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Childhood Obesity: Application of dietetics and nutritional science

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INTRODUCTION

Despite being a worry for several decades, excess weight in childhood and adolescence remains one of the most critical challenges in world health. According to recent estimates, 40 million children under the age of five and over 330 million children and adolescents aged five to nineteen were overweight or obese in 2016. Obesity or being overweight as a youngster has serious short- and long-term implications. Children who are overweight or obese are more likely to develop psychological comorbidities such as depression, anxiety, low self-esteem, a variety of emotional and behavioural disorders, asthma, low-grade systemic inflammation, liver complications, and musculoskeletal problems, particularly in the lower extremities, in the short term. Overweight and obese children are more likely to develop metabolic and cardiovascular risk factors, such as high blood pressure, dyslipidaemia, type 2-diabetes, and other cardiovascular abnormalities. Overweight or obesity in childhood raises the risk of grownup cardiovascular disease, diabetes, several malignancies, and musculoskeletal issues, which can lead to disability and premature mortality. Furthermore, adult obesity is difficult to treat, with studies indicating that roughly three-quarters of children who are overweight or obese continue to be so as adults. Because of the high persistence of overweight status and the low efficacy of currently available treatments, it is critical to prevent overweight and obesity as early as possible in childhood. Increased caloric intake, which often includes a disproportionate quantity of refined carbohydrates and/or processed foods (raising insulin release and fat storage), and decreased physical activity are both known to contribute to weight gain. Environmental, behavioural, biochemical, and genetic variables all contribute to weight increase and their interactions have resulted in the current global obesity epidemic. Other variables that contribute to childhood obesity include maternal health during pregnancy, an obese intrauterine environment, and rapid weight changes throughout infancy. Furthermore, the expanding 'obesogenic' environment increases children's inclination to consume high-calorie, energy-dense, or low-nutrient foods and beverages, as well as promoting sedentary lifestyles through reduced possibilities for active movement in daily lives. The globalised market and commercial interests that favour the production and distribution of inexpensive, energy-dense foods and beverages, as well as a lack of political will to address the economic causes of the obesity epidemic, which include a strong association with socioeconomic inequalities, are key drivers of the rapidly increasing worldwide occurrence of obesity and diabetes across populations. Obesity is more common in impoverished and marginalised communities in high-income environments than in those with greater socioeconomic status. In certain, but not all, low and middle-income countries, higher obesity prevalence is reported in groups with higher socioeconomic status. Genome-wide association studies have been utilised to uncover genetic markers that enhance predisposition to weight gain throughout the last decade, with the goal of elucidating the molecular pathways that lead to obesity. Heterogeneity in obesity phenotypes, such as distinctive metabolic profiles and increased central body adiposity, is also caused by genetic and epigenetic factors. To combat the childhood obesity pandemic, multi-sectoral initiatives will be needed to ensure fair access to economic resources, education, nutritious food, and urban environments, as well as universal health coverage. Most significantly, entities such as the government, civil society, academia, the commercial sector, and other key stakeholders must demonstrate greater political will and accountability to lead initiatives to encourage the development of and access to a healthier environment for all.