AUCTORES
Globalize your Research

New Medical Innovations and Research

Ashish Pandey *

Open Access

Short Communication

# Obesity and Overweight on Overall Health in Children and Adolescents: A Narrative Review

**Ashish Pandey**

Ege University, School of Physical Education and Sports, Faculty Member.

***Corresponding Author:** Ashish Pandey, Ege University, School of Physical Education and Sports, Faculty Member.

**Received date: November 5, 2024; Accepted date: November 20, 2024; Published date: December 10, 2024**

**Citation:** Ashish Pandey, (2024), Obesity and Overweight on Overall Health in Children and Adolescents: A Narrative Review, *J New Medical Innovations and Research*, 5(7); **DOI:10.31579/2767-7370/120**



**Abstract:**

**Background:**

This review article aims to underscore the urgent need for a comprehensive, multi-faceted strategy to tackle childhood obesity.

**Materials and Methods:**

In the search for scientific literature for this review, data from the US National Library of Medicine (PubMed), MEDLINE, and Sport Discus were used, and the terms "weight control'', ''metabolic health'','' physical activity'','' childhood obesity'', and "adolescent obesity" were used. The relevant literature has also taken its source from researching relevant articles from reference lists derived from data searches.

**Results:**

Obesity, a condition influenced by a number of factors, both genetic and environmental, presents a significant challenge to public health, particularly in the pediatric and adolescent populations. It would be beneficial to investigate the multifaceted causes of obesity, including its genetic basis, and to consider how physical activity might help to reduce genetic predispositions and improve overall health outcomes. This could be an important step towards raising healthy future generations.

**Conclusion:**

In conclusion, all these findings support the need to examine the interactions between genetic and environmental factors in detail and find solutions to the factors of overweight and obesity in order to develop effective interventions for the prevention and management of obesity in children and adolescents.

**Keywords:** childhood obesity; weight control; physical activity; metabolic health; weight control; adolescent obesity

## Introduction:

Childhood and adolescent obesity is a complex and multifaceted public health challenge that necessitates a comprehensive approach to intervention. Understanding the myriad factors contributing to this condition, alongside the critical role of movement education, is essential for developing effective strategies that promote healthy behaviors and create supportive environments for children. Sustained research initiatives and collaborative efforts across various sectors are vital in addressing this growing epidemic and enhancing the health and well-being of future generations.

The role of movement education emerges as a pivotal intervention in combating childhood and adolescent obesity. This educational approach not only fosters physical activity and the development of motor skills but also significantly contributes to the establishment of lifelong healthy habits among children (Cale & Harris, 2013; Goran et al., 1999; Robinson et al., 2020).

It seems reasonable to suggest that physical activity plays an important role in promoting general health and well-being. There is evidence that incorporating movement education into school curricula and community programs can help to reduce the risk of childhood and adolescent obesity and the health complications that can be associated with overweight and obesity. It is also thought that engaging children in structured physical activities can have positive psychological health benefits (Janssen et al., 2020; Oral et al., 2024; Waters et al., 2011).

Recent scientific reviews have indicated the potential benefit of considering a comprehensive, multifaceted strategy to address the issue of childhood obesity. It would be beneficial to consider collaborative efforts involving health professionals, educators, policymakers, and community stakeholders, who are committed to implementing evidence-based interventions and policies that address the root causes of childhood obesity (Garrido-Miguel et al., 2019; Mahmood et al., 2021;Story et al., 2018; Wang et al., 2017).

The increasing prevalence of obesity has been attributed to various environmental and lifestyle factors that are characteristic of modern society. It would seem that the proliferation of fast food restaurants, offering convenient but often calorie-dense and nutrient-poor options, may be a significant contributor to unhealthy dietary patterns among children and adolescents (Mohammadbeigi et al., 2018; Rosenheck, 2008). It may be beneficial to consider the creation of supportive environments that promote physical activity and healthy eating practices as a potential avenue for reducing the prevalence of childhood obesity and implementing evidence-based interventions and policies that address the root causes of childhood obesity (Sallis et al., 2019; Lavelle et al., 2020).

## Discussion:

It is thought that the increasing prevalence of obesity may be attributed to various environmental and lifestyle factors that are characteristic of modern society. The proliferation of fast food restaurants, offering convenient but often calorie-dense and nutrient-poor options, has been identified as a potential contributor to unhealthy dietary patterns among children and adolescents (Boswell & Kober, 2016; Gearhardt & DiFeliceantonio, 2023; Poti et al., 2014). Additionally, it could be argued that the widespread and often unrestricted use of technological devices such as computers, smartphones, televisions, and electronic games may be associated with sedentary behaviors and reduced physical activity (Stiglic & Viner, 2019). imilarly, Hampl et al. (2023) and Roth et al. (2004) explored the potential impact of screen time on childhood and adolescent obesity, suggesting a possible association between increased media consumption and higher body mass index (BMI) in children.

In a similar vein, Davis et al. (2007) also drew attention to the part played by these environmental factors in encouraging the development of unhealthy habits among children and adolescents. Their research highlighted the potential value of interventions that address not only individual behaviors but also the broader social context in which these behaviors occur.

