

Childhood Obesity Research Paper

To battle the obesity epidemic in America, health care professionals and policymakers need relevant, useful data on the effectiveness of obesity prevention policies and programs. Bridging the Evidence Gap in Obesity Prevention identifies a new approach to decision making and research on obesity prevention to use a systems perspective to gain a broader understanding of the context of obesity and the many factors that influence it.

Obesity has come to the forefront of the American public health agenda. The increased attention has led to a growing interest in quantifying obesity prevalence and determining how the prevalence has changed over time. Estimates of obesity prevalence and trends are fundamental to understanding and describing the scope of issue. Policy makers, program planners, and other stakeholders at the national, state, and local levels are among those who search for estimates relevant to their population(s) of interest to inform their decision-making. The differences in the collection, analysis, and interpretation of data have given rise to a body of evidence that is inconsistent and has created barriers to interpreting and applying published reports. As such, there is a need to provide guidance to those who seek to better understand and use estimates of obesity prevalence and trends. Assessing Prevalence and Trends in Obesity examines the approaches to data collection, analysis, and interpretation that have been used in recent reports on obesity prevalence and trends at the national, state, and local level, particularly among U.S. children, adolescents, and young adults. This report offers a framework for assessing studies on trends in obesity, principally among children and young adults, for policy making and program planning purposes, and recommends ways decision makers and others can move forward in assessing and interpreting reports on obesity trends.

This volume, containing 24 papers and 19 poster papers, reviews the etiology and epidemiology of childhood obesity. It explores genetic and contributory environmental factors. It also describes recent research and educational efforts in prevention of the condition, including programmes aimed at high-risk minority populations.

Promotes the recognition, treatment, and prevention of conditions of overweight and obesity in the United States.

Childhood obesity is highly prevalent in the U.S. and has become a global epidemic. The 2007-2008 National Health and Nutrition Examination Survey data showed that 17% of U.S. children and adolescents (ages 2–19) years were obese, and over 30% were overweight or obese. Childhood obesity leads to obesity in adulthood and many other serious health conditions, such as cardiovascular, metabolic, and psychosocial illnesses. To assess the effectiveness of existing childhood obesity prevention efforts, the Johns Hopkins University Evidence-based Practice Center completed a systematic review on childhood obesity prevention studies conducted in high-income countries. This report systematically reviewed seven key questions: What is the comparative effectiveness of school-based interventions for the prevention of obesity or overweight in children? What is the comparative effectiveness of home-based interventions for the prevention of obesity or overweight in children? What is the comparative effectiveness of primary care-based interventions for the prevention of obesity or overweight in children? What is the comparative effectiveness of childcare setting-based interventions for the prevention of obesity or overweight in children? What is the comparative effectiveness of community-based or environment-level interventions for the prevention of obesity or overweight in children? What is the comparative effectiveness of consumer health informatics applications for the prevention of obesity or overweight in children? What is the comparative effectiveness of multi-setting interventions for the prevention of obesity or overweight in children? Though the strength of evidence is moderate to high for school-based interventions, the limited number of studies and insufficient or low strength of evidence to support interventions in other settings made it difficult to conclude that interventions in other settings could effectively prevent childhood obesity. Based on the evidence gaps in these settings, we identified the following as Future Research Needs: Future research is needed on interventions delivered in settings other than schools or home. While there have been other reviews on the effectiveness of interventions on food and nutrition policies at school on changes in children's diet and school food environments, there are still gaps in the literature on some aspects, such as the impact of regulations on food availability and its impact on obesity prevention. Only a few studies that we reviewed used social marketing to deliver messages on nutrition, physical activity and health. This approach might be integrated with other intervention components to create an atmosphere favorable to healthy and active lifestyles and related behavioral changes. Further testing of the value of consumer health informatics products for obesity prevention is needed. In addition, there is a lack of evidence on the impact of regional or national policies on childhood obesity prevention. Further research might be conducted with stratified analyses on subgroups, such as by gender, age, race/ethnicity, or socioeconomic status. There were methodological limitations of the reviewed studies which suggest that future research might improve upon the methods. Few of the studies we reviewed reported process evaluation, which would provide useful insight regarding why some studies might detect desirable effect of the intervention. Future studies need to design innovative approaches that have a high likelihood of sustainability. This may be designed to take advantage of other existing public health, government or other organization supported programs or try to gain more support and engagement from related key stakeholders. The objective of this report is to prioritize the needs for research addressing gaps in the existing literature on the effectiveness of childhood obesity prevention programs by engaging expert stakeholders using a modified Delphi method.

