

Reducing Your Risk for Type 2 Diabetes: The Power of Food¹

Elena Torna, Jodi Fitzgerald, Danielle Aycart, Danielle Nelson, Madison Woodard, and Jeanette Andrade²

Overview of Diabetes

Diabetes is a group of diseases that are characterized by high blood sugar values. There are two main types of diabetes: Type 1, in which the body is not capable of producing enough insulin, and Type 2, the body is unable to use insulin properly (American Diabetes Association 2019; El Sayed et al. 2023). People who are diagnosed with diabetes and have elevated blood glucose levels over time can develop the following:

- Heart disease
- Kidney disease
- Nerve damage
- Lower-extremity amputations
- Blindness

According to the CDC (2024), 11.6% of the US population was estimated to have diabetes, primarily type 2, and 8.5 million adults are unaware that they have this disease. In recent years, it has been estimated that, on average, people diagnosed with diabetes have 2.3 times higher medical costs compared to people who are not diagnosed with diabetes

(El Sayed et al. 2023). This publication describes the modifiable risk factors for diabetes, primarily type 2, and tips to reduce your risk for diabetes.

Risk Factors for Developing Diabetes

Overweight or Obesity

Being overweight or obese increases your risk for diabetes. Discuss your current weight and how your weight has changed over time with your healthcare provider. Losing just 7% of your body weight can cut your risk of type 2 diabetes in half (Knowler et al. 2002). Your waist circumference is also important. Keeping your waistline less than 35 inches for women and less than 40 inches for men lowers the risk of diabetes (National Heart, Lung, and Blood Institute, n.d.).

Dietary Habits

Based on recent studies, Mediterranean or low calorie/low fat dietary patterns may help reduce your risk for developing diabetes (American Diabetes Association 2019;

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2. Elena Torna, former graduate student, UF/IFAS Department of Food Science and Human Nutrition; Jodi Fitzgerald, former medical student, University of Florida College of Medicine; board certified family medicine physician, rural health & critical access hospital practitioner, Pioneers Medical Center, Meeker, Colorado; Danielle Aycart, scientist in research and development in nutrition, The Kraft Heinz Company, Glenniew, IL; Danielle S. Nelson, associate professor and associate chief medical informatics officer, UF Department of Community Health and Family Medicine; Madison Woodard, graduate student, UF College of Dentistry; Jeanette M. Andrade, assistant professor and director UF Master of Science, Dietetic Internship (MS-DI) program, UF/IFAS Department of Food Science and Human Nutrition; UF/IFAS Extension, Gainesville, FL 32611.

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Bloomfield et al. 2016; Estruch et al. 2018; Salas-Salvadó et al. 2016). The consumption of whole grains, legumes, nuts, fruits, and vegetables (≥ 3 servings/week), as well as the minimal consumption of refined processed foods, red meats, and sugar-sweetened beverages (≤ 1 serving/day), may decrease your risk of developing this disease (Afshin et al. 2014; Chen et al. 2014; Chiuve et al. 2012; Mozaffarian 2016; Mursu et al. 2014).

Lifestyle

Lifestyle behaviors that may increase your risk for diabetes include the following:

- **Lack of physical activity.** The current recommendation is to have a goal of at least 150 minutes of moderate-intensity physical activity per week that is similar in intensity to brisk walking (Knowler et al. 2002).
- **Smoking.** Recent studies have shown that the years following smoking cessation may represent a time of increased risk for this disease (American Diabetes Association 2019; Hu et al. 2018; Oba et al. 2012).
- **Drinking alcohol.** Women should not drink more than one alcoholic beverage per day, and men should not drink more than two per day.

These are beverage amounts equal to one serving (HHS and USDA 2015):

- 5 ounces of wine
- 12 ounces of beer
- 8 ounces of 7% alcohol malt liquor
- 1.5 ounces of distilled spirits or liquor

Reduce Your Risk for Diabetes

A healthy lifestyle can reduce your risk for type 2 diabetes and help those with diabetes live a healthier life. Start today with these tips!

- **Focus on maintaining a healthy weight or losing weight gradually toward your optimal weight range.** Skip diets! Make lasting lifestyle changes that you can continue for life.
- **Follow the Diabetes Meal Plate (Hamilton 2015) to maintain blood glucose levels.** A diet high in unrefined carbohydrates (whole grains, vegetables, beans) and fiber (found only in plant foods) can help improve your blood glucose levels (McMacken and Shah 2017). Fill one-half of a 9-inch plate with non-starchy vegetables such as leafy greens or carrots, one-quarter of the plate with whole grains or starchy foods such as peas or potatoes, and the

remaining quarter with lean proteins such as chicken or beans. Have a piece of fruit and dairy on the side.

- **Exercise can improve your blood glucose levels.** Include a total of at least 150 minutes of moderate physical activity over at least five days every week. Try to include strength training (weights, yoga, resistance bands) two to three times weekly.
- **Talk with your doctor about your goals and plans for change.** Your doctor may need to adjust your medications as you make lifestyle changes.
- **Aim to sleep seven to nine hours each night.** People who sleep for at least seven hours per night maintain their body weight and have better control of their blood glucose levels (Watson 2015).
- **Start simple; set a goal each week to make small changes towards better health.** Try a goal such as eating at least one piece of fruit or $\frac{1}{2}$ cup of beans daily for a week.

