

Tobacco and Complications of Diabetes

**Satellite Conference and Live Webcast
Monday, March 16, 2009
2:00-4:00 p.m. (Central Time)**

Produced by the Alabama Department of Public Health
Video Communications and Distance Learning Division

Faculty

**Susan R. Altman, MPH
Alabama Department of Public Health
Tobacco Prevention & Control Branch**

Objectives

- Understand how the Alabama electronic system improves care coordination
- Recognize complications smoke has on diabetes and cardiovascular disease
- Gain knowledge of smoking cessation plans and the Alabama QuitLine

Objectives

- List contributing factors to successful diabetes coalitions in rural Alabama counties and identify where a coalition is needed
- Know how to recruit and develop new partnerships to create a successful community coalition
- Identify three themes for community training programs

Objectives

- Become familiar with how to create an action plan and communicate with physicians and primary care providers

The Burden of Diabetes in the United States

- 23.6 million people or 7.8% of the population have diabetes
- In 2007
 - 1.6 million new cases of diabetes were diagnosed in people 20 or older
 - Total economic cost of diabetes was estimated at \$174 billion

The Burden of Diabetes in Alabama

- According to the 2007 BRFSS data, 10% of adults reported having been told by a doctor they have diabetes
- 17.8% of diabetics are smokers

The Burden of Diabetes in Alabama

- The estimated economic losses associated with diabetes amount to approximately \$2.5 billion
 - \$1.6 billion in medical costs
 - \$859,000 in lost productivity

The Health Effects of Smoking on Body Systems



Smoking and Blood Glucose

- Smoking raises blood sugar and makes it harder to control diabetes
- Smoking is associated with insulin resistance
 - A dose-response relationship can be observed between the number of cigarettes smoked and the degree of insulin resistance

Smoking and Blood Glucose

- Smoking just one cigarette reduces the body's ability to use insulin by 15 percent

Cardiovascular Morbidity and Mortality

- Diabetic smokers are three times more likely to die of cardiovascular disease than diabetics who do not smoke

The Effects of Smoking on the Cardiovascular System

- Increased heart rate
- Increased blood pressure
- Reduced oxygen levels due to carbon monoxide
- Constriction of blood vessels due to nicotine

The Effects of Smoking on the Cardiovascular System

- Increased coagulation of blood cells
 - Results in increased risk of blood clots
- Increased cholesterol levels

The Brain

- Diabetic smokers have 2 to 4 times increased risk of stroke, compared to diabetics who do not smoke
- In 2004, stroke was noted on 16% of diabetes-related death certificates among people aged 65 and older

The Urinary System

- Diabetes is the leading cause of kidney failure, accounting for 44% of new cases in 2005
- Smoking triples the chances of developing kidney disease, even in people who are not diabetic
 - Diabetic smokers are at even greater risk of developing kidney disease

The Urinary System

- Medications, such as ACE Inhibitors, that successfully prevent kidney failure in most non-smoking diabetics may not help tobacco users with diabetes

The Eyes

- Diabetes is the leading cause of new cases of blindness in adults aged 20-74 years
- Diabetics are 40% more likely to develop glaucoma
- Diabetics are 60% more likely to develop cataracts

The Eyes

- Diabetic retinopathy causes 12,000 to 24,000 cases of blindness each year
- Smoking further increases the risk of blindness for diabetics

The Teeth

- Diabetes increases the risk of tooth and gum problems
 - Periodontitis, an infection of the gums and bone that hold teeth in place
- The sugar and chemicals in tobacco products eat away at the teeth and gums

The Feet and Legs

- Tobacco use can contribute to the development of foot ulcers, foot infections and blood vessel disease in the legs
- Tobacco use is a risk factor for lower extremity amputations in diabetics

The Reproductive System

- Male diabetics who smoke are more likely to experience impotence
- Female diabetic smokers are more likely to have pregnancy-related complications

Mental Health

- Diabetic smokers are more likely to report feelings of depression
- Even after adjusting for depression, diabetic smokers are less likely to abide by self-care guidelines and treatment recommendations

Secondhand Smoke (SHS): 2006 Surgeon General's Report

- Breathing SHS for even a short period of time causes dangerous changes in the cardiovascular system
- Nonsmokers who are exposed to SHS have 25-30 percent increased risk of heart disease

Conclusions....

- **Diabetes alone carries increased risk of morbidity and mortality**
 - **When combined with smoking, the risk increases**
- **Diabetic patients who smoke should talk to their healthcare provider to discuss which cessation options would work best for them**

Conclusions....

- **Diabetic patients should avoid smoke-filled environments, as secondhand smoke exposure further increases the risk of cardiovascular complications**

For Additional Information Contact:

Susan R. Altman, MPH
Local Support Coordinator
Alabama Department of Public Health
Tobacco Prevention and Control
Branch
201 Monroe Street, Suite 1276
Montgomery, AL 36104
(334) 206-2776
SusanAltman@adph.state.al.us