Children's health has made tremendous strides over the past century. In general, life expectancy has increased by more than thirty years since 1900 and much of this improvement is due to the reduction of infant and early childhood mortality. Given this trajectory toward a healthier childhood, we begin the 21st-century with a shocking development—an epidemic of obesity in children and youth. The increased number of obese children throughout the U.S. during the past 25 years has led policymakers to rank it as one of the most critical public health threats of the 21st-century. Preventing Childhood Obesity provides a broad-based examination of the nature, extent, and consequences of obesity in U.S. children and youth, including the social, environmental, medical, and dietary factors responsible for its increased prevalence. The book also offers a prevention-oriented action plan that identifies the most promising array of short-term and longer-term interventions, as well as recommendations for the roles and responsibilities of numerous stakeholders in various sectors of society to reduce its future occurrence. Preventing Childhood Obesity explores the underlying causes of this serious health problem and the actions needed to initiate, support, and sustain the societal and lifestyle changes that can reverse the trend among our children and youth.

Despite adults' best preventive efforts, childhood obesity is on the rise in most areas of the world, and with it the prevalence of Type 2 diabetes, hypertension, cardiovascular disease, and other formerly adult-onset conditions. Epidemiology of Obesity in Children and Adolescents takes the global ecological approach that is needed to understand the scope of the problem and its multiple causes and mechanisms, and to aid in developing more effective prevention and intervention programs. In the book's first half, experts present a descriptive summary of youth obesity trends in ten world regions, broken down by age group, gender, socioeconomic status, and risk factors. Complementing these findings, part two reviews the evidence base regarding the variables, separately and in combination, having the most significant impact on young people's development of obesity, including:

- Genetic and nutrigenomic factors.
- Environmental and psychosocial factors, such as family shopping and eating habits and access to healthful foods.
- Neuroendocrine regulation.
- Prenatal and neonatal factors (e.g., gestational diabetes of the mother).
- Dietary factors, from nutrient content to young people's food preferences.
- Physical activity versus sedentary behavior.

Epidemiology of Obesity in Children and Adolescents is necessary reading for the range of professionals involved in curtailing this epidemic, including public health specialists,

epidemiologists, pediatricians, nurses, nutritionists, psychologists, health educators, and policymakers.

Childhood obesity has reached epidemic proportions in the United States and continues to increase in prevalence in almost all countries in which it has been studied, including developed and developing countries around the globe. The causes of obesity are complex and multi-factorial. Childhood obesity becomes a life-long problem in most cases and is associated with long term chronic disease risk for a variety of diseases including type 2 diabetes, cardiovascular disease, non-alcoholic fatty liver disease, as well as psychosocial issues and obesity seems to affect almost every organ system in the body. In recent years there has been tremendous progress in the understanding of this problem and in strategies for prevention and treatment in the pediatric years. *Childhood Obesity: Causes, Consequences, and Intervention Approaches* presents current reviews on the complex problem of obesity from the multi-level causes throughout early life before adulthood and the implications for this for long-term disease risk. It reviews numerous types of strategies that have been used to address this issue from conventional clinical management to global policy strategies attempting to modify the global landscape of food, nutrition, and physical activity. Each chapter is written by a global authority in his or her respective field with a focus on reviewing the current status and recent developments. The book features information on contributing factors to obesity, including developmental origins, social/family, birth cohort studies, influence of ethnicity, and global perspectives. It takes a life-course approach to the subject matter and includes exhaustive treatment of contributing factors to childhood obesity, such as assessment, environmental factors, nutrition and dietary factors, host factors, interventions and treatment, consequences, and further action for future prevention. This broad range of topics relevant to the rapidly changing field of childhood obesity is suitable for students, health care professionals, physicians, and researchers.

This title includes a number of Open Access chapters. Child obesity is a serious condition that affects children around the world in growing numbers. With obesity comes an increased risk of other chronic diseases as well, making it even more important to understand and treat this condition from a variety of angles. This current volume seeks to understand the phenomenon of child obesity and presents a range of viewpoints on its prevalence, causes, and treatments. The different sections contained within explore the following topics: • The worldwide prevalence of childhood obesity and its growing effect on children • The causes of childhood obesity and the complex interactions of genetic, environmental, social, and medical factors that contribute to its development • Proposed treatments, some intervention-based and others that aim to change how food is marketed and sold to youth This reference volume offers a comprehensive and thorough guide to a field that is rapidly expanding and points to new directions in research and public policy. Edited by a doctor with extensive experience as a researcher, writer, and medical practitioner, *The Childhood Obesity Epidemic* is an authoritative and easy-to-use reference that provides resources for researchers in the field, students, and anyone who wishes to gain an overview to this important field of study.

