

For Patients

Type 2 Diabetes Mellitus Increases Your Risk for Serious Health Problems



An estimated 25.8 million people in the United States—more than 8% of the population—have diabetes, and more people are diagnosed every day.¹ By 2050, that number may increase to more than 20%.¹ Type 2 diabetes can cause serious health problems, including heart disease, stroke, nerve damage in the feet and hands, eye complications, and kidney disease.²

HOW SERIOUS ARE DIABETES-RELATED COMPLICATIONS?

Adults with diabetes are 2 to 4 times more likely to die prematurely than those without diabetes.¹ Complications of diabetes that affect the heart and large blood vessels are called macrovascular complications, and those that affect the nerves, eyes, and kidneys are called microvascular complications (involving smaller blood vessels).

Among people with diabetes, coronary heart disease occurs earlier in life, their risk for fatal or nonfatal stroke is higher, and most of them die of cardiovascular disease, compared with people without diabetes.^{3,4} One in 5 people with type 2 diabetes has diabetic retinopathy, which causes 12,000 to 24,000 new cases of blindness each year.^{3,4}

As many as 50% of people with diabetes may have peripheral neuropathy (causing numbness and pain in the hands and feet).¹ Up to 70% may have mild to severe forms of nervous system damage, accounting for more than 60% of nontraumatic lower limb amputations.¹ Diabetes is also the leading cause of chronic

kidney disease and results in 44% of new cases of kidney failure each year.^{1,5} However, by making lifestyle changes and taking the right medications, many people with diabetes can prevent or delay these complications.⁶

REDUCING THE RISK FOR DIABETES-RELATED COMPLICATIONS

Controlling your blood sugar is essential to managing your diabetes.² Clinical studies have shown that lowering your hemoglobin (A1C) to $\leq 7\%$ can reduce the microvascular and macrovascular complications of diabetes.^{2,7,8} Based on these findings, the American Diabetes Association recommends an A1C goal of $< 7\%$ for most nonpregnant adults (Table).²

WHY ARE LIFESTYLE CHANGES IMPORTANT?

Healthy changes in your diet and a physical activity regimen are essential to managing your diabetes and preventing or delaying complications.² Current guidelines to reduce cardiovascular risk in patients with diabetes, hypertension, and dyslipidemia recommend therapeutic lifestyle changes, the cornerstone for diabetes management.⁹⁻¹¹ This includes a diet with a balance of macronutrients—including lean meats, poultry, fish, vegetables, whole grains, fruits, and nonfat dairy products in a wide variety of foods to meet your personal nutritional goals and keep your blood sugar levels under control.² The guidelines also recommend moderate-intensity aerobic exercise

TABLE. Recommended Targets for Body Weight, Blood Pressure, Blood Sugar, and Lipids for Patients With Type 2 Diabetes

Parameter	Treatment Goal
Body weight	Reduce weight by 5% to 10%
Blood pressure	<130/80 mm Hg
A1C	<7% with individual modification based on clinical circumstances
Fasting plasma sugar level	70-130 mg/dL
Sugar level 2 hours after meals	<180 mg/dL
Low-density lipoprotein cholesterol (LDL-C)	<100 mg/dL if no established cardiovascular disease (CVD) <70 mg/dL if ≥2 CV risk factors or established CVD
High-density lipoprotein cholesterol (HDL-C)	>40 mg/dL for men >50 mg/dL for women
Triglycerides	<100 mg/dL

American Diabetes Association. *Diabetes Care*. 2012;35(suppl 1):S11-S63.

for at least 150 minutes per week, such as walking, biking, or working in the yard;⁶ weight loss and smoking cessation if appropriate; and moderate alcohol consumption.² Taken together, these changes help control your blood sugar, blood pressure, lipids (cholesterol and other fats in the blood), and body weight.

WHAT ELSE CAN I DO TO REDUCE MY RISK?

For many patients with diabetes, however, therapeutic lifestyle changes alone may not improve and maintain normal blood sugar,

blood pressure, and lipid levels, and medication is often necessary to reduce your risk for heart attack and stroke.²

In addition to medication to lower your blood sugar, your doctor may prescribe medications that will lower your blood pressure and your lipid levels.² Important long-term clinical studies in patients with diabetes have proven that treatment strategies that target several risk factors—high blood sugar, blood pressure, and lipid levels—can control or prevent heart disease, stroke, eye complications, and kidney disease.^{2,7,8}

REFERENCES

- Centers for Disease Control and Prevention. 2011 National Diabetes Fact Sheet. <http://www.cdc.gov/diabetes/pubs/factsheet11.htm>. Accessed November 2, 2012.
- American Diabetes Association. Standards of medical care in diabetes—2012. *Diabetes Care*. 2012;35(suppl 1):S11-S63.
- Centers for Disease Control and Prevention. Diabetes Data and Trends. National Surveillance System. <http://www.cdc.gov/diabetes/statistics>. Accessed November 2, 2012.
- Harris M. Chapter 1. Summary. *Diabetes in America*. 2nd ed. <http://diabetes.niddk.nih.gov/dm/pubs/america/pdf/chapter1.pdf>. Accessed November 2, 2012.
- National Kidney Foundation. KDOQI clinical practice guideline for diabetes and CKD: 2012 update. *Am J Kidney Dis*. 2012;60:850-889.
- American Diabetes Association. Standards of medical care in diabetes—2011. *Diabetes Care*. 2011;34(suppl 1):S11-S61.
- UK Prospective Diabetes Study Group. Tight blood pressure control and risk of macrovascular and microvascular complications in type 2 diabetes: UKPDS 38. *BMJ*. 1998;317:703-713.
- DCCT-EDIC: Retinopathy and nephropathy in patients with type 1 diabetes four years after a trial of intensive therapy. The Diabetes Control and Complications Trial/Epidemiology of Diabetes Interventions and Complications Research Group. *N Engl J Med*. 2000;342:381-389.
- Nathan DM, Buse JB, Davidson MB. Medical management of hyperglycemia in type 2 diabetes: a consensus algorithm for the initiation and adjustment of therapy. A consensus statement of the American Diabetes Association and the European Association for the Study of Diabetes. *Diabetes Care*. 2009;32:193-203.
- Chobanian AV, Bakris GL, Black HR, et al. The Seventh Report of the Joint National Committee on Prevention, Detection, Evaluation, and Treatment of High Blood Pressure: the JNC 7 report. *JAMA*. 2003;289:2560-2572.
- National Cholesterol Education Program (NCEP). Third Report of the National Cholesterol Education Program (NCEP) Expert Panel on Detection, Evaluation, and Treatment of High Blood Cholesterol in Adults (Adult Treatment Panel III) final report. *Circulation*. 2002;106:3143-3421.