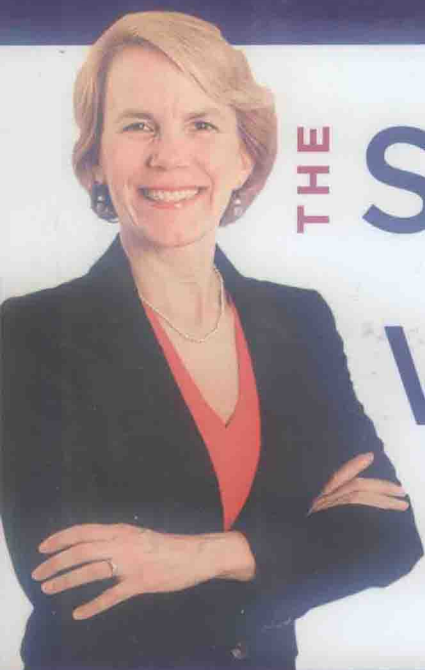


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Millions of Women Trust



**THE STRONG
WOMEN'S
GUIDE TO**

**TOTAL
HEALTH**

MIRIAM E. NELSON, PhD
and Jennifer Ackerman

THE STRONG WOMEN'S GUIDE TO

TO HEALTH

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藏书章

MIRIAM E. NELSON, PhD
and Jennifer Ackerman

This book is intended as a reference volume only, not as a medical manual. The information given here is designed to help you make informed decisions about your health. It is not intended as a substitute for any treatment that may have been prescribed by your doctor. If you suspect that you have a medical problem, we urge you to seek competent medical help.

The information in this book is meant to supplement, not replace, proper exercise training. All forms of exercise pose some inherent risks. The editors and publisher advise readers to take full responsibility for their safety and know their limits. Before practicing the exercises in this book, be sure that your equipment is well-maintained, and do not take risks beyond your level of experience, aptitude, training, and fitness. The exercise and dietary programs in this book are not intended as a substitute for any exercise routine or dietary regimen that may have been prescribed by your doctor. As with all exercise and dietary programs, you should get your doctor's approval before beginning.

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THE
STRONG
WOMEN'S
GUIDE TO
TOTAL
HEALTH

ALSO WRITTEN BY MIRIAM E. NELSON, PhD
(WITH SARAH WERNICK, PhD)

Strong Women Stay Young
Strong Women Stay Slim
Strong Women, Strong Bones

(WITH JUDY KNIPE)

Strong Women Eat Well

AND KRISTEN R. BAKER, PhD,
AND RONENN ROUBENOFF, MD, MHS
(WITH LAWRENCE LINDNER, MA)

Strong Women and Men Beat Arthritis

The Strong Women's Journal

AND ALICE H. LICHTENSTEIN, DSC
(WITH LAWRENCE LINDNER, MA)

Strong Women, Strong Hearts

(WITH LAWRENCE LINDNER, MA)

Strong Women, Strong Backs

ALSO WRITTEN BY JENNIFER ACKERMAN

Notes from the Shore
Chance in the House of Fate: A Natural History of Heredity
Sex Sleep Eat Drink Dream: A Day in the Life of Your Body

To our colleagues at Tufts University

Foreword

What's in This Book for You?

The huge strides we've made recently in understanding human health are truly amazing; much good has come of the new findings, from the development of the HPV vaccine to prevent cervical cancer to the latest strategies for maintaining muscle and bone strength into advanced age. But one aspect of the deluge of discoveries worries me: When some new bit of health information comes to light, we tend to focus on it to the exclusion of all else. Far too often we reduce the great wondrous complexity of our bodies in favor of focusing solely on the effects of this particular diet or that particular vitamin, the value of this new screening tool or that telling “biomarker.” In so doing, we lose sight of the bigger picture: By far the most important factor in ensuring our own good health is to live our lives in a healthful way that integrates body and mind. This means knowing every part of yourself, understanding your individual health concerns, and addressing them with good basic self-care.

The *Strong Women's Guide to Total Health* is designed to help you return to this commonsense approach, to take charge of your own health and minimize your risk of disease by making knowledgeable personal health choices.

For more than 2 decades I've been working in the field of women's health as a research scientist and an advocate. I've consulted dozens of colleagues—experts in women's reproduction, weight management, mental health, and many other disciplines—about the key health issues affecting women and what we should do about them. I've served on national health policy committees such as the 2008 Physical Activity Guidelines for Americans and the 2010 Dietary Guidelines for Americans. I've talked with thousands of women in communities across the country about the health issues that most concern them.

