Eat, Play, and Be Healthy

The Harvard Medical School Guide to Healthy Eating for Kids

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Featuring the Healthy Eating Pyramid for Kids!
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We hope you enjoy this McGraw-Hill eBook! If you’d like more information about this book, its author, or related books and websites, please click here.
I dedicate this book to my grandchildren, Douglas, Lena, and Giselle.
When you become a parent, protecting your child and investing in his or her future becomes second nature. You look for a pediatrician with a great reputation, shop for the safest toys, and scout for the best school system. You probably also know that feeding your child well is important for growth and development. What you might not know is that what children eat today powerfully influences their health as adults.

Most likely when you were a kid, your parents taught you about eating from the four food groups. Treats were just that, treats. School cafeterias didn’t offer “fast food.” And you probably walked or rode your bike to school and had gym class several times a week. Things are very different today. As a population we eat more food overall, more refined and processed foods, and move less.

Today, nutrition is a science—not just a set of food groups. This book distills decades of research on childhood nutrition and tells you how to use that information to feed your child well. It will also tell you how to get and keep your kid moving. Whether your child has a ravenous appetite or is a finicky eater, whether she is tethered to computer games or he is a soccer fanatic, this book will help you keep your kid healthy—now and in the future.

What kids eat today, and their level of physical activity, is radically different than in the past. Research has shown that many kids are jeopardizing their future health, and usually neither they nor their parents know it. Why is this? What has happened to create this threat, and what can be done about it?

Human beings have been around for about a million years. For nearly all that time, our relationship with food was unchanged. Our ancestors ate what was available, when it was available, and did not wonder whether or not it was healthy. The main thing that they likely recognized as unhealthy was not eating.

With the development of agriculture and farming, human societies began to control the availability of food. As recently as one hundred years ago, most people in the United States raised their own food; nearly 90 percent of the population lived on farms. Meals were taken at the dining room table, or in the fields—not in restaurants, and not (for children) in and near school. Although the study of food was not yet a robust science, people understood what they were eating.
During the twentieth century, in the developed nations, what and where people ate changed dramatically. Increasingly, we bought food from a grocery store or in a restaurant, and much of it had been processed, mixed with synthetic chemicals, or precooked or frozen. A century ago we ate corn off the cob, picked hours before on our own land. Today, we eat corn chips manufactured many weeks before in another state. At the turn of the twentieth century, people also were much more physically active than they are today. Farming was demanding physical work. Even people who lived in cities engaged in physically taxing work. And we walked a whole lot more.

In short, in the twentieth century, what we put on the dining room table, where we ate, and our levels of physical activity changed profoundly. If you think of the million-year history of humankind as being represented by a twenty-four-hour day, then the twentieth century occupied about the last ten seconds of that day. In other words, our species has made radical changes in nutrition and physical activity, very rapidly. That sort of sudden change was likely to have consequences, and it has.

However, until recently, we didn’t recognize those consequences. The developments of the twentieth century seemed more good news than bad news. Unlike many of our ancestors, very few of us faced famine. Labor-saving devices, from the car to the washing machine, offered us newfound leisure time. Moreover, the state of our health seemed to be improving. Indeed, in developed nations life expectancy increased remarkably, from about fifty years to about eighty years. It was hard to imagine that we might actually be paying a price for our sudden change in lifestyle.

Over the past fifty years, a growing body of research has shed light on this apparent contradiction. We are living longer because many infectious diseases have been controlled by improved sanitation, immunization, antibiotics, and other drugs. However, deaths from other diseases—among them heart disease, stroke, many cancers, and diabetes—have increased, largely because of the dramatic changes in our nutrition and physical activity. (See Figure 6.1)

You can’t open a newspaper or watch the news without hearing that some foods are good for you, others are not, and that exercise is good for you. But how do you actually start to eat better and become more physically active? In today’s fast-paced world we need practical strategies and achievable goals.


In this book, *Eat, Play, and Be Healthy*, my colleague W. Allan Walker, M.D., the first Conrad Taff Professor of Nutrition and Professor of Pediatrics, as well as the director of the Division of Nutrition at Harvard Medical School, undertakes the same task—for kids. Dr. Walker, an internationally renowned expert, summarizes the results of nutritional research in children. Not surprisingly, many of the principles of healthy eating in adults also apply to children—but not all. As pediatricians are fond of saying, children are not simply little adults. They are growing, and that imposes a unique set of nutritional needs.

