



THE UNIVERSITY OF NORTH DAKOTA



The University of North Dakota

School of Medicine
& Health Sciences



Courtesy Univ Texas San Antonio

Diabetes Overview

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What is Diabetes?

- Diabetes is a disorder characterized by abnormal metabolism of glucose in the body
- Insulin is the hormone responsible for utilizing glucose for energy in the body
- Diabetes is caused by decreased insulin production by the pancreas, resistance of the body to the effect of insulin, or both

Total Prevalence of Diabetes in the United States, All Ages, 2007

- 24 million people - 8 percent of the population (90%+ have Type 2)
- Undiagnosed: 5.7 million people
- 16.5 percent of Native Americans have Diabetes

CDC 2008



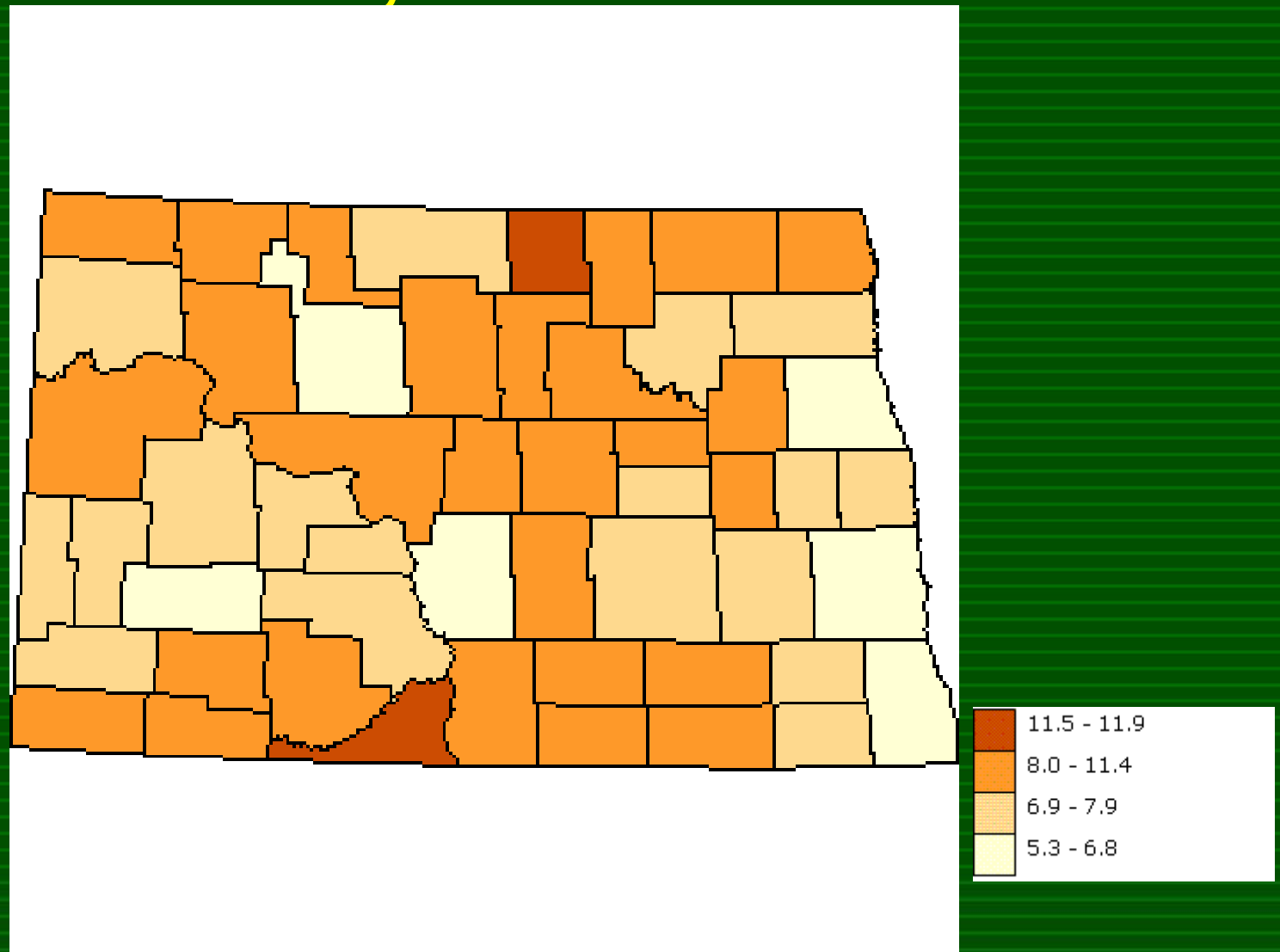
Total Prevalence of Diabetes in the United States, All Ages, 2007

