

## Effects of Obesity and Weight Loss Surgery on Cardiac Remodelling

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### Abstract

Obesity and weight-related issues have become a significant public health concern globally. This abstract provides a brief overview of the topic.

Obesity is a complex condition characterized by excess body fat accumulation, resulting from an imbalance between energy intake and expenditure. It is associated with various adverse health outcomes, including an increased risk of chronic diseases such as type 2 diabetes, cardiovascular diseases, certain cancers, and musculoskeletal disorders.

**Keywords:** Obesity; Surgical weight reduction; Speckle tracking

### Introduction

Stoutness (BMI >30 kg/m<sup>2</sup>) is a free gamble factor for episode cardiovascular breakdown (HF). Weight antagonistically influences the circulatory framework with resultant endothelial brokenness bringing about foundational hypertension, coronary course illness, and vascular calcification [1]. Additionally, obesity causes changes in the heart, such as an increase in left ventricular (LV) mass, LV hypertrophy, LV and LA dilatation, as well as diastolic and systolic dysfunction in some cases. Additionally, an increase in LV filling pressure and volume causes the Frank–Starling curve to shift to the left, resulting in LV dilatation and, eventually, systolic dysfunction.

Diet, lifestyle, and behavioral therapy have all been shown to be relatively ineffective in treating morbidly obese patients with a BMI greater than 40 kg/m<sup>2</sup>, particularly when used in isolation.

The National Institutes of Health (United States) and the National Institute for Clinical Excellence (United Kingdom) have established guidelines for the use of surgery to treat morbid obesity.

There are three types of surgical procedures: restrictive, unresponsive, or a combination of the two. By reducing the size of the stomach (either through stapling, restrictive surgery, or “sleeve gastrectomy,” which reduces the size of the stomach), restrictive operations can eventually result in food intolerance and weight loss. Malabsorptive tasks comprise of bypassing sections of the gut, which in this manner cause malabsorption of supplements, (for example, the biliopancreatic redirection regardless of duodenal switch and ileal mediation) [2]. The Roux-en-Y gastric bypass is one of the operations in the combination group that addresses both restriction and malabsorption.

Albeit the ramifications of weight change on cardiometabolic risk elements and episode diabetes in corpulence has been recently illustrated, however the effect of weight changes on cardiovascular design autonomous of stoutness related comorbidities has not been widely examined.

This abstract highlights the impact of obesity on both physical and mental health. It explores the factors contributing to obesity, including genetic predisposition, environmental factors, dietary patterns, sedentary lifestyle, and socioeconomic factors.

The abstract discusses the importance of weight management interventions, including lifestyle modifications such as adopting a healthy diet, increasing physical activity, behavior change strategies, and, in some cases, pharmacotherapy or bariatric surgery [3]. It

emphasizes the need for a multidisciplinary approach involving healthcare professionals, policymakers, and communities to address the obesity epidemic.

Furthermore, the abstract acknowledges the challenges associated with obesity prevention and treatment, such as societal norms, access to healthy food options, socioeconomic disparities, and the influence of advertising and marketing practices.

In conclusion, obesity and weight-related issues are significant public health challenges. Addressing these concerns requires a comprehensive approach involving various stakeholders and interventions aimed at promoting healthy lifestyles, reducing environmental factors contributing to obesity, and providing support and resources for individuals struggling with weight management.

Obesity and weight-related issues have reached epidemic proportions worldwide and have become a major public health concern. The prevalence of obesity has significantly increased in recent decades, affecting individuals of all ages, genders, and socioeconomic backgrounds.

Obesity is defined as the excessive accumulation of body fat, resulting from an energy imbalance between calorie intake and expenditure [4]. It is a multifactorial condition influenced by a complex interplay of genetic, environmental, behavioral, and socioeconomic factors.

