Quitting Works

Presenter: Dennis Lee, Tobacco Dependence Treatment Specialist

Adapted from “Dangers of Smoking,” Human Relations Media- www.hrmvideo.com
Disclosures:

I am a salaried employee of Saint Barnabas Health Care System.

Any and all program fees are used to build the capacity of the program.

I receive no fee from partners I work with from Pfizer, Glaxo-Smith-Kline or Novartis.

I have never accepted, and will never accept, any money from the tobacco industry for any reason.
I am *not* anti-smoking...

(Annoying, judgmental, busybody, out to tell adults what to do with their own lives)

I *am* anti-tobacco...

(Paranoid conspiracy theorist with an axe to grind and mistrust of most large organizations)
The Mounting Evidence of the Toll of Tobacco on Life and Health

- Lung cancer in men
- Chronic obstructive pulmonary disease

1964

- Peptic ulcer disease
- Lung cancer in women

1967

- Coronary heart disease

1979

- Laryngeal cancer

1980

- Esophageal cancer
- Oral cancer

1982

- Peptic ulcer disease
- Lung cancer in women

1989

- Coronary heart disease

1990

- Laryngeal cancer

2004

- Bladder cancer

- Stroke

- Stomach cancer

- Abdominal aortic aneurysm

- Acute myeloid leukemia

- Cataracts

- Cervical cancer

- Kidney cancer

- Pancreatic cancer

- Pneumonia

- Periodontitis
Long term effects like lung cancer may begin years before symptoms are noticed. For example…

The Life of a Smoker-Part 1

Age 14: Carl smokes his first cigarette. It leaves behind a sticky residue of tar with dozens of cancer causing chemicals.

Age 18: Carl is up to a pack a day. Many of the cilia in his lungs are destroyed. Each cigarette damages more and more lung cells.

Age 25: Carl gets out of breath more easily. He switches to a “light” brand, but soon is smoking two packs a day.

Age 29: Carl gets married. A single lung cell is mutated by cigarette smoke. It is a cancerous cell and begins to divide quickly.

Adapted from “Dangers of Smoking,” Human Relations Media- www.hrmvideo.com
The Life of a Smoker - Part 2

Age 32: The cancer cells are forming a small clump in Carl’s left lung. They begin to squeeze out normal lung cells. Carl has no symptoms…

Age 37: Carl now has two children. The cancer is confined to a small part of his lung and he doesn’t realize it is there. His only symptom a lingering cough.

Age 45: Carl begins to feel tired and breathless. He gets bronchitis a few times a year. He thinks he is working too hard. Cancer cells are spreading to his lymph nodes.

Age 47: An X-ray finds that the cancer has spread to Carl’s neck and chest wall. His doctor informs Carl that he has a 15% chance of surviving five years. By now, Carl’s sixteen year old daughter is a smoker too.

Adapted from “Dangers of Smoking,” Human Relations Media - www.hrmvideo.com
"A Centers for Disease Control and Prevention (CDC) study about cigarette smoking, based on data of…the…Youth Risk Behavior (NHIS-YRBS), found proven interconnections between smoking and sexual involvement, violent behavior and other substance…it consistently found current smokers had the highest rate of involvement in risk behaviors and ‘never smokers’ had the lowest rate.”
Results from the Youth Risk Behavior Survey

Between 2001 and 2005 in New Jersey the Centers for Disease Control recorded statistically significant declines in youth tobacco use including ever trying a cigarette, smoking regularly, and smoking more than ten cigarettes per day.

Between 2005 and 2009 in New Jersey the Centers for Disease Control recorded NO statistically significant declines in youth tobacco use in any category.¹
Why The Need for Policy Change?

Take Away Messages

- Our knowledge of the health risks of smoking demonstrate that they begin long before symptoms appear.
- Early initiation of smoking is a sign that other risk behaviors are taking place.
- Current practices are not reducing youth smoking anymore.
What’s in a cigarette?

