



Obesity in Children: Symptoms and Complications

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Authors' contributions

This work was carried out in collaboration between both authors. Both authors read and approved the final manuscript.

Article Information

DOI: 10.9734/JPRI/2021/v33i60B34640

Open Peer Review History:

This journal follows the Advanced Open Peer Review policy. Identity of the Reviewers, Editor(s) and additional Reviewers, peer review comments, different versions of the manuscript, comments of the editors, etc are available here: <https://www.sdiarticle5.com/review-history/80111>

Review Article

Received 15 October 2021
Accepted 20 December 2021
Published 22 December 2021

ABSTRACT

We aim to review the causes, symptoms, and treatment for obese children. And what does an obese children problems the effect and problem? We can say complicated condition in which our body weight is more than desired weight according to height, weight, and age. Obesity is characterized differently for children and teenagers than it is for adults. Male child and Female children develop at various rates, and children are still growing. This condition leads to a higher risk of getting other dangerous diseases like DM, HTN, etc. Childhood is the right time to pay attention; otherwise it will lead to obese adolescents and adults. Facts from different articles was amalgamated and shown in a simplified fashion, with the year of publication, the age of the children, sample size, study design, and study conclusions all taken into account. The key finding of this review was obesity is a major topic of concern today, especially in childhood. The lifestyle we have adapted in the present generation is more luxurious and physically less active. Obesity is the primary cause of a lot of diseases like diabetes mellitus, hypertension, thyroidism, even in younger children

This review article thoroughly covers a lot of ground, with references provided. It is a collection of various case studies that have been completed. As a result, this essay will only include essential information if anyone reads it. Childhood Obesity is a word used to describe a youngster who is considerably overweight for their age and height. Childhood obesity can lead to diabetes, high blood pressure, and high cholesterol.

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Keywords: Obesity; underweight; BMI; Socio-economic.

1. INTRODUCTION

Obesity is described as having too much physical fatness of the body because direct measurement of fat of the body is complex, the body mass index (BMI), a widely used scientific tool for assessing whether a person is underweight, normal weight, overweight, or obese, is usually used to assess obesity.

1.1 BMI (Body Mass Index) and a Healthy Weight (BMI)

Because it assesses weight in relation to height, the BMI is a helpful tool for public health. It is an important tool for public health, even if it isn't a perfect indicator of obesity. A BMI of 18.5 to 24.9 is considered normal for adults [1]. Adults with a BMI of 25.0 to 29.9 are overweight, obese adults with a BMI of 30 or more are obese, and extremely obese adults with a BMI of 40 or more are extremely obese.

There are different BMI categories for all age groups, children and teenagers also have variable due to difference in their build up and mass of body due to difference in their growth and development.

1.2 What is the Definition of a Healthy Weight?

Even with precise measurements, assessing a toddler's healthy weight is difficult. Because a body mass index (BMI) in the obese or overweight range typically, but never always, suggests that a kid is more at risk for health problems, BMI is frequently employed as a screening tool [2]. When assessing a kid's general well-being and growth, an assessment and other signs must be taken into account. Obesity is characterized differently for children and teenagers than it is for adults. Male child and Female child develop at various rates, and children are still growing. Doctors are being educated by the American Academy of Pediatrics, in partnership with the rest of the medical community.

1.3 Obesity in Children

Obesity is becoming more prevalent in children. It usually starts between the ages of 5 and 6 and during adolescence. Obesity screening for toddlers should begin at the age of two, according to child health specialists. They should

be directed to weight-loss programmes if necessary.

1.4 Children's Growth Measurement

Your paediatrician may have mentioned your child's Percentiles are used to calculate the weight. Weight-for-age percentiles are commonly used by doctors to measure your child's growth based on their weight. It makes no allowance for a child's height. This isn't a way to figure out how old you were when you were born. Obesity (or being overweight) is a measurement of development in children from the same age group [3]. To get your children's mass 50%, use the formula below find their age at the bottom of that list and look to the left for their body composition. Once you've figured out how much they weigh, Using a pen or pencil, draw the point on the graph. After you've determined child's weight-for-age %tile, you'll need to figure out which percentile (or percentile range) they fall into when compared to other kids their age. If your child's weight is in the 95th percentile, for example, it signifies that they are heavier than 95% of other children their age [4].

