

Diabetes 101:

A Brief Overview of Diabetes and the American Diabetes Association

What Happens When We Eat?



After eating, most food is turned into glucose,
the body's main source of energy.

Normal Blood Glucose Control

In people without diabetes,
glucose stays in a healthy range because

Insulin is
released at
the right
times and in
the right
amounts



Insulin helps
glucose enter
cells

High Blood Glucose (Hyperglycemia)

In diabetes, blood glucose builds up
for several possible reasons...

Too little
insulin is
made

Cells can't use
insulin well



Liver releases
too much
glucose

Symptoms of Hyperglycemia

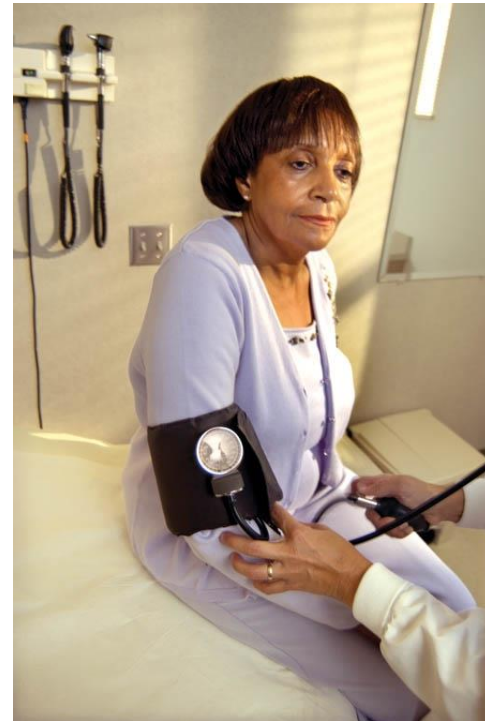


- Increased thirst
- Increased urination
- Blurry vision
- Feeling tired
- Slow healing of cuts or wounds
- More frequent infections
- Weight loss
- Nausea and vomiting

Hyperglycemia Can Cause Serious Long-Term Problems

Chronic complications of diabetes

- Blindness
- Kidney disease
- Nerve damage
- Amputation
- Heart attack
- Stroke



Two Main Types of Diabetes

Type 1 diabetes

Pancreas makes too little or no insulin

Type 2 diabetes

- Cells do not use insulin well (insulin resistance)
- Ability for pancreas to make insulin decreases over time

Type 1 Diabetes



- 1 in 20 people with diabetes have type 1
- Most people are under age 20 when diagnosed
- Body can no longer make insulin
- Insulin is always needed for treatment

Symptoms of Type 1 Diabetes

Symptoms usually start suddenly

- Weight loss
- Loss of energy
- Increased thirst
- Frequent urination
- Diabetic ketoacidosis (emergency condition nausea, vomiting, dehydration. Can lead to coma)



Managing Type 1 Diabetes



- Blood glucose monitoring
- Education
- Healthy food choices
- Physical activity
- Insulin

Before and After Insulin Treatment

Discovery of insulin in 1921 changed type 1 from a death sentence to a chronic disease

*Eli Lilly and Company Ltd. From
The Discovery of Insulin by Michael Bliss.*



7-year-old child
before and 3
months after
insulin therapy



Type 2 Diabetes

- Most people with diabetes have type 2
- Most people are over age 40 when diagnosed, but type 2 is becoming more common younger adults, children and teens
- Type 2 is more likely in people who:
 - Are overweight
 - Are non-Caucasian
 - Have a family history of type 2



Symptoms of Type 2 Diabetes

- Usually subtle or no symptoms in early stages:
 - Increased thirst
 - Increased urination
 - Feeling tired
 - Blurred vision
 - More frequent infections
- Symptoms may be mistaken for other situations or problems
- 1 in 4 with type 2 aren't aware they have it



Treatment for Type 2 Diabetes May Change Over a Lifetime



Always Includes:

- Education
- Healthy eating
- Blood glucose monitoring
- Physical Activity

May Include:

- Medications,
including insulin

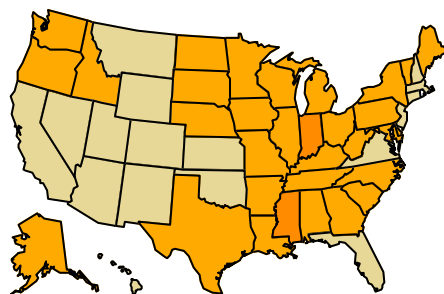
Risk Factors for Type 2 Diabetes

- Being overweight
- Sedentary lifestyle
- Family history of diabetes
- History of gestational diabetes
- Age
- Ethnic/racial background:
 - African American
 - Hispanic/Latino
 - Native American
 - Asian American

