

# Diabetes and Tobacco



## Kentucky Diabetes Prevention and Control Program

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# Overview

- Collaboration Across Programs
- Brief Diabetes Overview
- For patients who smoke & have diabetes
  - Risk for Complications
  - Opportunities
  - Challenges
  - Special Considerations

DAART

Diabetes Ask - Advise - Refer  
about Tobacco Use

# Collaboration Across Programs



## Diabetes and Smoking – BIG issues in KY

- Our state diabetes and tobacco programs working together to decrease the % of individuals with diabetes who smoke

# Equip Diabetes Educator Workforce for Their Role in Reducing Tobacco Use

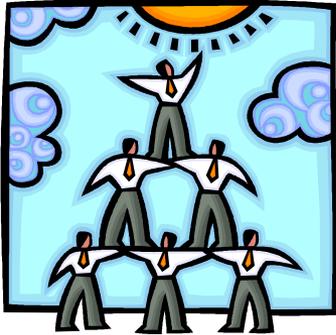
- **Developed DAART Tool Kit**
  - Quitline fax referral form for diabetes educators
  - Pt. ed. pieces on diabetes & tobacco
- **Provided CEU “*Treating Tobacco Use & Dependence in Pt. with Diabetes: Incorporating DAART into Your Practice*”**
  - Diabetes educators targeted
  - 4 locations across the state
  - Ongoing availability by TRAIN webcast
  - Participants receive tool kit

DAART  
Diabetes Ask - Advise - Refer  
about Tobacco Use



# Equip Diabetes Educators Cont.

- LHD staff who do diabetes required and/or strongly encouraged to view – also asked to promote webcast in their area
- Quitline # incorporated in numerous diabetes materials
- Articles in the statewide newsletter “KY Diabetes Connection”
- Widespread distribution of diabetes & tobacco pt ed. materials



# Additional Collaboration

- Diabetes program support for no smoking policies at the state & local level
- Today's opportunity to share diabetes and tobacco info, have a little time to interact with you – the tobacco experts
- You are encouraged to connect with diabetes staff locally to explore program coordination opportunities at the local level

# What is Diabetes?

- Diabetes is a chronic, progressive metabolic disorder characterized by abnormalities in the ability to metabolize carbohydrate, fat, and protein. It is characterized by high blood glucose (or blood sugar) levels as a result of problems with insulin production, insulin action or both.

# Types of Diabetes

- **Type 1:** traditionally age <20, no endogenous insulin, may be any age, about 5-10% of people with diabetes, Rx = insulin
- **Type 2:** traditionally >40, multiple problems with insulin secretion and action, may be any age, about 90% of people with diabetes, Rx may include oral agents and/or insulin
- **Gestational Diabetes** - any degree of glucose intolerance with onset or first recognition during pregnancy, resolved with delivery usually

# What is Pre-Diabetes?

- **Pre-diabetes** is a medical condition where blood glucose is higher than normal but not high enough to be called diabetes
- **7.8% of adult Kentuckians have pre-diabetes**
- It increases the risk for type 2 diabetes and cardiovascular disease

# Prevention Type 2 Diabetes

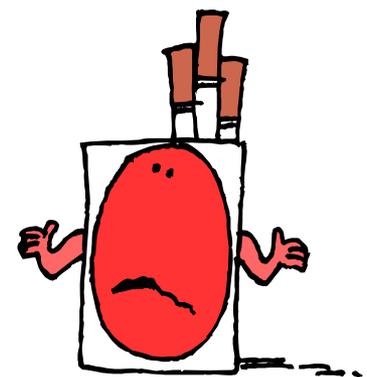
- Risk can be lowered by losing a modest amount of weight (5-10% of total body weight) and moderate exercise (30 minutes per day, five days a week)

# Who Is At Risk Diabetes?

- Age 45 or older
- Overweight
- Inactive
- Ethnic or minority population
- Family history of diabetes
- Excess abdominal fat
- High blood pressure
- Pre-diabetes
- High blood fats
- Darkening of the skin
- Polycystic ovarian syndrome
- History of Gestational Diabetes or large baby

