

BOOK REVIEW

Anticipation and Medicine edited by Mihai Nadin. Heidelberg, Germany: Springer, 2017. 363 pp. \$199 (hardcover), \$136.46 (Kindle). ISBN 978-3319451404.

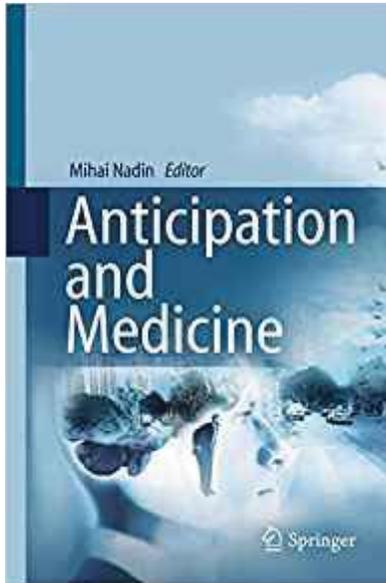
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Anticipation is part of everyday life. We make plans, we look at forecasts, we buy insurance. It is also one of the backbones of medical practice. We anticipate which strains of influenza will arrive and concoct a vaccine accordingly (which is still generally less than 50% effective). We perform Pap smears, which can anticipate cancer of the uterine cervix by ten years. Preventive medicine is a medical specialty. The government-commissioned United States Preventive Services Task Force publishes tomes of screening recommendations.

Anticipation and Medicine is a collection of “the variety of perspectives pursued in medical anticipation research and associated fields.” The book is broken into seven parts, each containing two to six treatises by a spectrum of authors here and abroad who express opinions that are well-referenced; there is no original research although much existing work is cited.

In medical genetics, anticipation is the tendency for certain genetic disease (e.g., Huntington’s disease) to occur sooner in successive generations. That is not the subject here. “Anticipation” as used in this book is never specifically defined. It seems to encompass everything from gut feelings (that may be precognitive) to routine medical screenings to extrapolation from the reams of data now available via sophisticated measuring devices (e.g., smart watches and FITBITS) and genome sequencing. A central theme of the book is that a living body is more than the sum of its parts, and cannot be understood as a machine or a multitude of chemical reactions (think consciousness). Most of our readership will be accepting of this; most conventional scientists are not. Another theme is that modern medicine is more reactive than proactive and that spending more money on healthcare will not necessarily lead to better health (think false positives).

Part I is called Anticipation and Medical Care. It includes a conceptual framework, a chapter on genes, environment, and mental health and one on how the heart can be considered an anticipatory organ. Part II deals with the potential of modern genetics, including next-generation



sequencing, in anticipating illness. Although this is seductive, the reality so far involves misinformation and scaring people unnecessarily. This is a fledgling science, with more data than can be interpreted and ever-changing techniques that refine and change these data. Stay tuned. The book's third part examines the brain and includes sections on temporal memory traces, the cerebellum, and the concept that brain processes are anticipatory in nature and distributed throughout the body. Part IV is about medical data processing, using the specifics obtained from wearable monitoring devices, glucose monitors, and smart-phone health apps. Again I must say we can collect more data

than we know how to interpret. FITBITS thus far get people to move a little more, but have not been shown to improve health (Finkelstein et al. 2016). Monitoring blood glucose routinely, at least at home on patients not on insulin, does not improve diabetic control (American Board of Internal Medicine Foundation 2018). Next is a section on psychological aspects of treating patients, including anticipation and child development and neural responses to threat. Part VI deals again with the ubiquity of computer-generated information, including intelligent support for surgeons in the operating room.

The last section, Anticipation and Alternative Medicine, begins with an interesting paper by Dean Radin, "Unorthodox Forms of Anticipation," about his work on precognition, presentiment, and retrocausation. After that comes a discussion of our current American epidemic of diabetes and obesity. It correctly points out that the recommendations for low-fat diets—believed to be healthy by the medical profession and the government—mark the start of this calamity, in 1977, by forcing an increase in carbohydrate intake. There is abundant evidence to support the harms of replacing fat with carbs, but entrenched ideas die hard (don't we at the SSE know this), and the American College of Cardiology still endorses low-fat diets. Now we know that the sugar industry manipulated the original data to make it appear that animal fat and cholesterol were the culprits in heart disease, not their products (Domonoske 2016). Next is a section on breast cancer

screening, correctly pointing out the limitations of mammography and mentioning alternatives ranging from breast MRI scans to warning dreams. Prediction dreams have been noted in other circumstances (e.g., some of the work of Ian Stevenson). The problem is, just like most women who get breast cancer don't carry the predisposing BRCA gene, even fewer have premonitory dreams and those who do are unlikely to mention them to their physicians. There is a chapter on traditional healing ceremonies, including shamans, Native American sweat lodges, and Afro-American and Afro-Cuban rituals. Finally, comes chiropractic and another piece on computerized, motion-based, full-body tracking.

Unmentioned in the book is the old truism that an apple can be anticipated to fall more or less under the tree. As a practicing family doctor, having followed multiple generations of the same families, I have noticed that most children not only become their parents, but do so in uncanny ways. A teenager has an unwanted pregnancy at 16. Her mother had the same, also at age 16, and has never told her daughter about it, and will not even now. (Both unwanted pregnancies were terminated.) An oxycodone-addicted mother in her late 30s is struggling to detox. Her daughter has her first car accident at age 17; no bones are broken, but only oxycodone assuages her pain.

There is occasional sloppy editing. "Benzodiazemines" on p. 23 should be "benzodiazepines." "The benefits outweigh the risks" in the abstract on page 309 should read the opposite. But *Anticipation and Medicine* is a valuable and comprehensive reference work, and anyone who is interested in any part of its subject matter will find this interesting. It is not a cover-to-cover read but each chapter is a stand-alone treatise of great interest. It belongs in many of our libraries.

—ROBERT S. BOBROW

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