

A Gut Feeling about You

Follow Your Gut: The Enormous Impact of Tiny Microbes

Authors: Rob Knight with Brendan Buhler

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The “gut microbiota” is rapidly becoming a common term outside of the halls of science: it has been headlined in the *New York Times*, is the subject of several non-fiction books, and is regularly promoted on TV (probiotics, anyone...?). Many non-scientists may not remember or know the technical term microbiota, but mention the gut flora to them, and they’ll probably know what you’re referring to.

Every month, new research comes out describing yet more findings about the gut microbiota or, more broadly, the human microbiota—your collection of microbes across all body locations. With each new study, more intriguing questions unfold as scientists try to understand the mechanisms involved. In this short TED book, Rob Knight from the University of Boulder, Colorado, one of the main researchers involved in the Human Microbiome Project, and Brendan Buhler, an award-winning science writer, provide a knowledgeable, up-to-date summary of how your gut microbiota affects many aspects of your everyday life. “Allergies, asthma, obesity, acne: these are just a few of the conditions that may be caused—and someday cured—by the microscopic life inside us. The key is to understand how this groundbreaking science influences your health, mood, and more,” state the authors. And they are right.

In seven short chapters, we learn a myriad of facts about the gut microbiome and ourselves. Starting with the first chapter, we discover how microbial we are; in fact, humans are mostly composed of microbes. The book then covers how we acquire our microbiome, its emerging role in sickness and in health, how it interacts with our brain through the fascinating

gut-microbiome axis, and how we might be able to tailor it to our specific needs. The book also touches upon the important topic of antibiotics and their effects on the gut microbiota before closing with a chapter looking to the future, as envisioned by the authors.

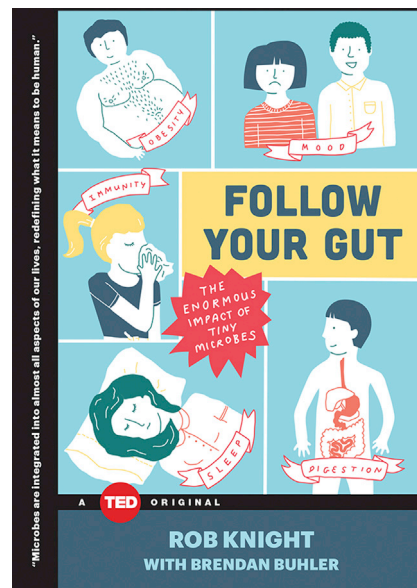
Overall, the studies referenced are solid, and the often-personal anecdotes throughout the book are generally spot-on and funny. We learn of the sobering arrival of Rob Knight’s daughter into the world, how our pets resemble us more than we think, and how bacteria could help us stop worrying about our waistlines. The reading is easy and enjoyable, with simple cartoons illustrating the different topics at hand. Two sidebars broaden the scope of the book, providing us with a “Brief History of Bugs,” which

covers the days from Antonie van Leeuwenhoek’s first observations of bacteria up to when Robert Koch linked them to disease with his famous postulates, and “The Science (and Art) of Microbiome Mapping,” which provides a window into how researchers go about decoding the genomic content from complex collections of microbes. The book also contains an addendum on “The American Gut,” an ongoing open-source scientific project led by Dr. Knight, allowing each of us to discover which inhabitants make up our own individual microbiota. Thousands of donations have already been made and sequences are publicly available, allowing researchers to map the incredible diversity of the gut microbiome and identify trends that can be further investigated in the lab.

For those already involved in the field of human microbiome research, this book will not provide anything new. Of particular interest, though, is how Rob Knight compares your gut microbiota to a garden. With this analogy, he makes the very strong point that microbial ecology hypotheses and testing will be crucial if we are to fully understand the extent to which our microbiota influences our health.

For those who wish to learn more about this exciting field, this will be an easy first step. And for those seeking health advice involving their gut microbiota, Dr. Knight provides wise advice: check the sources. Before making any radical change in your lifestyle or believing the overwhelming claims about a miracle-microbial solution, you should ask yourself, “Who says so, and how does he or she know?” This book provides helpful hints for an evidence-based approach to evaluating the various health claims out there.

In short, this enjoyable read summarizes a rather complex field of science with some everyday scenarios and delivers an optimistic, yet not unrealizable, vision of the future of medicine. Clearly, we have much to learn about ourselves as individual microbial ecosystems.



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