2. SYMPTOMS

Overweight does not mean obese. Every other person has different body built up some have large some have small in comparison to each other. Children's body fat levels vary during different stages of development. As a result, based on how your child seems, you may not be able to identify if his or her weight is a health risk. The body mass index (BMI), which provides a guideline of weight in relation to height, is the standard measure of overweight and obesity. To evaluate if your child's weight creates a health risk, your child's doctor can utilise growth charts, the BMI, and other testing, if necessary.

2.1 When Should You see a Doctor?

If a kid is gaining weight which is not normal as per his age, you should consult with doctor. He will assess his weight, height, age and can tell if he is getting obese or there is something thing else which is causing problem or why the kid is gaining weight [5].

2.2 Causes

Sedentary lifestyle like watching movies, series all the time in our beds with less physical work is

the main cause. On addition to this eating habits like junk food oily food which is not healthy at all.

2.3 Factors that are at Risk

Many factors, most of which act Raise money in concert your child's chance of becoming overweight. Tide. Eating increased-oily items on a daily basis, such as food court, ovened goods, and cold machine snacks, might leaad to weights growth in your cchild. sugar can pops and cake can also cgive its contribution to incresed weight and there is growing evidence that sweetened drinks, such as sweet juices and soda drinks, are the causes for some people's fatness. Withdrawal of physical work [6]. Kids who don't work out regularly are at more risk of obesity comparison to who do regularly play outdoor games such as cricket, basketball, which involves muscle work. Factors related to the family. If your kid comes from a family of fat peoples, they are more prone to increase fat. This is principally true in a civilization where dense oiled foods are willingly present and body mechanics is absent. Mental aspect : in today's scenario stress is also a factor [7]. Sometimes people eat junk food which give them temporary relief to cope up with stress. It can be of any type like personal stress, family problem setc. Factors of a socioeconomic nature. Some people are so busy that they dodon't have time to prepare healthy meal. They try to have readily available food such ads packed and canned food which is very un healthy and can be one of the reason for obesi. Some drugs. Sometimes medicine can also cause obesity as one of its side effect in some people [8]. Prednisone, lithium, amitriptyline, paroxetine (Paxil), gabapentin (Neurontin, Gralise, Horizant), and propranolol (Propranolol) are among them (Inderal, Hemangeol).

3. COMPLICATIONS

Obesity in children can have a negative impact on a child's physical, social, and emotional well-being.

3.1 Difficulties the Body

Fatness in children can lead to physical issues such as Diabetes type 2. The way your child's body uses sweet is affected by this chronic illness (glucose). Obesity and a sedentary lifestyle make type 2 diabetes more likely. Hhigh HTN pressure and cholesterol. There is increased chances for these diseases to occur.

These variables can contribute to plaque formation in the arteries, which can constrict aand stiffen the vessels of blood, potentially resulting in a Mayocardial infarction or stroke later in life. Joint aches and pains. Lower part of our body is at more stress on gaining weight. It will lead to many problems in knees and hips along with back. dypsonea difficulties. Asthama is more prone to the kids who are fat [9]. The kids are also more prone to develop obstructive sleep intermission, a most life-threatening condition in which breathing is discotinued and this continues frequently during sleep. Quasi steatosis results in fatty liver disease (NAFLD). This illness, which usually has no manifestation, causes fatty deposits to form in the liver. Bruising and damage to the liver can result from NAFLD.

