

Foreword

Recent estimates indicate that worldwide about three quarters of a billion people are obese, and that by 2025 approximately one in five of all adults will be obese. Many more adults are and will be overweight. This trend is accompanied by a major disease burden, including diabetes, cardiovascular disease, and cancer. Characterizing the increased risk of cancer among individuals who are overweight or obese is one of the major successes in etiological cancer research in the past two decades. The global cancer burden in 2012 associated with high body mass index was estimated to be 481 000 cases, translating to 3.6% of all new cancers in adults. The contribution was greater in women than men and in countries with very high and high Human Development Index. A recent IARC report (Lauby-Secretan et al., *N Engl J Med.* 2016; 375(8):794–8) concluded that there was sufficient evidence for a cancer-preventive effect of avoidance of weight gain for 13 different types of cancer.

Describing the problem is an important step, but it is not enough. While knowledge of the risks has progressed, there is far less progress in understanding how to combat the problem. For some populations the challenge is to reverse an existing problem, whereas other populations still have the opportunity to avoid repeating the changes in patterns that have occurred elsewhere. To inform these efforts, several important research gaps are evident, including: better characterizing the drivers of overweight and obesity (energy balance, dietary composition, physical inactivity, social environment, marketing and pricing of unhealthy foods, etc.); understanding the mechanisms by which these factors act and thus how they may be countered; elucidating the health effects of overweight and obesity at different times in the life-course; and the stark need to develop and evaluate behavioural and policy interventions to prevent or reverse overweight and obesity at all ages.

This IARC Working Group Report summarizes and evaluates the available scientific evidence on what is driving the obesity epidemic. The report reviews the important characteristics of a healthy diet, the biological and physiological pathways modulated by dietary components, and the effects of physical activity. The major impacts of the food environment, marketing of unhealthy foods, and urbanization are also highlighted. All the evidence points to the requirement for a multi-sectoral approach to reverse the rise in the prevalence of obesity in all age groups and in all populations. There can be few greater challenges to public health in the coming decades.

The intention of our Agency is that this volume will provide a valuable scientific evidence base for the next steps in research and for the subsequent translation of research into policy by other national and international bodies.

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