Amputations

- More than 60% of nontraumatic lower-limb amputations occur in people with diabetes.
- In 2004, about 71,000 nontraumatic lower-limb amputations were performed in people with diabetes.

Dental disease

- Periodontal (gum) disease is more common in people with diabetes. Among young adults, those with diabetes have about twice the risk of those without diabetes.
- Persons with poorly controlled diabetes (A1c > 9%) were nearly 3 times more likely to have severe periodontitis than those without diabetes.
- Almost one-third of people with diabetes have severe periodontal disease with loss of attachment of the gums to the teeth measuring 5 millimeters or more.

Complications of pregnancy

- Poorly controlled diabetes before conception and during the first trimester of pregnancy among women with type 1 diabetes can cause major birth defects in 5% to 10% of pregnancies and spontaneous abortions in 15% to 20% of pregnancies.
- Poorly controlled diabetes during the second and third trimesters of pregnancy can result in excessively large babies, posing a risk to both mother and child.

Other complications

- Uncontrolled diabetes often leads to biochemical imbalances that can cause acute life-threatening events, such as diabetic ketoacidosis and hyperosmolar (nonketotic) coma.
- People with diabetes are more susceptible to many other illnesses. Once they acquire these illnesses, they often have worse prognoses. For example, they are more likely to die with pneumonia or influenza than people who do not have diabetes.
- Persons with diabetes aged 60 years or older are 2–3 times more likely to report an inability to walk one-quarter of a mile, climb stairs, do housework, or use a mobility aid compared with persons without diabetes in the same age group.

Preventing diabetes complications

Diabetes can affect many parts of the body and can lead to serious complications such as blindness, kidney damage, and lower-limb amputations. Working together, people with diabetes, their support network, and their health care providers can reduce the occurrence of these and other diabetes complications by controlling the levels of blood glucose, blood pressure, and blood lipids, and by receiving other preventive care practices in a timely manner.

Glucose control

- Studies in the United States and abroad have found that improved glycemic control benefits people with either type 1 or type 2 diabetes. In general, every percentage point drop in A1c

blood test results (e.g., from 8.0% to 7.0%) can reduce the risk of microvascular complications (eye, kidney, and nerve diseases) by 40%.
- In patients with type 1 diabetes, intensive insulin therapy has long-term beneficial effects on the risk of cardiovascular disease.

Blood pressure control

- Blood pressure control reduces the risk of cardiovascular disease (heart disease or stroke) among persons with diabetes by 33% to 50%, and the risk of microvascular complications (eye, kidney, and nerve diseases) by approximately 33%.
- In general, for every 10 mm Hg reduction in systolic blood pressure, the risk for any complication related to diabetes is reduced by 12%.

Control of blood lipids

- Improved control of LDL cholesterol can reduce cardiovascular complications by 20% to 50%.

Preventive care practices for eyes, feet, and kidneys

- Detecting and treating diabetic eye disease with laser therapy can reduce the development of severe vision loss by an estimated 50% to 60%.
- Comprehensive foot care programs can reduce amputation rates by 45% to 85%.
- Detecting and treating early diabetic kidney disease by lowering blood pressure can reduce the decline in kidney function by 30% to 70%. Treatment with angiotensin-converting enzyme (ACE) inhibitors and angiotensin receptor blockers (ARBs) are more effective in reducing the decline in kidney function than other blood pressure lowering drugs.
- In addition to lowering blood pressure, ARBs reduce proteinuria, a risk factor for developing kidney disease, by 35%, similar to the reduction achieved by ACE inhibitors.

Estimated diabetes costs in the United States in 2007

Total (direct and indirect): $174 billion

Direct medical costs: $116 billion

- After adjusting for population age and sex differences, average medical expenditures among people with diagnosed diabetes were 2.3 times higher than what expenditures would be in the absence of diabetes.

Indirect costs: $58 billion (disability, work loss, premature mortality)

Acknowledgments

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• Agency for Health Care Research and Quality
http://ww/ahrq.gov/browse/diabetes.htm
• American Association of Diabetes Educators
http://www.diabeteseducator.org*
• American Diabetes Association
http://www.diabetes.org*
• Centers for Disease Control and Prevention
http://www.cdc.gov/diabetes
http://www.cdc.gov/nchs
• Centers for Medicare and Medicaid Services
http://cms.hhs.gov
• U.S. Department of Veterans Affairs
http://www.va.gov/health/diabetes
• Health Resources and Services Administration
http://www.hrsa.gov
• Indian Health Service
http://www.ihs.gov/MedicalPrograms/Diabetes/index.asp
• Juvenile Diabetes Research Foundation International
http://www.jdrf.org*
• National Diabetes Education Program, a joint program of NIH and CDC
http://www.ndep.nih.gov
http://www.cdc.gov/diabetes/ndep/index.htm
• National Diabetes Information Clearinghouse
http://diabetes.niddk.nih.gov/
• National Institute of Diabetes and Digestive and Kidney Diseases of the National Institutes of Health
http://www.niddk.nih.gov
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