This book is the fruit of those discussions. It distills the relentless and often contradictory chatter of popular health claims about everything from diet and exercise to vitamin and hormone regimens, offering a set of basic, reliable guidelines for staying well in body, mind, and spirit. It focuses on the health concerns that matter most to women—from weight gain to infertility, from mental health to sexuality—and provides tools and strategies to tackle them.

I wrote this book with my close friend and colleague Jennifer Ackerman. Jenny has been writing about human biology and health for more than 25 years, first as a staff writer at the National Geographic Society and more recently as an independent author with a special interest in the workings of the human body. We met 12 years ago when we were both fellows at the Bunting Institute at Harvard University and discovered our shared interest in and excitement about women's health. We wanted to write a book together that was factual, practical, and accessible, a book that we ourselves would find useful in sorting out the cacophony of health advice.

This book is not a treatment manual for specific diseases (though it does offer helpful references on treatment and other topics in the Resources section). Rather, it emphasizes health promotion and disease prevention—how you can avoid common medical conditions that affect women—and tells you how to make good decisions about the many important health choices you'll make over your lifetime.

The book begins with a special self-assessment tool for gauging your health status and priorities, which will help you determine where you should direct your energy for self-care.

The rest of the book is organized into nine parts. The first eight parts move through your body, exploring key health issues, including fertility and sexual satisfaction, skin care, eye care, weight control, bone and muscle health, immune system support, and mental health maintenance. Each part offers a set of **S.M.A.R.T.** health strategies. These are **S**pecific, **M**easurable, **A**ctionable, **R**elevant, and **T**imely ways of maintaining health in these areas—a sort of “bottom line” on what you should be doing. Part IX, “Flipping the Switch: An Action Plan for Health,” offers detailed, comprehensive programs to enhance your health and help you address your individual concerns, including physical activity plans, techniques for managing stress, and ways to create a healthier food environment.

We offer this book as an indispensable tool to help you take charge of your own good health and happiness.

Here's to Strong Women!

Introduction

What Makes Us Women?

What makes us women? And perhaps more important, what makes us strong women?

Biology, of course, is central—the presence of your potent X chromosome, along with the alchemy of estrogen and other hormones that make your body female. In my view, the female body in all of its various shapes and sizes is nothing short of miraculous: beautiful, efficient, complex, wondrous.

But there's more to your womanhood than your biology. Much of your makeup—your personality, temperament, health, appearance, behavior—is not spelled out in your genes. You are molded by your social and cultural surroundings, where you live, who your friends are, and how you define yourself within your world—from stay-at-home mom to high-powered CEO of a Fortune 500 company (or US secretary of state!); from one who has never worn lipstick to one who won't leave the house without it.

In short, being a woman is biological, cultural, environmental, tribal.

Being a strong woman, in my view, means being assertive, advocating for your own needs, surrounding yourself with positive influences, and being willing to take risks with things outside your comfort zone. Above all, it means taking care of yourself. Whatever your role in society, whatever your style—lipstick or makeup free—strength arises from a sense of well-being in both body and mind. Knowing how to take care of yourself in the best way possible is what this book is all about.

WOMEN ARE DIFFERENT

In the past few decades, society has striven to level the playing field for women and men in the world of work, home, and sports. But it's crucial to acknowledge that women are different in one arena: health.

Until recently, most doctors and medical researchers assumed that (reproductive organs aside) male and female bodies were pretty much alike. In blood and bone, heart and liver, women were thought to be like men, only smaller. The male body was accepted as the prototype for both sexes. Many of the studies conducted up until the mid-1980s were conducted only on men, and the results were assumed to apply to women. Fortunately, the tide has turned. Today more than half of participants in health studies are women. Moreover, researchers are scrutinizing illnesses that affect mostly women, such as multiple sclerosis and rheumatoid arthritis. Clinical trials for new drugs, vaccines, and medical devices nearly always include female subjects.

It turns out that in matters of health, gender really matters. It matters from head to toe, from mind to midriff. It matters throughout our life span. Our gender affects everything from the makeup of our bones and the architecture of our joints, to our skin's response to sunlight and aging, to how we experience pain, react to drugs, and cope with stress.