"I have no doubt that this book will be extremely useful to folk involved in programmes that aim to improve health outcomes of children and adolescents. It's brevity, among other factors, ensures that most people who buy, borrow or steal the book will actually fulfil an intention of reading it cover-to-cover!" --Alan J. Fisher, University of Cape Town *Journal of Child and Adolescent Mental Health* The purpose of this book is to provide a process for the development of effective community-wide health behavior programs for children and adolescents. Significant behavior change among young people across a variety of behaviors and community-based research studies has been achieved through programs that have been created based on this 10-step process. These steps will be discussed in four primary stages: preparing for program development; determining the program components; creating the health behavior program; and implementing and maintaining a program. The intent, then, of this book is to provide steps for developing programs that will lead to meaningful change in improving the health behaviors of young people in our communities, in the broader context of improving physical, psychological, social, and spiritual well-being.

The childhood obesity epidemic is an urgent public health problem. The most recent data available show that nearly 19 percent of boys and about 15 percent of girls aged 2-19 are obese, and almost a third of U.S. children and adolescents are overweight or obese (Ogden et al., 2012). The obesity epidemic will continue to take a substantial toll on the health of Americans. In the midst of this epidemic, children are exposed to an enormous amount of commercial advertising and marketing for food. In 2009, children aged 2-11 saw an average of more than 10 television food ads per day (Powell et al., 2011). Children see and hear advertising and marketing messages for food through many other channels as well, including radio, movies, billboards, and print media. Most notably, many new digital media venues and vehicles for food marketing have emerged in recent years, including Internet-based advergames, couponing on cell phones, and marketing on social networks, and much of this advertising is invisible to parents. The marketing of high-calorie, low-nutrient foods and beverages is linked to overweight and obesity. A major 2006 report from the Institute of Medicine (IOM) documents evidence that television advertising influences the food and beverage preferences, requests, and short-term consumption of children aged 2-11 (IOM, 2006). *Challenges and Opportunities for Change in Food Marketing to Children and Youth* also documents a body of evidence showing an association of television advertising with the adiposity of children and adolescents aged 2-18. The report notes the prevailing pattern that food and beverage products marketed to children and youth are often high in calories, fat, sugar, and sodium; are of low nutritional value; and tend to be from food groups Americans are already overconsuming. Furthermore, marketing messages that promote nutrition, healthful foods, or physical activity are scarce (IOM, 2006). To review progress and explore opportunities for action on food and beverage marketing that targets children and youth, the IOM's Standing Committee on Childhood Obesity Prevention held a workshop in Washington, DC, on November 5, 2012, titled "New Challenges and Opportunities in Food Marketing to Children and Youth."

The remarkable increase in the prevalence of obesity among children and youth in the United States over a relatively short timespan represents one of the defining public health challenges of the 21st century. The country is beginning to recognize childhood obesity as a major public health epidemic that will incur substantial costs to the nation. However, the current level of investment by the public and private sectors still does not match the extent of the problem. There is a substantial underinvestment of resources to adequately address the scope of this obesity crisis. At this early phase in addressing the epidemic, actions have begun on a number of levels to improve the dietary patterns and to increase the physical activity levels of young people. Schools, corporations, youth-related organizations, families, communities, foundations, and government agencies are working to implement a variety of policy changes, new programs, and other interventions. These efforts, however, generally remain fragmented and small in scale. Moreover, the lack of systematic monitoring and evaluation of interventions have hindered the

development of an evidence base to identify, apply, and disseminate lessons learned and to support promising efforts to prevent childhood obesity. *Progress in Preventing Childhood Obesity: How Do We Measure Up?* examines the progress made by obesity prevention initiatives in the United States from 2004 to 2006. This book emphasizes a call to action for key stakeholders and sectors to commit to and demonstrate leadership in childhood obesity prevention, evaluates all policies and programs, monitors their progress, and encourages stakeholders to widely disseminate promising practices. This book will be of interest to federal, state, and local government agencies; educators and schools; public health and health care professionals; private-sector companies and industry trade groups; media; parents; and those involved in implementing community-based programs and consumer advocacy.

