Diabetes Overview

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Courtesy Univ Texas San Antonio
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

The University of North Dakota School of Medicine & Health Sciences
Diabetes in North Dakota Prevalence of Diabetes - CDC, 2005

% with Diabetes

The University of North Dakota School of Medicine & Health Sciences
# Diabetes-Diagnosis Guidelines

<table>
<thead>
<tr>
<th>Category</th>
<th>FPG (mg/dL)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Normal</td>
<td>&lt;100</td>
</tr>
<tr>
<td>Impaired Fasting Glucose* (IFG)</td>
<td>100 – 125</td>
</tr>
<tr>
<td>Diabetes</td>
<td>≥126**</td>
</tr>
</tbody>
</table>

** 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