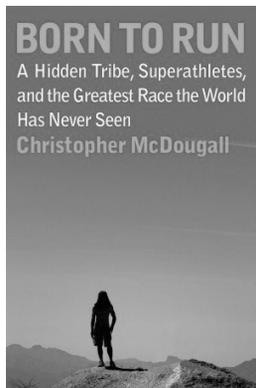


## BOOK AND MEDIA REVIEWS

### **Born to Run: A Hidden Tribe, Superathletes, and the Greatest Race the World Has Never Seen**

Christopher McDougall

New York, Knopf Doubleday Publishing Group, 2009, \$24.95, hardcover



This is not a sports medicine book. Yet it may be the most important sports medicine book in a decade. Since the publication of *Born to Run*, the type of shoes worn by many runners has changed dramatically. The breakthrough concept of this book, that our feet are

much like our hands, seems obvious yet goes against what we have been doing to our feet with running shoes and orthotics since the 1970s.

Christopher McDougall has no health care background. He is a former war correspondent for *The Associated Press*, and after being in Iraq, switched his work to covering extreme sports and men's health. Around 2004 he became interested in the reclusive Tarahumara Indians of the Copper Canyons of northern Mexico, legendary for their long distance running ability wearing primitive sandals. This also led him to study the rapidly growing sport of ultrarunning and explore why people were choosing to run 50 and 100 miles for the sheer pleasure of doing it.

A major premise of this book is that highly supportive running shoes have often been counterproductive. Shoes are like splints on our feet and, similar to putting splints elsewhere on our body, the underlying muscles become weaker. The secret to running is to have strong feet, and this requires the freedom to contract the many muscles of the feet regularly. This comes from less support, not more. While there are no clear evidence-based studies presented, McDougall draws from leading running coaches from around the world and the behavior of the Stanford track team using barefoot running workouts.

*Born to Run* is a somewhat disjointed tale that culminates in having Scott Jurek, the

greatest male ultrarunner for a decade, go down to the Copper Canyons and race the Tarahumara. McDougall pulls this off with the help of a vagabond named Micah True, aka Caballo Blanco, who lived primitively with the Tarahumara during the summers. Other ultrarunners join Jurek, including the famous "Barefoot Ted" (Ted McDonald from Seattle, a leading proponent of barefoot running).

Along the way, McDougall skewers the running shoe industry, especially Nike, for ignoring the real data and promoting a self-perpetuating need to buy more supportive running shoes. He devotes a chapter to the American story of running shoes that correlates with a decline in America's best marathon times from the late 1970s to the present.

Also fascinating in this book is the exploration of work by two teams of evolutionary biologists, one at Harvard and the other at the University of Utah, who have shown that we hominoids survived for millions of years based on our ability to run down other mammals for food. Humans have a unique ability to regulate our breathing and temperature while we run, not shared by species like horses or dogs, who we beat in long distance races. It takes a group of men about 6 hours to run down a deer or gazelle. We are truly born to run.

The book has many imperfections. McDougall gets loose with some of his data and mixes in many anecdotes as facts. This is not a book to analyze for every bit of factual evidence. The truth here comes from a breakthrough way of thinking, and there is plenty of evidence to support it.

Plantar fasciitis, achilles tendonitis, and other foot problems are now thought of as effects of weak feet. Ultrarunners with strong feet do not often suffer from these problems despite logging in tremendous miles on hard surfaces.

Turning 61, I informed my friends that after 25 marathons, I was retiring from this distance and would only run half marathons. Then I read this book. Over the next 12 months I ran four 50k ultramarathon trail runs and just finished my first 50 miler on Catalina Island. Now I run marathons for practice. My weekly training is about the same, 20–25 miles a week. What has changed most is my state of mind from absorbing this book.

There is much to teach medical students, residents, and fellow physicians in this book. As I see patients with plantar fasciitis and the

symptom of “sore feet,” my regimen is turned to strengthening their feet. This points to a paradigm shift in foot care, and much research needs to be done. Most podiatrists and orthopedic foot specialists are unaware of this new way of thinking. I strongly encourage reading *Born to Run* to get started on a fun and exciting journey. Ultrarunners are looked at as odd by many people, and my boss has told me that running 50 miles is not healthy. This book is a window to a basic part of human nature that makes being sedentary seem much more unhealthy.

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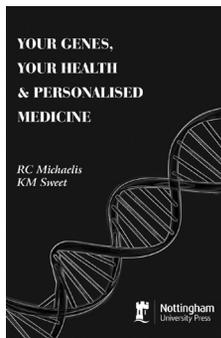
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## Your Genes, Your Health, and Personalized Medicine

R.C. Michaelis, K.M. Sweet

Nottingham, England, Nottingham University Press, 2012, 157 pp., \$39.95, paperback



With the completion of the Human Genome Project, the ever-dropping cost of gene sequencing, and the advent of direct-to-consumer marketing of gene analysis through the Internet, interest in how this might affect an individual's health is skyrocketing. *Your Genes, Your Health, and Personalized Medicine*

provides an introduction to understanding genes and how they influence health and describes how in the future, genes will be used to determine level of risk for many diseases, as well as to tailor medical treatment to the individual based on genetic profile.

*Your Genes* begins by reviewing genes and how they work at a cellular basis and then covers principles of inheritance as well as penetrance. It goes on to discuss how family history can be used to provide initial information on risk for specific diseases and looks to the

future as to how genetic testing can augment these predictions. *Your Genes* details the limits of genetic testing, as well as the potential psychological and emotional impact on both the patient and the patient's family, stressing the importance of a genetic counselor in helping patients to make sense of the results. Finally, it covers how diet, lifestyle, and environmental factors (nutrigenomics and epigenetics) influence genes themselves as well as their function. It concludes with a list of electronic web-based resources for those seeking greater detail, as well as updated information as it becomes available.

*Your Genes* is aimed at a non-medical audience (the patient) and does an excellent job of maintaining accuracy while simplifying these complex processes through the use of metaphors and illustrations so that they might be comprehended by the average patient. It provides a candid discussion of the limits of genetic science and highlights the importance of interpreting the results in light of family history as not all mutations lead to disease. It also stresses the emotional and psychological consequences of testing on not just the patient but on other family members as well who may not wish to know results. An entire well-written chapter is dedicated to making the decision whether or not to have genetic testing done. Finally, it underscores the importance of nutrition, lifestyle, and environmental factors on our gene function, not allowing the patient to abrogate responsibility for their own health by chalking it up to unavoidable genetic history and perhaps motivating them to make the appropriate changes.

This book is an excellent resource for those interested patients who always seek cutting-edge care. It will help them to understand what is and is not possible, as well as the risks of pursuing gene sequencing. *Your Genes* will also be a valuable review for the practicing physician faced with such patients, particularly those physicians whose Human Genetics course is far behind them. The electronic resources provided will prove invaluable for both physician and patient as genetic science progresses and becomes an integral part of daily medical care.

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