Consider your heart. It's only about two-thirds the size of a man's, with smaller coronary arteries that supply it with blood and oxygen. And it beats differently, with a higher rate even during sleep. Many women think of cardiovascular disease as a "man's condition." But although men may have more heart attacks, more women die as a result of them. Every year, half a million women die from heart disease—50,000 more women than men. More women than men have a second heart attack within a year of the first one. And although both sexes share the same risk for stroke, women more often die from the event. Later in this book, you'll learn in detail about the unique nature of your heart and the important differences in your cardiovascular system.

When it comes to immunity, being female has some advantages. We're lucky in having enhanced immune responses compared with men, which increases our resistance to many types of infection. We tend to make more antibodies, perhaps due to the effects of estrogen. But there's a dark side to this boosted immunity. It means that our immune defenses more often turn against us, attacking our own organs and tissues. As you'll read in Part VI, "In Our Defense," women are almost three times as

likely as men to develop autoimmune diseases, most often during childbearing age. Of the 1.5 million people with systemic lupus erythematosus—a chronic autoimmune disease that inflames the blood, skin, joints, kidneys, and other organs and body systems—90 percent are women.

We women are different in every system of the body, and the brain is no exception. Brains can be a prickly topic, of course. If you want to create a ruckus, just broach the subject of gender differences in mental skills. But the differences are there.

On tests of intelligence and problem solving, women perform as well as men, though they often use different areas of the brain and distinct mental strategies to execute the same tasks. It's not news that men and women think differently. What's new is our understanding of the underlying anatomical and biological sex differences in the brain and their effect on everything from how we process driving directions, to how we experience pain and stress, to the kinds of mental deterioration we may experience with aging. Researchers have learned lately that women tend to have more persistent and severe pain, though we manage it better and have more coping strategies than men do. We make more stress hormones and have a harder time turning them off. Estrogen "prolongs the secretion of the stress hormone, cortisol," explains my colleague Marianne J. Legato, MD, in her book on gender-specific medicine, *Eve's Rib*. "So a woman feels more stressed in the moment than a man in the same situation." Moreover, because estrogen activates more extensive networks of neurons in the female brain, we often have more detailed memories of stressful events. We also react to stress in different ways.

As you'll learn in Chapter 23, "Mental Health," women also show different patterns of mental illness and disease. Whereas men are more likely to have schizophrenia and alcohol or drug addiction, women have more depression, anxiety, and eating disorders. In brain aging, our gender is better off in one sense: Our stores of estrogen make us less susceptible than men to age-related loss of tissue and increase in fluid in the brain, which can cause a decline in mental abilities such as memory or the learning of new concepts. On the other hand, because we live longer, we're more vulnerable to degenerative brain disorders such as dementia, which hit the brain later in life.

Our gender also bestows both gifts and betrayals where medications are concerned. Painkillers such as ibuprofen don't work as well in women. Even as common a medication as aspirin provides different benefits. It offers men some protection against heart attack but not stroke; in women, it has precisely the opposite effect. Some medications

are downright dangerous for us because of our gender. In the late 1990s, eight out of the ten medicines removed from market shelves were pulled because they presented real dangers to women. Many of these drugs were common antibiotics and antihistamines, such as Seldane. The primary focus of this book is prevention, so apart from offering some general advice on medications, we don't explore them in depth. To ensure safety, discuss any drugs you take with your health care provider and pharmacist. If you find that something you've taken is causing unexpected effects, contact your health care provider immediately.

WHAT MAKES US DIFFERENT?

So what biological wizardry makes our bodies and our brains so different, so female?

It begins, of course, with the X chromosome, which is truly gargantuan by comparison with the much punier Y. It carries a rich store of 1,098 genes to the Y's 78. Possessing a double dose of the X chromosome protects us from many diseases. When one of the genes in a pair is defective, having two copies comes in handy. Men, having only one X, possess no such backup and so more often have color blindness, hemophilia, and muscular dystrophy. Our extra X genes also mean that women may have as many as 130 more active genes per cell than men do, which may help explain some of our differences.

Our marvelous XX chromosome package finds its way into every cell in our body. It has always seemed incredible to me, but it's true: The 3 billion bits of information in your DNA, neatly packaged in 23 pairs of chromosomes, are present in all body cells. Among those 23 are your sex chromosomes, which determine the direction of your sexual development, from single fertilized cell to sentient human being.

