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Short Communication
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Is Excess Body Weight a Protective Factor in the Elderly?

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Short Communication

Since the 1980s, the global prevalence of obesity has increased dramatically and has nearly tripled. This increase is particularly concerning when we consider that the average life expectancy in the world is also increasing, and that we are now witnessing high rates of obesity among the elderly population [1].

There are three major factors contributing to the risk posed to obese elderly individuals following a reduction of weight: Sarcopenia, body fat distribution, and cardio fitness.

Sarcopenia, the reduction of skeletal muscle mass, is a normal physiological event linked to aging that often results in an increase in the abdominal adipose tissue. Studies have shown that elderly individuals can experience a loss of nearly 40% of their limbs muscle mass. This loss of muscle mass can be further exacerbated by weight loss.

Fat visceral distribution tend to increase with aging, particularly when weight gain is involved. This type of fat is associated with inflammation, which is now considered a crucial contributor to the complications associated with obesity [2,3].

Additionally, physical activity and cardiorespiratory fitness levels decrease with age. These three factors place the elderly at an increased risk for cardiovascular events making it imperative for them to reduce their visceral fat and increase their muscle mass through proper nutrition and physical activity.

Excess weight has been considered a risk factor for health since the time of Hippocrates. We know that obesity can lead to multiple diseases, with a particular emphasis on diabetes and CVD. However, some recent observations seem to indicate that being overweight may have protective benefits, leading to the concept of the "obesity paradox." This term was coined to describe the finding that overweight and obese individuals have better outcomes than their normal-weight counterparts. In this paper, we will review various studies to answer the question: Is excess body weight a protective factor in the elderly? [4].

The cardiovascular diseases provide a basis for this controversy, as a study from 2018 showed that obesity increases several CVD risk factors, but research suggests that patients with certain types of CVD may have a better prognosis if they are classified as overweight or obese. This paradoxical benefit of a medically unfavorable phenotype is particularly strong in individuals with overweight and class I obesity, but less pronounced in those with more severe or morbid obesity [5].

It is controversial whether the obesity paradox exists in the elderly. A meta-analysis of 16 articles supports the existence of the obesity paradox, in contrast to a meta-analysis of 13 articles that argue against it [6]. The obesity paradox in the elderly can be better understood by examining changes in body weight over time and the clinical relationships between obesity and aging. There are several potential explanations for the obesity paradox, including reverse causality (the paradox may be due to the fact that individuals who are already ill are losing weight), measurement error (BMI may not accurately reflect body fatness in older adults or in individuals with certain medical conditions), residual confounding (other factors, such as physical activity level, diet, and smoking status, may play a role in the relationship between BMI and health outcomes), and the fact that obese patients may receive better treatment than low weight patients, as obesity often causes symptoms of chronic conditions at earlier stages of these diseases.

Among the papers appearing in the meta-analysis that oppose the obesity paradox is one published in Lancet in 2017. In that paper the global BMI Mortality Collaboration presents results from the largest ever pooled dataset about the relationship between BMI and mortality. To address biases, the study excluded smokers and patients with known chronic diseases and excluded the

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first 5 years of follow-up to remove individuals with undiagnosed conditions who had lost weight due to serious disease. The study covers more than 200 studies from 32 countries and includes over 10 million participants. The study shows a high correlation between obesity and mortality in each age group, with the strongest correlation in the younger population, but still evident in the 70 to 89 age group [7].

Moreover, most of the studies on the elderly obesity are retrospective, the "Declare Timi 58" study however was a large prospective study that examined the effect of SGLT2 inhibitor in elderly T2D patients, mostly obese. The study included more than 8,000 patients over the age of 65 and more than 1,000 patients over the age of 75, with a median follow-up period of 4.2 years. The average baseline BMI was 31.1 in the 65 to 75 age group and 30.2 in those over the age of 75. The study found that the weight loss was similar in the different age groups, with a decrease of about 3 kg *vs.* placebo in 4 years. There was a reduction in hypoglycemia in the elderly and the SGLT2 inhibitors were found to be safe in all age groups. The study showed that controlled weight loss had beneficial effect on the kidney and heart of the elderly [8].

In conclusion, the question of whether excess body weight is a protective factor in the elderly has been debated by various studies. While some cross-sectional studies have shown that overweight reduces the mortality rate, this could be due to biases such as smoking and undiagnosed diseases in the low BMI group. However, a very large metanalysis published in the Lancet found that when these biases were taken into consideration, there was a rise in the mortality rate in people with higher BMIs, even in the elderly. Nevertheless, it is important to remember the different characteristics of the elderly and distinguish between patients suffering from sarcopenia and visceral abdominal obesity and patients without sarcopenia and a different distribution of fat. Each population must choose the treatment that will benefit it the most and prevent muscle loss through proper nutrition and physical activity under medical supervision. In general, the elderly with a high BMI would be well advised to lose weight under medical supervision.

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