- Acetone – found in nail polish remover
- Acetic Acid – an ingredient in hair dye
- Ammonia – a common household cleaner
- Arsenic – used in rat poison
- Benzene – found in rubber cement
- Butane – used in lighter fluid
- Cadmium – active component in battery acid
- Carbon Monoxide – released in car exhaust fumes
- Formaldehyde – embalming fluid
- Hexamine – found in barbecue lighter fluid
- Lead – used in batteries
- Napthalene – an ingredient in moth balls
- Methanol – a main component in rocket fuel
- Nicotine – used as insecticide
- Tar – material for paving roads
- Toluene - used to manufacture paint

And about 4,000 other chemicals…
What is Nicotine?

Nicotine is an alkaloid found in the nightshade family of plants…It functions as an antiherbivore chemical…therefore nicotine was widely used as an insecticide in the past.

In low concentrations the substance acts as a stimulant and is the main factor responsible for the dependence-forming properties of tobacco smoking.

According to the American Heart Association, nicotine addiction has historically been one of the hardest addictions to break.

Nicotine content in cigarettes has slowly increased over the years…one study found an average increase of 1.6% per year between the years of 1998 and 2005. This was found for all major market categories of cigarettes.
What is Nicotine?

Thanks Wikipedia!!!
Why is smoking so addictive?

In 1998 the Surgeon General stated that nicotine is more addictive than heroin or cocaine.

Nicotine reaches the brain seven seconds after being inhaled.

Nicotine levels accumulate in the body and fuel addiction 24/7.

Most smokers quickly develop tolerance and need greater amounts for the same effect.

Smokers come to rely on the habits of smoking—they often associate cigarettes with people, places, situations, and their lifestyle.
Addiction and Withdrawal

Tingling in the hands and feet
Sweating
Intestinal disorders (cramps, nausea)
Headache
Cold symptoms (sore throats, coughing, and other signs of colds and respiratory problem)
Feelings of being an infant: temper tantrums, intense needs, feelings of dependency, a state of near paralysis
Insomnia
Mental confusion
Vagueness
Irritability
Anxiety
Depression is common in the short and long term
The Benefits of Quitting

Your body will begin to repair itself as soon as you stop smoking – and you’ll go on feeling the health benefits for the rest of your life.

**20 minutes** after stopping your blood pressure and pulse rate will return to normal. Circulation improves in hands and feet, making them warmer.

**8 hrs** after stopping nicotine and carbon monoxide levels in the blood will be cut by half and oxygen levels will return to normal. Chances of heart attack start to fall.

**24hrs** after stopping the level of carbon monoxide in your body will be that of a non-smoker and your lungs will start to clear out mucus and other smoking debris.

**48hrs** after stopping your body is becoming free of nicotine and your sense of taste and smell is improving.

**72 hours** after stopping you should be breathing more easily. Airway passages in the lungs begin to relax. Energy levels increase.
More Benefits of Quitting

At 5 years smoke-free:
from 5 to 15 years after quitting tobacco, stroke risk is reduced to that of people who have never smoked.

At 10 years smoke-free:
risk of lung cancer drops to as little as one-half that of continuing smokers
risk of cancer of the mouth, throat, esophagus, bladder, kidney, and pancreas decreases
risk of ulcers decreases

At 15 years smoke-free:
risk of coronary heart disease is now similar to that of people who have never smoked
risk of death returns to nearly the level of people who have never smoked
Benefits of Quitting after a Diagnosis of Cancer

Overall, continuing to smoke after a diagnosis of lung cancer increased the risk of death by nearly two to three times. It also substantially increased the risk of recurrence of the initial cancer. - BMJ

For those having surgery, chemotherapy, or other treatments, quitting smoking helps improve the body’s ability to heal and respond to therapy. It also lowers the risk of pneumonia and respiratory failure. Moreover, quitting smoking may lower the risk of the cancer returning or a second cancer developing. - NCI

Persistent tobacco-use post-diagnosis also is associated with poorer outcomes, including increased complications of treatment, progressive disease, second primaries and increased comorbidity. Thus, while smoking cessation plays a substantial role in prevention and primary care, it is perhaps even more critical for cancer survivors to quit smoking. - ACS, et.al.
Science of Quitting

Public Health Service Guidelines are clear—getting help improves your chances of a successful quit now!
## Combinations: Medication and Counseling

Effectiveness of and estimated abstinence rates for the combination of counseling and medication versus medication alone (n = 18 studies)