Genes may set up our sex, but that's only the beginning. Our gonads release sex hormones that bathe the fetus early in gestation, creating sex-specific changes in every cell, tissue, and organ in the body, including the brain. These sex hormones "wire" the brain, organizing its systems of neurons that mediate behavior later in life—and they continue to do so after birth, influencing the mature neural systems in our adult brains.

Through this mix of genetics and hormone production, the brain is "hardwired" to be male or female from the moment it begins developing in the womb, until we die. As

Legato writes in *Eve's Rib*, "It isn't an exaggeration to say that the brain is as sexual an organ (if not truly more so) than the ovaries or testes."

This doesn't mean that our brains are "set." Our genes and sex hormones may direct the wiring of our brains and continue to shape our biology throughout life. But environmental factors and the way we live our lives matter equally in shaping the brain. Virtually every thought we have, every action we take, can shape, modify, and strengthen neurons and their connections. The real wonder of the brain is this remarkable plasticity; the brain is never a "finished" work but creates and re-creates itself from cradle to grave.

Clearly, though, hormones are powerful players, with effects that reach far beyond our reproductive systems and continue throughout life, surging and waning at various stages from puberty through our reproductive years and into menopause and beyond. One way they exert their potent effects is by regulating genes, turning them on and off in different cells and tissues. This may help explain a striking new scientific discovery: Thousands of genes that are the same in both sexes actually behave differently in the organs of men and women—another possible reason we may respond in our own way to the same drug or disease.

In the past decade or so, we've learned that estrogen not only dictates when and how we menstruate, it also directs how our feet grow, how well we repair our tissues and organs, how we respond to stress (too much or too little estrogen can trigger depression in response to stressful events), and the way we think, learn, and remember. A high level of the hormone appears to stimulate nerve cells. It also boosts bloodflow to some regions of the brain and can enhance the brain's use of glucose, its main source of energy. Moreover, abundant estrogen can help create more elaborate connections between neurons, which may improve learning and memory. On the flip side, estrogen may bear partial responsibility for our greater vulnerability to lung cancer by boosting the effects of carcinogens such as tobacco smoke, radon, and cooking fumes.

BACK TO BASICS

We know that who we are as individuals is rooted in our genes. When I look in the mirror, I see my mother's eyes and nose. If I could look deeper, I might see my higher risk of macular degeneration and cataracts, a legacy from my grandmother. Genes are the body's blueprint, determining not just our gender, eye color, and hair texture but also

the likelihood of developing specific diseases. Physicians may soon have at their fingertips new ways of individualizing treatment based on this new understanding of our genetic makeup.

I have very mixed feelings about putting too much emphasis on the promise of genetically tailored or “personalized” treatment, though. There’s very little you can do about the genes you possess, except to know your own family history and be vigilant about getting appropriate screenings and regular checkups. And the truth is, the really serious health issues facing most women today have less to do with our genes and more to do with our environment, lifestyle, and behavior. Our surroundings (family, work, neighborhood, community, and society) and our experiences in life (what we eat, how much we sleep, where we live, how we exercise, what we think about) all play a huge role in determining how good we feel on a given day and how healthy we are over the course of our life span.

Take cardiovascular disease. Our behavior determines 65 percent of our risk for this disease. Cardiovascular disease is preventable if we know what to do and take action now. Or consider obesity. Genes may give us the propensity to get fat, but our lifestyle and behavior determine whether we actually put on weight.

Our country spends a huge amount of research money on specialized health studies that come back around to the same message. The most important things you can do to stay healthy are also the simplest. Here are the five key actions:

1. Create a healthy food environment. (See Chapter 26.)
2. Configure your week to build in physical activity. (See Chapter 27.)
3. Have the self-confidence to make needed changes in your lifestyle. (See Chapter 24.)
4. Make taking care of yourself a joyful routine.
5. Find a health care provider you trust (see Chapter 28) and be informed about your own health: That’s what this book is about! You can start today by taking the Smart Woman’s Health Assessment on the following pages.