# Smoking May Be An Independent Risk Factor for Type 2 Diabetes

- Risk for type 2 diabetes is 3Xs greater for someone who smokes 16-25 cigarettes a day than for a non-smoker
- Smoking increases insulin resistance
- 12% of diabetes may be attributable to smoking
- Despite lower weight in smokers, more central adiposity
- JAMA meta-analysis 2007



# Diabetes is Common & on the Rise



- 11.4% or 1 in every 9 Adult Kentuckians have diagnosed diabetes (doubled since 1998)
- Est. 29% are undiagnosed
  - **Diagnosed:** 366,000 people
  - **Undiagnosed:** 183,000 people
- KY ranks 4<sup>th</sup> highest in the nation

# Diabetes is Serious

It can lead to serious complications & premature death

5<sup>th</sup> leading KY cause of death by disease

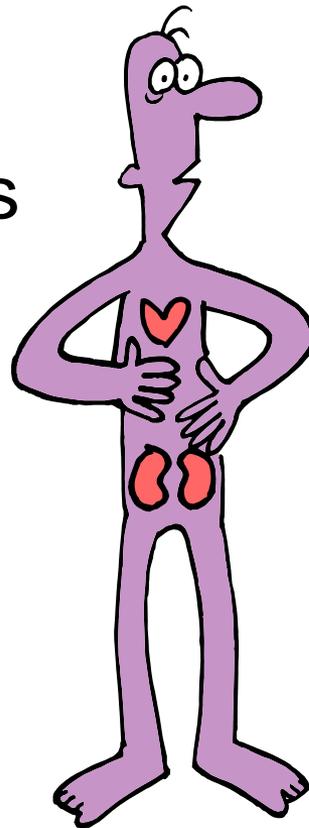
17% of all KY hospitalizations diabetes – related in 2007

Leading cause of kidney failure, non-traumatic lower-limb amputation and new cases of blindness among adults

# Diabetes Chronic Complications

A combination of complex factors, including hyperglycemia and risk factors, are responsible for the chronic complications of diabetes

- Heart Disease & Circulation Problems
- Eye Problems
- Kidney Problems
- Nerve Damage



- Sex Problems
- Foot Problems
- Dental Problems

# Diabetes is Costly

- KY spends \$2.9 billion annually on diabetes and its complications (2002)
- KY's Medicaid program spent more than 670 million to pay for services for people with diabetes (2004)
- 1 out of every 5 U.S. health care dollars is spent on caring for someone with diabetes (2007)



# Diabetes Smoking Prevalence

Although the prevalence of smoking has decreased over the last decade in the U.S.  
**1 in 6 adults with diabetes still smoke**

In Kentucky

- 23% of adults with diabetes report smoking (09)
- 34.5% of adults with pre-diabetes report smoking

# Diabetes & Smoking

## Especially Bad News

### Smoking affects insulin action

- Decreases subcutaneous absorption of insulin, increasing dosing requirements
- Increases insulin resistance which makes controlling diabetes extremely challenging



# Smoking and Diabetes

## Dangerous Combination

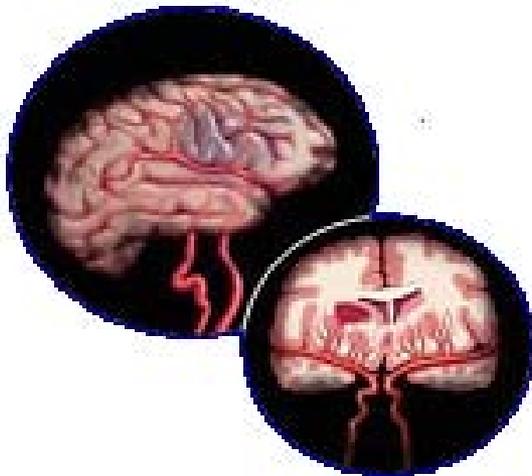
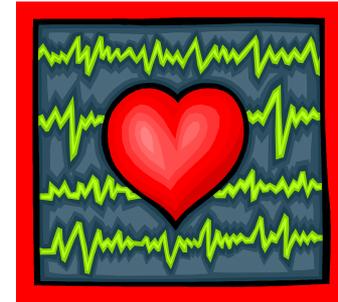


