

THE ROADMAP TO 100

THE
BREAKTHROUGH
SCIENCE OF
LIVING A LONG
and HEALTHY LIFE

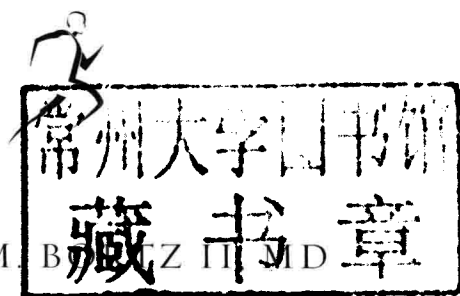
WALTER M. BORTZ II, M.D.
AND RANDALL STICKROD



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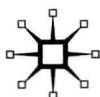
*The Breakthrough Science of
Living a Long and Healthy Life*

WALTER M. BOLTZ II MD



RANDALL STICKROD

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Further praise for *The Roadmap to 100*

“More and more people are living well into their eighties and nineties today and they are continuing to thrive and participate fully in life. Renowned physician and aging researcher, Dr. Wally Bortz from the Stanford Medical School makes a solid case for how we can dramatically impact our own lifelong health through vigorous and sustained exercise. He draws on cutting edge science that shows that we get weaker as the decades pass, not necessarily due to aging, but rather because we don’t challenge our bodies enough. *The Roadmap to 100* shows how staying engaged cuts across all fields—exercising, socializing, keeping sexuality alive—can prolong your life for many decades. This is a fantastic book and Bortz is a true trailblazer.”

—Ken Dychtwald, Ph.D., author of
The Age Wave and *A New Purpose:
Redefining Money, Family, Work, Retirement, and Success*

“At 80 years young, Doctor Walter Bortz brings an energy to his work that exceeds most 20 year olds. He challenges us with an uplifting message: we are each ultimately responsible for our own health, and that by remaining fully engaged—community, fitness, intellectual, creative—we extend a life worth living.”

—Jim Collins, author of *Good to Great*

“Unlike the generalizations with which doctors usually instruct their patients, this book outlines in clear, concise prose what we can do to remain fully function as we age. Moreover, it explains exactly how the interventions recommended work to preserve health and competence. The book is a welcome aid to helping people live better as well as longer.”

—Marianne Legato, author of *Why Men Die First*

“With his enthusiasm and insight, Walter Bortz makes us want to go further and explore all the options of aging. *The Roadmap to 100* is a spirited romp through the process of gaining wisdom and pleasure as we continue on and on.”

—Bonnie Matheson, author of *Ahead of the Curve*

“Here is a fast paced and lively guide on how to live longer. Wally Bortz’s clear and direct message emphasizes the importance of action, motion, and engagement in maintaining ‘vim and vigor’.”

—Seth Landefeld, MD, Professor of Medicine,
Chief, Division of Geriatrics,
University of California at San Francisco

“Ever since I learned that Jeanne Calment said at 120 she had only one wrinkle, and she was sitting on it, I figured that humor must be the key to longevity. Since then I met Walter M. Bortz—marathoner, thinker, and former head of the American Geriatrics Association. No one has been a more avid gatherer and popularizer of data on the importance of exercise to the project of happiness and longevity. But Bortz’s vision extends further, to a whole new medicine based on empowerment and prevention, and informed by evolution and energy science. Bortz’s vision is contagious, and I’m a subscriber!”

—Dorion Sagan, author of *Biospheres*

“With longevity becoming the new norm, we can use all the help we can get from the experts to help us along.”

—Edgar Mitchell, Sc.D. Founder of the Institute
of Noetic Sciences; Astronaut Apollo 14.

To our families, present and future. To all of those on whose
shoulders we have stood.

—*Walter M. Bortz II, M.D. and Randall Stickrod*

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INTRODUCTION

We live in a world divided by health. Any large city today probably has more gyms and health clubs than gas stations. We have bike lanes and urban hiking trails, the hallmarks of an active, aware population embracing fitness and robust health. And yet, our headlines blare out chilling warnings about the epidemic of obesity and the rampaging spread of type 2 diabetes, a disease that barely existed just two generations ago. Fitness scores among school-age children continue to drop precipitously. Fast food franchises seem to be everywhere, contrasting with the increasing presence of organic foods and farmers' markets. We are a population dangerously divided between the health conscious and the health averse.

