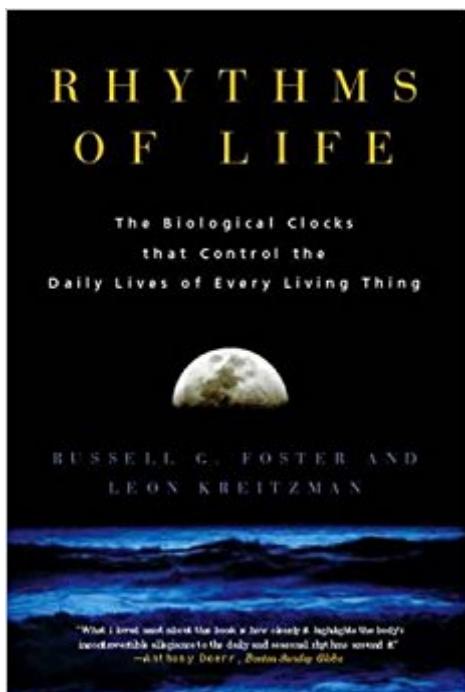


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Rhythms Of Life: The Biological Clocks That Control The Daily Lives Of Every Living Thing



Synopsis

Why can't teenagers get out of bed in the morning? How do bees tell the time? Why do some plants open and close their flowers at the same time each day? Why do so many people suffer the misery of jet lag? In this fascinating book, Russell Foster and Leon Kreitzman explain the significance of the biological clock, showing how it has played an essential role in evolution and why it continues to play a vitally important role in all living organisms. The authors tell us that biological clocks are embedded in our genes and reset at sunrise and sunset each day to link astronomical time with an organism's internal time. They discuss how scientists are working out the clockwork mechanisms and what governs them, and they describe how organisms measure different intervals of time, how they are adapted to various cycles, and how light coordinates the time within to the external world. They review problems that can be caused by malfunctioning biological clocks—including jet lag, seasonal affective disorder, and depression. And they warn that although new drugs are being promoted to allow us to stay awake for longer periods, a 24/7 lifestyle can have a harmful impact on our health, both as individuals and as a society.

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Customer Reviews

Are you a morning "lark" or a "night owl"? Do you put your feet up after lunch, or can you get by on a few hours' sleep? Foster, a professor of molecular neuroscience in London, and Kreitzman (The 24 Hour Society) survey the biological clocks that dictate circadian rhythms, the daily cycles that affect creatures from cockroaches to humans. A little bundle of nerve cells in the front of the brain

called the suprachiasmatic nuclei is responsible for many circadian functions in mammals. Other controls may be embedded in our genes. The authors explain that all living creatures run on several different biological clocks simultaneously: some make it possible for us to recognize the passage of short intervals of time, whereas others (in the retina) respond to light and regulate our bodily functions over 24 hours and even longer cycles. Your very perception of time depends on your body temperature, which varies by almost one degree Celsius during the course of a day. In their final chapters, the authors explain that the very efficacy of medication for many diseases, notably cancer, depends on when it is administered. Biology buffs will marvel at the fascinating material, and medical professionals should put the book at the top of their must-read lists. Copyright © Reed Business Information, a division of Reed Elsevier Inc. All rights reserved. --This text refers to an out of print or unavailable edition of this title.

"The writing is clean, clever, and ... evocative.... What I loved most about this book is how clearly it highlights the body's incontrovertible allegiance to the daily and seasonal rhythms around it."

Let me begin with a comprehensive ditto to the words of reviewer R. Hardy "Rob Hardy." I could cut and paste his words here and go away satisfied that I had done my job. In fact, I would heartily agree with almost everything said by every reviewer before me -- with the caveat that everyone's expectations going in shaped whether they or not they were pleased with what they found once they got there. My rating is five stars because the book DID contain the information I wanted to find within its pages - and more. This is clearly not a book for the average self-help reader, nor will someone who is looking for something from a more metaphysical or Eastern medicine perspective be very happy with it. (I appreciate many of those too, btw - but that's not what THIS book is.) If you are looking for a great read in terms of style-verve, you probably won't be thrilled. Even though it is a bit of a "first-person narrative biography" of an exciting period in the sleep-research field, it is stylistically slanted more toward those who are used to reading scientific tomes -- after which, almost anything would be a beach-read. If you read and liked Kandel's *In Search of Memory*, you won't find this book as "easy" or engaging a read, or as filled with personal details, but that doesn't mean it is not worth reading, or dry as dust, right? This is an "information-dense" book from a neuroscientist's perspective, with many passages that you will probably want to underline or re-read to make sure that the content "sticks" (unless you have the sleep field's vocabulary already under your belt). To me, it is well worth the effort to dig a bit for the treasures it contains. Like life, the territory becomes more familiar the longer you stick with it. There is a brief 4-page glossary of terms