Exacerbates harmful effects of diabetes & speeds development of complications

- In circulatory system, increases inflammation, oxidative stress and impairs endothelial function
- Macrovascular and microvascular damage ensue more quickly

# Cardiovascular Disease with Smoking & Diabetes

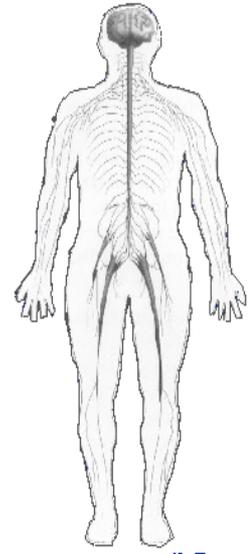
- Coronary Heart Disease
- **11 times more likely  
to die from heart disease**



## Stroke

**11 times more  
likely to suffer  
a stroke**

# Neuropathy

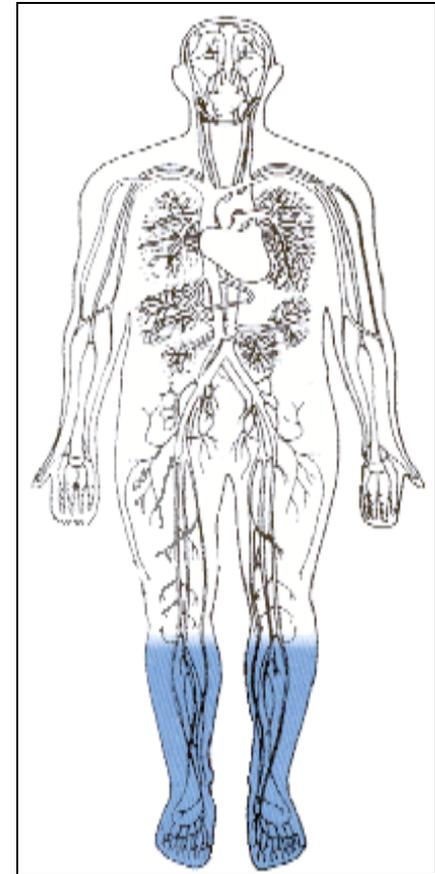


As with diabetes, smoking increases

- Risk of nerve damage both peripheral and autonomic nerves
- 2.2 times higher in smokers vs. non-smokers
- This can result in impotence, gastroparesis, loss of sensation in extremities & foot ulcers
- 10Xs more likely to have amputations than people without diabetes

# Peripheral Vascular Disease

**Smokers with diabetes- 10 times more likely than non-smokers to develop peripheral vascular disease**



# Hypertension



- **Smoking and nicotine increase blood pressure**
- **2 of 3 adults with diabetes have high blood pressure**
- **Hypertension – major risk factor for heart disease and stroke**
-

# Dyslipidemia

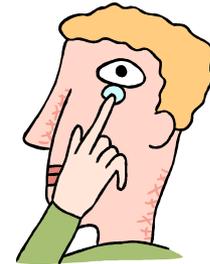
- **Smoking increases triglycerides and decreases HDL**
- **Diabetes is also associated with increased triglycerides and decreased HDL, leading to risk for heart attack and stroke**

# Periodontal Disease



- **Smoking increases the risk of periodontal infections and disease**
- **People with diabetes – if not controlled are more likely to have periodontal disease than people without diabetes**
- **Periodontal disease increases the risk of tooth loss and diabetes complications**

