

Prediabetes Treatment Guidelines

Prediabetes is a significant health concern characterized by elevated blood sugar levels due to increased insulin resistance and impaired glucose uptake. A person with prediabetes will present with an average blood glucose above normal ranges but below the threshold for a type 2 diabetes diagnosis. This condition represents an increased risk of developing type 2 diabetes and heightened susceptibility to heart disease and stroke.

Prediabetes patients often do not present with any symptoms, but the condition can be diagnosed using a blood glucose test. Risk factors include genetic predisposition, sedentary lifestyles, excessive calorie consumption, obesity or high body mass index (BMI), hormonal imbalances, age-related changes in metabolism and lifestyle habits, certain medications, and underlying health conditions. With correct and timely treatment, prediabetes can be reversible, and the development of type 2 diabetes can be delayed or altogether avoided.

Lifestyle modifications

Lifestyle changes are the most effective way to manage prediabetes and prevent progression to type 2 diabetes. There are several aspects of lifestyle changes that contribute to holistic health, including:

- **Weight loss:** For most prediabetes patients, weight management is an effective strategy to minimize the risk of type 2 diabetes. Weight management is especially important for patients with a high BMI or obesity, as it can lower A1C/HbA1C.
 - It is recommended that patients attempt to reduce their body weight by 5-10%.
 - Weight loss goals can be achieved by consistent, sustainable changes in diet and physical activity.
- **Regular exercise:** Physical activity plays a crucial role in enhancing insulin sensitivity and glucose metabolism. Engaging in regular exercise not only helps control weight but also enhances insulin sensitivity and glucose uptake by muscles.
 - Aim for at least 150 minutes of moderate-intensity aerobic activity per week.
 - Supplement aerobic activity with strength training and flexibility exercises.
- **Dietary changes**
 - Creating portion-controlled, balanced meals is a helpful way to implement dietary change. Fill half the plate with non-starchy vegetables, a quarter with lean protein, and a quarter with grains or starchy carbohydrates.
 - Implement mindful eating strategies to bring awareness to eating habits and limit overeating.
 - Avoid or reduce processed foods, alcohol, and foods or drinks high in trans fat and/or refined sugar.
 - Increase intake of water and unsweetened beverages, whole grains, healthy fats, fruits, non-starchy vegetables, and lean proteins.
- **Lifestyle change programs:** These are programs designed for patients diagnosed with prediabetes. A trained lifestyle coach helps guide patients to make healthy changes to reduce the risk of type 2 diabetes. Patients also have a support group of other people who have similar goals and challenges. CDC-recognized national DPP lifestyle change programs have been shown to cut the risk of type 2 diabetes by up to half.

- **Other lifestyle adjustments**

- Quitting smoking
 - Reducing or eliminating alcohol intake
 - Increasing hydration
 - Improving the quality and quantity of sleep
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Medication therapy

In cases of elevated risk of type 2 diabetes, patients may benefit from medications to manage metabolic function alongside lifestyle changes. Medications require a prescription and are only appropriate for patients with HbA1C levels close to the diagnostic threshold for diabetes.

- **Metformin:** It is a medication that reduces the level of glucose the liver releases. It is commonly prescribed to improve insulin sensitivity and glucose tolerance.
 - **Acarbose:** This slows the digestion of carbohydrates to prevent a blood sugar spike following meals.
 - **Semaglutide:** Medications to treat diabetes (brand name Ozempic) or obesity (brand name Wegovy).
 - **Vildagliptin:** A medication prescribed to make the pancreas produce more insulin. This medication is associated with unpleasant side effects such as nausea and headaches.
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Monitoring and follow-up

Regular monitoring and follow-up are essential components of prediabetes management to assess treatment efficacy and ensure adherence to therapeutic interventions.

- **Blood glucose levels:** Monitoring blood glucose levels regularly allows for timely adjustments to treatment plans and helps track progress toward glycemic targets.
 - **Blood pressure and cholesterol control:** These should also be monitored, as they are related to metabolic dysfunction seen in prediabetes.
 - **Mental health:** A prediabetes diagnosis can cause distress or elevated stress, which a doctor can help manage or make a referral to a mental health professional to address.
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