



**How to Maximize
the Effectiveness of
your GLP-1
Medications**





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We, at All of Nutrition, are seeing more patients on GLP-1 medications and want to help patients maximize the effectiveness of them in combination with nutritional care and other lifestyle changes in order to have long-term success.

What is GLP-1?

- GLP-1 stands for glucagon-like peptide 1, which is a gut-derived peptide secreted from the intestines after a meal.
- GLP-1 receptors are found throughout the body including in the brain, gastrointestinal tract, the pancreas, and other organs.

Functions of GLP-1

- ThGLP-1 helps with many things including weight loss by helping to regulate appetite and lower blood glucose levels.
- GLP-1 is also thought to act at the hypothalamus (brain) by regulating appetite and increasing satisfaction.
- GLP-1 also slows down the gut and tells your brain you are full.
- GLP-1 also helps increase insulin secretion from the pancreas.
- GLP-1s have numerous actions and scientists are still finding out more and more about their functions.



What is a GLP-1 Receptor Agonist?

- It is a synthetic form of GLP-1 that mimics the actions of the GLP-1 hormone in the body.
- They are FDA-approved medications to treat type-2 diabetes and obesity.
- They reduce appetite, slow down digestion and boost metabolism.
- They also help the body produce more insulin, reducing the amount of sugar produced by the liver.

Types of GLP-1 Receptor Agonists

There are currently two FDA approved GLP-1 agonists for weight loss:

Semaglutide (Wegovy) and Tirzepatide (Zepbound).

- Each of these medications have a sister drug that is sold for the management of type 2 diabetes: Semaglutide (Ozempic), Tirzepatide (Mounjaro). Both drugs have weight loss affects.
- Semaglutide (approved in 2021 for chronic weight management) and tirzepatide (approved in 2023 for chronic weight management) are medications that act in the brain to reduce food intake, food cravings body weight, waist circumference and systolic blood pressure.

Semaglutide vs. Tirzepatide

The main difference is that **tirzepatide mimics two hormones while semaglutide mimics one.**

- Semaglutide is the active ingredient in Ozempic and Wegovy. It works as a GLP-1 receptor agonist to treat type-2 diabetes and weight loss.
- Tirzepatide is the active ingredient in Mounjaro and Zepbound, which can also treat type 2 diabetes and result in weight loss.
- Tirzepatide is a GLP-1 receptor agonist as well as a GIP (glucose-dependent insulinotropic polypeptide) receptor agonist. GIP is another hormone your body makes after you eat.
- There are also many compounded peptides on the market. These have not been FDA approved and should be used with caution.





How Does Rapid Weight Loss Occur?

- These medications reduce your appetite and hunger cues in order to reduce food intake and create a calorie deficit.
- Delayed gastric emptying prolongs the sensation of fullness, reducing the frequency of eating, and causing earlier satiety.
- A reduction in cravings and altered food preferences makes individuals less likely to overeat their favorite foods.

The Effectiveness of GLP-1 Receptor Agonists

- Newly approved and emerging anti-obesity medications (AOMs) can **reduce body weight by about 15%**, which has previously only been seen with bariatric surgeries and very low-calorie diets.*
- In the past 5 years, the number of patients with Diabetes taking a GLP-1 medication has risen to 43%, and the number of patients diagnosed as overweight taking the medication has risen to 22%.*

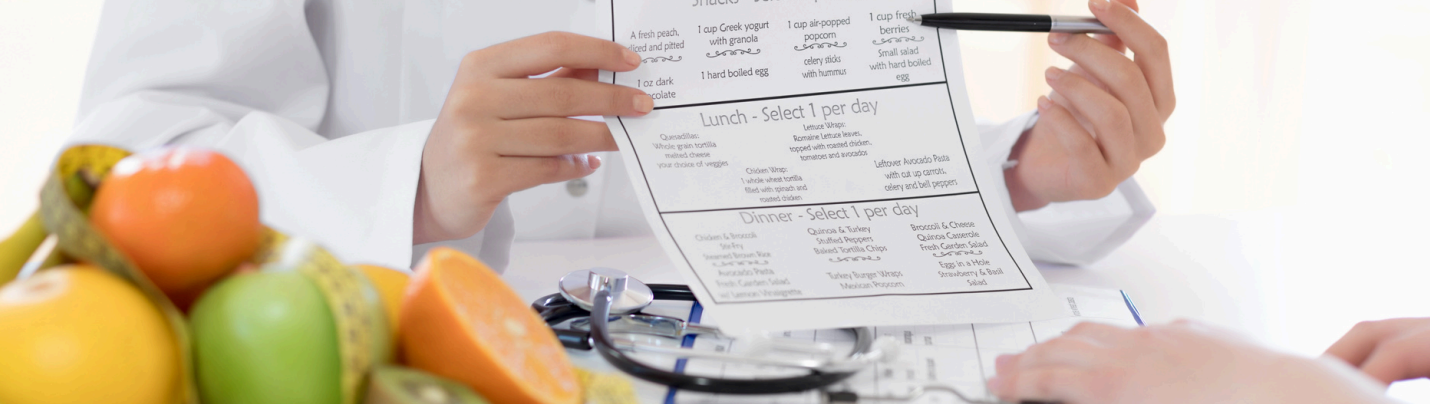
* Mormon, M. John, "GLP-1 Medications and Weight Loss: Help Patients Navigate Beyond Trends." Wolters Kluwer, 19 July 2024, www.wolterskluwer.com/en/expert-insights/glp-1-medications-and-weight-loss-help-patients-navigate-beyond-trends. Accessed 29 July 2024.

How Long Can Patients Take GLP-1 Medications?

