



Obesity at an Early Age and Its Impact on Child Development

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Topic

Obesity

Introduction

Obesity has become a pandemic, with more than a billion people affected worldwide.¹ Over the past 30 years, the prevalence of overweight children, defined as those having a body mass index (BMI) greater than the 85th percentile for age and sex, has tripled.² More than 30% of children in the United States are overweight or obese (BMI > 95th percentile).³ Data from the International Obesity Task Force indicate that 22 million of the world's children under five years of age are overweight or obese.⁴ Obesity has replaced malnutrition as the major nutritional problem in some parts of Africa, with overweight/obesity being as much as four times more common than malnutrition.⁵

Subject

Childhood obesity results from a failure of the body's self-regulatory system to modulate environmental influences relative to the person's genetic background. Various factors involved in the complex genetic-environment interactions that cause obesity will promote long-term positive energy balance. Results from longitudinal studies suggest that a modest chronic energy imbalance, which is difficult to detect by current methods of measuring energy intake and expenditure, is likely the ultimate cause of obesity.⁶ It is likely that changes in the environment (i.e. nutrition and lifestyle) are primarily responsible for the current epidemic of obesity because it is not possible for the gene pool to change in less than a generation.

Problems

Obese children are exposed to weight stigma and may be vulnerable to psychological effects, such as depression, and social effects, such as isolation.⁷ Consequences of bias, such as isolation or social withdrawal, could contribute to the exacerbation of obesity through psychological vulnerabilities that increase the likelihood of over-eating and sedentary activity. It is clear that bias, prejudice and discrimination are part of everyday life for these overweight children. In addition, as the incidence of childhood obesity has increased, more consequences of obesity in children, including obstructive sleep apnea, orthopedic problems, hyperandrogenism, type 2 diabetes and cardiovascular disease, have also been identified.

Research Context

Children who develop the above-mentioned conditions track them into adulthood, thus increasing both their medical burden on society and their risk of early morbidity and mortality.⁸ Thus, the present research context is mainly related to obesity prevention. Indeed, the health of these children depends on a whole series of factors – not just biological, but also psychological and social. These factors act together in synergy to either strengthen or weaken one another. In this context, research involves considering all the determining factors that affect development. It means seeking to understand the fundamental causes of problems, how they interrelate and their many impacts on individuals and the community. Above all, it also involves bringing about changes in attitudes and practices.

Key Research Questions

A thorough understanding of weight stigma and its impact may be important to document the social and psychological consequences of obesity in children, and may be central to revealing the totality of effects of excess weight on health and well-being. From a biological perspective, factors that affect energy balance are of particular interest in order to better understand body weight regulation and propose strategies that might have a beneficial influence on obesity management.

Recent Research Results

Results in rodent studies are consistent with observations that breastfeeding in humans may be protective against childhood obesity.⁹ Possible mechanisms for this protective effect include metabolic programming or early learned self-regulation of food intake.¹⁰ Infants who were bottle-fed before three months of age consistently had higher BMIs and skinfold thickness during early childhood than infants who were breastfed longer than three months.¹¹ Nonetheless, all of the studies examining the protectiveness of breastfeeding have concluded that environmental and genetic factors, such as maternal weight and socioeconomic status, also play a role in the development of obesity in childhood.¹²

Conclusions

Prevention of obesity in children should be the first line of treatment. In 2003, the American Academy of Pediatrics (AAP) issued a policy statement on preventing pediatric overweight and obesity. The statement recommended health supervision and advocacy to prevent obesity in children. The AAP stated that pediatricians should become adept at recognizing children at risk for obesity, calculate and plot BMI at all visits, use changes in BMI to identify excessive weight gain, and monitor for comorbidities associated with obesity. Additionally, the AAP stated that pediatricians should encourage, support and protect breastfeeding, promote healthy eating habits, promote physical activity, and recommend limitation of television viewing. The policy statement also encouraged pediatricians to become advocates for the prevention of obesity by identifying and targeting influential people for education on obesity and by directing funding toward the prevention of obesity in children. In practical terms, the best treatment strategy seems to be a multidisciplinary approach to the problem involving different specialists from all

fields. Additionally, frequent follow-up of patients with obesity is absolutely necessary for success.

Implications

The modest effects of past health education interventions have increased interest in environmental and policy approaches to increase physical activity, decrease sedentary behaviour and/or reduce dietary energy intake to prevent obesity. These approaches attempt to alter the social, regulatory or physical environments resulting in individuals adopting more healthful behaviours, whether or not they are aware of their decisions to adopt those behaviours. Environmental and policy approaches may be particularly attractive for helping to shape child behaviours because (1) children spend a large part of their days in a relatively small number of settings that are susceptible to environmental and policy changes (e.g. home, school, transportation to/from school, child care and after-school programs); (2) children are often considered unable to make responsible behavioural decisions for themselves; and (3) presumed child vulnerabilities justify both preemptive and remedial protective actions by parents, institutions and policy-makers. Environmental and policy solutions designed to prevent obesity at an early age are enticing to many policy-makers at all levels of society, from parents to international agencies. However, implementing new strategies and policies without evidence of efficacy or effectiveness may lead to large investments of resources, effort and time that may or may not result in any benefits.

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