The Smart Woman's Health Assessment

Knowledge is power. This is especially true when it comes to your own health; that's why we begin this book with a targeted self-assessment. Being familiar with your own body and the numbers and measurements that reveal your basic health status is both empowering and essential to good self-care. The health assessment you'll find here is not the standard assessment that you might get from a doctor. It focuses primarily on your behaviors in relation to nutrition, physical activity, and mental health. I'm a big believer in knowing your health numbers—but not just the typical ones that your health care provider will obtain during visits, such as your blood pressure, lipoprotein profile (including cholesterol levels and triglycerides), and fasting blood glucose. These are important, of course, and I include them in other chapters. However, this assessment is aimed at helping you know where you stand on more atypical measures of overall health. I urge you to take the time to complete this health evaluation before you read this book. It consists of eight assessments:

1. Body mass index
2. Waist circumference
3. Vitamin D level
4. Nutrition and food-related behaviors
5. Physical fitness and movement-related behaviors
6. Self-efficacy level
7. Joy quotient
8. Family history

Most of these assessments can be completed right now, with just a pen or pencil; some will take time to complete; one will require a visit to your health care provider. Try to finish all of them—within a couple of weeks, if possible. Knowing the results will help you better understand where your health concerns lie and where to best focus your efforts at prevention. Throughout this book, I will refer back to these assessments and discuss ways to help you address the risk areas you identify here.

To complete this health assessment you will need:

- A visit to your health care provider to obtain measurement of your serum vitamin D level. If you've had it measured already, call for the results. However, chances are good that your health care provider will not have assessed your vitamin D level. When you get this assessment, ask to have your blood pressure taken and your blood lipid and fasting blood glucose levels measured at the same time. You'll need these later in the book to fully assess your risk for heart disease and diabetes.
- A body weight scale
- A tape measure to determine your waist circumference and your height
- A nearby track or treadmill where you can do a walking test
- An exercise mat or towel
- A stopwatch or a watch with an easy-to-use second hand
- A yardstick
- A pen and a calculator
- Some time to talk with relatives

1. BODY MASS INDEX

Body mass index (BMI) is a calculation of your weight in relation to your height. BMI is related to several important health conditions, including heart disease, type 2 diabetes, cancer (especially breast and colon), and osteoarthritis. To calculate your BMI, weigh yourself in the morning with minimal or no clothes to get as close as possible to your true body weight. You should also measure your height in the morning, when you are tallest (as a result of your spine elongating during sleep). Stand with your back against a flat surface and have someone place a ruler on top of your head, parallel with the floor. Mark your height on the wall and then measure with a tape measure. Once you have these measurements, use the chart at right to calculate your BMI.

Body weight = _____ pounds

Height = _____ feet _____ inches

BMI = _____

HEIGHT	WEIGHT (LB)																			
5'0"	92	97	102	107	112	118	123	128	133	138	143	148	153	158	163	168	174	179	184	189
5'1"	95	100	106	111	116	122	127	132	137	143	148	153	158	164	169	174	180	185	190	195
5'2"	98	104	109	115	120	126	131	136	142	147	153	158	164	169	175	180	186	191	196	202
5'3"	101	107	113	118	124	130	135	141	146	152	158	163	169	175	180	186	191	197	203	208
5'4"	104	110	116	122	128	134	140	145	151	157	163	169	174	180	186	192	197	204	209	215
5'5"	108	114	120	126	132	138	144	150	156	162	168	174	180	186	192	198	204	210	216	222
5'6"	111	118	124	130	136	142	148	155	161	167	173	179	186	192	198	204	210	216	223	229
5'7"	114	121	127	134	140	146	153	159	166	172	178	185	191	198	204	211	217	223	230	236
5'8"	118	125	131	138	144	151	158	164	171	177	184	190	197	203	210	216	223	230	236	243
5'9"	121	128	135	142	149	155	162	169	176	182	189	196	203	209	216	223	230	236	243	250
5'10"	125	132	139	146	153	160	167	174	181	188	195	202	209	216	222	229	236	243	250	257
5'11"	129	136	143	150	157	165	172	179	186	193	200	208	215	222	229	236	243	250	257	265
6'0"	132	140	147	154	162	169	177	184	191	199	206	213	221	228	235	242	250	258	265	272
6'1"	136	144	151	159	166	174	182	189	197	204	212	219	227	235	242	250	257	265	272	280
6'2"	140	148	155	163	171	179	186	194	202	210	218	225	233	241	249	256	264	272	280	287
BMI	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37

BMI scores are organized into the following categories:

< 18.5	underweight
18.5 to 24.9	healthy weight
25 to 29.9	overweight
30 to 39.9	obese
> 40	extreme obesity

In general, the higher your BMI category, the greater your risk for chronic disease. This is especially true for obese and extremely obese individuals. The overweight category is less clear. Research demonstrates that if you are overweight but fit (see fitness assess-