

# GLP-1 Patient Guide

## Introduction to GLP-1 Therapies

GLP-1, or glucagon-like peptide-1, is a highly effective treatment used to manage and mitigate the symptoms of Type 2 Diabetes and assist with weight loss in individuals struggling with obesity. This therapy works by mirroring the action of a naturally occurring hormone in the body that helps regulate blood sugar levels and appetite.

By enhancing the secretion of insulin, slowing gastric emptying, and reducing appetite, GLP-1 therapies not only help stabilize blood glucose levels but also contribute to a decrease in body weight. GLP-1 offers patients a dual approach to controlling these interlinked chronic conditions through a single treatment strategy.

Type 2 diabetes is a condition where the body struggles to manage blood sugar levels properly. Here are the [key components and how GLP-1 can help](#):

1. **Problem: Insulin Resistance** - Normally, when you eat, your body breaks down food into glucose that enters your bloodstream. This increase in blood sugar signals your pancreas to release insulin, which allows glucose to enter your cells to be used for energy. In type 2 diabetes, cells don't respond as well to insulin. The pancreas tries to compensate by producing more insulin, but over time it can't keep up, and blood sugar levels remain high.
  - a. **Solution:** GLP-1 helps your body use insulin more effectively. It also improves the ability of muscles and fat cells to absorb glucose from your blood, which helps keep your blood sugar levels stable.
2. **Problem: Too Much Glucagon** - This hormone has the opposite effect of insulin. When blood sugar is low, glucagon signals the liver to release stored glucose into the bloodstream. However, in type 2 diabetes, this regulation can be off, meaning that the liver releases too much glucose into the bloodstream, causing high blood sugar.
  - a. **Solution:** GLP-1 helps control blood glucose by telling your liver to release less glucose, especially after meals. This is important for managing type 2 diabetes, as it prevents the blood sugar spikes that are common after eating.

GLP-1 helps patients with or without diabetes lose weight by altering these processes:

3. **Problem: Rapid Digestion** - Amylin is a hormone often released along with insulin. It helps slow the emptying of the stomach and can reduce appetite, which helps control blood sugar levels. The stomach may also adaptively increase its emptying speed to handle larger volumes of food more frequently consumed by overweight individuals.
  - a. **Solution:** GLP-1 slows the movement of food through the digestive system. This is partially due to the stimulation of the cells in the pancreas that make insulin

and amylin. Slower digestion helps prevent rapid increases in blood sugar following meals and increases feelings of fullness.

4. **Problem: Altered Hunger Cues** - Insulin resistance also occurs in the brain. Ghrelin, known as the "hunger hormone," is elevated in overweight individuals, encouraging excess food intake when the stomach is empty. Conversely, patients also develop leptin resistance, where the brain fails to respond to "satiety hormone" signals to stop eating, leading to persistent hunger making it more challenging to manage your weight.
  - a. **Solution:** GLP-1 influences the chemical messengers that regulate appetite and mood; it promotes the release of serotonin, which enhances mood and satiety, thereby reducing food intake. At the same time, GLP-1 reduces the secretion of ghrelin, which decreases appetite. It also improves the sensitivity of brain cells to leptin, helping to restore effective signaling of fullness.

Carrying excess weight affects all of your body processes, leading to other health conditions. Losing weight is an investment in your future. By losing significant weight, you're improving the function of these systems:

1. **Cardiovascular System:** Weight loss usually leads to lower blood pressure, reduced cholesterol levels, and decreased strain on the heart. This reduces the risk of cardiovascular diseases such as heart attack, stroke, and atherosclerosis.
2. **Bones and Joints:** Losing weight decreases the stress and load on bones and joints, reducing the risk of osteoarthritis and other joint problems. It can also improve mobility and reduce pain associated with weight-bearing activities.
3. **Respiratory System:** Reduced body weight alleviates pressure on the lungs and respiratory tract, improving breathing and reducing the risk of sleep apnea and asthma.
4. **Digestive and Immune Systems:** GLP-1 can influence the composition of the gut microbiota. It may promote the growth of beneficial bacterial strains that are associated with reduced inflammation and a strong intestinal barrier. A healthy gut barrier prevents harmful substances and pathogens from leaking out of the intestines and into the bloodstream.

## Managing Side Effects

Although GLP-1 can have side effects, they are typically mild and manageable. The substantial benefits this therapy offers in managing diabetes and improving overall health typically outweigh these effects. In most cases, your doctor will have you slowly increase your dose at the beginning of the treatment to mitigate these side effects.