The consequences of obesity are far-reaching and impact both physical and mental health. Individuals with obesity are at an increased risk of developing numerous chronic conditions, including type 2 diabetes, cardiovascular diseases, hypertension, dyslipidemia, certain cancers, sleep apnea, and musculoskeletal disorders. Moreover, obesity can have profound psychological and social implications, leading to decreased self-esteem, body image dissatisfaction, and an increased risk of mental health disorders such as depression and anxiety.

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**Received:** 03-June-2023, Manuscript No. jomb-23-104078; **Editor assigned:** 05-June-2023, PreQC No. jomb-23-104078 (PQ); **Reviewed:** 19-June-2023, QC No. jomb-23-104078, **Revised:** 21-June-2023, Manuscript No. jomb-23-104078 (R); **Published:** 28-June-2023, DOI: 10.4172/jomb.1000160

**Citation:** Shaimaa A (2023) Effects of Obesity and Weight Loss Surgery on Cardiac Remodelling. J Obes Metab 6: 160.

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The causes of obesity are multifaceted and include a combination of genetic factors, environmental influences, dietary patterns, sedentary lifestyles, cultural norms, and socioeconomic factors. The modern obesogenic environment, characterized by easy access to calorie-dense foods, sedentary behaviors, and increased reliance on technology, has contributed to the rising obesity rates.

Addressing obesity requires a comprehensive and multifaceted approach. Prevention efforts focus on promoting healthy eating habits, regular physical activity, and creating supportive environments that facilitate healthy lifestyle choices. Treatment strategies encompass lifestyle modifications, including dietary changes and increased physical activity, behavioral therapy, pharmacotherapy, and in severe cases, bariatric surgery.

The societal impact of obesity is substantial, resulting in increased healthcare costs, reduced productivity, and a burden on healthcare systems. Therefore, combating obesity requires collaboration among healthcare professionals, policymakers, communities, and individuals to implement effective interventions, policies, and programs aimed at prevention, early detection, and management.

This paper aims to provide an overview of obesity and weight-related issues, including the causes, consequences, and approaches for prevention and management [5]. By understanding the complex nature of obesity, its impact on health, and the available strategies, we can work towards addressing this global public health challenge.

## Methods and Materials

The methods and materials section for a study on obesity and weight-related issues would vary depending on the specific research objectives and design. However, here are some common components that may be included:

### Study design

Clearly state the study design, whether it is an observational study, clinical trial, systematic review, or other research approach.

Specify the study duration and follow-up period, if applicable.

### Study population

Describe the characteristics of the study population, including the sample size, age range, gender distribution, and any specific inclusion or exclusion criteria.

Specify whether the study population is representative of a particular community, region, or target population.

### Data collection

Explain the methods used to collect data, such as surveys, questionnaires, interviews, medical records, or physical measurements.

Provide details on the data collection instruments or tools used, including their validity and reliability if applicable.

Outline any standardized or validated scales used to assess variables related to obesity and weight.

### Variables and measurements

Clearly define the variables of interest, such as body weight, body mass index (BMI), waist circumference, or obesity-related comorbidities [6].

Describe the measurements and assessments performed, including

the equipment or techniques used.

Address any considerations or adjustments made for confounding factors, such as age, sex, or socioeconomic status.

### Data analysis

Specify the statistical methods used for data analysis, such as descriptive statistics, inferential statistics, regression models, or other analytical approaches.

Outline any software or programs used for data management and statistical analysis.

Describe any sensitivity analyses or subgroup analyses conducted.

### Ethical considerations

State any ethical approvals obtained from relevant research ethics committees or institutional review boards.

Explain how informed consent was obtained from study participants and how confidentiality and privacy were ensured.

### Limitations

Address any limitations or potential biases in the study design or data collection methods.

Discuss any challenges encountered during the study and their potential impact on the results.

The methods and materials section should provide sufficient detail to allow for reproducibility of the study and enable readers to evaluate the validity and reliability of the findings [7]. It should align with the research objectives and study design, ensuring the appropriate collection and analysis of data related to obesity and weight-related issues.