Their unique nutritional needs do not, however, protect kids from the same nutritional problems that we adults are experiencing. For example, more kids are overweight. The social penalties are
great, and the health penalties are perhaps greater. Children are developing what used to be adult
diseases, including type 2 diabetes and high cholesterol levels—problems that will dog them well
into adulthood.

You can do something about that. Today. Dr. Walker not only describes what we know about
healthy eating in young kids, but he presents a practical plan of action for both nutrition and
exercise. It is a plan that kids—with their parents’ help—can follow. Read this book, and work
with your kids to protect their future.

Walter C. Willett, M.D.
Fredrick Stare Professor of Epidemiology and Nutrition and Chairman, Department of Nutrition
Harvard School of Public Health
Preface

I chose to train in pediatrics after medical school because I felt that providing the best medical care for infants and children could assure them of a better quality of life as adults. By knowing the early predictors of chronic diseases, I hoped to help prevent children from developing life-threatening diseases later in life. Prevention is one of the guiding principles for pediatricians caring for infants and young children. We now know that establishing healthy nutritional habits early in life can have an enormous impact on the development of cardiovascular disease and other health problems. It is therefore my intent in this book to translate the knowledge gained from clinical studies over the last two decades into a guide that is understandable and provides practical recommendations for nutrition from birth until eight years of life.

This book is a sequel to Dr. Walter Willett’s book titled *Eat, Drink, and Be Healthy*, published in 2001 as part of a series of high-quality books about health from Harvard Health Publications. I will comment on how the Healthy Eating Pyramid that Dr. Willett introduced in that book applies to nutrition in infancy and childhood, and where the unique aspects of childhood nutrition differ from recommendations for adults. In addition, we have relied on nutrition policy statements issued by the Committee on Nutrition of the American Academy of Pediatrics, the most influential body for advising pediatricians on appropriate nutrition care for children, and their recently published *Pediatric Nutrition Handbook* to provide the most updated, accurate recommendations for establishing good nutrition in infants and children.

Unfortunately, the kind of epidemiologic data provided by Dr. Willett from the Nurses’ Health Study dating back to the early 1970s is not yet available for children, because pediatric research often lags behind adult studies. However, that picture is finally beginning to change. Researchers are now analyzing data obtained more recently from the children of the Nurses’ Health Study participants, and we should have important findings to report in the foreseeable future. The National Institute of Child Health and Human Development of the National Institutes of Health is establishing a large-scale database of newborn infants from various ethnic and racial backgrounds to help find predictors of adult-onset disease early in life. Through studies like these, we hope to find answers to questions such as how nutritional habits from birth to adolescence influence weight gain, and how they might predict a person’s chance of being obese in adulthood. Until then, pediatric nutrition must rely on the evidence we have so far, and I hope to convey to parents the
best and most current available knowledge.

My own interest in pediatric nutrition and the need for establishing healthy eating habits early in life stems from my undergraduate premedical days at a small midwestern liberal arts college, DePauw University. As a participant in a service project in my senior year, I worked with welfare agencies in Indianapolis to help prevent malnutrition and subsequent infection among inner-city children. This happened in the days before the National WIC and School Lunch Nutrition Programs offered federal support to nutritionally needy kids. My interest in childhood nutrition continued when, as a medical student at Washington University School of Medicine in St. Louis, Missouri, I delivered milk to inner-city kids in Chicago. As a resident and chief resident in pediatrics at the University of Minnesota teaching hospital in Minneapolis, Minnesota, I became interested in how the digestive system develops in babies and the role that nutrition plays in keeping them healthy. After my residency, I trained at Massachusetts General Hospital (MGH) in gastroenterology and nutrition and established the first Pediatric Gastroenterology and Nutrition Division at that hospital. In the early 1980s, I was asked to merge the two pediatric gastroenterology and nutrition programs at Harvard (based at the Children’s Hospital Boston and the Massachusetts General Hospital for Children) into a combined training program for pediatricians. During the last twenty years, I’ve helped train many, if not most, of the pediatric nutritionists in academic centers throughout North America and Europe.