The consequences of childhood obesity are serious and far reaching, with both physical and psychological components that add to its complexity. *Childhood Obesity: Contemporary Issues* provides an up-to-date account of the increase of obesity in children, its causes, and its prevention. The expert editorial panel has chosen contributors with consider

This book is the second in a series of two, featuring the *Adiposity - Omics and Molecular Understanding*, serving as an introduction to modern views on how the adipocytes are reciprocally interacting with organ systems in order to explain the biology of the body's fat cells and how they are integrated with other organ systems, like muscle cells and the liver, in order to control the lipid metabolism in our bodies, to finally preserve a positive balance between white and brown/beige adipocyte tissues (WAT and BAT). The understanding of the "omics" of obesity will therefore enable clinicians and researchers to better pursue the untoward incidents of metabolic deviations from a defined and health-bringing homeostasis, with fully responding WAT and BAT, being able to preserve a healthy balance between fat-producing and fat-metabolizing tissues for the benefit of the host, and thus longevity (optimal health with healthy, well-functioning organ systems) throughout a lifetime.

Urban Sprawl and Public Health Designing, Planning, and Building for Healthy Communities Island Press

Almost one in four people in OECD countries is currently obese. This epidemic has far-reaching consequences for individuals, society and the economy. Using microsimulation modelling, this book analyses the burden of obesity and overweight in 52 countries (including OECD, European Union and G20 countries), showing how overweight reduces life expectancy, increases healthcare costs, decreases workers' productivity and lowers GDP. The report makes the urgent economic case to scale up investments in policies to promote healthy lifestyles and tackle this growing global public health problem. The book evaluates a number of policies which could significantly improve health outcomes while being an excellent investment for countries.

Creating an environment in which children in the United States grow up healthy should be a high priority for the nation. Yet the prevailing pattern of food and beverage marketing to children in America represents, at best, a missed opportunity, and at worst, a direct threat to the health prospects of the next generation. Children's dietary and related health patterns are shaped by the interplay of many factors—their biologic affinities, their culture and values, their economic status, their physical and social environments, and their commercial media environments—all of which, apart from their genetic predispositions, have undergone significant transformations during the past three decades. Among these environments, none have more rapidly assumed central socializing roles among children and youth than the media. With the growth in the variety and the penetration of the media have come a parallel growth with their use for marketing, including the marketing of food and beverage products. What impact has food and beverage marketing had on the dietary patterns and health status of American children? The answer to this question has the potential to shape a generation and is the focus of *Food Marketing to Children and Youth*. This book will be of interest to parents, federal and state government agencies, educators and schools, health care professionals, industry companies, industry trade groups, media, and those involved in community and consumer advocacy.

Understanding the complex factors contributing to the growing childhood obesity epidemic is vital not only for the improved health of the world's future generations, but for the healthcare system. The impact of childhood obesity reaches beyond the individual family and into the public arenas of social systems and government policy and programs. *Global Perspectives on Childhood Obesity* explores these with an approach that considers the current state of childhood obesity around the world as well as future projections, the most highly cited factors contributing to childhood obesity, what it means for the future both for children and society, and suggestions for steps to address and potentially prevent childhood obesity. This book will cover the multi-faceted factors contributing to the rapidly growing childhood obesity epidemic. The underlying causes and current status of rapidly growing obesity epidemic in children in the global scenario will be discussed. The strategies for childhood obesity prevention and treatment such as physical activity and exercise, personalized nutrition plans and school and community involvement will be presented.

Public health entails the use of models, technologies, experience and evidence derived through consumer participation, translational research and population sciences to protect and improve the health of the population. Enhancing public health is of significant importance to the development of a nation, particularly for developing countries where the health care system is underdeveloped, fragile or vulnerable. This book examines progress and challenges with regards to public health in developing countries in two parts: Part 1 "General and Crosscutting Issues in Public Health and Case Studies" and Part 2 "Country-Specific Issues in Public Health." For example, assuring equity for marginalized indigenous groups and other key populations entails the application of transdisciplinary interventions including legislation, advocacy, financing, empowerment and de-stigmatization. The diverse structural, political, economic, technological, geographical and social landscape of developing countries translates to unique public health challenges, infrastructure and implementation trajectories in addressing issues such as vector-borne diseases and intimate partner violence. This volume will be of interest to researchers, health ministry policy makers, public health professionals and non-governmental organizations whose work entails collaborations with public health systems of developing nations and regions.