Nearly every day we read a story about a new centenarian, the fastest-growing demographic category in the country. It seems a thrilling affirmation that we are still progressing, still evolving as a species, still the pinnacle of the evolutionary food chain. Masters of the universe further asserting our mastery by extending the very span of our lives. But

in the same paper, there will be at least one story about our soaring health care costs, signs of a major national crisis. We are getting early warnings that our average life span may well decline in the next generation, the first such occurrence in the entire history of mankind.

The division between those who live long, productive lives with a real likelihood of achieving a full century, and those who merely progress deeper into the high-risk categories of medical statistics as they descend farther into middle age is increasing. What to make of all this?

Knowledge is power, it is said, and if knowledge can empower us to achieve and maintain our maximum health and enable us to live to our full potential, then we have truly accomplished something spectacular.

Yet too few are living anywhere close to their full potential. We all know the basics: Don't smoke. Don't drink too much. Eat your vegetables, and lay off the fast food. Exercise. The message becomes a mantra that is too easily ignored. We know you need more information in order to create a coherent and compelling message that can effectively cause you to modify your behavior. You need better answers: Not just what, but why? How? How much? How much should I exercise? Why should I lift weights if I'm not a bodybuilder? How much is too much? Why, exactly, should I avoid anything made with high-fructose corn syrup? We are accustomed to being told what we should or shouldn't do, but more often than not without the specifics of the reasons why. We need better, deeper, more detailed information.

Even many of our medical professionals are hard pressed to give the average person solid answers to questions like these. The typical medical school graduate is better trained to look for what's wrong with you than to shepherd you on a preventive path with specific goals of health, not to mention longevity. Imagine a routine physical exam where the patient asks the doctor these hard questions: What should I do to be as healthy as I possibly can? To live as long as I possibly can without loss of function? What kind of exercise should I do, how often, and how much? What should I eat? What shouldn't I eat? Should I take vitamins? Supplements? Is there anything I should stop doing because I'm now 70 years old?

One might get lucky. Some doctors are quite prepared to become your trusted advisor and guide you to all the best and most current information about health science. They are the exceptions, though. Medicine has been described as the newest science, and since medicine synthesizes biology, chemistry, and physics, it's no wonder that it has been a bit of a laggard. You don't have to look back too far to appreciate just how daunting the challenge has been. For instance, just a few decades ago, a patient who had suffered a heart attack was consigned to bed rest and almost total inactivity for weeks after the event. We now know that this is just about the worst thing you can do when recovering from a heart attack!

Medicine is problematic only to the extent that we let it be. As a culture we have become accustomed to turning to medicine and pharmaceuticals to make us well. Too many of us expect to be able to blithely

defy all the advisories about healthy living and then turn to our doctor (or pharmacist) to fix the damage for us. In this respect, we have largely abdicated ownership of our health.

Who owns your health? You do! That admission is the first step toward blowing out those 100 candles on your milestone birthday cake.

The mission of this book is to present the case for living to 100 or more and living well all the while. We want you to avoid that long decline, the infirmities and frailties of later years, the degradations of helplessness and loss of independence. We are issuing a clarion call to reclaim ownership of our health, to learn to take responsibility for it and not rely blindly on medical technology to repair the damage we do to ourselves. The willingness to take responsibility for one's own health and well-being is the crucial first step; without that commitment all the other information here may well be irrelevant.

The roadmap to 100 passes through points that are all health related, a critical distinction that cannot be overstated. Longevity is neither an accident nor an isolated phenomenon. It is a product of specific healthy behaviors, a direct consequence of health maintenance. People who live to 100 are healthy people. They make better choices, choices that directly support the maintenance of healthy life processes and ward off the diseases that cut life short. Knowledge of these centenarian strategies is indeed power: the power to defy the default scenario of inevitable decline laid out by Mother Nature.