My interest in nutrition has also extended into scientific research. As a National Institutes of Health–funded investigator, I studied how nutrition influences the development of intestinal allergies and intestinal immune defenses against infections. As a result of this effort, I successfully competed for an NIH-funded Clinical Nutrition Research Center (one of seven centers funded in the United States), became the recipient of the first Chair in Nutrition at Harvard Medical School (Conrad Taff Professor of Nutrition), and began the Division of Nutrition at Harvard Medical School. This background and the division’s commitment to public education has been the basis for writing a book that helps parents establish healthy nutrition habits for their children. It represents the ultimate attempt to bring preventative health care in pediatrics to the public.

We hope you find the guidelines in this book helpful for enabling your kids to eat a healthy diet from infancy on.
Acknowledgments

This book was conceived of as a sequel to the very successful guide to healthy eating titled *Eat, Drink, and Be Healthy*, by Walter Willett with P. J. Skerrett. I am grateful to Walter for recommending this book be written, and for suggesting me with Courtney Humphries as its authors. I am also grateful to Harvard Medical School for establishing a schoolwide Division of Nutrition in 1996 and asking me to be its first director. The intent of establishing this division was to give more visibility to nutrition as an important part of medicine and to organize the large but diffuse resources in nutrition at the medical school and its major teaching hospitals into a single coordinated entity. At the request of numerous graduating classes of the medical school, the Division of Nutrition was charged with bringing practical information about nutrition into the medical curriculum so that physicians would be more knowledgeable in the use of nutrition in medical practice.

In this book, we have carefully considered clinical studies that strongly suggest the recommendations made in the various chapters. Much of the published work comes from position papers written by the Committee on Nutrition of the American Academy of Pediatrics (AAP), the most influential advisory body on nutrition for practicing pediatricians in North America, as well as its recently published *Pediatric Nutrition Handbook*. Dr. Nancy Krebs, the chairman of this committee, has reviewed specific chapters of this book and provides an endorsement of their content and recommendations. I am grateful to Dr. Bill Sears, an expert in communicating medical advice to parents, and Dr. Ronald Kleinman, editor of the AAP nutrition handbook and former chairman of the AAP Committee on Nutrition, for their endorsements as to the importance of this book. They too have read selected chapters and support their message.

As this book was being written, we had several pediatric experts in nutrition and new mothers read the chapters for content and readability. I am grateful to Drs. Carine Lenders and Alison Hoppin, our experts for optimal weight for life programs at Children’s Hospital Boston, Boston City Hospital, and the Massachusetts General Hospital for Children, respectively, for providing a review of the factual content of this book. We received input on the content and readability of the text from Dr. Kim Walker, a child psychologist and my daughter; Dr. Helen Delichatsios, an internist; and Dr. Annemarie Broderick, a pediatric gastroenterologist, all of whom are new mothers. Courtney Humphries, a gifted science writer, has helped to translate complex medical
terms into a text understandable to parents. Sharon Collier, a well-known pediatric nutritionist who has run the Nutrition Service at Children’s Hospital for more than a decade, has contributed to the text by reviewing chapters and providing practical dietary suggestions for the recipes in Chapter 12. This is particularly true of homemade weaning foods, healthy snacks for toddlers, and suggested homemade lunches for school-age children. I also wish to thank Lisa F. O’Gorman, a certified executive chef, for the practical recipes provided to parents wishing to make healthy meals and school lunches for their children. Dr. Chris Duggan also provided valuable advice. Dr. Tony Komaroff of Harvard Health Publications provided important support and encouragement in the development of this book, and Ms. Nancy Ferrari and Ms. Christine Junge assisted in many aspects of its production. I also would like to thank McGraw-Hill and executive editor Judith McCarthy for their help in editing and organizing this book.

