Tobacco Cessation
Hope or Hopeless

Julio G. Peguero MD, FACC
Disclosures

- No disclosures.
Shady past...

According to repeated nationwide surveys,

More Doctors Smoke CAMELS
than any other cigarette!

Doctors in every branch of medicine were asked, "What cigarette do you smoke?"
The brand named most was Camel!

You'll enjoy Camels for the same reasons so many doctors enjoy them: Camels have cool, mild taste, rich after-taste, and a flavor unmatched by any other cigarette.

Make this sensible test: Smoke only Camels for 30 days and see how well Camels please your taste, how well they suit your throat as your steady smoke. You'll see how enjoyable a cigarette can be!

For 30 days, test Camels in your "T-Zone" (T for Throat, T for Taste).

20,679* Physicians say "LUCKIES are less irritating"

"It's toasted"

Your Throat Protection against irritation against cough
• Smoking causes ~ 20% of US death.

• Reduced Life expectancy
  male by 13.2 years
  females by 14.5 years

• Current smoker at age of 50 it decreases the chance of surviving to age 85 by 53%.
IMPORTANCE – Does quantity matter?

• Heavy smoking (20 Cigarettes/day) increases the risk of MI up to 6 times in women and 3 times in men.

• Light smoking (1-4 cigarettes/day) Increases the risk of dying of ischemic heart disease by 2.74 in men and 2.94 in woman.

• Secondhand smoke exposure at home or work increases the risk of coronary artery disease by 25-30%

Reduced CV mortality regardless of CHD presence

- 25-34 years of age = 10 years of life gained.
- 35-44 years of age = 9 years of life gained.
- 45-54 years of age = 6 years of life gained.

Reduction in tobacco use does not confer the same benefit.
Number needed to treat (NNT) = is the average number of patients who need to be treated to prevent one event.

<table>
<thead>
<tr>
<th>Intervention</th>
<th>NNT (death)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>NO RISK</td>
</tr>
<tr>
<td>Mammogram in women years 39-49</td>
<td></td>
</tr>
<tr>
<td>PSA in men above 65 years</td>
<td></td>
</tr>
<tr>
<td>Hypertension Therapy</td>
<td></td>
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<tr>
<td>Statin Therapy</td>
<td></td>
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<tr>
<td>Nutrition – Mediterranean diet</td>
<td></td>
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<tr>
<td>Cardiac rehabilitation</td>
<td></td>
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<tr>
<td>Smoking Cessation</td>
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Cigarette smoking is the leading cause of preventable death!
CIGARETTE SMOKING - Harms

THE SECRETS THEY KEEP
HERE ARE SOME OF THE HARMFUL CHEMICALS HIDING IN CIGARETTE SMOKE...

NICOTINE
A deadly toxin that causes nausea, headaches and increased blood pressure. Nicotine is commonly used in insecticides.

BENZOPYRENE
One of the most potent cancer-causing chemicals known. You find it in tar, coal, engine exhaust fumes, burnt food and tobacco smoke.

TURPENTINE
A paint thinner. In cigarette smoke, it irritates the respiratory tract. High exposure cause kidney and nerve damage.

PROPYLENE GLYCOL
The tobacco industry claims they use it to keep tobacco moist and flexible. Scientists say it carries smoke deeper into the lungs so more nicotine is absorbed.

ANHYDROUS ETHER (AGETONE)
An active ingredient in nail polish remover and paint thinner. In cigarette smoke, it irritates the respiratory tract.

BUTANE
Used in cigarette lighter fuel.

CADMIUM
Used in batteries. It builds up in the body and causes cancer. Cigarette smoking is the main cause of cadmium exposure.

AMMONIA
Used in household cleaning products. The tobacco industry says it improves flavour and makes tobacco more flexible. Scientists say it helps deliver nicotine to the brain faster.

FORMALDEHYDE
It kills most species of bacteria and is used for preserving dead bodies and laboratory specimens. Causes cancer and is now banned in many countries.

BENZENE
Found in crude oil, it causes leukemia and other cancers.

Cigarette smoke contains over 4,800 chemicals. Even if you don’t smoke, you can still be harmed by these poisonous chemicals by being around people who are smoking.