Various forecasts predict that by the middle of this century, as many as 6 million centenarians will be among us. The majority of them will be demonstrably healthy, functional, and largely independent. Many are expected to continue to be productive members of society, not simply retirees. The positive impact on our economy from having an elder cadre that contributes more than their social cost is exciting to anticipate, and unprecedented in world history.

Other forecasts predict a darker side, that the present trend toward obesity will increasingly become a global phenomenon, that type 2 diabetes will continue to spread with the “western diet” and ravage the world’s population. Present estimates point to nearly 400 million people with diabetes worldwide by 2025, creating an insurmountable social burden as the cost of medical care continues to escalate, and the sick spend fewer years contributing as productive members of society. And the crisis will impact not just our own national health care costs but will have a global economic impact as well.

It is up to us to determine which of these scenarios will come to dominate the world we bequeath to future generations. Nobody wants to see the worst-case scenario—a downward spiral with immense social costs. An increasingly healthy population, in which people can expect to be productive members of society far longer than any previous time in our history, would be truly revolutionary, and worthy of what our species’ potential has always promised.

CHAPTER 1

AGING, HEALTH, AND THE QUEST FOR LONGEVITY

THE CENTENARIAN IMPERATIVE

Growing old is a relatively recent phenomenon. Until the last century or two, the average life span was less than 30 years. The historical record on aging is so sparse that we have had little information about the aging process, and because so few people had the opportunity to achieve their full aging potential, we are just now learning what our potential life spans are. Prior to the agricultural revolution of 10,000 or so years ago, life was usually cut short by predation, injury, or starvation. The emergence of agriculture led to the formation of villages and cities; with people settling in close proximity, we saw the rise and spread of infectious diseases, which continued to inhibit average

life spans. It wasn't until the twentieth century that average life expectancy began to rise appreciably, thanks to the medical successes curing infectious diseases, the widespread availability of food, and fewer hazards of daily life in civilized society. In fact, in the twentieth century alone, we have added approximately 30 years to the average life span, a near doubling over the previous millennia.

A century ago there were only a handful of centenarians on earth. By 1950 their numbers were estimated to be a few thousand. Today there are thought to be 340,000 centenarians worldwide, and it is estimated that that number will increase to 6 million by 2050. The highest concentrations of centenarians are projected to be in the United States and Japan. In 2009 there were approximately 100,000 in the United States and nearly 40,000 in Japan, but by mid-century those numbers are expected to grow to at least 600,000 in the United States and a full million in Japan, making centenarians the fastest-growing demographic, more than 20 times the overall rate of total population growth.

These impressive statistics underscore the viability of 100 as a reasonable objective, a longevity beacon that is demonstrably achievable. And yet we find ourselves in an era when the upward progression of expected life span is seriously threatened by an epidemic of lifestyle-based negative factors. Obesity and diabetes are the scourge of our times, a peculiar regression in a century of generally improving public health and

longevity. We are increasingly becoming a bifurcated society, with one segment focused on health, fitness, and nutrition, and the other skewing our public health statistics in the negative direction. Probably the greatest challenge in public health policy today is to provide the education and motivation for the unhealthy to turn their lives around and adopt healthier—and hence more productive—lifestyles.

There is nothing special or magical—or particularly scientific—about the number 100, it should be noted. It is a convenient marker on our decimal-based number system, a “round” number in three digits, that just happens to be statistically significant in life-span studies. But it is a useful symbolic target. What we do know so far is that there seems to be a natural upper limit to the human life span, somewhere around 120 years. The oldest documented person was France’s Mme. Jean Calment, who died in 1997 at the age of 122 (and who famously drank two glasses of port wine a day, made a hip-hop record at 121, and claimed to have “an enormous will to live and a good appetite, especially for chocolate”).

Not long ago a newspaper item proclaimed the 115th birthday of Los Angeles resident Gertrude Baines and noted the irony in the fact that the world’s oldest person would be found in the world’s most youth-obsessed city. More remarkable than her age was the fact that, until she was 107, she lived independently and self-sufficiently. Reports of people achieving their 100th birthday are now becoming commonplace. There are now