One-third of adults are now obese, and children's obesity rates have climbed from 5 to 17 percent in the past 30 years. The causes of the nation's obesity epidemic are multi-factorial, having much more to do with the absence of sidewalks and the limited availability of healthy and affordable foods than a lack of personal responsibility. The broad societal changes that are needed to prevent obesity will inevitably affect activity and eating environments and settings for all ages. Many aspects of the obesity problem have been identified and discussed; however, there has not been complete agreement on what needs to be done to accelerate progress. *Accelerating Progress in Obesity Prevention* reviews previous studies and their recommendations and presents five key recommendations to accelerate meaningful change on a societal level during the next decade. The report suggests recommendations and strategies that, independently, can

accelerate progress, but urges a systems approach of many strategies working in concert to maximize progress in accelerating obesity prevention. The recommendations in *Accelerating Progress in Obesity Prevention* include major reforms in access to and opportunities for physical activity; widespread reductions in the availability of unhealthy foods and beverages and increases in access to healthier options at affordable, competitive prices; an overhaul of the messages that surround Americans through marketing and education with respect to physical activity and food consumption; expansion of the obesity prevention support structure provided by health care providers, insurers, and employers; and schools as a major national focal point for obesity prevention. The report calls on all individuals, organizations, agencies, and sectors that do or can influence physical activity and nutrition environments to assess and begin to act on their potential roles as leaders in obesity prevention.

'Urban Sprawl and Public Health' offers a survey of the impact that the built environment can have on the health of the people who inhabit our cities. The authors go on to suggest ways in which the design of cities could be improved & have a positive impact on the well-being of their citizens.

Obesity is a global epidemic and an urgent health crisis impacting human health and health services, with the economic consequences of loss of human capital. It is a crisis for health professionals, health economists and government officials managing finite resources and the economy with premature loss of life and economic productivity. In this *Frontiers Research Topic*, researchers from a breadth of disciplines internationally contributed reviews, meta-analyses and novel data on the challenges obesity presents in attempts to stimulate debate on strategies and solutions for this crisis.

Obesity in childhood and adolescence has reached epidemic proportions in all industrialized countries around the world. Its impact on individual lives as well as on health economics has to be recognized by physicians and the public alike. Among the most common consequences of obesity in the adolescent are hypertension, dyslipidemia, back pain and psychosocial problems. Therapeutic strategies include psychological and family therapy, lifestyle/behavior modification and nutrition education. The role of regular exercise and exercise programs is emphasized. Surgical procedures and drugs used in adult obesity are still not generally recommended for obese adolescents. This book aims to increase physicians knowledge and understanding of obesity in childhood and adolescence as well as to further public awareness of the health burden and economic dimension of obesity at a young age. Several chapters deliver insights into the basic understanding of which factors contribute to or prevent the development of overweight and obesity in young people. Other contributions provide tools for the clinician to manage the care of the child and adolescent with overweight/obesity. In addition, knowledge from the latest scientific studies on the molecular biology of obesity is also presented.

Childhood obesity is a serious health problem that has adverse and long-lasting consequences for individuals, families, and communities. The magnitude of the problem has increased dramatically during the last three decades and, despite some indications of a plateau in this growth, the numbers remain stubbornly high. Efforts to prevent childhood obesity to date have focused largely on school-aged children, with relatively little attention to children under age 5. However, there is a growing awareness that efforts to prevent childhood obesity must begin before children ever enter the school system. *Early Childhood Obesity Prevention Policies* reviews factors related to overweight and obese children from birth to age 5, with a focus on nutrition, physical activity, and sedentary behavior, and recommends policies that can alter children's environments to promote the maintenance of healthy weight. Because the first years of life are important to health and well-being throughout the life span, preventing obesity in infants and young children can contribute to reversing the epidemic of obesity in children and adults. The book recommends that health care providers make parents aware of their child's excess weight early. It also suggests that parents and child care providers keep children active throughout the day, provide them with healthy diets, limit screen time, and ensure children get adequate sleep. In addition to providing comprehensive solutions to tackle the problem of obesity in infants and young children, *Early Childhood Obesity Prevention Policies* identifies potential actions that could be taken to implement those recommendations. The recommendations can inform the decisions of state and local child care regulators, child care providers, health care providers, directors of federal and local child care and nutrition programs, and government officials at all levels.

