

Overweight and Obesity in Children

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Abstract

Childhood, overweight and obesity are increasingly significant problems, and ones that are likely to endure and to have long term adverse influences on the health of individuals and populations unless action is taken to reverse the trend. A number of factors have been suggested as contributing to the development of childhood obesity. These include genetic factors, decreasing levels of physical activity, increased time spent in sedentary behavior and changes in diet. In addition, lifestyle factors, including family influences, changes in society and media advertising, have been associated with the increasing incidence of obesity and overweight in childhood. To address the problem, health care professionals should incorporate appropriate screening in their child practice. Comprehensive assessment of children who are, or who are at risk of becoming, obese is also necessary.

Overweight and Obesity

Overweight and obesity are defined as abnormal or excessive fat accumulation that presents a risk to health. A crude population measure of obesity is the body mass index (BMI), a person's weight (in kilograms) divided by the square of his or her height (in meters). A person with a BMI of 30 or more is generally considered obese. A person with a BMI equal to or more than 25 is considered overweight.

Overweight and obesity are major risk factors for a number of chronic diseases, including diabetes, cardiovascular diseases and cancer.

Overweight is a significant contributor to health problems. It increases the risk of developing a number of diseases including: Type 2 (adult-onset) diabetes, High blood pressure (hypertension), Stroke (cerebrovascular accident or CVA), Heart attack (myocardial infarction or MI), Heart failure (congestive heart failure), Cancer (certain forms such as cancer of the prostate and cancer of the colon and rectum), Gallstones and gall bladder disease (cholecystitis), Gout and gouty arthritis, Osteoarthritis (degenerative arthritis) of the knees, hips, and the lower back, Sleep apnea (failure to breath normally during sleep, lowering blood oxygen), Pickwick an syndrome (obesity, red face, under ventilation, and drowsiness).

Overweight and Obesity in Children

Obesity is the most prevalent nutritional disorder among children and adolescents in the United States. Approximately 21-24% of American children and adolescents are overweight, and another 16-18% is obese; the prevalence of obesity is highest among specific ethnic groups.

Childhood obesity predisposes to insulin resistance and type 2 diabetes, hypertension, hyperlipidemia, liver and renal disease, and reproductive dysfunction. This condition also increases the risk of adult-onset obesity and cardiovascular disease.

A Review of the Literature

Kimm describes childhood obesity as an 'emerging pandemic of the new millennium'. There has been a marked increase in the incidence of obesity in children in the UK over the past 20 years [1].

Wilson [2] Centre for Reviews and Dissemination [3] with Caroli and Lagravinese [4] suggesting that the prevalence of obesity in children and adolescents has doubled and that of overweight children and adolescents has shown an increase of up to 50%.

In the USA, obesity is now estimated to affect 20-25% of children

and adolescents [5]. It is a worldwide concern [6] with the United Kingdom [7], Italy [8], New Zealand, South America, Japan and India among the countries in which a need for intervention has been identified [9].

Childhood overweight and obesity are now considered to be major public health problems [10].

The increasing prevalence has health consequences likely to adversely affect the lives of a high proportion of the population both in childhood and adulthood. This will represent a significant drain on health care resources if action is not taken to reverse the trend and to assist children and young people who are overweight or obese to improve their health [11].

If childhood overweight and obesity are to be addressed, they must be defined and diagnostic criteria set to enable health care professionals to identify those who are at risk or affected. Despite the increasing number of children described as overweight or obese, there is a lack of a rigorous scientific definition of these terms and lack of clarity over how they should be assessed [12].

Cole et al. use the principle of the adult BMI cut-off of 30 to be indicative of obesity and 25 as indicative of overweight, and have calculated percentile figures from these for children to estimate overweight or obesity. Thus, as well as using cut-offs in accordance with a percentile measure, it is consistent with the adult definitions of overweight and obesity [13].

Cole et al.'s [14] tool is considered to be a reasonably accurate measure of obesity or overweight in children aged from two to six [15].

The most common internationally accepted definition of childhood overweight and obesity is that described by Cole et al. (See Figures 1 and 2). Rolland-Cachera [16] suggests that in addition to identification of a child's current BMI, the use of a predictive BMI curve to identify

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the development of obesity even when this is not clinically visible may be helpful to allow early intervention in children who are at risk of becoming obese [17].

Tremblay and Willms and Giugliano and Carneiro suggest a link between physical inactivity and obesity and Vandewater et al. found that heavier children generally spent more time in sedentary activities [18].

However, levels of physical activity are hard to measure in adults and even more problematic in children due to their more complex and multidimensional activity patterns [19].

Moore et al. used a device that children wore to record total physical activity levels, and thus, unlike some measures, included organized activity and incidental activity (although the device had to be removed for swimming or bathing) enabling them to more accurately measure children's total activity [20].

In Europe, there is scant evidence to support links between television viewing and obesity, but food advertising has been shown to be most frequent during children's peak television viewing hours and, among these, cereal, confectionery and savory snacks account for 60% of all food advertising [21]. Jeffrey et al. suggest that exposure to adverts for foods of poor nutritional value increases children's requests for and purchase of them [22].

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