Obesity-Related Respiratory And Digestive Diseases

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Introduction

Obesity is considered a disease and not just a risk related to human health. It has become one of the most prevalent problems related to human health, especially in Western Culture. Obesity can be considered a huge drift in the system of health care as it comes with an increased risk of medical complications. Obesity can also increase the risk of premature death. Moreover, obesity is associated with compromised life quality due to its effects on daily life activities (Visscher et al., 2004). This paper will discuss the risks associated with obesity and its effects on the body's mechanisms, specifically the digestive and respiratory systems.

Obesity and its effect on Respiratory System

Several systemic problems are linked to obesity. It is a condition that can be the result of genetic as well as environmental influence. Estimations of the contributions in the susceptible obese families due to genetic influences range from 25-40%. Now that obesity has become the most common metabolic illness worldwide, it is at risk of becoming a global epidemic (Mafort et al., 2016).

Some of these complications can lead to severe damage to both the tissues and organs. As a person becomes obese, the accumulation of adipose tissues increases; these increased levels, alongside a huge number of cytokine production, can lead to complications in the normal regulatory mechanisms (Marseglia et al., 2014). There is an enormous amount of data available on the effects of obesity on respiratory systems since it has been studied extensively. The fat accumulated in the body tissues can change the physiology of the respiratory tract and can lead to the impairment of the lungs. However, the patterns of fat distribution are different, and all of them have negative effects on the functioning of the respiratory system (Murphy & Hart, 2014).

Regulatory mechanisms for the maintenance of

homeostasis in the respiratory system

The maintenance of homeostasis within the respiratory tract is done in two ways: by gas exchange and by the regulation of blood pH. The process of gas exchange is performed primarily by the lungs, and the elimination of carbon dioxide is done. With the elimination of carbon dioxide from the body, oxygen again gets in via the lungs, and ATP is generated by the process of cellular respiration (Murphy & Hart, 2014). On the contrary, the normal pH of the human body is 7.4, which by nature is slightly alkaline. Hydrogen ions and buffers are mainly responsible for maintaining the levels of pH within the body. Among the most important buffers inside the human body is the mixture of bicarbonate ions and carbon dioxide. Through this mixture, pH is regulated inside the human body in normal cases.

Obesity and its Effects on the Digestive System

Obesity can change both the mechanical and hormonal processes in the body. Both factors can affect an individual's digestive system later on. The development of oesophagal diseases is linked with obesity alongside various other digestive disorders. These diseases are the results of the accumulation of cytokines within the tissues, i.e. both pro-inflammatory and inflammatory. Obesity can induce gastroesophageal reflux disease, Barrett's oesophagus, and oesophagal cancer. It has also been considered a major risk factor for the development of colorectal cancer (Nam, 2017).

Regulatory mechanisms for the maintenance of homeostasis in the digestive system

In the digestive system, the maintenance of homeostasis is under the control of hormones. Whenever the stomach is empty and unable to maintain the acidic environment, a negative feedback mechanism takes place. In response to this, a hormone is released to cut down the activity of hydrochloric acid in the stomach.

Obese people can face an imbalance in the homeostatic systems of the body because of the irregular systems. A new theory has been proposed, a Circle of Discontent, which states that a system of feedback links weight gain and its negative effects on the body (Nam, 2017). Certain surgeries for the improvement of physiologic changes can be done on obese people, bringing in significant weight decreases and improving certain body functions as well. These surgeries include gastric banding, bypass, and sleeve gastrectomy.

The impacts of different bariatric surgeries on the digestive system

The main advantage or impact of bariatric surgeries is weight reduction. Sometimes, surgeries are performed to reduce weight if they are not done by exercise (West, 2013). However, the ultimate goal is the achievement of normal body weight, yet hunger is not affected at all. Certain complications might include physiological impacts such as vomiting, mood swings, surgery failure, hernia, and iron or vitamin deficiency. Overall, it is an effective method to reduce weight in patients with obesity.

Excessive weight and imbalances in medical conditions

Overweight individuals can face several imbalances in the normal conditions and mechanisms. Obesity is associated with high blood pressure and cholesterol levels in the body. These complications can lead to certain major diseases, such as stroke, respiratory complications, and cardiovascular diseases. In addition, the complications may lead to an imbalance in the insulin production of the body, thus causing diabetes, arthritis, and gall bladder issues (West, 2013).

Conclusion

Certain diseases are linked with obesity, and most of these come with complications in the digestive and respiratory tracts. However, complications can be treated through treatments. Obesity is a major health concern since the risk and complications are life-threatening. Moreover, the factors associated with obesity are not the same and can vary from one person to another. Although environmental and genetic factors can play a vital role, the problem is highly associated with a poorly managed lifestyle. However, through exercise, physical activity, and proper diet planning, obesity can be managed.

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