The *Nutrition and Health* series has been very fortunate to have each of the volumes recognized by rating services, such as Doody's, as valuable contributions for health professionals and individuals interested in the most up-to-date and balanced information from the experts in nutrition. These independent accolades may have occurred because the *Nutrition and Health* series has as its overriding mission to provide health professionals with texts that are considered essential because each book includes: (1) a synthesis of the state of the science, (2) timely, in-depth reviews by the leading researchers in their respective fields, (3) extensive, up-to-date fully annotated reference lists, (4) a detailed index, (5) relevant tables and figures, (6) identification of paradigm shifts and the consequences, (7) virtually no overlap of information between chapters, but targeted, inter chapter referrals, (8) suggestions of areas for future research, and (9) balanced, data-driven answers to patient questions, which are based upon the totality of evidence rather than the findings of any single study. The series volumes are not the outcome of a symposium. Rather, each editor has the potential to examine a chosen area with a broad perspective, both in subject matter as well as in the choice of chapter authors. The international perspective, especially with regard to public health initiatives, is emphasized where appropriate.

That precursors of adult coronary artery disease, hypertension, and type II diabetes begin in childhood have been clearly established by the Bogalusa Heart Study. This unique research program has been able to follow a biracial (black/white) population over 35 years from childhood through mid-adulthood to provide perspectives on the natural history of adult heart diseases. Not only do these observations describe trajectories of cardio-metabolic risk variables leading to these diseases but provide a rationale for the need to begin

prevention beginning in childhood. The trajectories of the burden of cardio-metabolic risk variables in the context of their fetal origin and chromosome telomere dynamics provide some insight into the metabolic imprinting in utero and aging process. The observed racial contrasts on cardio-metabolic risk variables implicate various biologic pathways interacting with environment contributing to the high morbidity and mortality from related diseases in our population. To address the seriousness of the onset of cardiovascular disease in youth, approaches to primordial prevention are described focussing on childhood health education as an important aspect of Preventive Cardiology.

Childhood obesity and its co-morbidities -- including type 2 diabetes, hypertension, dyslipidemia, sleep apnea, and fatty liver disease -- have seen striking increases in recent years. Despite a wealth of investigation, there is considerable controversy regarding the etiology of childhood obesity and the optimal approaches for prevention and treatment. *Pediatric Obesity: Etiology, Pathogenesis, and Treatment* addresses the controversy with a range of features that make it a unique resource for those who care for obese children and their families. Written from a perspective that is international in scope, the distinguished authors re-assess the roles of genetic and environmental factors in the pathogenesis of childhood obesity and critically review new studies of the effects of lifestyle, pharmacologic, and surgical interventions. The evidence-based approach of *Pediatric Obesity: Etiology, Pathogenesis, and Treatment* provides a comprehensive and invaluable guide for all healthcare providers concerned with the evaluation and care of children with nutritional and metabolic disease and with the societal implications of the obesity epidemic.

Regular physical activity is proven to help prevent and treat noncommunicable diseases (NCDs) such as heart disease, stroke, diabetes and breast and colon cancer. It also helps to prevent hypertension, overweight and obesity and can improve mental health, quality of life and well-being. In addition to the multiple health benefits of physical activity, societies that are more active can generate additional returns on investment including a reduced use of fossil fuels, cleaner air and less congested, safer roads. These outcomes are interconnected with achieving the shared goals, political priorities and ambition of the Sustainable Development Agenda 2030. The new WHO global action plan to promote physical activity responds to the requests by countries for updated guidance, and a framework of effective and feasible policy actions to increase physical activity at all levels. It also responds to requests for global leadership and stronger regional and national coordination, and the need for a whole-of-society response to achieve a paradigm shift in both supporting and valuing all people being regularly active, according to ability and across the life course. The action plan was developed through a worldwide consultation process involving governments and key stakeholders across multiple sectors including health, sports, transport, urban design, civil society, academia and the private sector.