It is becoming increasingly clear that obesity may be a significant precursor to various chronic health issues that could potentially impact an individual's quality of life and longevity. Research suggests a potential correlation between obesity and various conditions, including type 2 diabetes mellitus (Huang et al., 2019). Furthermore, there is a possibility that obesity may contribute to cardiovascular disease (CVD), which could potentially lead to hypertension, dyslipidemia, and increased arterial stiffness. This may, in turn, lead to the development of atherosclerosis and heart attacks. Furthermore, there appears to be a notable correlation between obesity and metabolic syndrome, a cluster of conditions that may increase the risk of heart disease, stroke, and diabetes (Cai et al., 2013; Kim & Popkin, 2006; Rippe, Crossley & Ringer, 1998).

In light of the increasing global prevalence of obesity, it seems increasingly clear that there is a need for effective prevention and treatment strategies. In this context, it would be beneficial to undertake a detailed examination of the relationship between overweight, obesity and genetic structure, as there is evidence that genetic factors can significantly affect energy regulation and storage (Goodarzi, 2018).In addition to all this, some studies have also suggested a potential link between obesity and certain types of cancer, such as breast, colorectal, and endometrial cancers. This is thought to be due to changes in hormone levels and inflammatory pathways in an environment conducive to tumor growth (Carroll, 1998; Davoodi, 2013).

## Conclusion:

Obesity is a chronic condition that can be described as an imbalance between energy intake and expenditure, which may result in excess fat accumulation in the body. This imbalance can be attributed to a number of factors, including excessive caloric consumption and insufficient energy expenditure, which can result in the storage of fatty acids in adipose tissue. It is becoming increasingly clear that obesity can have a significant impact on our health and wellbeing. There is a growing body of evidence to suggest that it may contribute to the development of a range of health issues, including metabolic disorders such as type 2 diabetes, hypertension, cardiovascular disease, and various psychological issues.

It is important to note that the progression of obesity is influenced by a number of factors, including age, gender, and metabolic processes. Research suggests that, at the same Body Mass Index (BMI), men typically store less fat than women. It also indicates that genetic factors significantly affect energy regulation and storage. In light of the growing global prevalence of obesity, it is becoming increasingly clear that there is a need for effective prevention and treatment strategies. While environmental factors undoubtedly play a significant role, genetics also appear to be a crucial element. Some studies suggest that regular physical activity may help to offset the hereditary effects of obesity-related genes on BMI. It is recommended that you exercise for at least 45 minutes a day, five days a week.

Childhood and adolescent obesity is an urgent public health problem that requires a detailed and comprehensive intervention strategy. By thoroughly understanding the contributing factors and recognizing The importance of physical activity was emphasized, and it was stated that personalized interventions could be developed to help children and adolescents acquire healthy behaviors and create supportive environments. Ongoing research and collaboration across multiple sectors are crucial in addressing this escalating epidemic and improving the health and well-being of future generations.

Furthermore, it is becoming increasingly clear that there is a complex relationship between genetic predisposition, physical activity, and obesity risk. It seems that regular exercise may help counteract the impact of genetic variants associated with obesity. This suggests that promoting physical activity could be an important part of prevention and treatment efforts. However, further research is essential to fully understand the molecular mechanisms linking genetics and physical activity, as well as potential sex-specific effects. It would also be beneficial to conduct long-term intervention studies to identify the most effective types and intensities of physical activity tailored to diverse populations. This could ultimately contribute to addressing the global obesity epidemic.

## Acknowledgment:

We would like to express our special thanks to Dr. George N. NOMIKOS for his very successful contribution to the literature research process and unique academic support in the publication during the process of this review article.

## Conflict of interest:

The author certifies that there is no conflict of interest with any financial organization regarding the material discussed in the manuscript.

## Funding:

The author certifies that there is no funding from any financial organization regarding the material discussed in the manuscript or contributions:

## Author contributions:

All the authors read and approved the final version of the manuscript.

## References:

1. Boswell, R. G., & Kober, H. (2016). Food cue reactivity and craving predict eating and weight gain: a meta-analytic review. Obesity reviews, 17(2), 159-177.
2. Cai, D., Frantz, J. D., Tawa, N. E., Melendez, P. A., Oh, B. C., Gavrilova, O., ... & Lee, C. E. (2013). IKKβ/NF-κB activation causes severe muscle wasting in mice. Cell, 119(2), 285-298.

