Handbook of Obesity Prevention
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Editors

Handbook of Obesity Prevention
A Resource for Health Professionals

Foreword by Dr. David Satcher

Springer
To Christiaan and Chenjerai, who provide strength and inspiration.

S.K.K.

To Carol, for her support, guidance, and good humor.

R.C.B.
In the Surgeon General’s Report: A Surgeon General’s Call to Action to Prevent and Reduce Overweight and Obesity, we referred to the “epidemic” of overweight and obesity. This was an unusual designation for a chronic disease or condition but we felt it quite appropriate. In public health, where “epidemic” has generally referred to an unusual outbreak or increase in incidence of an infectious disease, this application of the term to a chronic condition such as obesity was unusual but appropriate. The increase in overweight and obesity in America over the last two to three decades has been both dramatic and unprecedented and certainly unexpected. We reported that in children overweight had increased two-fold from 1980 to 2000 and almost tripled in adolescents. A similar trend was also seen in adults in America. There was no sign of abatement of this increase as we entered the 21st century.

Although this dramatic increase in overweight and obesity affected all groups in the nation it impacted some much more than others. African Americans, Hispanics and American Indians were most severely impacted. These were the groups which had been targeted for improvement in health outcomes with the 2010 goal of eliminating disparities in health. But the epidemic of overweight and obesity not only threatens to derail this goal but it also threatens to undue much of the progress in control of chronic diseases that we made in the last half of the 21st century. The concern about overweight and obesity was not about cosmetics and appearances, as we pointed out in the report, it was about health. There are beautiful people who are overweight and obese and there are beautiful people who are thin but this epidemic is about health. The epidemic of overweight and obesity is a threat to our health now and in the future. It was and is a threat to increase morbidity and mortality from diabetes, cardiovascular disease, cancer and osteoarthritis. It interferes with learning in children by increasing risks for asthma and other causes of absenteeism from school and the ability to concentrate in school. It also dramatically increases costs in the healthcare system. Children who are overweight, and especially into their adolescent years are most likely to be obese as adults. Thus childhood overweight must be particularly targeted.

The cause of this epidemic of overweight and obesity is not altogether clear but it is clear that two major forces in our society have contributed greatly to the epidemic. Those two forces have been the pressures for us to consume
more calories and at the same time to be less physically active. With the production and sale of more and more food, the pressure to consume more calories faces us on every corner and with every other commercial. More fast foods have not only meant faster food but also more fat, more sugar and more salt. The other force has been the growing disincentive for us to be physically active. In 1996 the Surgeon General’s Report on Physical Activity was released. As director of the CDC I was involved in the development of that report. We pointed to the dramatic decrease in physical activity by American children and adults. We found, for example, that less than 30% of teenagers were taking physical education in school, and this represented a trend for all students. Physical education was seen as competing with classroom activities geared toward preparing children for standardized exams. Of course we know now that physical activity and good nutrition can improve learning and performance by children on math and reading tests, as well as writing. But the trend to eat more and to be less physically active is not easy to reverse in children or adults.

While it is true that treatment is sometimes indicated and possible to deal with obesity, as with other epidemics, it is not the answer to the epidemic. The challenge we face is to prevent overweight and obesity, especially in children but also in adults. In a nation and in a health system where health promotion and disease prevention have never been priorities, except for infectious diseases, we are faced with a daunting challenge to prevent overweight and obesity. Most studies show that we as a nation spend less than two to three percent of our health budget on population based prevention, and population based prevention is what is needed to fight this epidemic. In the language of McKinlay and others this epidemic must be fought, downstream, midstream, and upstream.

**Downstream** we must educate, motivate and mobilize individuals and families toward healthy lifestyles that militate against overweight and obesity. As surgeon general I took seriously my designation as “The Nation’s Doctor” and among other things wrote an actual prescription for the American people. On this prescription I encourage physical activity at least 30 minutes a day, five days a week. I also prescribed good nutrition focusing on the consumption of at least five servings of fruits and vegetables per day. The other recommendations related to the avoidance of toxins and being responsible in one’s sexual behavior. Clearly individuals and families must respond to the epidemic by increasing physical activity and consuming a more nutritious, low fat, low calorie diet and becoming significantly more physically active. But this is not enough.

We must also act at **midstream** or in the community where environments can facilitate or militate against healthy lifestyles or eating habits. The school curriculum, the safety of our streets and the general quality of the natural and built environments are critical to allowing and encouraging healthy lifestyles. In the community there must be a commitment especially to creating the kind of environment that encourages children to develop lifetime habits of physical activity and good nutrition. Today children are most susceptible to our “obesogenic” environments, from fast foods to T.V. watching and their related advertisements. Finally, overlooking what individuals can and will be incentivized to do as well as how communities and their institutions respond to this epidemic are the local, state and federal policies. This
Function is critical to our success in stopping and reversing the trend of overweight and obesity.