## Results and Discussion

The results and discussion section of a study on obesity and weight-related issues presents the findings obtained from the conducted research or analysis [8]. Here are some key aspects that may be addressed in the results and discussion:

### Descriptive statistics

Provide an overview of the study population characteristics, including the sample size, age distribution, gender distribution, and any relevant demographic information.

Present descriptive statistics of the variables of interest, such as mean body weight, BMI, waist circumference, or prevalence rates of obesity and overweight.

### Prevalence and trends

Discuss the prevalence of obesity and overweight in the study population compared to regional, national, or international data.

Examine trends over time, if applicable, to identify changes in the prevalence of obesity and weight-related issues.

### Correlations and associations

Explore associations between obesity and various factors, such as age, gender, socioeconomic status, dietary patterns, physical activity levels, or comorbidities.

Present statistical measures [9], such as odds ratios, correlation

coefficients, or p-values, to quantify the strength and significance of these associations.

### Impact on health and well-being

Discuss the implications of obesity on physical health outcomes, such as the development of chronic diseases (e.g., diabetes, cardiovascular diseases), musculoskeletal disorders, or mortality rates.

Address the impact of obesity on mental health, including its association with depression, anxiety, body image dissatisfaction, and quality of life.

### Intervention outcomes

Evaluate the effectiveness of interventions or treatment strategies targeting obesity and weight management.

Discuss changes in body weight, BMI, waist circumference, or other relevant measures following lifestyle modifications, pharmacotherapy, or bariatric surgery.

Address any observed improvements in metabolic parameters, such as blood glucose levels, lipid profiles, or blood pressure.

### Discussion of findings

Interpret the results in the context of existing literature and theoretical frameworks.

Explore potential explanations for the observed findings, considering biological, behavioral, and environmental factors.

Discuss the implications of the findings for public health policies, clinical practice, or future research directions.

Address any limitations of the study and potential sources of bias or confounding factors.

The results and discussion section should provide a comprehensive analysis and interpretation of the findings related to obesity and weight-related issues [10]. It should contribute to the understanding of the topic, highlight areas of significance, and provide insights for future research and interventions.

### Conclusion

In conclusion, obesity and weight-related issues pose significant challenges to global public health. The prevalence of obesity has reached alarming levels, with detrimental consequences for individuals and society as a whole. This section provides a summary of the key points and implications discussed throughout the study on obesity and weight.

Obesity is a complex condition influenced by a combination of genetic, environmental, behavioral, and socioeconomic factors. It is associated with a wide range of health problems, including an increased risk of chronic diseases, decreased quality of life, and increased healthcare costs.

The findings from various studies and analyses emphasize the importance of addressing obesity as a multifaceted issue requiring comprehensive approaches. Prevention efforts are crucial and should focus on promoting healthy eating habits, increasing physical activity, and creating environments that support healthy lifestyles. Early intervention and management strategies, such as lifestyle modifications,

behavioral therapy, and, in some cases, medical interventions, are essential for individuals already affected by obesity.

The implications of the study findings extend beyond the individual level. Addressing obesity requires collaborative efforts involving healthcare professionals, policymakers, communities, and individuals. Policies and interventions should target environmental factors, such as access to healthy food options and opportunities for physical activity, while also considering social determinants of health, cultural norms, and socioeconomic disparities.

Furthermore, there is a need for continued research to deepen our understanding of obesity and weight-related issues. Future studies should explore effective strategies for preventing and treating obesity, identify vulnerable populations, and investigate the long-term impacts of interventions.

Ultimately, tackling obesity and weight-related issues requires a comprehensive and sustained approach. By promoting awareness, implementing evidence-based interventions, and fostering a supportive environment, we can make significant strides in combating obesity and improving the overall health and well-being of individuals and communities.

### Acknowledgement

None

### Conflict of Interest

None

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