4. EFFECT OF SOCIO-ECONOMIC INTERACTIONS

According to a new study, children who are overweight when they first start school struggle in their interactions with their peers a few years later. A study conducted by the University of Adelaide found that by the time the children were eight or nine years old, their parents were 15% more likely to describe them as lonely or teased. Their teachers were also 20% more likely to indicate that the kids were having emotional issues. Over 1/3ird of grown up individuals in the US of kingdom are corpulent as claimed by the Centers for Disease Control and Prevention. Corpulent defined by the CDC as having a BMI of 30 or higher. In simple words, aa individual 5' 4 inches height who measures 174 pounds or more is obese; a person 5'9 inches tall who measures 203 pounds or more is obese. A study has been done on effect of obesity on socioeconomic development and position which included sixtey seven nation from tje world. They used different criteria such as weight, education, height, occupation, age. There is a discernible relation between obesity and socioeconomic status. Low economic countries in a better socioeconomic status has mre obesity. On contrast to this high economic countries and high socioeconomic status people has less obesity. Why the change of heart? High socioeconomic status people in LES do less physical work and has bad earing habits. Individuals with a higher socioeconomic status, on the other hand, may respond with good food and frequent exercise in higher-income countries. While economic progress improves health, "issues of starvation are replaced with over eating problem n that impact SES groups differently," the scientists

concluded. However, certain emerging nations, for example India, continue to experience increased ranks of undernourishment and overweight. What makes having a lofty socioeconomic status in a lofty income country advantageous for maintaining a healthy weight? A fact declared in the *Sociology of Health and Illness* looked at the relationship between weight and lifestyle, utilising data from 17 countries, predominantly in Europe. Reading, visiting rational activities, and going to the cinemas were all linked to a reduced BMI almost as much as exercise, according to the study. Individuals who involved in events such as seeing television, visiting playing activities and browsing on the other hand, had an increased BMI [10]. Economically rich nations, such as those in Western Europe, showed the utmost harmony style. The writer recommended that different sedentary pursuits are "connected with body weight through a probable shared root to—cultural tastes that in part separate Socioeconomic status-associated group membership" when discussing how they could be linked to varied weights.

Other researchers eyed at how SES is connected to obesity the conversion to early adulthood in the United States of America in a study published in *Demography*. They discovered a more complex relationship. For example, men who born in low Socioeconomic status but at present they work in lower-status positions were virtually as probably to be overweight as those who brought up in working-class families but now work in lower-status work. Race had an impact on women's relationships. When it came to pale skin, all SES levels had a higher risk of obesity than the most privileged. When comparing black women from working-poor homes with lower-status employment to those from more affluent house families, only those from working-poor households were at a higher risk of obesity. On compiling, these studies suggest that factors that raise the probability of obesity have distinct effects on different sociopolitical groups, and that obesity disparities between socioeconomic groups can harm health and decrease lifespan for the people who are at majority loss.

4.1 Additional Immediate Health Hazards

Childhood fatness can affect the body in a variety of ways. Obese children are more prone to get diabetes. HTN and cholesterol both of them are CVS disease danger elements. Impaired

