



# Diabetes and Nutrition: A Guide for Patients and Caregivers



## UNDERSTANDING PRE-DIABETES & DIABETES

### WHAT IS PRE-DIABETES?<sup>1,2</sup>

34% of U.S. adults ages 18 and older have pre-diabetes.

Pre-diabetes is a condition where blood sugar levels are higher than normal, but not high enough for a diabetes diagnosis.

### HOW IS IT DIAGNOSED?

Healthcare professionals may perform a 75 g oral glucose tolerance test, fasting plasma glucose (FPG) test, or measure your % hemoglobin A1C. Those who have two consecutive FPGs in the range of 100-125 mg/dL are diagnosed with pre-diabetes.

### IMPORTANCE OF LIFESTYLE CHANGES

People with pre-diabetes are at an increased risk of developing type 2 diabetes later in life. Lifestyle changes including weight management, a balanced diet, and increased physical activity can reduce the risk of developing type 2 diabetes.

### WHAT IS DIABETES?<sup>1,3,4</sup>

13% of U.S. adults ages 18 and older have diabetes.

Diabetes is a chronic health condition in which the body is unable to use and properly store glucose (a form of sugar). Therefore, glucose builds up in the bloodstream, causing blood sugar levels to rise too high.

### DIABETES TYPES & MANAGEMENT

There are two major types of diabetes, type 1 and type 2.

- ▶ **TYPE 1:** The body stops making insulin, a hormone produced by the pancreas that enables the body to use glucose found in foods for energy. People with type 1 diabetes require insulin therapy for life.
- ▶ **TYPE 2:** Either the body doesn't produce enough insulin or it's resistant to the normal action of insulin. Type 2 diabetes may be managed by lifestyle changes and (when needed) medications.

### LIFESTYLE CHANGES THAT CAN HELP REDUCE RISKS

Over time, high blood sugar levels can increase your risk of heart attack and stroke and lead to complications including kidney disease, nerve damage, hearing loss, and even death. Working with your healthcare team to adjust your diet, physical activity, and medications (if needed) to manage your blood sugar levels can help reduce these risks.



## NUTRITION & DIABETES<sup>2,5-7</sup>

Nutrition plays a significant role in the overall management of diabetes. Choosing a balanced diet with nutrient-rich foods in appropriate portion sizes can help keep your blood sugar levels in your target range.

### STAYING ON TRACK

Frequent self-monitoring of blood glucose can be used (with proper instruction) to keep track of the effects of meals and activity levels on blood sugar.



## CARB COUNTING IS KEY<sup>2,5-7</sup>

Carbohydrates turn into glucose in the body and therefore affect blood glucose levels more than fat or protein. This does not mean that you have to give up all carb-containing foods; however, monitoring your total carbohydrate intake is important.

### CARB COUNTING

Keep track of your carb intake by counting your "Carb Choices." One "Carb Choice" is equivalent to 15 grams of carbohydrates. To determine the target amount of Carb Choices in your diet, consider working with a Registered Dietitian Nutritionist (RDN). You may also use the BOOST® Carb Counting Worksheet to help you.

### QUALITY CARBS

Choose carbs from nutrient-dense sources such as fruit, vegetables, dairy, legumes, and whole grains, along with controlled portion sizes.

### LIMIT ADDED SUGARS

There are two main types of sugars in the diet — naturally occurring and added sugars. Look for carb-containing foods that are low in added sugars and rich in dietary fiber, vitamins, and minerals.

- ▶ **NATURALLY OCCURRING SUGARS** are inherent in foods and include fructose (found in fruit) and lactose (found in milk).
- ▶ **ADDED SUGARS** include any sugars or caloric sweeteners that are added to foods or beverages during processing or preparation of food (for example: table sugar, brown sugar, honey, or high fructose corn syrup).



## NUTRITION TIPS

### CHOOSE SOURCES OF LEAN PROTEIN<sup>8-10</sup>

Protein is important for muscle health and can help manage hunger. Look for protein sources that supply unsaturated fats like low-fat dairy, lean meats, poultry, legumes, fish, and eggs.

### FOCUS ON HEALTHY FATS<sup>11</sup>

Choose foods that provide monounsaturated fats, polyunsaturated fats, and omega-3 fatty acids, and minimize foods containing trans fats. Examples of healthy fat food sources include: avocado, oils (olive and flaxseed), olives, nuts (almonds, cashews, pecans, peanuts, walnuts), seeds (pumpkin, sunflower, flaxseed), and fatty fish such as salmon and albacore tuna.

### BE SODIUM-SAVVY<sup>5,12,13</sup>

People with diabetes are more likely to have high blood pressure, which can be affected by sodium intake. Aim to consume less than 2,300 mg sodium per day (equivalent to 1 teaspoon of salt) by limiting processed foods high in sodium. Examples of high-sodium foods include: canned soups and vegetables, cold cuts, pizza, salted nuts, cereals, and some condiments such as soy sauce, ketchup, mustard, and pickles.



## GUIDANCE ON BEVERAGES<sup>5</sup>

### ALCOHOLIC BEVERAGES

For those who choose to drink alcohol, women should consume no more than 1 drink per day and men should consume no more than 2 drinks per day.