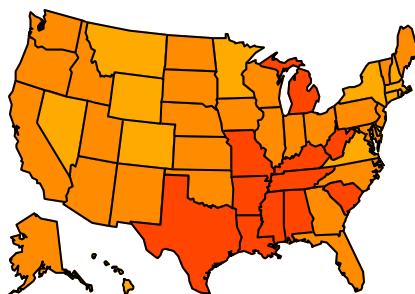


Obesity Prevalence in Adults

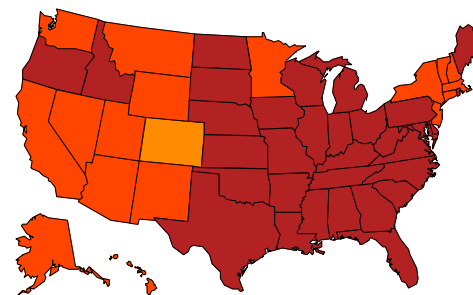
1994



2000



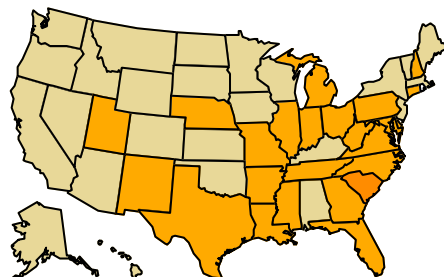
2010



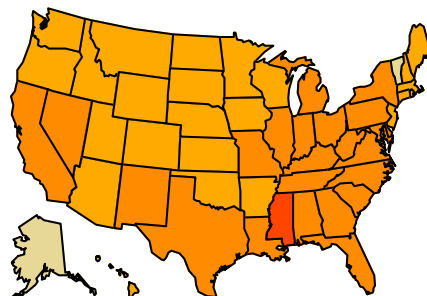
No Data
 <14.0%
 14.0-17.9%
 18.0-21.9%
 22.0-25.9%
 ≥26.0%

Diabetes Prevalence in Adults

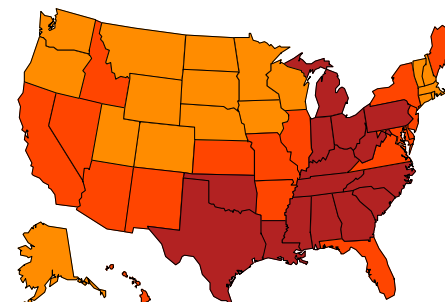
1994



2000



2010



No Data
 <4.5%
 4.5-5.9%
 6.0-7.4%
 7.5-8.9%
 ≥9.0%

Source: CDC



Diabetes in the United States

- More than 29 million people in the U.S. have diabetes
 - 8.1 million people with diabetes are undiagnosed
 - 9.3% of the U.S. population
- 1.7 million Americans aged 20 years or older were newly diagnosed with diabetes in 2010
- Every 19 seconds, someone is diagnosed with diabetes

Source: National Diabetes Fact Sheet, 2014



Burden of Diabetes in the United States

- The leading cause of:
 - new blindness among adults
 - kidney failure
 - non-traumatic lower-limb amputations
- Increases the risk of heart attack and stroke by 2-4 fold
- 7th leading cause of death
- Mortality rates 2-4 times greater than non-diabetic people of the same age

Source: Centers for Disease Control and Prevention

Burden of Diabetes in the United States

- Total direct and indirect cost of diagnosed diabetes is \$245 billion a year
- Total diabetes-related costs are more when you add gestational diabetes, prediabetes, and undiagnosed diabetes
- 1 in 5 health care dollars is spent caring for someone with diagnosed diabetes
- 1 in 10 health care dollars is attributed directly to diabetes

What is Prediabetes?



- 1 in 3 American adults (86 million) have prediabetes
- Occurs before type 2 diabetes
- Blood glucose levels are higher than normal but not yet diabetes
- Most people with prediabetes don't know they have it

Is There Any Good News?

- Yes, we can reduce the chances of developing type 2 diabetes in high-risk people (weight loss, exercise, medications)
- Yes, we can reduce the chances of developing diabetes complications through:
 - Blood glucose control (diet, monitoring, medication)
 - Blood pressure control
 - Cholesterol control
 - Regular visits to healthcare providers
 - Early detection and treatment of complications

Preventive Efforts Are Key

- Most of the diabetes costs are due to end-stage complications
- Investment of resources into early diagnosis, patient education, prevention and treatments pays off in:
 - Longer lives
 - Increased productivity
 - Reduced costs over the long term



Steps to Lower Your Risk of Diabetes Complications

- A1C < 7
- Blood pressure < 140/90
- Cholesterol management with lifestyle changes and medicine
- Get help to quit smoking
- Be active
- Make healthy food choices
- Take care of your feet
- Get recommended screenings and early treatment for complications

The American Diabetes Association: What We Do - Research

- In 2014, the Association made nearly \$30 million available to support diabetes research
- Over the years, the Association has invested more than \$700 million in more than 4,500 research projects



The American Diabetes Association: What We Do - Education

- Center for Information and Community Support communicates through phone, email and chats
- Health fairs, programs, camps and other events target millions of people around the country
- Award-winning books and Diabetes Forecast magazine for consumers
- Journals, books, and clinical guidelines for health care professionals
- Scientific Sessions: Largest diabetes meeting in the world



The American Diabetes Association: What We Do - Advocacy

- Seek increased federal and state funding for diabetes prevention, treatment and research
- Promote public policies to prevent diabetes
- Advocate to improve the availability of accessible, adequate and affordable health care
- Fight discrimination people with diabetes face at school, work, and elsewhere in their lives.



More Information

- 1-800-DIABETES
- askADA@diabetes.org
- Social media information:
 - www.Facebook.com/AmericanDiabetesAssociation
 - @AmDiabetesAssn
 - www.diabetesstopshere.org
- Web:
 - www.diabetes.org
 - www.stopdiabetes.com