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Number of arms</th>
<th>Estimated odds ratio (95% C.I.)</th>
<th>Estimated abstinence rate (95% C.I.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Medication alone</td>
<td>8</td>
<td>1.0</td>
<td>21.7</td>
</tr>
<tr>
<td>Medication and counseling</td>
<td>39</td>
<td>1.4 (1.2, 1.6)</td>
<td>27.6 (25.0, 30.3)</td>
</tr>
</tbody>
</table>
Science of Quitting

Medication

Seven first-line medications shown to be effective and recommended for use by the Guideline Panel:

- Bupropion SR
- Nicotine Gum
- Nicotine Inhaler
- Nicotine Lozenge
- Nicotine Nasal Spray
- Nicotine Patch
- Varenicline
Marlboro Country
Win a trip to the hottest dance party of the year!
Win a trip to the hottest dance party of the year!

Newport Rhythm and Sound
IT'S ALL ABOUT THE NEXT MORNING!

We don't want to know what went on last night, and chances are neither do you. But when it's gonna be a morning in, you might as well stay in, in comfort.

**Melitta® Dual Thermal Mug Coffeemaker**

Coffee to go? No problem. Ingenious design allows fresh brewed coffee to go right into two portable mugs. Mugs are stainless steel with rubber grips, made to fit standard car cup holders. Dishwasher-safe with removable spouts for easy cleaning.

**Cool Beans.**

**Dyed Pocket T-shirt**

Look good even when it's hot! This pocket T-shirt with 100% preshrunk heavyweight cotton blends style and comfort. Generously cut, double-needle stitching throughout. Unisex sizes M/L-XXL.

**Tee Off.**

**SURGEON GENERAL'S WARNING:** Quitting smoking now greatly reduces serious risks to your health.

Box: 16 mg. "tar," 1.2 mg. nicotine avg. per cigarette by FTC method.
Current life expectancy figures estimate that every cigarette takes 11 seconds from your life…

30 UPC=30 packs=600 cigarettes

600 x 11 seconds = 6600 seconds

6600 seconds = 110 hours

110 hours = 4 ½ days off of your life for a free t-shirt!
NEVER let the goody two shoes get you down...

Find Your Voice

SURGEON GENERAL'S WARNING: Quitting Smoking Now Greatly Reduces Serious Risks to Your Health.
NEVER let the goody two shoes get you down.

VIRGINIA SLIMS
Find Your Voice

SURGEON GENERAL'S WARNING: Quitting Smoking Now Greatly Reduces Serious Risks to Your Health.

VIRGINIA SLIMS
REGULAR LIGHTS 100's
WARNING

CIGARETTES ARE A HEARTBREAKER

Tobacco use can result in the clogging of arteries in your heart. Clogged arteries cause heart attacks and can cause death.

Health Canada

Matinée
EXTRA MILD
25 CIGARETTES

WARNING

CIGARETTES CAUSE MOUTH DISEASES

Cigarette smoke causes oral cancer, gum diseases and tooth loss.

Health Canada

Peter Jackson
Light

25 CIGARETTES

WARNING

CIGARETTES CAUSE LUNG CANCER

85% of lung cancers are caused by smoking. 80% of lung cancer victims die within 3 years.

Health Canada

Matinée
EXTRA MILD
25 CIGARETTES

WARNING

CIGARETTES LEAVE YOU BREATHLESS

Tobacco use causes crippling, often fatal lung diseases such as emphysema.

Health Canada

Peter Jackson
Light

25 CIGARETTES
Tobacco Lethality

2004 marked the fortieth anniversary of the landmark Surgeon General’s report linking smoking and lung cancer.

The Surgeon General’s latest findings will in all likelihood push the annual toll for cigarette smoking beyond a half a million Americans.

Cigarette smoking kills more people than murder, suicide, accidental overdoses, auto accidents, AIDS and domestic accidents—combined.
Questions?
For More Information About our Program…

In the South:
Helene Long
732.886.4149

In the North
Dennis Lee
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Special Symposium of the Essex County Cancer Coalition
March 29, 2012

Addiction to Smoking – Is there a Genetic Component?
BACKGROUND

Work by Peto and colleagues (as cited in Shafey, Dolwick, & Guindon, 2003) suggests that nearly 30% of all deaths among adults aged 35–69 years in the United States can be attributed to the persistent use of cigarettes, including approximately

- 27% of all cancer related deaths in women and
- 44% in men.