The most common effects are gastrointestinal in nature, like nausea, constipation, and diarrhea. To mitigate these effects, there are a couple of things you can do to help.

1. Try to eat slowly and mindfully, ensuring that you stop when you no longer feel hungry, rather than eating until you feel full.
2. Stay hydrated.

3. Eat smaller, more frequent meals.
4. Eat only when you feel hungry.
5. Try to maintain a balanced diet, including high-fiber foods, to help mitigate diarrhea.
6. Avoid high-fat, spicy, and highly processed or unhealthy foods.
7. Try to avoid alcohol as it may place extra stress on your liver, cause abdominal pain, or worsen constipation.

Contact your doctor if you are following the dietary guidelines and experience worsening or long-lasting symptoms.

## Optimizing Weight Loss on GLP-1 Therapy

### What is Skinny Fat?

Sarcopenic Obesity or “Skinny Fat” is when an individual has very little muscle mass and strength compared to their fat mass. It is particularly prevalent among older adults and poses significant health risks like metabolic syndrome, cardiovascular diseases, and physical disability.

Managing body weight is more complicated in sarcopenic obesity than in general obesity. Weight loss strategies must be carefully designed to ensure that fat loss occurs without additional loss of muscle mass. Traditional weight loss programs that focus solely on reducing calories can exacerbate muscle loss, making the condition worse.

Therefore, targeted weight loss that promotes fat reduction while preserving or enhancing muscle mass can significantly improve physical function, metabolic health, and overall quality of life.

Gaining muscle mass can be a strategic “hack” for weight loss because muscle tissue is metabolically active and burns more calories than fat tissue—even when you're just sitting still. By increasing muscle mass, you increase your basal metabolic rate (BMR), which is the number of calories your body burns per day at rest. This heightened metabolic rate helps you burn more calories throughout the day, boosting overall energy expenditure, including during periods of physical activity. Muscle also improves insulin sensitivity, reducing the likelihood of glucose being stored as fat.

As a result, building muscle not only **enhances your body's calorie-burning capabilities** during exercise but also **increases daily caloric burn**, facilitating easier weight management and contributing to long-term health improvements.

## Optimizing Protein Intake

Protein is your best weapon against the loss of muscle mass. When you reduce your calorie intake, the body turns to other sources of energy, like fat or muscle mass. To ensure that you lose only fat mass and not muscle mass, it's essential to eat enough protein.

Not only is protein essential to gaining and maintaining muscle mass, but it's also the macronutrient that will leave you [feeling the fullest, compared to carbohydrates or fats](#). It is recommended that patients undergoing GLP-1 therapy aim to consume **a minimum of .8g of protein per kilogram of body weight, which translates to about .4g of protein per pound.**

Lean animal proteins and legumes are the best sources of protein, as higher-fat protein sources like red meat are more likely to cause digestive side effects like constipation. Some lower-calorie protein sources are:

1. Chicken or Turkey Breast
2. Egg Whites
3. Fish and Shellfish
4. Beans like black beans, lima beans, or chickpeas
5. Greek Yogurt and Low-Fat Dairy Products
6. Cauliflower and Broccoli

If you frequently cook at home, you don't have to abandon your favorite recipes; just make simple swaps to achieve a healthier balance of nutrients.

- Swap cream for cottage cheese for more protein and less calories
- Cook rice or soups with bone broth for more protein
- Swap eggs for egg whites for less calories
- Swap butter for healthy fats like olive oil
- Consider air-frying fried foods with some olive oil spray rather than deep-frying
- Use greek yogurt in creamy salad dressings or in place of sour cream

If you struggle to feel full when eating healthy, try choosing foods with low calorie density that you can eat a higher volume of—like broccoli or cucumber—and making sure you incorporate enough protein into your meals.

## How to Gain and Maintain Muscle through Exercise

Integrating resistance training into your fitness routine is a fantastic way to invest in your health and see tangible improvements. Starting with simple exercises like walking or practicing getting up from a couch can set a solid foundation, slowly improving your strength and endurance. As you grow more comfortable, gradually increasing the difficulty of these exercises can help you build muscle, boost your metabolism, and improve your mood.

Starting an exercise routine doesn't require expensive equipment or a gym membership; you can achieve significant fitness gains using everyday items and simple activities. For instance,

bodyweight exercises such as squats, wall push-ups, and supported lunges are fantastic for building strength and can be performed in any spacious part of your home. If you're looking to add a bit of resistance, household items like water bottles, canned goods, or a backpack filled with books can serve as improvised weights. For stability and core strengthening, practices like planks or [dead bugs](#) can be incredibly effective. There are countless resources available online to guide you through various workouts. YouTube, for example, hosts a myriad of fitness channels that offer step-by-step exercise tutorials suited for all levels—from beginners to advanced.