CDC, how tobacco smoke causes disease. available from: https://www.ncbi.nlm.nih.gov/books/NBK53012/
# CIGARETTE SMOKING - Nicotine withdrawal

## TEMPORARY PHYSICAL SIDE EFFECTS OF STOPPING SMOKING

<table>
<thead>
<tr>
<th>Effect</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Insomnia</td>
<td>Vivid dreams, fatigue, drowsiness</td>
</tr>
<tr>
<td>Skin changes</td>
<td>Blemishes, itchiness, hives</td>
</tr>
<tr>
<td>Circulation</td>
<td>Dizziness, stiffness/pain, tingly fingers &amp; toes, bloating, water weight gain</td>
</tr>
<tr>
<td>Mouth</td>
<td>Soreness &amp; bleeding gums</td>
</tr>
<tr>
<td>Respiratory issues</td>
<td>Congestion, cough, phlegm, hoarseness, breathlessness</td>
</tr>
<tr>
<td>Digestion</td>
<td>Heartburn, gas, flatulence, nausea</td>
</tr>
<tr>
<td>Headache</td>
<td>Weight gain</td>
</tr>
<tr>
<td>Hormone changes</td>
<td></td>
</tr>
</tbody>
</table>

## TEMPORARY EMOTIONAL SIDE EFFECTS OF STOPPING SMOKING

<table>
<thead>
<tr>
<th>Effect</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Restlessness</td>
<td></td>
</tr>
<tr>
<td>Depression</td>
<td>Difficulty concentrating</td>
</tr>
<tr>
<td>Irritability</td>
<td>Anxiety</td>
</tr>
<tr>
<td>Crankiness</td>
<td>Mood swings</td>
</tr>
<tr>
<td>Excitability</td>
<td></td>
</tr>
</tbody>
</table>

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**1. Heroin**
The brain converts heroin into morphine, which binds to molecules on cells that affect how we perceive pain and reward — producing a surging sense of euphoria. But overdosing can kill, since it slows and can stop breathing.

**Rank:** 3 out of 3

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**2. Cocaine**
In seconds, cocaine floods the brain with the feel-good chemical dopamine. The sensation of pleasure is so powerful that some lab animals choose cocaine over food until they starve. Cocaine appears to acutely affect the brain’s key memory centers, which may help explain why it’s so addictive.

**Rank:** 2.4 out of 3

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**3. Nicotine**
The main addictive ingredient in tobacco, nicotine, is sucked up by the lungs and delivered to the brain, with drug levels peaking within 10 seconds. Because its effects vanish so quickly — including feelings of pleasure — scientists think smokers are more prone to repeated use. Some 85% of people who try to quit on their own relapse.

**Rank:** 2.2 out of 3

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**4. Barbiturates**
Barbiturates, which are still prescribed temporarily for things like anxiety and insomnia, block some of the brain's chemical signalling, effectively muting several brain regions. At low doses, these drugs can induce a feeling of euphoria, but at higher doses they can suppress breathing and kill.

**Rank:** 2 out of 3

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**5. Alcohol**
Alcohol interferes with messengers in the brain called "excitatory" messengers, slowing our thinking, breathing, and heart rate. At the same time, it boosts our "inhibitory" messengers, giving us feelings of pleasure.

**Rank:** 1.9 out of 3

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The Lancet 2007. 369, 9566, P1047-1053,
SMOKING CESSATION - Characterization

National Health Interview Survey

Characterization of smoking cessation attempts

SMOKING CESSATION - Characterization

5 A’s of Smoking Cessation

Ask
- What do you smoke?
- How much do you smoke?
- How long have you smoked?

Advise
- Discuss harmful effects and urge patient to quit

Assess
- Willingness to Quit

Assist
- Help create best plan for quitting

Arrange
- Follow up if quitting, within 1 week of quit date
SMOKING CESSATION - Strategies

Unassisted strategies

- “Cold Turkey”
- Counseling

Pharmacotherapy

- Nicotine Replacement therapy (NRT)
- Bupropion
- Varenicline

E-Cigarettes

Insurance plans are required to cover Tobacco-cessation interventions including behavioral counseling and pharmacotherapies approved by the FDA.
SMOKING CESSATION – Unassisted

Program Helps Smokers Quit
December 20, 2016

The evidence that smoking cigarettes poses catastrophic health risks is irrefutable.

Yet the facts aren’t always strong enough to beat addiction’s irrational pull. We need help – the right help – to quit.

Paul Pevoroff, RN, Nurse Manager of 3 Central Observation Unit/Respiratory Therapy at Memorial Hospital Miramar, and Stephannie Braaf, Administrative Assistant at Memorial Hospital West, manage a tobacco cessation program founded on the principle that every smoker and every reason for smoking are unique.