Obesity poses one of the greatest public health challenges of the 21st century, creating serious health, economic, and social consequences for individuals and society. Despite acceleration in efforts to characterize, comprehend, and act on this problem, including implementation of preventive interventions, further understanding is needed on the progress and effectiveness of these interventions. *Evaluating Obesity Prevention Efforts* develops a concise and actionable plan for measuring the nation's progress in obesity prevention efforts--specifically, the success of policy and environmental strategies recommended in the 2012 IOM report *Accelerating Progress in Obesity Prevention: Solving the Weight of the Nation*. This book offers a framework that will provide guidance for systematic and routine planning, implementation, and evaluation of the advancement of obesity prevention efforts. This framework is for specific use with the goals and strategies from the 2012 report and can be used to assess the progress made in every community and throughout the country, with the ultimate goal of reducing the obesity epidemic. It offers potentially valuable guidance in improving the quality and effect of the actions being implemented. The recommendations of *Evaluating Obesity Prevention Efforts* focus on efforts to increase the likelihood that actions taken to prevent obesity will be evaluated, that their progress in accelerating the prevention of obesity will be monitored, and that the most promising practices will be widely disseminated.

Understanding the relationship between energy balance and obesity is essential to develop effective prevention programs and policies. The International Agency for Research on Cancer convened a Working Group of world-leading experts in December 2015 to review the evidence regarding energy balance and obesity, with a focus on low- and middle-income countries, and to consider the following scientific questions: (i) Are the drivers of the obesity epidemic related only to energy excess and/or do specific foods or nutrients play a major role in this epidemic? (ii) What are the factors that modulate these associations? (iii) Which types of data and/or studies will further improve our understanding? This book provides summaries of the evidence from the literature as well as the Working Group's conclusions and recommendations to tackle the global epidemic of obesity.

This volume examines the causes and consequences of increasing rates of obesity and overweight among children. In addition, it reviews specific policies and programs aimed at reducing obesity and overweight and the related health problems that result. Contents: *Introducing the Issue*, Christina Paxson and Elisabeth Donahue (Princeton University) *Childhood Obesity: Trends and Potential Causes*, Patricia M. Anderson (Dartmouth College) and Kristin F. Butcher (Federal Reserve Bank of Chicago) *The Consequences of Childhood Overweight and Obesity*, Stephen R. Daniels (University of Cincinnati College of Medicine and Cincinnati Children's Hospital Medical Center) *Treating Childhood Obesity and Associated Medical Conditions*, Sonia Caprio (Yale University School of Medicine) *The Role of Built Environments in Physical Activity, Eating, and Obesity in Children*, James F. Sallis (San Diego State University and Robert Wood Johnson Foundation) and Karen Glanz (Emory University) *The Role of Child Care Settings in Obesity Prevention*, Mary Story and Karen Kaphingst (University of Minnesota and Robert Wood Johnson Foundation), and Simone French (University of Minnesota) *The Role of Schools in Obesity Prevention*, Mary Story, Karen Kaphingst, and Simone French *Markets and Childhood Obesity Policy*, John Cawley (Cornell University) *The Role of Parents in Preventing Childhood Obesity*, Ana C. Lindsay, Juhee Kim, and Steven Gortmaker (Harvard School of Public Health), and Katarina M. Sussner (Harvard Graduate School of Arts and Sciences)

Obesity is one of the biggest public health challenges in the 21st century. Devising effective policy and practice to combat childhood obesity is a high priority for many governments and health professionals internationally. This book brings together contributors from around the world and showcases the latest evidence-based research on community and policy interventions to prevent unhealthy weight gain and improve the health and well-being of children. The authors highlight from the evidence available what is and what is not effective and provide recommendations on how to implement and evaluate promising interventions for obesity prevention. This book is an essential read for all public health practitioners, early childhood professionals, health care providers and clinicians working to reduce the prevalence of childhood obesity in their communities. Due to the resultant health consequences and considerable increase in prevalence, obesity has become a major worldwide health problem. "Obesity and Lipotoxicity" is a comprehensive review of the recent researches to provide a better understanding of the lipotoxicity-related mechanisms of obesity and the potential for the development of new treatment strategies. This book overviews the biochemical pathways leading to obesity-related metabolic disorders that occur subsequent to lipotoxicity. Chapters examine the deleterious effects of nutrient excess at molecular level including the cellular and molecular aspects of breast cancer, resistance to leptin, insulin, adiponectin, and interconnection between the circadian clock and metabolic pathways during high-fat feeding. "Lipotoxicity and Obesity" will be a useful resource for clinicians and basic science researchers, such as biochemists, toxicologists, immunologists, nutritionists, adult and pediatric endocrinologists, cardiologists, as well as students who are thought in this field.

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