Consistency is key. Regularly engaging in resistance training not only stimulates muscle growth but also prevents muscle loss. It's important not to rush the process; easing into more challenging activities ensures you enjoy the journey and avoid injury.

Breaking up long periods of inactivity with short bursts of movement can significantly benefit your muscle health and overall energy levels. Such small, manageable actions can have a big impact, making every day a little better.

By staying consistent and progressively increasing the challenge to your muscles, you'll not only see visible improvements in your strength and physique but also have more energy. On top of that, you'll feel a greater sense of well-being from the “happy chemicals,” called endorphins, released when you exercise. This approach to fitness makes it easier to embrace healthier habits and truly enjoy the rewards of being active.

## Making it Last - Sustainable Health Habits

To ensure the benefits of GLP-1 therapy are here to stay, developing long-term health habits is the best path. Here are some practical tips to integrate these practices into your everyday life:

1. **Incorporate Healthy Snacks into Your Routine:** Discover new favorite snacks that are both satisfying and healthy. Opt for fresh fruits, air-popped popcorn, veggies with a light dip, protein bars, yogurt, or baked snacks over fried snacks. Experiment with different combinations to keep your snack time exciting and nutritious.
2. **Mindful Grocery Shopping:** Always go grocery shopping with a list and a full stomach. Shopping while hungry can lead to impulse purchases of less healthy foods. Planning your meals and snacks before you head to the store helps you make smarter, healthier choices.
3. **Eat Mindfully:** Avoid eating while distracted, such as watching TV or using your phone. Distraction during meals can lead to overeating by dulling your natural fullness cues. Try to eat at a dining table and focus on the flavors and textures of your food, which can help you enjoy your meals more and feel satisfied with less.
4. **Choose Enjoyable Exercises:** Find a form of exercise you truly enjoy, as you're more likely to stick with it over the long term. Remember, fitness doesn't have to mean running on a treadmill or doing squats unless you enjoy those activities. Explore different options like dancing, swimming, walking your dog, cycling, or even gardening. Engaging in

physical activities that you look forward to can transform exercise from a chore into a rewarding part of your day.

5. **Schedule Your Workouts:** Treat your exercise time like any other important appointment by scheduling it into your day. Choose specific times for physical activity and set reminders to keep yourself accountable. Whether it's a morning yoga session, a lunchtime walk, or an evening bike ride, having a set time each day helps establish a routine and makes it more likely that you'll stick with your exercise plan. This structure can turn fitness into a regular, integral part of your daily life.
6. **Establish a Support System:** Engaging your friends, family, or household members in your health journey can help your motivation and success. Share your goals with them or even invite them to join you in your activities. Having a support system can provide encouragement, keep you accountable, and make your fitness journey more enjoyable and sustainable. This turns the pursuit of wellness into a shared experience.

By making these practices part of your daily routine and finding enjoyable ways to implement them, you'll be more likely to maintain these healthy habits in the long term. This proactive approach helps maximize the effectiveness of your GLP-1 therapy and ensures you maintain this progress down the road.

## Conclusion

Making a lasting lifestyle change, particularly in terms of diet and exercise, hinges on the principles of integration and enjoyment. To ensure these changes stick, you must make them part of your daily routine. This could mean scheduling workouts at the same time each day or preparing healthy meals during a set time each week, making them a natural part of your life rather than a burden.

Enjoyment plays a role as well; when you genuinely enjoy the exercises you do and the food you eat, these elements cease to be chores and become pleasurable activities. This enjoyment not only boosts motivation but also makes it more likely that you'll stick with these changes in the long run. By choosing activities and foods that bring you joy, you're more likely to maintain these habits over time, creating a self-sustaining cycle of healthy behaviors that are both adaptable and resilient to life's changes.

Integrating enjoyable, healthy choices into your daily life transforms them from temporary fixes to permanent and fulfilling parts of your everyday routine, increasing the likelihood of long-term success.

## Support

We are committed to providing continuous support and guidance throughout your health journey. Our team is always ready to assist you in navigating the complexities of GLP-1 therapy, making lifestyle changes, applying diet modifications, and starting a new exercise routine. We

encourage you to reach out for help whenever needed, as embracing these practices with our support will lead to meaningful and lasting health benefits.

Remember, investing in your health not only improves your immediate well-being but also secures a healthier future, ensuring you're there for the moments that matter. Let us know if there is anything we can do to help you make these changes lasting and rewarding.