- 6.6 percent of all non-Hispanic whites have Diabetes
- Rate of type 1 also increasing
- 57 million people have pre-diabetes

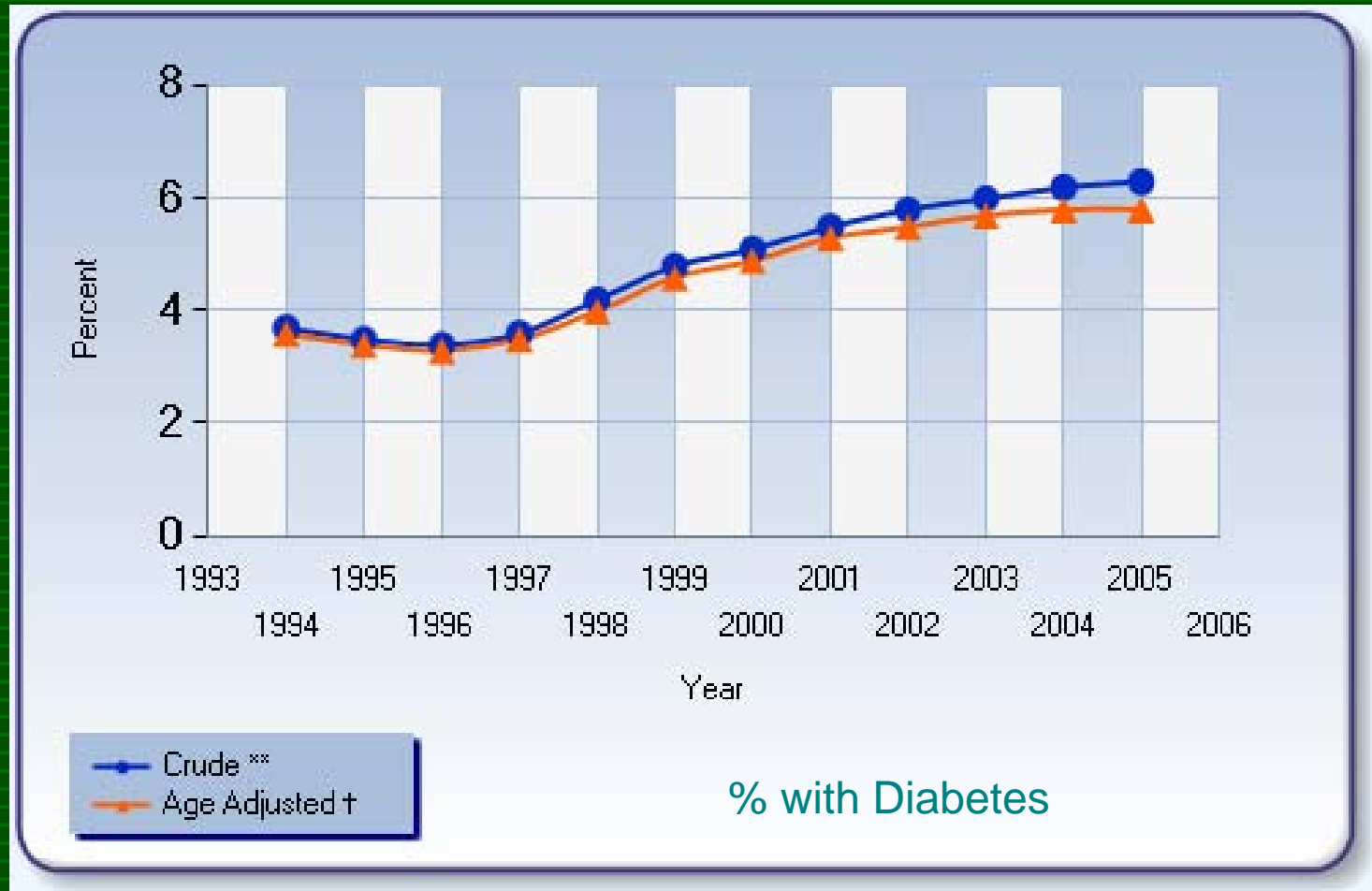
CDC 2008



Diabetes in North Dakota-County by County % Estimated



Diabetes in North Dakota Prevalence of Diabetes - CDC, 2005



Diabetes-Diagnosis Guidelines

Category	FPG (mg/dL)
Normal	<100
Impaired Fasting Glucose* (IFG)	100 – 125
Diabetes	≥126**

** On 2 separate occasions

- Also: Blood glucose ≥ 200 random (casual) with symptoms (fatigue, thirst, frequent urination, weight loss)
- Blood glucose ≥ 200 on a 2 hour glucose tolerance test

(Diabetes Care 32:Supplement 1, 2009)

Types of Diabetes Mellitus

- Type 1 Diabetes
- Type 2 Diabetes
- Gestational Diabetes (Diabetes of Pregnancy)
- Pre-Diabetes

Type 1 Diabetes

- ~10% of all diabetes cases in U.S.
- Usually diagnosed in younger patients
- Most diagnosed before age 30

Type 1 Diabetes

- Can be diagnosed at any age
- Often have very high blood sugar at time of diagnosis (often >300)
- No definite cause or risk factors

Type 1 Diabetes

- Symptoms include weight loss, fatigue, frequent urination, thirst, hunger, blurry vision
- May progress to dehydration, ketoacidosis, unconsciousness, death without treatment
- “Insulin Dependent”
- Must start insulin at time of diagnosis

Type 2 Diabetes

- More common, ~90% of all diabetes cases in the U.S.
- Usually diagnosed in adulthood
 - More children and adolescents with type 2
 - Associated with obesity