Alcohol can increase your risk for low blood sugar, so it's important to monitor blood sugar levels frequently after drinking. Consuming food along with alcohol can also help.

### NON-ALCOHOLIC BEVERAGES

Avoid: sugary drinks like regular soda, fruit punch, fruit drinks, energy drinks, and sweet tea.

Choose: water, unsweetened teas, plain coffee, low-fat or fat-free milk, or juice (4 ounces or less), and aim for 8 cups per day of non-caloric beverages.



## HELP LOWER YOUR RISK OF DIABETES<sup>2,14-16</sup>

While you can't change the genes you inherit and how that influences your risk of developing diabetes, you can make some positive behavioral and lifestyle changes.

**WEIGHT MANAGEMENT:** If you are overweight, lose weight. Achieving a 7% weight loss goal can significantly reduce your risk for developing type 2 diabetes.

**GET MOVING:** Regular physical activity, such as taking a brisk walk for 30 minutes every day, is an important part of managing diabetes or pre-diabetes.

**NO SMOKING:** If you smoke, quit. Smokers are 30-40% more likely to develop diabetes compared to nonsmokers. Heavy smokers have an even higher risk.

**ADEQUATE SLEEP:** Getting too little or too much sleep is associated with increased risk for type 2 diabetes. Aim for 7-8 hours of sleep each night.



## SET AN ACTION PLAN<sup>2,5</sup>

When you have type 1 or type 2 diabetes, it is important to test your blood sugar regularly, have an action plan, and set small goals with your healthcare team.

Talk with your doctor and ask about your A1C levels (a measure of your average blood sugar levels over the past 3 months). A common goal for adults with diabetes is to get your A1C to <7%.

Meeting with an RDN regularly can help keep your meal plans in check, keep your blood sugar levels in target range, and provide encouragement to achieve a healthy lifestyle.



**BOOST Glucose Control<sup>®</sup> Drink is clinically shown to produce a lower blood sugar response vs. a standard nutritional drink in people with type 2 diabetes.<sup>17</sup>**

- ▶ 16 g high-quality protein
- ▶ 25 vitamins & minerals
- ▶ 190 nutrient-rich calories
- ▶ 1 carb choice

Incorporate BOOST Glucose Control<sup>®</sup> Drink into a balanced diet as part of a medically supervised diabetes management plan. Not a substitute for medication.

**REFERENCES:** 1. CDC. National Diabetes Statistics Report. 2020. <https://www.cdc.gov/diabetes/pdfs/data/statistics/national-diabetes-statistics-report.pdf>. 2. American Diabetes Association. Standards of Medical Care in Diabetes 2021. Diabetes Care 2021;44(S1):S1-S232. 3. Joslin Diabetes Center. General Diabetes Facts and Information. 2017. [http://www.joslin.org/info/general\\_diabetes\\_facts\\_and\\_information.html](http://www.joslin.org/info/general_diabetes_facts_and_information.html). 4. Mayo Foundation for Medical Education and Research (MFMER). Mayo Clinic, Diseases and Conditions, Diabetes Symptoms & Causes. <https://www.mayoclinic.org/diseases-conditions/diabetes/symptoms-causes/syc-20371444>. 5. Evert AB, et al. Diabetes Care. 2019;42:731-754. 6. National Institute of Diabetes and Digestive and Kidney Diseases. Carbohydrate Counting. 2017. <https://www.niddk.nih.gov/health-information/diabetes/overview/diet-eating-physical-activity>. 7. American Heart Association. Sugar 101. 2017. <https://www.heart.org/en/healthy-living/healthy-eating/eat-smart/sugar/sugar-101>. 8. Hamdy O, Horton ES. Curr Diab Rep. 2011;11(2): 111-9. 9. Campbell AP, Rains TM. J Nutr. 2015;145:164S-9S. 10. American Diabetes Association. Healthy Food Choices Made Easy - Protein. 2019. <https://www.diabetes.org/nutrition/healthy-food-choices-made-easy/protein>. 11. American Diabetes Association. Healthy Food Choices Made Easy - Fats. 2019. <https://www.diabetes.org/nutrition/healthy-food-choices-made-easy/fats>. 12. Franz MJ, et al. JAND. 2017;117(10): 1659-1679. 13. CDC. Get the Facts: Sodium and the Dietary Guidelines. 2017. [https://www.cdc.gov/salt/pdfs/sodium\\_dietary\\_guidelines.pdf](https://www.cdc.gov/salt/pdfs/sodium_dietary_guidelines.pdf). 14. Harvard School of Public Health. Nutrition Source. Simple Steps to Preventing Diabetes. [https://www.hsph.harvard.edu/nutritionsource/diabetes-prevention/preventing-diabetes-full-story/#Simple\\_steps](https://www.hsph.harvard.edu/nutritionsource/diabetes-prevention/preventing-diabetes-full-story/#Simple_steps). 15. Maddatu J et al. Trans Res. 2017;184:101-107. 16. Shan Z et al. Diabetes Care. 2015;38:529-537. 17. Klosterbuer A et al. JPEN. 2021;45:S194-195.