At the end of the Surgeon General’s Call to Action to Prevent and Decrease Overweight in Obesity we listed several settings for action. Among those settings we included the home and community, schools, workplace, healthcare, and media/communication. These settings are all very important for attacking the epidemic of overweight and obesity. In many cases they must work together.

The program “Action for Healthy Kids,” which we started in the Fall of 2002 and is now nationwide with over 6,000 volunteers, begins by encouraging schools to return to physical education K-12 and to model good nutrition as well as to educate parents, teachers, students and others about the value of physical activity and good nutrition. This strategy is geared toward habituating children to healthy lifestyles in such a way that they will be on the path to good health for life.

But this midstream intervention was given new life and a major boost in 2004 when congress passed the Wellness Act (upstream). This act required local school districts that received federal funds for programs such as free breakfast and lunches to put in place policies and programs to help children develop habits of regular physical activity and good nutrition. Already we have seen major movement on the part of school districts to respond to this federal policy.

In one program, we are attempting to attack the problem of overweight and obesity at all three levels. This is the 100 Black Men’s Health Challenge started in Atlanta and recently discussed and described in the January issue of the Journal of Health Education. Downstream the program focuses on getting black men to change their lifestyle toward more physical activity and better nutrition. There is close monitoring and group challenge and support for these changes. In midstream the program takes advantage of the men’s power/influence in the community and the fact that they often serve as mentors of children from the housing projects. They are in a very good position to work to make the community more supportive of physical activity and good nutrition. They can help to make the streets safer and the parks more attractive. Upstream, these men often occupy positions on the school board and even in the legislature and can help to get policies in place that lead to environments which encourage/support healthy lifestyles. Thus the 100 Black Men Health Challenge is a three-dimensional challenge.

It is especially great to attempt to pull together in one handbook virtually all that we know about the nature and distribution of overweight and obesity and about the various strategies for intervening to prevent and reduce overweight and obesity. Those who are on the front line of the battle against overweight and obesity have come together to put forth the status of our knowledge and experience with the efforts to reverse this dangerous public health trend. This sharing of knowledge and experiences and research strategies is critical if we are to be successful in our efforts. As many new minds and bodies join the efforts against this epidemic they do not need to start from scratch or “reinvent the wheel.” What is already known and experienced in terms of strategies that work and do not work and methodologies that are being applied to further advance knowledge are available in this Handbook of Obesity Prevention. The editors of this handbook are well established and respected for their leadership in public health and especially research related to the nature and
causes of overweight and obesity and the assessment of strategies for amelio-
rating this problem. Thus the book reflects their oversight and the tremendous
input of several outstanding investigators and program developers.

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The statistics are alarming. Over the past decades we have watched the weight levels of the U.S. population shift steadily upward. Media coverage of obesity conveys a continuing sense of crisis—for the population at large, especially children and youth, and for the health care system. We hear threats of spiraling health and societal costs related to obesity within the United States as well as dour predictions of the millions affected globally by obesity and its adverse health consequences. It is now clear that the society at large, not just the health sector, has a stake in ensuring that obesity is controlled. So we know that obesity must be controlled. The question is how to control it.

Without being overly technical, we frame, organize, and explain information relevant to obesity prevention, providing general background and perspective and reviewing how solutions to the problem might proceed within different settings or with different audiences. This book attempts to get to the “nuts and bolts” of how to halt and eventually reverse the obesity epidemic. In so doing, we are not starting at the beginning. In fact, the high level of action, energy, and discourse devoted to curbing the obesity epidemic has given us both the motivation and mandate for developing this book. Efforts are underway in the population at large, in community organizations, in local, state, and federal government agencies, in voluntary organizations, and within the commercial sector and the media. Some are relatively spontaneous; others have developed more purposely. These efforts encompass a spectrum of initiatives directed both to individual behavior and to aspects of the environments that influence individual behavior. Numerous reports and evidence reviews have been developed. There are national, state, and local action plans that spell out what needs to be done broadly as well as more specific guidelines and tools, while research to build the evidence base is ongoing. Yet, as described in the book, many of the ongoing efforts are not well coordinated and therefore are not obtaining maximum synergy.