Cessation plans, therefore, must be individualized to improve the odds of success. Yet in order to customize those plans, people must first realize the root of their addiction.

“We’ve learned with our training that no two people smoke the same way,” says Paul. “We understand that it takes an average of between four and seven attempts to quit smoking and stay quit.”

The program began in 2013, when Candice Sareli, Chief Medical Research Officer for Memorial, asked Paul to devise an in-house process to help patients quit smoking. He created a two-part counseling model where Respiratory Therapy staff members attended training sessions to become facilitators.

Paul and Stephannie also obtained advanced training through the State of Florida.

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Ft. Lauderdale, FL 33328
954-262-1594
bperkins@nova.edu

https://www.mhs.net/news/2016/12/smoking-cessation-program
For more information about the program, call 954-262-1580.
Any state in the US: free quit line support 1-800-QUIT-NOW
SMOKING CESSATION – Counseling

QUIT YOUR WAY
Quitting tobacco isn’t easy. Finding help should be.
Tobacco Free Florida offers free tools and services to help you get started.

GROUP QUIT
Is the in-person option of Tobacco Free Florida’s Quit Your Way services.
Programs cover all forms of tobacco.

GROUP QUIT offers two programs:

OPTION 1
A 2-hour session where participants learn how to develop a successful quit plan.

OPTION 2
Support groups meet once a week for 6 weeks and cover a variety of topics including coping with withdrawal symptoms, managing addiction and preventing relapse.

NICOTINE REPLACEMENT*
FREE nicotine patches, lozenges and gum to help tobacco users cope with nicotine withdrawal symptoms.
*While supplies last and if medically appropriate.

GROUP COACHING
Is an effective and critical component of any quit attempt, and can double the success rate of quitting tobacco.

toll free 877-848-6696
tobaccofreeflorida.com/quityourway

Counseling

Group Quit

Phone Quit
(quit coach 24/7)

Web Quit

2 hours sessions (plan)
6 weeks
(includes free patches, gums, lozenges)
Behavioural interventions for smoking cessation: a meta-analysis of randomized controlled trials

- **Minimal Clinical Intervention**
  - 9 RCTs
  - N = 6,476
  - OR = 1.5 (0.84 - 2.78)

- **Individual Counseling**
  - 23 RCTs
  - n = 8,646
  - OR = 1.49 (1.08 - 2.07)

- **Telephone Counseling**
  - 10 RCTs
  - N = 8,225
  - OR = 1.58 (1.15 - 2.29)

- **Group Counseling**
  - 12 RCTs
  - N = 3,600
  - OR = 1.76 (1.11 - 2.93)

Overall: 50 Randomized Controlled Trials (RCTs), N = 26,927 patients.
SMOKING CESSATION - Strategies

Unassisted strategies
- “Cold Turkey”
- Counseling

Pharmacotherapy
- Nicotine Replacement therapy (NRT)
  - Bupropion
  - Varenicline

E-Cigarettes
SMOKING CESSATION – Pharmacotherapy

Cochrane Database Syst Rev. 2013;5:CD009329

Percent Abstinence

Treatment | Placebo
---|---
NRT | 17.3% | 10.3%
Bupropion | 18.9% | 10.6%
Varenicline | 27.6% | 11.9%

Cochrane Database Syst Rev. 2013;5:CD009329
SMOKING CESSATION – Nicotine Replacement

• Combination therapy is more effective than a single agent.
  ✓ 20.6% vs 15.6% cessation rates

• Match patient nicotine intake patterns.
  ✓ Doses and durations can be extended for >8 weeks.

• No evidence of harm when NRT are used while still smoking or in combination.
  ✓ Less efficacious.

• Associated with increased risk of palpitations and chest pain
  ✓ 2.5% vs 1.4% RR 1.8 (1.37-2.57)
  ✓ Has not proven to increase the risk of CV events.
SMOKING CESSATION – Bupropion and Varenicline

• Varenicline is superior to Buproprion
  ✓ 21.1% vs 13.9%
  OR 1.59 (1.29-1.96)

• Similar mechanism of action. Both carry a black box warning for Neuropsychiatric events.
  ✓ Observational rather than randomized Findings. (RR 0.53 vs 0.88)

• Bupropion will increase the risk of seizures.
  ✓ ~ 1 in 1,500 treated patients.