sweet tolerance, insulin resistance, and type 2 diabetes are all danger elements. Asthma and sleep apnea are examples of breathing issues. Musculoskeletal discomfort and joint issues. Consternation and depression are examples of psychological problems. Low self-esteem and a lower standard of life as reported by the single person. Intimidating and disgrace are examples of social issues. More sleep and less screen time. Set a positive example for others [11]. Become a good example for your kid is one idea to inculcate good habit in them. Children learn by watching their mother father grandparents and people in their surrounding whom they meet on daily basis. You yourself should have a proper eating habit and time so that your child can also inherit this by seeing you. Instead of watching series movies or using the internet, put a better example by going by using your legs on walk or a bicycle. Playing at the garden or going swimming with your kids demonstrates to them that being active is enjoyable, and it's a terrific opportunity for you and your brood to spend time together. The whole family should change dietary pattern so that child can also adapt the pattern. If you do something as a family, physical activity may be more interesting to your child. Become more active. There is a myth that overweight kids need to exercise more than leaner kids, but the fact is that there is no need of doing so. For excellent health, all children should try to get at least 60 minutes of physical activity per day, but this does not have to be done all at once. A series of brief 10-minute or even 5-minute bursts of action spread throughout the day can be just as beneficial as an hour-long stretch. It can take the shape of physical play for younger children, such as ball games, chasing games like "it" and "tag," riding a scooter, and swinging on playground swings. Riding a bike, skating, walking to school, skipping, swimming, dancing, and martial arts are all options for older youngsters. Walking or cycling short distances rather than taking the car or bus is a terrific option for the whole family to get some exercise. You'll also save money. parts that are appropriate for children. Avoid giving your youngster excessively large quantities. Because there isn't much official advice on how much food youngsters need, you'll have to rely on your own judgement. Starting meals with minimal portions and allowing your youngster to ask for more if they're still hungry is a smart rule of thumb. Make an effort not to force your child to eat everything on their plate or to eat more than they desire [12]. Also, using adult-size plates for younger children encourages them to eat

disproportionately large portions. Motivate your kids to eat slowly with chewing the food properly and always eat on a fixed time. Explain to your child how to use the Eatwell Guide to attain the correct balance in their diet. It displays how much of each food type they should consume. Learn more about what constitutes a healthy diet. It's helpful to know how many calories are in various foods.

4.2 Childhood Obesity Prevention

According to the World Health Organization, childhood obesity is one of the most important public health issues of the twenty-first century. Obesity prevention in children is critical, especially since we know how difficult it is to manage obesity. Obesity prevention strategies include Increasing fruit and vegetable consumption. Reducing the amount of time spent watching television. Excessive food consumption is frequently caused by eating while watching television. Children are influenced by television advertising to eat fast food. Consume less sugar. Sugar is now referred to as the "new tobacco," and it must be consumed in moderation by people of all ages. Instead of sugary drinks, water is recommended. Encourage people to engage in labour activity which include physical work. Due to a lack of time and academic constraints, it is difficult to ensure that youngsters live active lives. Parents should encourage young children participate in physical activity and older children to engage in sixty minutes of daily intense physical activity.

4.3 Pharmacological Treatments that aren't included in the above list

As per the prevalence of paediatric obesity is continuously climbing in the United States, there is increase in number of people who are interested in the treatment options accessible through pharmacotherapy. Previously, sibutramine was thought to be a possible treatment for children because of its capacity to increase satiety and/or increase the use of energy via thermogenic effects. With daily dosages of 5 to 15 mg, teenagers data suggested a 1 to 4 kg/m² reduction in BMI compared to placebo or baseline. [53–58] However, the FDA recommended that Abbott's Labs removed sibutramine from the market on October 8, 2010, citing concerns about increased cardiovascular events in the Sibutramine Cardiovascular Outcomes (SCOUT) experiment [13].

There is insufficient data on the usage of GNRH hormone, octreotide, and topiramate in obese children, despite the fact that they are not FDA-approved. In children with Prader-Willi syndrome, the use of growth hormone (Genotropin, Pharmacia and Upjohn Co., New York, NY; Omnitrope, Sandoz, Inc., Princeton, NJ) has been linked to a reduction in fat of body % and weight loss. [61,62] Adult studies, on the other hand, have yet to produce results [14-24].

5. CONCLUSION

This article is now being discussed by my mentor and me. The focus of this study is obesity in children. It also includes information on the treatment of an issue as well as the fatality rate. This is a review article that covers a lot of ground in a thorough manner, with references provided. It is a collection of several case studies that have been completed. So, if someone reads this article, it will be brief information with a reference to the full text if necessary. This article also refers to persons who are on the verge of losing their health.

CONSENT

It is not applicable.

ETHICAL APPROVAL

It is not applicable.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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Peer-review history:

The peer review history for this paper can be accessed here:
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