3. Cale, L., & Harris, J. (2013). 'Every child (of every size) matters' in physical education! Physical education's role in childhood obesity. Sport, Education and Society, 18(4), 433-452.
4. Carroll, K. K. (1998). Obesity as a risk factor for certain types of cancer. Lipids, 33(11), 1055-1059.
5. Davis, M. M., Gance-Cleveland, B., Hassink, S., Johnson, R., Paradis, G., & Resnicow, K. (2007). Recommendations for prevention of childhood obesity. Pediatrics, 120(Supplement_4), S229-S253.
6. Davoodi, S. H., Malek-Shahabi, T., Malekshahi-Moghadam, A., Shahbazi, R., & Esmaeili, S. (2013). Obesity as an important risk factor for certain types of cancer. Iranian journal of cancer prevention, 6(4), 186.
7. Garrido-Miguel, M., Cavero-Redondo, I., Álvarez-Bueno, C., Rodríguez-Artalejo, F., Moreno, L. A., Ruiz, J. R., ... & Martínez-Vizcaíno, V. (2019). Prevalence and trends of overweight and obesity in European children from 1999 to 2016: a systematic review and meta-analysis. JAMA pediatrics, 173(10), e192430-e192430.
8. Gearhardt, A. N., & DiFeliceantonio, A. G. (2023). Highly processed foods can be considered addictive substances based on established scientific criteria. Addiction, 118(4), 589-598.
9. Goodarzi, M. O. (2018). Genetics of obesity: What genetic association studies have taught us about the biology of obesity and its complications. The Lancet Diabetes & Endocrinology, 6(3), 223-236.
10. Goran, M. I., Reynolds, K. D., & Lindquist, C. H. (1999). Role of physical activity in the prevention of obesity in children. International journal of obesity, 23(3), S18-S33.
11. Huang, P. L., Lin, K. L., Han, L. K., Wang, T. T., Cheong, R. L., & Chao, P. M. (2019). An overview of the mechanisms of obesity and chronic diseases. Archives of Physiology and Biochemistry, 126(6), 470-475.
12. Hampl, S. E., Hassink, S. G., Skinner, A. C., Armstrong, S. C., Barlow, S. E., Bolling, C. F., ... & Okechukwu, K. (2023). Clinical practice guideline for the evaluation and treatment of children and adolescents with obesity. Pediatrics, 151(2).
13. Janssen, I., LeBlanc, A. G., & Côté, J. (2020). Systematic review of the relationship between physical activity and health outcomes in children and youth. *Health Reports, 31*(12), 3-15.
14. Lavelle, H., McMahon, A., & McCarthy, S. (2020). The role of the environment in childhood obesity: A systematic review. International Journal of Environmental Research and Public Health, 17(1), 1-12.
15. Kim, S., & Popkin, B. M. (2006). Commentary: understanding the epidemiology of overweight and obesity—a real global public health concern. International journal of epidemiology, 35(1), 60-67.
16. Mahmood, L., Flores-Barrantes, P., Moreno, L. A., Manios, Y., & Gonzalez-Gil, E. M. (2021). The influence of parental dietary behaviors and practices on children's eating habits. Nutrients, 13(4), 1138.
17. Mohammadbeigi, A., Asgarian, A., Moshir, E., Heidari, H., Afrashteh, S., Khazaei, S., & Ansari, H. (2018). Fast food consumption and overweight/obesity prevalence in students and its association with general and abdominal obesity. Journal of preventive medicine and hygiene, 59(3), E236.
18. Oral, O, Rezaee, Z, Nomikos, G, Ayca, B. (2024) The effect of physical activity on the psychological development of adolescent females. Scientific Chronicles; 29(1): 102-108
19. Poti, J. M., Duffey, K. J., & Popkin, B. M. (2014). The association of fast food consumption with poor dietary outcomes and obesity among children: is it the fast food or the remainder of the diet?. The American journal of clinical nutrition, 99(1), 162-171.
20. Rippe, J. M., Crossley, S., & Ringer, R. (1998). Obesity as a chronic disease: modern medical and lifestyle management. Journal of the American Dietetic Association, 98(10), S9-S15.
21. Robinson, L. E., Stodden, D. F., & Barnett, L. M. (2020). Motor competence and its effect on physical activity and health-related fitness in children. Journal of Sport and Health Science, 9(1), 1-8.
22. Rosenheck, R. (2008). Fast food consumption and increased caloric intake: A systematic review of a trajectory towards weight gain and obesity risk. Obesity Reviews, 9(6), 535-547.
23. Roth, J., Qiang, X., Marbán, S. L., Redelt, H., & Lowell, B. C. (2004). The obesity pandemic: Where have we been and where are we going? Obesity Research, 12(S11), 88S-101S.
24. Sallis, J. F., Owen, N., & Fisher, E. B. (2019). Ecological models of health behavior. In K. Glanz, B. K. Rimer, & K. Viswanath (Eds.), Health behavior and health education: Theory, research, and practice (4th ed., pp. 465-486). Jossey-Bass.
25. Stiglic, N., & Viner, R. M. (2019). Effects of screentime on the health and well-being of children and adolescents: A systematic review of reviews. BMJ Open, 9(1), e023191.
26. Story, M., Kaphingst, K. I., & Robinson-O'Brien, R. (2018). Creating healthy food and eating environments: Policy and environmental approaches. Annual Review of Public Health, 29, 253-272.
27. Wang, Y., & Lobstein, T. (2017). Worldwide trends in childhood overweight and obesity. International Journal of Pediatric Obesity, 2(4), 11-22.
28. Waters, E., de Silva-Sanigorski, A., Burford, B. J., Brown, T., Campbell, K. J., Gao, Y., ... & Summerbell, C. D. (2011). Interventions for preventing obesity in children. Cochrane database of systematic reviews, (12).

**DOI:10.31579/2767-7370/120**