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## Childhood obesity and the role of physical education

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### Abstract

The term overweight and obesity often are used interchangeably, but technically they have different meanings. Overweight is defined as a bodyweight that exceeds the normal or standard weight for a particular person based on height and frame size. Obesity refers to the condition of having an excessive amount of body fat. Men with more than 25% body fat and women with more than 35% should be considered obese. Body mass index, or BMI, is a widely used screening tool for measuring both overweight and obesity. BMI percentile is preferred for measuring children and young adults (ages 2–20) because it takes into account that they are still growing, and growing at different rates depending on their age and sex. Health professionals use growth charts to see whether a child's weight falls into a healthy range for the child's height, age, and sex. Now a day, Childhood obesity is a great health problem all over the world. India is a country, where child malnutrition rates still remain high in many states at the same time childhood obesity is another growing health problem. Childhood obesity has immediate and long term impacts on physical, social and emotional health. Children with obesity are higher risk for having other chronic health conditions and diseases that impact physical health such as asthma, sleep apnea, bone and joint problems, type two diabetes and heart diseases. The role of physical education plays a significant role to control childhood obesity.

**Keywords:** Obesity, overweight, childhood, health, ailments, BMI and physical activity

### Introduction

From the very beginning physical education has been considered as an integral part of education and it plays an important role in human development and creation of healthy society. Our ancient *Gurukul* system was the best example where the student used to learn various skills, tactics, weapon fighting, yoga along with learning's to science mathematics, and literature. Those ancient seers rightly have told "*Sariram Adyam Khalu Dharam Sadhanam*" means first we should give prior importance to our body or physique so that we can physically, mentally, socially and emotionally fit and became a well-balanced person in the society. Our modern programme of physical education believes in the same and thus it provides knowledge, skills, and behavior to achieve and developing their physical, mental, social, and emotional health. Physical education not only addresses the acquisition and refinement of motor skills for athletic competition, but also the development and maintenance of fitness, optimal health and wellness. The modern programme of physical education focuses on the importance of healthy lifestyle and physical activities in the lives of individuals and groups in society. With the advancement of modern science and technology man has become more lethargic who depends upon machines and remains less involved in physical activities which has resulted in ones suffering from hypo kinetic disease, obesity, cardio vascular diseases and other ailments. Presently the Childhood Obesity has posed itself as a matter of serious concern on a global scale. Hence, I felt it most apt and quite befitting to explain the problem of obesity in children that has given to the signal to have a diseased and deformed generation in near future.

Childhood obesity seems to have acquired the status of a growing epidemic not only in India but also all over the world. Somewhere between 5.74 percent and 8.82 percent of school children in India are obese. In urban south India, 21.4 per cent boys and 18.5 per cent girls aged 13-18 are either overweight or obese. Today, more and more children are being diagnosed with diabetes, hypertension and other co-morbid conditions associated with obesity. It has been seen that the average child today spends less time in physical activities than the children used to do ten, fifteen and twenty years ago. An easy access to computers, televisions

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and video games of modern days has drastically changed the children's activities. Children's of our present society show a sort of disinclination in overall physical activities. Over the past few decades, dietary patterns have changed significantly. The average amount of calories consumed per day has dramatically increased (particularly in city life in India). The present topic not only focuses on its cause and prevention but also tries to state how physical education programme can help to manage childhood obesity and create a healthier generation.

### Meaning and Definition of Obesity and overweight:

Obesity is defined as having excess body fat. Overweight is defined as having excess body weight for a particular height from fat, muscle, bone, water, or a combination of these factors. Body mass index, or BMI, is a particular measure widely used to determine both overweight and obesity. BMI percentile is preferred for measuring children and young adults (ages 2–20) because it takes into account that they are still growing, and growing at different rates depending on their age and sex. Health professionals use growth charts to see whether a child's weight falls into a healthy range for the child's height, age, and sex. Children with a BMI at or above the 85<sup>th</sup> percentile and less than the 95<sup>th</sup> percentile are considered overweight. Children at or above the 95<sup>th</sup> percentile have obesity. BMI is calculated by dividing a person's weight in kilograms by the square of height in meters.

$$\text{BMI} = \frac{\text{Weight (kg)}}{\text{Height}^2 \text{ (m)}}$$

### BMI Table for Children and Teens, Age 2-20

The Centers for Disease Control and Prevention (CDC), USA recommends BMI categorization for children and teens between age 2 and 20.

| Category               | Percentile Range |
|------------------------|------------------|
| Under weight           | <5%              |
| Healthy weight         | 5% - 85%         |
| At risk of over weight | 85% - 95%        |
| Over weight            | >95%             |

For children and adolescents (aged 2–20 years), the BMI value can be determine through the growth charts given by centers for diseases control and prevention (CDC), USA . BMI is the most widely accepted method used to screen for overweight and obesity in children and adolescents

- Overweight is defined as a BMI at or above the 85th percentile and lower than the 95th percentile.
- Obesity is defined as a BMI at or above the 95th percentile for children of the same age and sex.
- **Underweight:** BMI below the 5th percentile
- **Normal weight:** BMI at the 5th and less than the 85th percentile

### Cause of childhood obesity

Although the causes of childhood obesity are widespread, certain factors are targeted as major contributors.

### Home environment

We all know that traditional family dinners are the best bet to fight childhood obesity. But unfortunately now a day's most of the urban Indian families are nucleus in nature. The

working ladies do not have sufficient time to prepare their meal patterns in their homes and most of the times they are dependent on fast foods.

