

Multifactorial Nature of Obesity

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Introduction

Obesity is a major health, social and economic problem worldwide. The World Health Organization has recognised it as the 'greatest public health challenge of the twenty first century' [1]. The number of obese people is dramatically increasing and if it follows this rate, by 2030 it is expected that 20% of the world adult population will be obese [2].

The definition of obesity is very simple - the accumulation of body fat, but the mechanism of its development is quite complex and not fully understood.

Obesity is a result of multiple factors including nutritional, genetic, environmental, behavioural and the interaction between them [1,2]. These factors and their interaction lead to the unbalance of energy input and output. In short, obesity is a consequence of complex interactions between many factors.

Factors leading to obesity

Food intake is directly associated with weight gain. There is supporting evidence that unhealthy food choice and increased portion sizes are playing a major role in increasing the rates of obesity. Children who ate three main meals were reported to have a lower risk of becoming obese. Energy misbalance, which happens when daily energy intake is higher than daily energy used, causes fat accumulation which leads to obesity. There are many factors that can affect food intake, such as portion size, price, accessibility to food, types and preparation of food, cultural influences, etc. A major problem is the phenomenon of fast food and the easy access to it [3].

Genetic factors play an important role in obesity [4]. A large number of genes that influence the development of obesity have already been identified. More than 300 genes, markers and chromosomal regions have been found to be associated with various human obesity phenotypes.

One of the important determinants of obesity is physical activity. Yeow Nyin Ang, *et al.* describes the importance of physical activity comparing with the concept of the Law of Thermodynamics and the fact that there are three ways of energy expenditure. One is for basal metabolism, the second for thermogenesis and the third on physical activity. The last is the only factor that we can control to prevent the development of obesity. It has been reported that most people, especially younger generations lead sedentary lifestyles [3].

The psychological status is another factor that influences eating habits, increasing the consumption of high caloric food. Most people eat more when they do not feel well, when they are in stress, occupied with negative emotions, in depression or other neurological problems.

Other factors which may lead to obesity are sleep duration, smoking, pharmaceuticals, maternal age, etc.

The impact of obesity

Obesity has a negative impact on physical, mental and social health. There is a strong association between obesity and different physical and mental disorders such as type 2 diabetes, cardiovascular disorders, hypertension, many types of cancer, depression, anxiety, etc [5].

The impact of obesity is also linked with higher economic costs including human capital cost, medical cost, transportation cost and productivity cost.

Conclusion

Obesity is a multifactorial disorder with major contributions from the genome and the environment. The number of obese people is dramatically increasing throughout the world and the solution to this major problem is still not clear. As the factors causing this phenomenon are becoming clearer every day, the way how they interact with each other and the effect of these interactions leading to obesity, is still to be studied. Because of the variety of factors and the complexity involved, this requires a multidisciplinary approach. Analysing and focusing on factors and their interaction in children and young people and moderating their influence, can have an impact in tackling and preventing obesity as a major health challenge of this century.

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