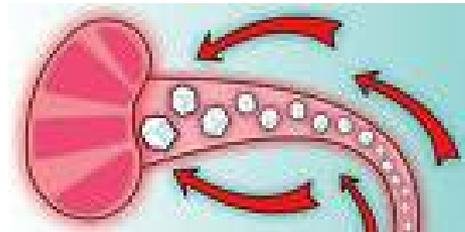
# Eye Disease



- **Smokers have 2 to 3 times the risk of developing cataracts as nonsmokers**
- **Smoking can increase and worsen diabetic retinopathy and the risk for blindness**

# Nephropathy

- **1/3 of all people with diabetes will develop kidney disease**
- **Smoking triples risk of kidney disease**



# Number of Adult Kentuckians with Diabetes/Pre-Diabetes who Smoke

Adults with known diabetes	11.4%	366,000
Adults with known diabetes who smoke	23%	84,180
Adults with known pre-diabetes	7.8%	219,000
Adults with known pre-diabetes who smoke	34.5%	76,000
<b>Total</b> of known diabetes and pre-diabetes who smoke		<b>160,180</b>
Unknown diabetes and pre-diabetes who smoke	?	?

# Good News Is...

- Diabetes complications, the risk for type 2 diabetes & effects of smoking can be reduced or prevented. The following are key
  - Self-Management Education
  - ABCs of Diabetes
    - **A**1C or Glucose control
    - **B**lood pressure control
    - **C**holesterol or blood lipid control
    - **S**moking Cessation
  - Preventive care practices for eyes, kidneys, feet, teeth, and gums

# Smoking Cessation

- Should be a key facet of diabetes prevention & control
- Can pay especially high dividends for individuals with & at risk for diabetes



# Opportunities for Patients who Smoke & have Diabetes



- Already routinely visiting a healthcare provider for specific condition & more potentially monitoring effects from both
- Already receiving patient education for lifestyle changes for health improvement – “teachable moments”
- Diabetes meal planning conducive to weight control for cessation

# Challenges for Patients who Smoke and have Diabetes

- Patient and provider managing so many issues concurrently
- Overlapping complications and considerations
- Continuity/coordination of care between multiple providers



# Special Considerations for Tobacco Cessation & Diabetes

## Information for Patients

- Risk of GI distress with frequent use of sugar free gum/hard candy especially in combination with nicotine replacement gum or lozenges – due to alcohol sugars
  - Use sparingly and possibly at home initially to monitor response
- Nicotine gum & lozenges are sugar free but do contain alcohol sugar

# Special Considerations for Tobacco Cessation & Diabetes

## Info for Patients cont.

- Stress associated with cessation could increase blood glucose levels initially
  - Monitor more frequently as needed
  - Adapt exercise/management approaches accordingly
- Medication requirements may decrease with successful elimination of tobacco & decreased insulin resistance

# Special Considerations for Tobacco Cessation & Diabetes

## Information for Professionals

- Be aware that weight gain could hinder glycemic control
  - Tailor counseling to wt gain prevention
- Assess for potential depression – more common in diabetes population
  - Be aware of signs of depression
  - Monitor mental status closely with Chantix
  - Consider more frequent counseling/follow-up
  - Refer/pharmacotherapy

# Special Considerations for Tobacco Cessation & Diabetes

## Information for Professionals

- As appropriate, refer individuals with diabetes to diabetes self-management classes and support groups at your LHD or in your community
  - Coordinate referral back and forth between your program and diabetes program
  - See website below to print resources for your area

<https://apps.chfs.ky.gov/KYDiabetesResources>

# Summary

- May opportunities for collaboration across diabetes & tobacco programs
- Patients with diabetes (or pre-diabetes) who smoke could benefit more from cessation than individuals without diabetes
- Identifying & providing cessation interventions should a high priority in diabetes control & prevention
- Clinicians should consider smoking cessation as equally important to blood pressure & cholesterol control



*Thank you and best wishes for  
the important work you do!*