As always, I am grateful to my wife, Dr. Ann Sattler, who is also a pediatrician, for her encouragement and support of my many activities in pediatric nutrition and to my children, Kim, Mike, Andy, and Meredith, and grandchildren, Douglas, Lena, and Giselle, for keeping me honest in my suggestions for practical approaches to developing healthy eating habits during childhood.
Chapter 1

What Kids Eat and Why It Matters So Much

Kids today are growing up in a world of unprecedented variety in food choices. An astounding array of foods from all over the world fills our supermarket shelves, restaurants, and food courts. Ingredients that once seemed exotic are now regular items in stores. New products are often designed to fulfill our desire for foods that are, or seem, healthier. For instance, most stores now carry soy milk, fat-free dairy products and desserts, exotic grains and whole-wheat pastas, organic produce, veggie burgers, and tofu hot dogs—the list goes on and on.

But what is a healthy food, anyway? What makes one food better than another? And more important, how can different foods be put together into a healthful diet that is practical and affordable?

Even as health foods enjoy a growing market, it is apparent that many people are confused about which type of diet is best and how they should be feeding their children. Today, kids’ diets are often overloaded with foods that are high in calories but low in nutrients that growing bodies need. Overweight and obesity afflict twice as many children as they did fifteen or twenty years ago. And growing evidence suggests that many of the chronic diseases that affect adults, including diabetes, heart disease, and certain cancers, are rooted in lifestyle choices, including a poor diet and lack of exercise. If children today are to avoid the burden of disease from unhealthy lifestyles, parents need to make sure they are growing up with the habits and knowledge to help them make better choices as adults.

In 2001, my colleague at Harvard Walter C. Willett released a book called *Eat, Drink, and Be Healthy: The Harvard Medical School Guide to Healthy Eating*. It argued that current nutritional guidelines, as represented by the United States Department of Agriculture’s (USDA) Food Guide Pyramid, were flawed. Willett instead put forth a newly redrawn pyramid based on years of extensive research, including findings from the large-scale Nurses’ Health Study and the Health Professionals Follow-Up Study, which he directs. That book showed how current nutritional guidelines offer an overly simplified view of healthy eating. Instead, a healthy diet for adults should emphasize regular exercise and eating the right amount of food to prevent weight gain, eating whole grains and healthy fats from plant oils, limiting foods such as refined carbohydrates and
unhealthy fats, eating plenty of fruits and vegetables, drinking alcohol in moderation, and taking a daily multivitamin for nutritional insurance.

The argument caught on. The cover of *Newsweek* questioned whether the USDA pyramid was sound, and countless articles in newspapers and magazines brought the flaws in the pyramid to the public’s attention. The assault was so effective that the USDA is now in the process of reevaluating the pyramid. We have yet to see what its newest incarnation will be—whether the pyramid will better reflect decades of research, whether the image of the pyramid itself will be thrown out in favor of some new image or set of guidelines, or whether very little will change at all.

One of the lingering questions that many people had when reading *Eat, Drink, and Be Healthy* was how to apply the latest nutritional knowledge to children’s diets. The guidelines that Dr. Willett puts forth are based on studies on adults, and their goal is to move people toward a diet that limits their risk of developing chronic disease. How do these findings translate to children’s health and the goals of children’s nutrition? What is the current state of knowledge about how children should eat? How should a family that is trying to eat more healthily adapt the family diet for children?

This book will help parents adopt a nutritional strategy that is best for the long-term health of their children. I will bring you up to date on the latest knowledge about how the foods children eat affect their health. Much of the advice in this book will echo the latest recommendations for a healthy adult diet. But I will also point out some important differences unique to kids. The choices you make are important from day one, and I will guide you through the unique nutritional needs of children in their first eight years of life.

In your baby’s first months of life, the main choice that most parents make is whether to feed their baby breast milk or formula. And this choice is not a trivial one. I’ll explain why an overwhelming consensus indicates that breast milk is best for babies. For parents who do use formula, I’ll explain what goes into it and how to choose the best kind.

Once a baby is ready to start solid foods, the more complex choices begin. Which kinds of foods to feed, and how much? I will talk about how to begin children on a diet that meets their nutrient needs and sets good habits from the start.

The second year is a time of transition, when a growing toddler still has important needs but also begins to have more control over eating—and more likes and dislikes. We’ll talk about feeding strategies for toddlers and how to establish good eating habits in this transitional stage.

The rest of this book will take a comprehensive look at nutrition for children aged two to eight, including:

- Why the emotional and social context of eating is so important, and how to establish healthy eating habits in children.
- Why physical activity and weight control early in life are necessary for children’s [End of Sample]