

# Lifestyle Interventions Can Work with Super-Super Obese Patient BMI of 90.5 kg/m<sup>2</sup>: Case Report

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**Title:** Lifestyle Interventions Can Work with Super-Super Obese Patient BMI of 90.5 kg/m<sup>2</sup>: Case Report

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**Key words:** Obesity, Weight Loss, Lifestyle, Primary Health Care, Body Mass Index, Liraglutide.

**Abstract:** patients with super-super obesity represent challenges for health care professionals due to high failure rate, morbidity and mortality. This is a report of successful case of a 38-year-old female with a body mass index (BMI) of 90.5 kg/m<sup>2</sup> underwent lifestyle modification as initial management approach.

## Introduction:

Obesity is defined as excess body fat that represents a health risk (1). The estimated prevalence of obesity is increasing among adults globally reaching up to 18.5% (2). Saudi Arabia has a higher prevalence than the global average, in which about half of adults are estimated to be obese with a 2.1% annual increase rate (2). Moreover, high body mass index is the leading risk factor that drives most disability and deaths combined in Saudi Arabia (3). Obesity can be classified depending on measured body mass index (BMI) and the excess health risk in stage 1 (30-34.9 kg/ m<sup>2</sup>), stage 2 (35-39.9 kg/ m<sup>2</sup>), and stage 3 or morbid obesity (>40 kg/ m<sup>2</sup>) (4). Morbid obesity is further classified into super obesity as a BMI [?] 50 kg/m<sup>2</sup>, and super-super obesity as a BMI [?] 60 kg/m<sup>2</sup> (5).

Obesity is a devastating disease that can affect personal physical, mental, and social health and is associated with poor quality of life (6). People with obesity may be comorbid with diabetes, hypertension, fatty liver disease, osteoarthritis, obstructive sleep apnea, or some types of cancer. They may also have depression, anxiety, binge eating disorders, and experience social stigma (6). Individual, socioeconomic, cultural, and environmental factors play a role in obesity (7). A healthy lifestyle containing a plant-based diet, physical activity, managing stress, restorative sleep, social connectedness, and avoiding risky substances are modifiable risk factors that may prevent and treat obesity (8). Treatment of obesity can be augmented with pharmacological or surgical intervention (9).

This is a report of a super obese patient who underwent a successful lifestyle modification process with remarkable weight loss.

## Case History/Examination

A 38-year-old female does not know to have any medical illness presented to obesity clinic at primary care for weight management. She was brought by her sister and aunt to the clinic because she was partially willing to lose weight. She did not undergo a structured weight-loss trial before. Her vital signs were height 146 cm, weight 193 kg, body mass index (BMI) 90.5 kg/ m<sup>2</sup> with central obesity. Her blood pressure was normal with a regular pulse. All her laboratory work, other than high normal blood sugar, was normal. Therefore, metformin started. In addition, she had obstructive sleep apnea and c-pap started.

A multidisciplinary team was formed to discuss the case including preventive medicine, family medicine, diabetologist, endocrinologist, bariatric surgeon, and health coach. Both preventive and family medicine physicians had lifestyle medicine training along with the health coach. We suggested starting a structured lifestyle style intervention for six months then adding weight loss medications “Liraglutide” then going for surgery.

## Methods

### Assessment of lifestyle “Vital Signs”

All six pillars of lifestyle medicine were assessed. No physical activity or muscle strengthening exercise engagement during the week and most of the time spent sitting or reclining at home even. There were objective evidence major mobility limitations on a 400-m walk test and climbing one flight of stairs.

Regarding nutrition, on a typical day the patient was highly consuming sugary food/drinks and ultra-processed foods and minimal consumption of fruits and vegetables/day.

Sleep was for short periods interrupted and during the day. She usually gets four to five interrupted un-refreshed sleeping hours during the day. She was not a smoker or substance abuser and had limited social connections. Her mental health was reasonable.

### Lifestyle interventions

The intervention aimed to create a negative energy balance through reduced calorie consumption by a plant-based diet avoiding processed food and increasing energy expenditure through gradual physical activity. Walking was added to the patient’s daily schedule starting with 2 minutes 3 times per day then progressing gradually. Sleep was increased up to 6 hours per night. Family support had a big role in patient weight loss success. The patient was hospitalized 5 days/ week at her sister’s home where she ensures compliance.

## Result and Conclusion

The patient lost 23 kg (11.9%) during the first 6 months of follow-up with lifestyle change.

Then the patient started to come alone to the clinic with high self-esteem, willing to continue weight management, and trusting her ability to lose weight. When Liraglutide “Saxenda” was added she lost 5 kg more during the next 6 months.

This case report challenges the existing paradigm that lifestyle interventions are less effective in super obese individuals. It demonstrates that with a comprehensive, personalized, and multidisciplinary approach, significant weight loss and health improvement can be achieved without primary reliance on pharmacological or surgical interventions. This case should encourage healthcare providers to consider intensive lifestyle modifications as a viable first-line treatment option in managing extreme obesity. It also calls for more research to explore the full potential and long-term effectiveness of lifestyle interventions in super obese patients.

## Discussion

Obesity, particularly at its extreme levels such as morbid, super, and super-super obesity, presents significant challenges in management and treatment. Current literature predominantly emphasizes pharmacological and surgical interventions as the principal modalities for weight loss in these severe cases (10).Surgical treatments like the laparoscopic sleeve gastrectomy (LSG) are proven to be effective in greatly reducing weight and

handling health problems in people with very high BMI (11)(12). These treatments are essential in cases where the extreme level of obesity can't be managed by lifestyle changes alone, showing the need for a complete care approach for patients with super-super obesity (13). Despite their efficacy, these interventions are associated with significant risks and potential complications.

In contrast, lifestyle interventions, while essential in obesity management, have been somewhat overlooked in the context of extreme obesity due to their perceived limited effectiveness. However, this case report highlights the critical role of lifestyle interventions as the primary strategy in the comprehensive management of obesity, especially in its most severe forms, such as super-super obesity (BMI [?] 60 kg/ m<sup>2</sup>)

Despite the common focus on drug and surgical options, which are associated with significant risks and complications (10). The impressive results from our case study demonstrate the success of well-planned lifestyle Interventions. These interventions have resulted in significant weight loss, even in individuals with a BMI 90.5 kg/m<sup>2</sup>, proving the effectiveness of lifestyle Interventions as a crucial method for obesity treatment. The vital support from family members and the teamwork of various healthcare professionals underscores the necessity of a comprehensive approach to treatment. Additionally, the gradual integration of medications, combined with fostering the patient's self-efficacy and independence in managing their health, are key aspects of this case. These findings indicate that lifestyle interventions not only trigger weight loss but also empower patients in their long-term health journey.

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### **Ethical consideration**

The authors certify that they have obtained ethical approval from institutional review board of Qatif central hospital.

### **Declaration of Patient Consent**

The authors certify that they have obtained patient consent. In the form, the patient consented for clinical information to be report in the journal without any identification information.

### **Conflict of interest**

Authors declare no conflict of interest.

### **Author contributions**

GG wrote the introduction and case presentation of the manuscript. DA composed the draft and wrote the discussion of the manuscript. MK helped to organize medical documentation, write the manuscript, and review it. AA coordinated the patient's management, initiated the process of writing the manuscript, and finally, reviewed the manuscript. All authors read and approved the final manuscript.

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### **Availability of data and materials**

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