



## BIOLOGICAL USE OF OZEMPIC AND ITS EFFECTS: A NARRATIVE REVIEW OF THE LITERATURE

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### ABSTRACT

Objective: To analyze the biological use of Ozempic and its effects. Literature Review: Obesity is the global pandemic of the twenty-first century, it is a chronic pathology, characterized essentially by the accumulation of excess body fat. In this regard, it is necessary to highlight Ozempic, a drug prescribed for the treatment of type 2 diabetes contains the active substance "semaglutide", which helps reduce blood sugar levels. Despite this, this has been a product widely consumed by individuals who want to lose their weight in a miraculous way and without the monitoring of a qualified health professional (GOMES; TREVISAN, 2021). Final considerations: It should be noted that the irrational use of these drugs can cause harm to consumers, from mild damage to serious damage, which can lead to death. Since there are people who use these drugs without clinical indication and who do not understand the action and effects they cause in the body, they often care only about weight loss in search of aesthetic standards, thus leaving health in the background.

**Keywords:** Ozempic. Obesity. Semaglutide.

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## INTRODUCTION

Obesity is the global pandemic of the twenty-first century, it is a chronic pathology, essentially characterized by the accumulation of excess body fat. Research has shown that the situation is worrisome, since the consequences of obesity can directly interfere with the quality of life of the population, and according to Faeh D, et al. (2011) it is also associated with the growing mortality statistics. In Brazil, the percentage of obese people in adulthood went from 12.2% in 2003 to 26.8% in 2019. In the same period, the proportion of the adult population overweight went from 43.3% to 61.7%, representing almost two-thirds of Brazilians. This means that currently one in four people over twenty years of age is obese, and more than half of the population is overweight (BRASIL, 2019).

According to the World Health Organization (WHO), obesity is conceptualized as a global, multifactorial disease, characterized by the excessive accumulation of adipose tissue. It results from the interaction of genetic, cultural and family factors. It is considered a disease because it predisposes to early death and the onset of diseases, as it is currently one of the most serious public health problems. The main form of diagnosis is through the calculation of the Body Mass Index (BMI), evaluated according to the WHO, when the BMI is  $\geq 30$  kg/m<sup>2</sup>, and the weight range that indicates normal weight between 18.5 and 24.9 kg/m (ABESO, 2016).

Treatment, prevention, and lifestyle change through dietary intervention and increased physical activity is ineffective in most patients. In this scenario, pharmacological treatment becomes effective in combating obesity, as the obese person must be submitted to a treatment with drug intervention to achieve better results, associated with a diet and physical activity to help maintain this result in the long term (BRASIL, 2016).

In this regard, it is necessary to highlight Ozempic, a drug prescribed for the treatment of type 2 diabetes contains the active substance "semaglutide", which helps reduce blood sugar levels. Despite this, this has been a product widely consumed by individuals who want to lose their weight in a miraculous way and without the monitoring of a qualified health professional (GOMES; TREVISAN, 2021).



## LITERATURE REVIEW

First, it is necessary to emphasize that obesity represents a pandemic and multiethnic problem, with incidence in high, medium and low-income locations, especially in urban areas, affecting both men and women of the most diverse age groups (WANNMACHER, 2016). The World Health Organization (WHO) defines obesity as a chronic disease characterized by the atypical or exaggerated accumulation of fat throughout the body, posing health risks (DIAS et al., 2017).

In this sense, irrationality and the occurrence of the consumption of some medications had negative factors, an example is the drugs with thermogenic actions, which activate the sympathetic system, because by promoting thermogenesis there is an increase in both heart rate and blood pressure. Some examples: Dinitrophenol is related to hyperthermia and cardiovascular collapse, phenylpropanolamine related to stroke, aminorex caused pulmonary hypertension, ephedrine raised blood pressure.

Semaglutide (Ozempic) is a class of drugs known as a GLP-1 analogue, acts as an antagonist of the GLP-1 receptor, which is a physiological hormone released in the gastrointestinal tract that increases insulin secretion and inhibits hepatic glucose production. The action on blood glucose and the effects on appetite are mediated by GLP-1 receptors in the pancreas and brain. Ozempic demonstrates superiority when compared to other injectable therapies in its class. Its mechanism of action involves a delay in gastric emptying, thus reducing weight through a caloric deficit, including a reduction in appetite in general, in addition to reducing the preference for foods with a high fat content. GLP-1 receptors also have an effect on plasma lipids, lowering systolic blood pressure, and reducing inflammation. In addition, this drug increases glycemic control through various metabolic pathways.

Ozempic reduces body weight by reducing appetite and hunger, increasing satiety, curbing food cravings, changing food preferences, and limiting energy intake. Among the most common side effects are gastrointestinal (GI) side effects, vomiting, diarrhea and nausea which have a very small contribution showing a change of 0.07 to 0.5 kg in total weight loss. (PIRES WEBER, et al., 2023) Pharmacological therapies, including the use of osemptic, play an important role in clinical treatment for weight loss, combined with nutritional treatment and increased physical activity. No pharmacological treatment is seen as effective if used alone, as weight regain has been demonstrated in



many studies after discontinuation of drug use, when there are no effective changes in lifestyle.

Once the goal is reached, patients usually reduce or cease visits to the nutritionist abandoning dietary treatment, as a result of which there is weight gain making the yo-yo effect a growing reality. The same pattern is seen by people who lose weight without professional support before, during, and after treatment, which causes a gradual return to the dietary pattern or behavioral profile evaluated in the pre-treatment. (PIRES WEBER, et al., 2023).

Due to the easy access to acquisition and satisfactory results, it facilitated neglect with regard to simultaneous treatment, changes in lifestyle and guided dietary re-education. It is an agenda for debate on the importance of nutritional monitoring and healthy weight loss and not only supported by medications, which bring long-term side effects. When there is no simultaneous follow-up, the results are not long-lasting, and they become unsatisfactory. (PIRES WEBER, et al., 2023). The treatment of obesity is complex and challenging, as it addresses the need for a multidisciplinary team. The protocol should involve nutritional and physical activity guidelines aimed at modifications

## **FINAL CONSIDERATIONS**

It should be noted that the irrational use of these drugs can cause harm to consumers, from mild damage to serious damage, which can lead to death. Since there are people who use these drugs without clinical indication and who do not understand the action and effects they cause in the body, they often care only about weight loss in search of aesthetic standards, thus leaving health in the background. In this way, it is known that the drug will not cure obesity, it will only control weight gain, hence the importance of practicing alternative activities such as physical exercise associated with treatment.



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