at the back for the true sleep research newbie -- AND a handy one-page chart on page 248 that summarizes the oscillations of human chronorhythms in terms of performance, disease & biochemistry, which helps to get a "picture" of a great deal of the content (Older eyes may need magnification for the chart!) I found their 15-page, "normal" type-size References section useful as well. But then, I am an easy sell for the few authors who are offering ANYTHING credible beyond primary journal-published research that might shed some light on chronorhythm disorders, since they are still so poorly understood and under-researched. I explore with a keen PERSONAL interest, having been one of those supposedly "rare" non-blind DSPS N-24 sufferers all my baby-boomer life: the kid they had to wake for Christmas, chronically jet-lagged even when I don't travel! So Foster, a leading expert in chronobiology, is already *quite* the hero as far as I'm concerned -- a leading light in a comparatively teensy field (given how little we really understand about healthy or disordered sleep architecture, and that 100% of the human population expects to be able to fall asleep and stay asleep with ease and intentionality - as if their health and functionality depended upon it!) Foster (& group) "discovered," in the words of Wikipedia, "the non-rod, non-cone, photosensitive ganglion cells in the mammalian retina which provide input to the circadian rhythm system." Having watched Foster's highly engaging video talks and done quite a bit of additional research for an upcoming book on chronorhythm disorders (and an ongoing Sleep series on my blog), I was well aware of what a HUGE deal Foster's "discovery" was - a giant step forward in sleep research that is still under-appreciated, IMHO. I was hoping to gain insight into how it all came about (What was the thread of the thinking? How was it funded? etc.) I was also interested in getting an inkling of what ELSE they might be up to. While I did not find out EVERYthing I wanted to know, I was not disappointed. Foster asks interesting questions and underscores those that framed the research that came before him - and generously credits the findings of others. That always matters to me. I was personally fascinated by the sections on the evolutionary advantage to how non-human brains keep track of time - the source of more than a few aha!s I intend to pursue. (Foster's June 2013 TED talk is now online, for anyone else who wants to keep tabs on him) I also loved the quotations peppered throughout, like the Chapter 1 beginning, a 1993 quote by Colin Pittendrigh, whom he quotes several times throughout the book, "A rose is not necessarily & unqualifiedly a rose; that is to say, it is a very different biochemical system at noon and at midnight." How fitting a beginning for a book about "The Biological Clocks that Control the Daily Lives of Every Living Thing"~~~~~Madelyn Griffith-Haynie, CMC, SCAC, MCC- ADD Coach Training Field founder; ADD Coaching co-founder -(blogs: ADDandSoMuchMore, ADDerWorld & ethosconsultancynz - dot com)"It takes a village to educate a world!"

very informative with strong references

Great overview.

I had bought this book because the author had written a number of interesting editorials in the New York Times (or at least the version I read, the International Herald Tribune), and I also have a strong interest in Chinese medicine, which had already incorporated the body clock into its account of the body many hundreds of years before. For instance talk about the Qi flowing strongly in the large intestine from 5-7am, the heart from 11am to 1pm, the lungs at 3 to 5am. However I found this book to be overly dry and academic, delving deep into the mechanics of how certain circadian rhythms work in different animals (spending an inordinate amount of time writing about trying to figure out where the body clock is located in the body or the cells), but does not step back and address some of the bigger picture issues I was interested in- like what time is optimum to exercise?- what is the optimum time to eat?- what are the effects of the tides on the human body / menstruation ?- is there any basis to the Chinese body clock compared to the scientific research that was highlighted in the book- how does aligning ourselves with the sunrise and sunset contribute to our health (i.e. should we be staying up late until midnight and what health effects would there be long term)- why are there different bodily effects during different times of the day (what is the biological /evolutionary reason for these effects)I found none of these things or passing reference in the text. I understand that this is an introduction to a burgeoning field, but it would have been more interesting if the book had tried to address some of these issues for the lay reader instead of the purely biologically or scientifically minded.

Utterly over simplifies biological clocks.

As the cover says; About the biological clocks that control the daily lives of every little thing. A fascinating book. I was most enthralled by the explanation and illustration how bees communicate in the hive to each other the direction and distance of the food sources. But the book is truly intriguing throughout. Highly recommended!

I've long believed there's a lot to be learned by observing and appreciating the natural rhythms of the body. There's more than one force at work but Foster & Kreitzman give a good presentation.

Easy to understand.

The best thing about this book is the circadian rhythm chart in the back.

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