Among those who smoke cigarettes, evidence suggests that beginning at age 40 years there is increasing loss of life depending on the age of quitting cigarettes, with as much as 10 years lost for those smoking cigarettes throughout their life (Doll & Hill, 2004).

*At the same time, smoking cessation therapies have disappointing success rates.* From a public health perspective, the most important aspect of cigarette smoking is smoking persistence, that is, which individuals become long term smokers, among the many who are exposed to tobacco.
• Strong consistent evidence suggest that **genetic factors** account at least in part for individual differences in long-term persistent cigarette smoking.

**How are early and later stages of cigarette smoking related?**

• Even in societies with high rates of cigarette experimentation, not all experimenters become smokers.
• Not all respondents who report smoking regularly at some point in their lives report a history of nicotine dependence or withdrawal.
• In an Australian study, about 50% with a history of regular smoking reported repeated failure at quitting cigarettes.
The Genetics and Epigenetics of Substance Abuse: NIDA/NIAAA Satellite Symposium at the World Congress of Psychiatric Genetics

September 9, 2011

Omni Shoreham Hotel
2500 Calvert Street NW, Washington, DC 20008
NIDA/NIAAA Conference

At that conference, 3 of the key talks were:

• **Genetics of Nicotine Addiction**  
  *Laura Bierut, M.D.*  
  *Washington University in St. Louis*

• **Genetics of Alcoholism**  
  *Howard Edenberg, Ph.D.*  
  *Indiana University*

• **The Future is Bright: Charting a Course for Genomic Medicine**  
  *Eric Green, M.D., Ph.D*  
  *Director, National Human Genome Research Institute*

*A brief summary of the evolving data:*
Addiction

• If a substance is never tried, there will never be addiction.
• There is tremendous variation in the addiction potential of various substances plus there is individual variation in the propensity to addiction in general and addiction to various substances, and these are slowly being teased apart
• The best, and sometimes perhaps the only, chance to avoid addiction among those with
  – Genetic predisposition, or
  – Strong social influences
to nicotine addiction may be to avoid that first cigarette
Evolving Genetic Findings

• Specific genes have been linked to some patterns or metabolic pathways
• For most of these, the biologic mechanisms of the genes are not yet understood
• Some have been linked with metabolism, such as with the rapidity of metabolism of alcohol, and this may help explain some racial/ethnic differences in alcohol tolerance (E.g., Japanese vs. Irish)
Evolving Genetic Findings - Alcohol

• “Social” drinking in the teens so far has NOT been associated with any genetic predisposition NOR to alcoholism

• In contrast, a gene related to a predisposition to alcoholism seems to first “kick in” during the mid-20’s and later

• *Reminder*: alcoholism is associated with increased morbidity and mortality from many chronic illnesses, including liver cancer
Nicotine

• A key addictive component in tobacco is NICOTINE

• If the nicotine content in a cigarette is reduced, smoking may increase to compensate in order to get the same dose

• As just discussed by Mr. Lee, nicotine has many physiologic effects as do the multitude of other chemicals in tobacco and in tobacco smoke
Nicotine

• For decades, the tobacco industry hid data and tried to create a climate of doubt; in particular, read:
  – *Doubt is their product. How industry’s assault on science threatens your health.* By David Michaels, 2007, Oxford University Press
Evolving Genetic Findings - Nicotine

• A gene has been found that is associated with persistence of smoking behavior (i.e., ADDICTION).

• In contrast to alcohol, this gene acts beginning in the teens.

• Corollary: once exposed, for these people it has been extremely difficult to stop smoking.

• Thus, it is critical to PREVENT that first initiation exposure to nicotine.

• Our youth-based efforts are thus EXCEPTIONALLY important.
Caveats

• Most of these genetic tests are in their infancy, and none come close to being 100% predictive.

• These are complex behaviors; genetics can be part of the story, but likely only in some

• It also is beginning to help us understand that some familial patterns may be partly social (shared environment, etc) and partly genetic
The Future

- Genetic data is being accumulated at exponentially increasing rates and decreasing costs,
- The amount of data has so far been outstripping anyone’s ability to interpret it
- The NIH will be spending billions of $$ over the next decades in an attempt to help clinicians use these data on behalf of their patients