This book comes at a time when obesity prevention has emerged as a specific topic within the broader fields of public health, health promotion, and preventive medicine—and especially as distinct from the well established clinical and research focus on obesity treatment. In part, we attempt to counter the tendency to talk about obesity “prevention and treatment” while allowing the more familiar, treatment perspective to dominate. Stopping the epidemic means
preventing the gain of unhealthy excess weight in the population at large, and this can only be done through preventive strategies. Obesity treatment will continue to be important in obesity control efforts, but treatment affects the problem very far “downstream”, i.e., after the problem has already taken hold. Treatment may be only partly effective over the long term, and—even when successful—is unlikely to reverse all of the long term effects of having carried the excess weight. Most important, if the forces underlying the epidemic remain unchecked, the numbers who need to be treated will continue to rise far beyond our capacity to provide individualized treatment to all who need it—especially as the potential to gain excess weight is lifelong.

Population-based, public health approaches are needed to address the underlying forces that influence—at a population level—how people eat and how physically active they are. These forces are “upstream” of the individual-level. Individual choices about eating and physical activity ultimately determine their weight levels (within very flexible physiological boundaries). Obesity prevention must alter the relevant physical, economic, and social environments and the policies that structure these environments in ways that make choices conducive to healthy weights easier or more desirable than others. Changing these environments will require collaboration and coordination across diverse sectors such as public health, agriculture, urban planning, and transportation. A significant challenge, yet entirely within our reach when one considers other major challenges that have been faced and met by public health initiatives in the past, including the eradication of smallpox or the reduction in tobacco-related diseases.

We have aimed for comprehensiveness, with a focus on the most recent literature, highlighting aspects of obesity prevention from multiple vantage points that, taken together, will tell the entire story. A key objective is to focus obesity prevention on both children and adults rather than in children only—as some might expect. Another is to increase understanding of the environmental and policy influences on obesity prevention, particularly in areas heretofore unfamiliar or insufficiently appreciated as affecting the success of lifestyle change programs (e.g., How might new school policies affect rates of childhood obesity?). A third objective is to facilitate strategic approaches to planning and executing obesity prevention initiatives in a way that draws upon established principles of public health practice and social change to find new approaches.

The three main sections of the book: Overview, Understanding the Landscape, and Crafting Solutions—progress from upstream, societal-level perspectives to downstream, community- and individual-level perspectives. This organization roughly follows the now widespread application of ecological frameworks in addressing public health issues. Considerations underlying interventions for adults and children have been integrated where appropriate, but important differences by life stage are highlighted in separate chapters. Intervention options are addressed separately for settings and population groups—to fit with these two different but related approaches to programming. For example, there are chapters on interventions in school and child care settings and in worksites, but there are also chapters on interventions in children and youth by developmental stage and in adults. Almost all chapters integrate issues related to both food and physical activity. Several chapters highlight special issues for subgroups defined by ethnicity or socioeconomic status,
because these are the population groups with the highest current and future potential burden of obesity.

Our goal is to offer guidance and inspiration for the teachers, students, and professionals from the diverse array of disciplines whose efforts are needed in order to solve the obesity problem. We hope the book will be useful for academic institutions, state and local health agencies, non-profit organizations, health care organizations, and national public health agencies—to help these various audiences to use the information about obesity prevention that we have now and that will develop in the coming years to keep pace with continuing cultural and other environmental changes.

While we focus mainly on the U.S. context, the principles and approaches apply in most other countries. The problem is inherently global in nature, and both the problem of obesity and its eventual solutions must extend across the globe. However, the character of the epidemic and the potential feasibility and effectiveness of various solutions varies across countries and, within countries, in different regions, localities, and neighborhoods.

In spite of the rapidly increasing rates of obesity and the future implications of these trends, there is considerable hope for change and improvement. Many sectors of society now recognize the importance of obesity prevention, and we have more information and tools at our fingertips than ever before to meet this challenge. We therefore offer this handbook to all who can be enlisted in crafting solutions to the obesity problem and to foster the societal transformation that this implies.

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We are only the editors of this book and, therefore, attribute any value that it will have to the talents of the authors who have generously given their time and energies to produce the chapters. We were extremely fortunate in attracting an outstanding group of contributors—scholars who are leading the science and practice on diverse aspects of obesity prevention and for whom the opportunity to share the insights they have gleaned to date became an irresistible challenge. We are deeply indebted to these very busy people, and to the people who have worked with them behind the scenes, for their willingness to sign on to this project and for their exceptionally collaborative spirit in shaping the individual chapters to fit with our vision and organizational schema. We also acknowledge the key role of Bill Tucker at Springer for his initiative in suggesting this project initially to Shiriki and for his ongoing encouragement and support throughout the writing and editing process.
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