### Sedentary lifestyle

Physical inactivity of the children has also shown to be a serious cause and children who fail to engage themselves in regular outdoor activities are at greater risk of obesity. Most of the students are spending time doing stationary activities such as playing video games and watching T.V. which are also the major factor of childhood obesity.

### Genetics

Childhood obesity is also often the result of interplay between many genetic and environmental factors. The study shows that 80% of the offspring of two obese parents are obese in contrast to less than 10% of the offspring of two parents who are of normal weight. Science shows that genetics play a role in obesity. It has been proven that children with obese parents are more likely to be obese. Literature says that heredity contributes between 5 to 25 percent of the risk for obesity.

### Dietary system

Soft drinks and fast food consumption definitely contribute to childhood obesity. Now a day a child prefers to take fast foods, sweetened milk or drinks and chocolates which supplements to obesity.

### Medical illness

The Excess amount of cortisol found in child may influence childhood to be a victim of obesity. Hypothyroidism is another hormonal cause of obesity.

### Childhood Obesity and its Effects on health

The medical problems associated with child obesity include such conditions as asthma, Type 2 diabetes, gallstones, heart disease, high blood pressure, liver disorders, menstrual problems, metabolic syndrome, and sleep disorders.

**Asthma:** Asthma is just one of the medical problems with child obesity. Overweight and obese children are at a greater risk for developing asthma than their peers. New studies also show that children with asthma symptoms are more likely to have problems with behavior than children without chronic respiratory problems. The stress of dealing with asthma can lead to behavior issues, such as being nervous and having trouble focusing on tasks. All of these behavior problems can interfere with learning.

**Diabetes:** Type two diabetes was once a condition that only affected the adults. However, this condition has become increasingly prevalent among overweight children and adolescents. The Centers for Disease Control and Prevention (CDC) now estimate that one in three children born in the United States will develop diabetes in their lifetime.

**Gallstones:** The problem of Gallstone is another health hazard. The gallbladder is filled with liquid called bile that is used to help the body digest fats. Gallstones form when this bile hardens into pieces of stone-like material. The risk of developing gallstones is significantly higher in those who are obese.

**Heart Disease:** Atherosclerosis is the most common cause of heart disease, and it can begin as early as childhood and

adolescence. It's the process in which deposits of fatty substances, cholesterol, cellular waste products, calcium and other substances build up along the inner lining of an artery. This buildup, called plaque, affects both large and medium-sized arteries. Atherosclerosis is related to high blood cholesterol and triglyceride levels, which are associated with poor eating habits and overweight.

**High Blood Pressure:** Overweight children are more likely to have high blood pressure than their peers. High blood pressure places a great deal of strain on the heart.

**Liver Problems:** Obese and overweight children have a greater risk for developing a liver problem called nonalcoholic steatohepatitis (NASH). This disorder can be severe and can lead to cirrhosis, in which the liver is permanently damaged and scarred and no longer able to work properly.

**Menstrual Problems:** Young girls those are overweight or obese may reach puberty at an earlier age than their peers. Obesity may also contribute to the development of uterine fibroids or other menstrual irregularities later in life.

**Metabolic Syndrome:** Between 25% and 40% of children who are overweight or obese suffer from the metabolic syndrome which leads to other medical problems associated with childhood obesity, such as diabetes and heart problems.

**Sleep Disorders:** Sleep disorders are another one of the medical concerns connected with child obesity. Children who are overweight may develop a serious condition called obstructive sleep apnea that is characterized by brief interruptions of breathing during sleep. Over a long period of time, this type of sleep apnea can lead to heart failure.

### Prevention

- Encourage healthy eating habits
- Encourage daily physical activity
- Behavior modification
- Family support and Motivation
- Media support

### The role of Physical Education

As physical education programme provides a wide range of activities it definitely contributes to manage childhood obesity. Here comes the role of physical education teacher.

- The physical education teacher should maintain health data of the students in their respective school. So he is the best person who can give suggestion and advice about child growth including BMI.
- He should give diet and nutrition advice and proper meal plan of the day that can promote healthy eating habits at home.
- He should be creative and must design various types of physical activities for obese children at school.
- He should motivate the obese students to participate in physical activities and develop their self-esteem and body image.
- He should motivate the parents to develop an active family lifestyle and encourage the whole family to participate in physical activity.
- All the students in their school must participate in various physical activities from moderate to vigorous activities

compulsory for five days in a week.

- The department of Physical education must conduct health and fitness awareness programme for parents and all the teachers.
- The physical education curriculum in school should not be neglected and more emphasis should be given health, fitness and wellness programme.
- The participation in competitive sports should not be the ultimate aim in school PE programme. More number of fitness and health programme should be organized for all the students.
- Every year the physical fitness test should be conducted by the PE department in the school where the entire school teacher must be associated to success the test. The best physical fitness award for both boys and girls should be awarded in all age group or class wise.

To conduct all the programme, the PE teacher in their respective school must be encouraged and motivated by the Principal and other teachers of the school. But unfortunately, our school PE curriculums do not permit to conduct the various programme. The physical education programmes in most of the schools are neglected.

### Conclusion

We must now contemplate that: the obesity is one of the greatest public health, social and economic challenges in 21<sup>st</sup> century. It is an "unprecedented burden" on children's health. Studies have shown that overweight children are more likely to grow up to be overweight adults. Kids today are leading a sedentary lifestyle who sit all day at school and came home to watch TV, Video games and junk food. These are the major factors that enhance childhood obesity. Physical education programme are needed to increase the physical competence, health related fitness, self-responsibility and enjoyment of physical activities for all the students. In this context quality physical education programme can only provide these benefits if they well planned and well designed and practically implemented in the educational institution.

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