- Research shows that many patients regain the weight they lost when they stop taking the drugs. This is often because patients did not change their dietary patterns or increase physical activity levels.
- In order to maintain weight loss and the health benefits associated with a lower body weight, **a healthy diet and regular exercise must be incorporated into daily life.** Lifestyle changes are key to maintaining weight loss.



How Long Can Patients Take GLP-1?



Common Side Effects

- Common side effects include nausea, vomiting, diarrhea, constipation, GERD, abdominal pain, dizziness, and hypoglycemia.
- In clinical trials, most events were mild or moderate and generally short term.

Managing Side Effects

- We recommend that you work directly with a Dietitian to manage side effects and help identify which foods that are causing discomfort.
- The feeling of satiety and decreased hunger from GLP-1s can result in under fueling which can lead to decreased muscle mass and nutrient deficiencies. This can further develop into depression when not managed.
- If negative side effects continue or become severe, you should call your doctor.



Important Considerations

- Energy (calorie) intake is expected to decrease with use of weight loss medications.
- With decreased energy intake, **the consumption of nutrient-dense foods becomes more important** in order to reduce the risk of nutritional deficiencies.
- Nutrient-dense foods are good sources of vitamins, minerals, or other health-promoting components and have little added sugars, saturated fat, and sodium.
- Examples of nutrient-dense foods include **vegetables, fruits, whole grains, seafood, eggs, beans, peas and lentils, unsalted nuts and seeds, fat-free and low-fat dairy products, and lean meats and poultry.**
- Medical nutrition therapy from a registered dietitian alongside GLP-1 medications can help to maximize health outcomes and ensure sustainability.
- Once an individual stops taking the GLP-1 medication, weight loss will likely come to a halt or even regain weight, unless you are following the proper recommendations. **Healthy eating habits, behavioral strategies, and commitment to long-term health are necessary.**

Energy Intake

- Energy requirements vary based on an individual's sex, age, current body weight, and physical activity level, as well as other factors.
- The less you are eating, the higher the potential for nutritional deficiencies.
- Please **work with a registered dietitian** to determine your specific, individualized energy requirements.

Protein

- Insufficient protein intake can lead to excessive loss of lean body mass, weakness, edema, hair loss, and skin changes.
- Patients on anti-obesity medications should aim for protein to make up 10-35% of their estimated energy intake.
- A minimum for of **60-70 grams/day may be considered** on an individual basis.



Carbohydrates

- Carbohydrate intake in healthy adults should **range from 45% to 65% of energy intake.**
- A dietary pattern severely low in carbohydrates is not necessary because it does not produce greater long-term weight reduction and may promote restricted intake of fruits, vegetables, and whole-grain foods, which are important sources of vitamins, minerals, and dietary fiber.
- Ketone body production with very low-carbohydrate (ketogenic) diets may promote increased urination, dehydration, and electrolyte imbalance.
- For patients who prefer a low-carbohydrate dietary pattern, attention to hydration (with fluid intake of >2 L/day) is recommended, along with consumption of nutrient-rich, high-fiber vegetables and fruits.



Fat

- Fat intake in healthy adults should **range from 20% to 35% of energy intake**.
- Dietary fats are important for the absorption of fat-soluble vitamins (A, D, E, and K) and to stimulate gallbladder emptying during weight reduction, which may reduce the risk of gallstone formation.
- Intake of foods rich in Omega-3 polyunsaturated fatty acids (e.g., flaxseed or fatty fish), Omega-6 polyunsaturated fatty acids (e.g., nuts, seeds), or monounsaturated fatty acids (e.g., olive oil) should be prioritized.
- A **balanced intake of healthy fats should be considered**. It has been recommended that fried and high-fat foods be avoided to decrease GI side effects associated with these medications.



Dietary Fiber

- Over 90% of American adults fail to meet the daily intake recommendations for dietary fiber.
- Adequate intake of dietary fiber is associated with lower cardiovascular disease risk and is important for gastrointestinal health.
- The general **recommendation for daily fiber intake is 25 g/day for women and 30 to 38 g/day for men**, depending on age.
- For patients receiving anti-obesity medications who do not currently meet recommended fiber intakes, gradual increases in fiber intake along with adequate fluid intake may decrease constipation.
- Use of a fiber supplement may be considered if you are unable to meet fiber goals with food alone. Please consult your Dietitian or Doctor before starting any supplements



Vitamins and Minerals

- Common vitamin and mineral deficiencies in the U.S include potassium, calcium, and vitamin D, and guidelines recommend increased intake of food sources of these nutrients (vegetables, fruits, low-fat dairy, and fortified soy alternatives).
- Additional nutrients of concern include iron (in women of childbearing age) and vitamin B12 (in older adults).
- Individuals with obesity are at increased risk of additional vitamin and mineral deficiencies.
- Working with a registered dietitian can help to improve your diet, decrease risk of vitamin or mineral deficiencies or add dietary supplements to reduce risk.



Fluid Intake

- The Adequate Intake level for fluids is **80 ounces per day for women and 96 ounces per day for men.**
- Fluid requirements can increase based on level of physical activity or hot climates.
- Target fluid intakes should be met with water or low-calorie beverages (such as unsweetened coffee or tea)
- **High caffeine intake is discouraged** because of the diuretic effect of caffeine.





Movement

- The CDC and ACSM recommends that all healthy adults aged 18–65 years should participate in moderate intensity aerobic physical activity for a minimum of 30 minutes on five days per week, or vigorous intensity aerobic activity for a minimum of 20 minutes on three days per week.
- It is also recommended that you maintain or increase muscular strength and endurance for a minimum of two days per week. This can be done with weight training (body weight training, yoga, pilates, water aerobics, etc).
- Please consult with your doctor before starting any new exercise program.

More resources at <https://www.acsm.org/education-resources/trending-topics-resources/physical-activity-guidelines>



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