Neuropsychiatric Symptoms and Suicidality
monitor for serious neuropsychiatric events incl. behavior change, hostility, agitation, depression, and suicidality as well as worsening of preexisting psychiatric illness which have occurred in pts taking varenicline and after discontinuation; some cases possibly complicated by nicotine withdrawal sx, but also reported in pts who continue to smoke while taking varenicline; weigh varenicline risks vs. benefits of smoking cessation

SMOKING CESSATION - Strategies

- Unassisted strategies
  - “Cold Turkey”
  - Counseling

- Pharmacotherapy
  - Nicotine Replacement therapy (NRT)
  - Bupropion
  - Varenicline

- E-Cigarettes

Combination therapy is the most effective.
SMOKING CESSATION – E-Cigarettes

“Vape” was the Oxford dictionary word of the year in 2014.

Electronic Nicotine Delivery Systems (ENDS)

Available at: https://en.oxforddictionaries.com/word-of-the-year/word-of-the-year-2014
SMOKING CESSATION – E-Cigarettes

• E-Liquid or “Juice” components:

1. Nicotine: 0-36 mg /ml (compared to 1 cigarette is ~ 18 mg/ml)

2. Propylene Glycol, Glycerol, Glycerine.

3. Flavoring

4. Water

Manufacturing of e-liquid is mostly unregulated!
“While scientific evidence is insufficient to allow reliable conclusions to be made about the long-term health effects of e-cigarettes (including CV outcomes or measures of subclinical atherosclerosis), such risks could be less than those associated with smoking, because toxicants and carcinogens present in cigarette smoke are absent or present at much lower concentrations in e-cigarette aerosols”.
A Randomized Trial of E-Cigarettes versus Nicotine-Replacement Therapy

Methods: 886 smokers were randomized to combination of NRT provided up to 3 month or e-cigarette started pack (1 bottle of e-liquid). Both groups received 4 weeks of behavioral support.

Primary endpoint: Sustained abstinence for 1 year validated biochemically. Participants lost to follow up were considered not to be abstinent.

Secondary endpoints: Participant-reported treatment usage and respiratory symptoms.
Results

• **Throat and mouth irritation** was reported more frequently in the e-cigarettes group. 65.3% vs. 51.2%

• **Nausea** was reported more frequently in the NRT group 37.9% vs. 31.3%

• The e-cigarette group reported greater decline in the incidence of **cough and phlegm**. No difference in the incidence of **wheezing or shortness of breath**.

Table 2. Abstinence Rates at Different Time Points and Smoking Reduction at 52 Weeks.*

<table>
<thead>
<tr>
<th>Outcome</th>
<th>E-Cigarettes (N = 438)</th>
<th>Nicotine Replacement (N = 446)</th>
<th>Primary Analysis: Relative Risk (95% CI)†</th>
<th>Sensitivity Analysis: Adjusted Relative Risk (95% CI)‡</th>
</tr>
</thead>
<tbody>
<tr>
<td>Primary outcome: abstinence at 52 wk — no. (%)</td>
<td>79 (18.0)</td>
<td>44 (9.9)</td>
<td>1.83 (1.30–2.58)</td>
<td>1.75 (1.24–2.46)</td>
</tr>
<tr>
<td>Secondary outcomes</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Abstinence between wk 26 and wk 52 — no. (%)</td>
<td>93 (21.2)</td>
<td>53 (11.9)</td>
<td>1.79 (1.32–2.44)</td>
<td>1.82 (1.34–2.47)</td>
</tr>
<tr>
<td>Abstinence at 4 wk after target quit date — no. (%)</td>
<td>192 (43.8)</td>
<td>134 (30.0)</td>
<td>1.45 (1.22–1.74)</td>
<td>1.43 (1.20–1.71)</td>
</tr>
<tr>
<td>Abstinence at 26 wk after target quit date — no. (%)</td>
<td>155 (35.4)</td>
<td>112 (25.1)</td>
<td>1.40 (1.14–1.72)</td>
<td>1.36 (1.15–1.67)</td>
</tr>
<tr>
<td>Carbon monoxide–validated reduction in smoking of ≥50% in participants without abstinence between wk 26 and wk 52 — no./total no. (%)</td>
<td>44/345 (12.8)</td>
<td>29/393 (7.4)</td>
<td>1.75 (1.12–2.72)</td>
<td>1.73 (1.11–2.69)</td>
</tr>
</tbody>
</table>

✓ Smoking Cessation is one of the most important life-saving interventions.

✓ **Combination therapy** is the most effective method for smoking cessation.

✓ **E-cigarettes may improve cessation rates** but long term impact on health is unknown.

Thank You!

Julio G. Peguero MD, FACC