References

Afshin, A., R. Micha, S. Khatibzadeh, and D. Mozaffarian. 2014. "Consumption of Nuts and Legumes and Risk of Incident Ischemic Heart Disease, Stroke, and Diabetes: A Systematic Review and Meta-Analysis." *American Journal of Clinical Nutrition* 100 (1): 278. <https://doi.org/10.3945/ajcn.113.076901>

American Diabetes Association. 2019. "3. Prevention or Delay of Type 2 Diabetes: Standards of Medical Care in Diabetes—2019." *Diabetes Care* 42 (Supplement 1): S29–S33. <https://doi.org/10.2337/dc19-S003>

Bloomfield, H. E., E. Koeller, N. Greer, R. MacDonald, R. Kane, and T. J. Wilt. 2016. "Effects on Health Outcomes of a Mediterranean Diet with No Restriction on Fat Intake: A Systematic Review and Meta-Analysis." *Annals of Internal Medicine* 165 (7): 491–500. <https://doi.org/10.7326/M16-0361>

Centers for Disease Control and Prevention. 2024. *National Diabetes Statistics Report*. Diabetes. Department of Health and Human Services. Last updated May 15, 2024. <https://www.cdc.gov/diabetes/php/data-research/index.html>

Chen, M., Q. Sun, E. Giovannucci, et al. 2014. "Dairy Consumption and Risk of Type 2 Diabetes: 3 Cohorts of US Adults and an Updated Meta-Analysis." *BMC Medicine* 12: 1–14. <https://doi.org/10.1186/S12916-014-0215-1>

- Chiuve, S. E., T. T. Fung, E. B. Rimm, et al. 2012. “Alternative dietary indices both strongly predict risk of chronic disease.” *Journal of Nutrition* 142 (6): 1009–1018. <https://doi.org/10.3945/JN.111.157222>
- El Sayed, N. A., G. Aleppo, V. R. Aroda, et al., on behalf of the American Diabetes Association. 2023. “Summary of Revisions: Standards of Care in Diabetes—2023.” *Diabetes Care* 46 (Supplement 1): S5–S9. <https://doi.org/10.2337/dc23-Srev>
- Estruch, R., E. Ros, J. Salas-Salvadó, et al. 2018. “Primary Prevention of Cardiovascular Disease with a Mediterranean Diet Supplemented with Extra-Virgin Olive Oil or Nuts.” *New England Journal of Medicine* 378 (25): e34. <https://doi.org/10.1056/NEJMoa1800389>
- Hamilton, L. 2015. “What is the plate method?” *Diabetes Forecast*, November. Archived December 5, 2019, from <https://web.archive.org/web/20191205222922/http://www.diabetesforecast.org/2015/adm/diabetes-plate-method/what-is-the-plate-method.html>
- Hu, Y., G. Zong, G. Liu, et al. 2018. “Smoking Cessation, Weight Change, Type 2 Diabetes, and Mortality.” *New England Journal of Medicine* 379 (7): 623–632. <https://doi.org/10.1056/NEJMoa1803626>
- Knowler, W. C., E. Barrett-Connor, S. E. Fowler, et al. 2002. “Reduction in the Incidence of Type 2 Diabetes with Lifestyle Intervention or Metformin.” *New England Journal of Medicine* 346 (6): 393–403. <https://doi.org/10.1056/NEJMoa012512>
- McMacken, M., and S. Shah. 2017. “A Plant-Based Diet for the Prevention and Treatment of Type 2 Diabetes.” *Journal of Geriatric Cardiology* 14 (5): 342–354. <https://pmc.ncbi.nlm.nih.gov/articles/PMC5466941/>
- Mozaffarian, D. 2016. “Dietary and Policy Priorities for Cardiovascular Disease, Diabetes, and Obesity.” *Circulation* 133 (2): 187–225. <https://doi.org/10.1161/CIRCULATIONAHA.115.018585>
- Mursu, J., J. K. Virtanen, T. P. Tuomainen, T. Nurmi, and S. Voutilainen. 2014. “Intake of Fruit, Berries, and Vegetables and Risk of Type 2 Diabetes in Finnish Men: The Kuopio Ischaemic Heart Disease Risk Factor Study.” *American Journal of Clinical Nutrition* 99 (2): 328–333. <https://doi.org/10.3945/ajcn.113.069641>
- National Heart, Lung, and Blood Institute. n.d. “Aim for a Healthy Weight.” National Institutes of Health. Accessed June 12, 2020. https://www.nhlbi.nih.gov/health/educational/lose_wt/risk.htm
- Oba, S., M. Noda, K. Waki, et al. 2012. “Smoking cessation increases short-term risk of Type 2 diabetes irrespective of weight gain: The Japan public health center-based prospective study.” *PLOS One* 7 (2). <https://doi.org/10.1371/journal.pone.0017061>
- Salas-Salvadó, J., M. Guasch-Ferré, C. H. Lee, R. Estruch, C. B. Clish, and E. Ros. 2016. “Protective Effects of the Mediterranean Diet on Type 2 Diabetes and Metabolic Syndrome.” *Journal of Nutrition* 146 (4): 920S–927S. <https://doi.org/10.3945/jn.115.218487>
- U.S. Department of Health and Human Services (HHS) and U.S. Department of Agriculture (USDA). 2015. *2015–2020 Dietary Guidelines for Americans*. 8th ed. https://odphp.health.gov/sites/default/files/2019-09/2015-2020_Dietary_Guidelines.pdf
- Watson, N. F., and E. Tasali. 2015. “Recommended Amount of Sleep for a Healthy Adult: A Joint Consensus Statement of the American Academy of Sleep Medicine and Sleep Research Society.” *Sleep* 38 (6): 843–844. <https://doi.org/10.5665/sleep.4716>