

DIABETES: NUTRITION AND EXERCISE

NUTRITION AND EXERCISE in the treatment of Type 2 Diabetes and Pre-Diabetes

I. NUTRITION

Usually, when you eat, much of your food is broken down into sugar (**glucose**) and is sent into your bloodstream. This glucose is the energy your body uses to function and work. In order for your body to use glucose for energy, you need insulin.

Insulin is a hormone made by your pancreas and is released when your blood glucose starts to rise after eating. Insulin works to “unlock” your body cells, much like a key opening a door, which allows glucose into the cells to be used for energy.

When you have diabetes, your body can't make enough insulin, can't use the insulin correctly (insulin resistance), or both. Too much glucose in the bloodstream over time can lead to symptoms and, eventually, serious health problems. Fortunately, diabetes can be managed well through medical and lifestyle interventions.

→ *Food choices are among several factors affecting blood glucose levels.*

The macronutrient **CARBOHYDRATE** is made up of glucose molecules. Carbohydrate containing foods have the biggest impact on blood glucose levels. The following types of foods are high in carbohydrate:

- Grain based foods: rice, cereal, pasta, crackers, rolls, bagels, tortillas, oatmeal
- Starchy vegetables: corn, peas, beans, potatoes, sweet potatoes, butternut squash
- Fruits and fruit juices: apples, bananas, oranges, grapes, berries, pineapple, etc.
- Milk and yogurt
- Foods with added sugars: cake, cookies, candy, pastries, ice cream, soda and other sweetened beverages

It is important to include carbohydrates in your diet for energy, and it's a good idea to spread them out throughout the day and pair them with the other macronutrients– fats and protein. The next section describes what this looks like in more detail.

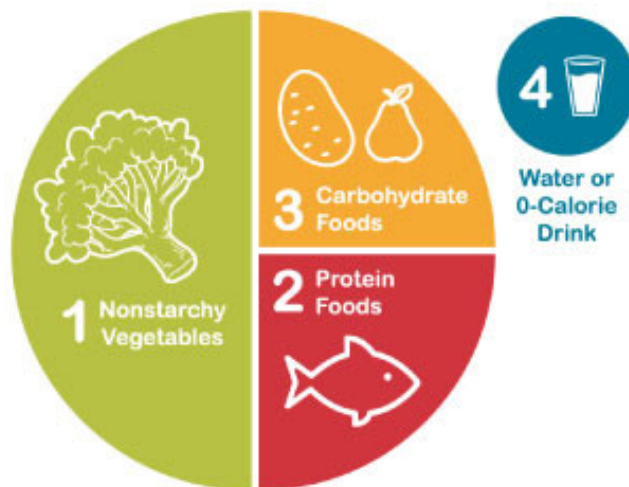
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The **Plate Method** is a simple tool to help visualize and plan balanced meals. This model assumes a dinner sized, or ~10", plate. Keep in mind that you may need more or less food than depicted; meet with a registered dietitian to discuss your individual needs. See bottom of page for scheduling instructions.

Fill **1/3 to 1/2** of a plate with **vegetables** - such as carrots, broccoli, cucumber, tomatoes, bell peppers, jicama and more!

Make **1/4 to 1/3** of the plate a **protein** such as chicken, turkey, fish, beef, eggs, cheese, tofu, or alternative meats.

Make **1/4 to 1/3** of the plate **carbohydrate foods**, ideally **fiber-rich** options like fruit, brown rice, quinoa, whole grain cereal, oatmeal, whole wheat bread, whole wheat pasta, tortillas, milk, yogurt, potatoes, or beans.



Additional tips for blood glucose management

- Aim to **eat within 1 hour of waking up**, and then **every 3-4 hours** after that.
- **Pair carbs** with **protein** for a snack to manage blood sugar in between meals. Examples: apple + peanut butter, crackers + cheese, yogurt + nuts, hummus + baby carrots
- Drink **water** instead of sweetened beverages.
- If you have clear hunger and fullness cues, use them to guide when and how much to eat. If not, work with a dietitian to come up with a plan that keeps you well nourished.
- Prioritize **sleep** and **stress management**.
- Engage in **joyful movement** frequently, such as walking, dancing, or sports.

Need more support?

Find hours and Zoom links for free drop-in nutrition counseling with UHS Dietitians at uhs.berkeley.edu/nutritioneducation.

You may schedule a longer visit on eTang or by calling Social Services at (510) 642-6074. (Note: These scheduled longer visits incur a fee. \$15 fee with SHIP.)

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II. EXERCISE IS MEDICINE

Regular exercise is an important component for managing diabetes or pre-diabetes. As a general practice, the American Diabetes Association supports

- At least 150 min of moderate-intensity physical activity per week, similar in intensity to brisk walking. With a minimum frequency of three times per week and at least 10 min per session. A maximum of 75 min of strength training could be applied toward the total 150 min/week physical activity goal.
- Aerobic activity bouts should ideally last at least 10 min, with the goal of 30 min/day or more most days of the week for adults with type 2 diabetes. Daily exercise, or at least not allowing more than 2 days to elapse between exercise sessions, is recommended to decrease insulin resistance, regardless of diabetes type.

At UC Berkeley, **Exercise is Medicine-On Campus** (EiM) is a collaborative effort between University Health Services, Rec Sports, School of Public Health, and the Department of Physical Education that aims to reduce your barriers to physical activity, help you explore the many available programs on campus, and support your engagement in physical activities of your choice to improve your mental health, physical health, and wellbeing. The program includes

- Orientation to physical activity resources on campus
- 1-to-1 Health Coaching
- Fitness consultations with a certified Personal Trainer at Rec Sports

If you are interested in joining the Exercise is Medicine (EiM) program, contact Health Promotion at the Tang Center at hpromo@berkeley.edu. Include in the subject line Diabetes and mention in the message that you are a participant in the Diabetes Care Management Program.