Nutrition

For Lipodystrophy Syndromes

"I do what my doctor tells me. I follow my dietitian's advice. But food still affects me differently."

For people living with lipodystrophy syndromes, healthy eating can be a challenge.

- Lipodystrophy syndromes have a cluster of complications that can affect how food is digested, absorbed, and used in the body.
- Medications can also have side effects that affect appetite and lab values.
- Lipodystrophy syndromes can cause **hyperphagia**, a condition of constant hunger that can lead to overeating.
- Because there are different types of lipodystrophy syndromes, there is no single diet that will work for everyone. Some diets like the Ketogenic Diet, Mediterranean Diet, Pritikin, the Autoimmune Protocol, or other popular diets may or may not be right for you. Always discuss with your healthcare provider before making dietary changes.

With this guide, you will learn...

- How different nutrients affect blood sugar, triglycerides, cholesterol, blood pressure, and other related health concerns.
- Healthy choices for carbohydrates and protein.
- When and how to include moderate amounts of healthy fats in your diet.
- How to balance meals for proper portions and optimal nutrition.
- How to work with your dietitian in personalizing a meal plan that is right for you

The information in this guide is based on clinical experience, expert opinion, and patient outcomes.

While diet alone cannot cure or treat lipodystrophy syndromes, healthy eating is still an important part of managing blood glucose, triglycerides, blood pressure, and other complications. The purpose of this guide is to help you find what foods work best for you.

This guide is intended for individuals with lipodystrophy syndromes who experience metabolic complications.

Medications are required for the management of lipodystrophy syndromes and related complications. See a lipodystrophy specialist for guidance.

Lipodystrophy United

For people with lipodystrophy syndromes, food affects the body in different ways.

Below are key points to consider when planning your meals.

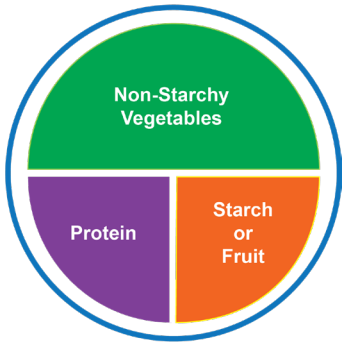
Together with medications, healthy food choices are an important part of treatment. While there is no specific diet for lipodystrophy syndromes, the nutrition goals are to prevent or manage complications, which can include diabetes, heart disease, liver disease, pancreatitis, and the many issues associated with these conditions.

Things to Know About Blood Glucose

Why is glucose important?

- **Blood glucose** is also known as **blood sugar**.
- **Glucose** is the main fuel for the brain, muscle, and other cells throughout the body. The body needs glucose to survive.
- **Insulin** is the hormone that allows glucose to enter the cells.
- For many people with lipodystrophy syndromes, the body does not respond properly to insulin, a condition called **"insulin resistance."** Glucose is unable to enter the cells. Instead, it stays in the blood and builds up, leading to high blood glucose. Insulin resistance often leads diabetes.
- Your lipodystrophy specialist will recommend which medications will best manage your blood glucose.

How Food Affects Blood Glucose



The Plate Method

- **Carbohydrates** ("carbs") are the primary source of glucose. Carbs include starchy vegetables, beans, lentils, fruit, milk, yogurt, and grains like rice, oatmeal, and wheat products like bread and pasta.
- **Keep carb portions small.** See **"The Plate Method"** for proper portions.
- Choose carbs that are higher in **fiber** and/or **protein,** like whole grains, beans and lentils. Fiber and protein help slow the digestion and absorption of food so blood glucose rises more slowly.
- **Limit added sugars** like those in candy, sugary beverages, pastries, and sugary cereals; **limit refined carbs** like white bread or white rice, and **simple sugars** like in fruit juice or syrups.
- **For best results, eat protein and vegetables first.** Studies show that eating carbs last results in a lower rise in blood glucose after the meal.

Things to Know About Fat and Triglycerides

What are triglycerides?

- **A triglyceride** is a type of fat. Fat is used for energy storage, hormone production, insulation, and other functions.

- Extra triglycerides are stored in body fat. However, for people with lipodystrophy syndromes, body fat does not develop or distribute properly, which affects storage capacity. Without proper storage, triglycerides build up in the blood. High triglyceride levels increase the risks for **pancreatitis** and **heart disease**. Fats can also build up on the liver, a condition called **metabolic dysfunction-associated fatty liver disease (MAFLD)**.
- **Insulin resistance** is also related to high triglyceride levels.

