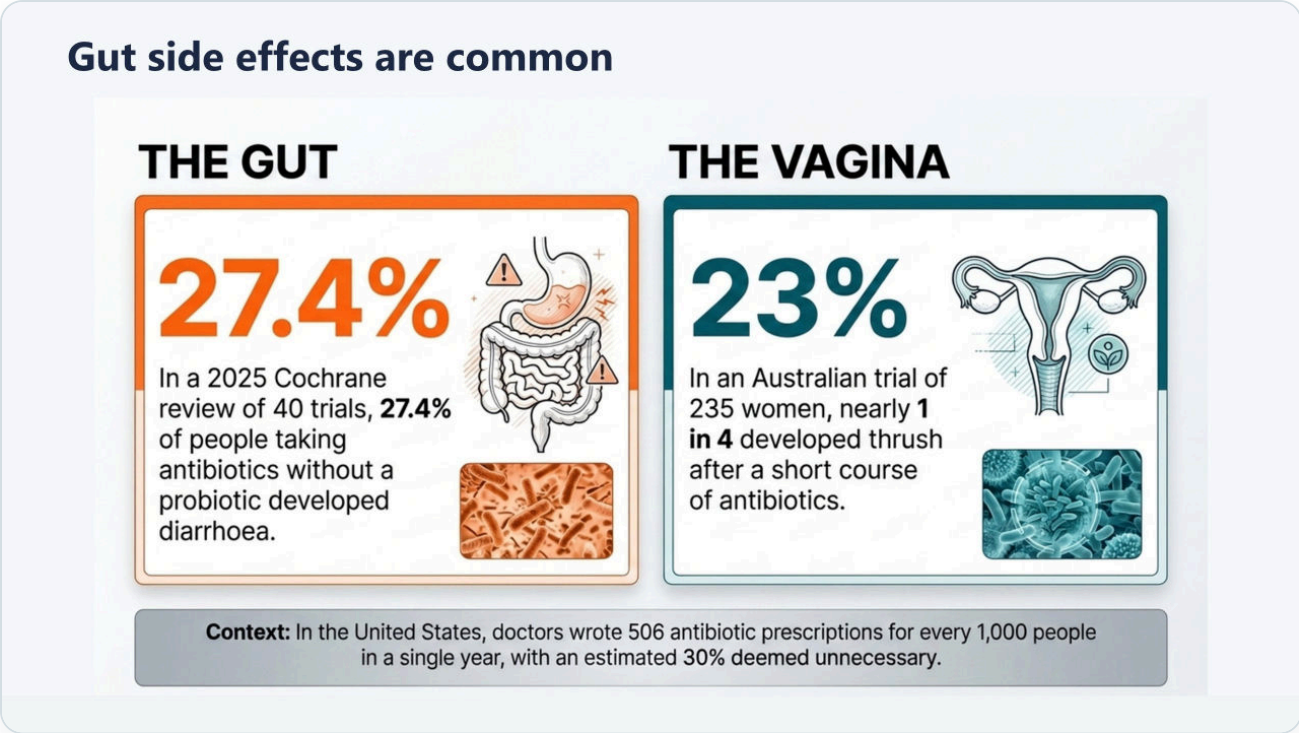


FIGURE 2.1 **Gut side effects are common** In the trials, about one person in four on antibiotics developed diarrhoea without a probiotic, and about one woman in four developed thrush.

2.2 What antibiotics do to your gut bacteria

Antibiotics kill the bacteria causing an infection, but they also hit many of the harmless and helpful bacteria in your gut, the community scientists call the **microbiome**.

- **Diversity falls fast.** In a Stanford study that followed three people closely, the antibiotic ciprofloxacin caused a loss of diversity within three to four days of starting.
- **Helpful groups are lost.** Bifidobacteria and the bacteria that make **butyrate**, a fuel for the cells lining the colon, drop sharply.
- **Opportunists bloom.** Hardier bacteria, such as Enterococcus and the E. coli family, multiply in the space left behind.
- **Resistance genes increase.** Bacteria that carry antibiotic resistance genes have an advantage and become more common.

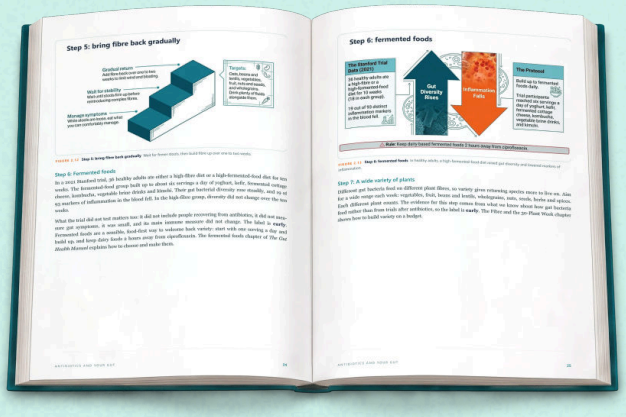
These changes explain why diarrhoea, bloating and thrush are common during and just after a course.

Bloated and loose
after a course of antibiotics?

Learn what antibiotics do to your gut bacteria, which red flags need a doctor, how well the gut recovers, and what probiotics can and cannot do, in seven steps.

Practical steps to help your gut recover, each graded by the strength of its evidence. Printable checklists, symptom diaries and progress trackers are free to download, and the GutClarity app is free too, with no subscription.

Read the red flags, then start step one today.



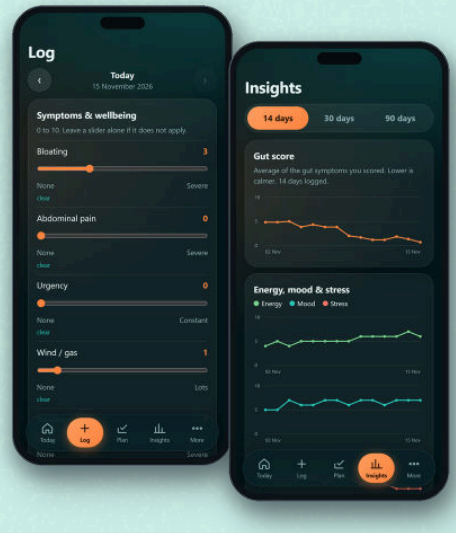
Clear explanations. Practical steps.



Checklists, diaries and trackers.

Explore The Gut Health Series





The complete Gut Health Manual • Seven focused guides • Free GutClarity app