Type 2 Diabetes

- May or may not have symptoms
- Fatigue a common complaint

Type 2 Diabetes

- Risk Factors
 - Obesity
 - Sedentary Lifestyle
 - Family History
 - High Blood Pressure
 - Abnormal Cholesterol Profile
 - Cigarette Smoking

Diabetes Complications

- Eye disease/blindness (retinopathy)
- Kidney disease (nephropathy)
- Heart disease
- Stroke
- Nerve damage (neuropathy)

Gestational Diabetes

- Diabetes of Pregnancy
- Potential complications
 - Large infant (>9 lbs)
 - C-section delivery
 - Birth defects or delivery problems
- ~6% of all pregnancies
- Treated with diet, exercise and sometimes insulin

Gestational Diabetes

- Often resolves after delivery of infant
- Higher risk of developing subsequent type 2 diabetes
- Should be monitored for life

Pre-Diabetes

- Abnormal blood sugar
- Not abnormal enough to be classified as diabetes
 - Normal blood sugar fasting <100
 - Pre-diabetes blood sugar 100-125
 - Diabetes blood sugar ≥ 126

Pre-Diabetes

- Higher risk to develop type 2 Diabetes
- Best prevention is lifestyle management

Pre-Diabetes

- Lifestyle management can reduce risk of diabetes by over 50%
- Lifestyle management
 - Meal plan
 - Activity plan
- Diabetes medications to prevent diabetes not as effective

Summary

- Diabetes is common
- Type 2 Diabetes can be prevented or delayed
 - Lifestyle changes
 - Weight loss
- Pre-diabetes should be diagnosed and managed to prevent or delay Type 2 Diabetes and diabetes complications