How Food Affects Triglycerides

- **We get triglycerides from the fat in our foods.** Fats are found in animal protein like meat, poultry, oily fish, and dairy. Fats are are also in some plant foods like nuts, seeds, avocado, olives and coconut. Cooking oils like olive oil, vegetable oil, canola oil, and other oils are also fats.
- **Our body also makes triglycerides out of sugar,** especially simple sugars from sweets, sugary beverages, and refined carbs like white rice or white bread**.** Managing blood glucose is an important part of managing triglycerides.

While some people with lipodystrophy syndromes can consume a small or moderate amount of fat, others with severely high triglycerides will have to use fats sparingly.

Other Nutrition Considerations

Foods to Include

- **Diets high in plant foods** like vegetables, beans, lentils, fruit, and whole grains
  - improve blood pressure and cholesterol for heart health.
  - help manage blood glucose.
  - are gentler on the kidneys.
  - promote digestive health and regularity.
  - can lower risk for certain cancers.
  - support immune health.
- **Lean protein** like chicken, turkey, some fish like cod or tilapia, lowfat dairy, or **plant proteins** like beans, lentils, tofu and other soy foods are lower in fat. Protein is important for the building and repair of tissue, muscle, bone, skin, hair, and nails. Protein is also involved in the production of hormones, enzymes, and other important compounds in the body.

Modifications will be required for certain conditions such as severely high triglycerides, pancreatitis, kidney disease, digestive disorders, or other complications.

A registered dietitian nutritionist will evaluate your labs and symptoms to help you personalize your dietary needs.

Foods to Limit

- **Limit foods high in fat** like high fat or processed meats, full fat dairy, and deep fried foods. Use minimal amounts of cooking oils, salad dressings, nuts, seeds, and avocado.
- **A very low fat diet may be required** for people whose triglycerides are over 1000 mg/dL or if they have pancreatitis. Your dietitian and doctor will guide you in following this special diet safely.
- **Limit highly processed foods** like some packaged foods and restaurant foods, sugary beverages like regular soda and juice, sweets, and refined carbohydrates like white flour and white rice. Highly processed foods are

often low in fiber and high in simple carbs and sodium. Some may contain harmful fats or additives.

- **Limit foods high in sodium**, which can increase blood pressure and water retention. Foods high in sodium include many packaged foods and restaurant foods.

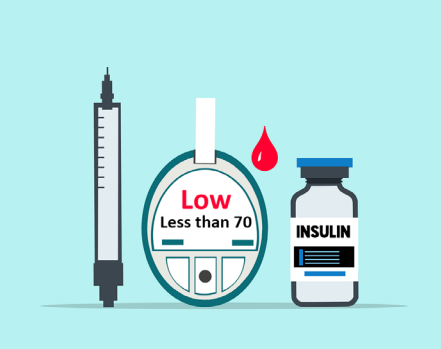
Some Medication Considerations

Your doctor will prescribe medications specific to your needs. Some commonly used medications will require additional meal planning considerations.

Certain **diabetes medications**, specifically insulin, can increase your risk for dangerously low blood glucose, also known as **hypoglycemia**.

To prevent hypoglycemia (glucose less than 70 mg/dL)

- Include a **consistent amount of carbohydrates** (about one-quarter plate portion) in each of your meals.
- **Avoid skipping meals.**
- **If you experience recurring hypoglycemia,** talk to your doctor about adjusting your medication doses.
- **Prevention strategies vary per person.** Work with your diabetes specialist for individualized planning.



GLP-1 RAs are medications that are used for **diabetes** and/or **weight management**, available in injectible or oral forms. These medications work by slowing digestion in the stomach, regulating appetite, and improving insulin sensitivity. Some people with lipodystrophy syndromes found that it **helps manage hunger**. However, side effects can include stomach upset or prolonged fullness, which can prevent people from eating enough nutrients.

To reduce GLP-1 RA side effects and insure adequate nutrition, prepare meals that are easier to digest:

- Cook vegetables and protein until they are soft and tender, like in stews and soups.
- Consider softer proteins like fish, eggs or egg whites, fat free cottage cheese, lowfat or nonfat milk and yogurt, or plant proteins like beans, lentils, tofu or other soy foods.
- Avoid high fat meats, deep fried foods, or other high fat meals.
- Avoid large meals, especially in the evening or before bed. Eat smaller meals throughout the day.

If using diuretics, GLP-1 RAs increase the risk of dehydration, low sodium, or other electrolyte abnormalities. Follow up with your lipodystrophy specialist for close monitoring and treatment if needed.

Metreleptin is a key treatment for lipodystrophy syndromes. The medication helps regulate appetite, improve insulin sensitivity, and reduce fat in the liver. It has been especially helpful for those who experience **hyperphagia**, a condition that causes constant hunger. Hyperphagia makes it difficult to manage diet and often leads to overeating. **If metreleptin is used with insulin, there is an increased risk for dangerously low blood glucose.** Take the precautions above for preventing hypoglycemia.

Resources

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