Book Review

Outsmart *Your* Genes: How Understanding Your DNA Will Empower You to Protect Yourself Against Cancer, Alzheimer's, Heart Disease, Obesity, and Many Other Conditions

Brandon Colby
Perigee Books, New York, NY, USA; ISBN 978 0399535574; 2010; 336pp.; Hardback; £15.44; ISBN 978 039953638-0, 2011; 318pp.; Paperback; $14.95

This book handles the complex topic of genetic testing and predictive medicine. It covers basic genetics, correct execution of genetic screening, interpretation and the application of genetic testing, including parental planning and the prevention of the most current and prevalent medical problems of our society. The author encourages the reader to gain a positive perspective of current and future genetic screening and its benefits for preventative medicine.

With a straightforward, readable text that combines entertaining anecdotes in lay terms with established medical facts, the author encourages the reader to take the initiative and become curious about his/her genetic make-up. In part this is due to the well-organised structure of the book, which partitions every topic of interest, such as the history of genetics, genetic screening and predictive medicine, how to execute genetic screening, parental and reproductive screening, as well as the screening of newborns, children and adults, and the corresponding interpretation regarding the risk of developing major diseases such as obesity, cardiovascular problems, Alzheimer's disease and cancers. Well-structured tables and a scheme that lists the prevalent genes and their genetic impact on a particular health issue, and potential lifestyle changes and treatment options for individuals with mutations in these genes, further help in understanding the notion of how to live a longer, better life in terms of one's complex individual genetic make-up. Besides tables, the book summarises essential take-home messages in fat print and contains boxes with anecdotes, including examples from the media, movie world and children's books/riddles, as well as evidence of historical and current genetics, which further underline and enlighten the main text in a humorous manner. Thus, some of the historical anecdotes, such as Mendel and his colleagues getting stung by his new cross-bred hive of bees, remain truly anecdotal.

Regarding the science, the text uses numerous solid references to support the content. It includes a very detailed discussion about currently known genetic variations that determine genetic traits or disease states and gives examples of how changes in lifestyle or therapeutic interventions can positively affect a patient's quality of life. With this in mind, the book is well written for a reader who is seeking advice on genetic screening and its interpretation. Yet, the book intentionally holds back on some scientific aspects of human genetics when looking at the etiology of genetic variability to make it more attractive for the average reader. For instance, the description of one's genetic make-up lacks particular information about homologous recombination between sister chromatids, and the difference between X and Y chromosomes including their correlation with developing a male or female body.

Considering the take-home message, this book tries to paint a positive picture of genetic screening and predictive medicine. The text gives example panels for the interpretation of genetic data screening in a regular patient setting, ignoring current obstacles to translating genetic screening panels within a primary care physician praxis. Another aspect that is covered only marginally is the potential abuse of genetic screening by life-, disability- and long-term care insurance companies and other industries. Further, the book takes a positive perspective on pre-implantation and foetal screening with a very limited discussion of ethical concerns. (Actually, the chosen position of the paragraph on 'pre-implantation genetic screening' right below that on 'family planning in the 21st century' and the tiny paragraph about '*au naturel*' at the end was very striking).

In conclusion, the reader receives excellent information about the why, when, where and how of genetic screening, including correlations of our genes and lifestyle with their impact on life expectancy. Whether or not we really 'outsmart' our genes seems currently to depend on access to affordable testing and the patient's initiative.

Personal comment: After the conclusion that longevity can be achieved with two glasses of red wine and a marginal amount of coffee, we were awaiting a recommendation on continuing to eat our favourite chocolate!

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