



No Financial Disclosures



Objectives:

- Understand current scope of nicotine addiction in different forms (cigarettes, chew, vaping) and the science behind it.
- Be aware of best practices in assisting patients with quitting nicotine.
- Apply knowledge and tools to current practice.





A Brief History of Tobacco in America

- ▶ 1610: Money gained from tobacco exports was the main source of income for the American Colonies.
- ▶ 1950: Fast forward 440 years to when studies were first published showing the link between cigarette smoking and lung cancer.
- 1964: First Surgeon General's Report on Smoking and Health published. - SG Luther L. Terry
- 1965: Congress passed requirement for warning labels on cigarettes.
- ▶ 1969: Advertisement of cigarettes prohibited on television and radio.
- ▶ 1998: Tobacco Master Settlement Agreement reached between state Attorney Generals of 46 states with 4 largest cigarette companies.
- ▶ 2009: Center for Tobacco Products established at FDA.
- ▶ 2016: FDA's regulatory authority was extended to all tobacco products including e-cigarettes.

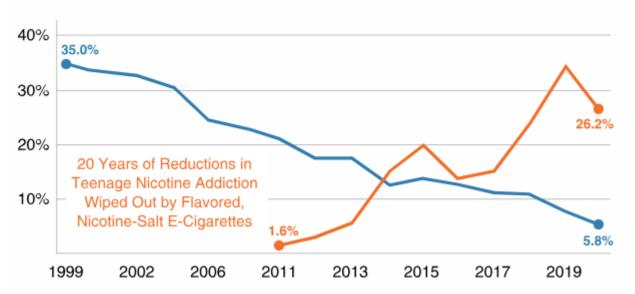




The war was won, then e-cigarettes:

12 Grade Cigarette vs. E-Cigarette Use

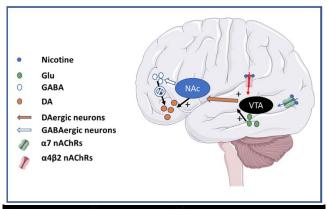
Use in Past 30 Days – National Youth Tobacco Survey

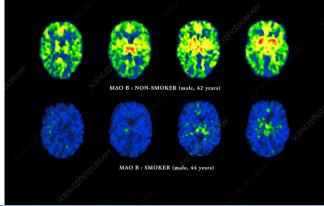




The Science of Addiction in Plain Language

- The lungs are an effective delivery system of a drug as interior surface is equal to that of a tennis court with blood vessels ready to offload O2 and nicotine as a hitchhiker.
- Nicotine is rapidly pumped to the brain where it attaches to receptor whose job it is to "release the king of the feel-good neurotransmitters, dopamine".
- Acute addiction: Spike of dopamine causes: increased focus, euphoria, self-confidence, alertness and loss of appetite.
- BUT: The brain then down regulates these receptors to make them less sensitive. Effects exaggerated in adolescent brains!
- Consequences of chronic addiction: nicotine required just to achieve near normal levels of dopamine.
 - Without nicotine, smokers and vapers feel irritable, unfocused and depressed.
 - Nicotine reverses this and makes them feel relaxed and de-stressed (returning dopamine levels to near normal).





Levels of MAO B low in smokers leading to higher levels of dopamine.



Call to Action!

- Most people want to quit, but don't get help.
 - 30-50% attempt quitting each year
- Annual quit rate without assistance 3-5%, but 10-15% with assistance.
 - Counseling + medication most effective
- People with serious mental illness (SMI) and substance use disorders also want to quit.
- Heavy smoking is a risk factor for major depression.
 - 2X as common in smokers
 - 4X as common in heavy smokers

Know Your Biases





Percentage of Tobacco Use in US Adults

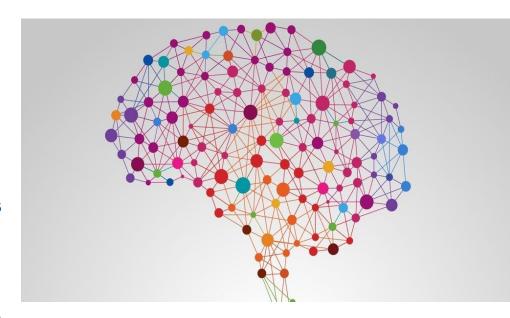
- In 2020, 23.1% of U.S. adults with any mental illness reported smoking cigarettes during the past month compared to 14.5% of adults with no mental illness.
- ▶ 25% of adults in the U.S. have some form of mental illness or substance use disorder, and these adults consume almost 40% of all cigarettes smoked by adults.





Mental Health Benefits of Smoking Cessation

- Smoking cessation reduces depression, anxiety and stress.
 - Effects are as large for those with or without psychiatric disorders.
 - Cessation has = or > effect than antidepressant treatment for anxiety and depression.
- No worsening of psychiatric symptoms in stable SMI with anti-tobacco treatment.
 - Reduction in smoking
 - Use of smoking cessation medications including varenicline



Why it Matters

SMOKING CESSATION BY THE NUMBERS

About 34 million
U.S. adults currently smoke cigarettes.

- Smoking is the leading cause of preventable disease and death in the United States
- 480,000 Americans die from smoking each year, accounting for nearly 1 in 5 deaths
- 16 million Americans live with a smoking-related disease
- Smoking-related death and disease cost the United States over \$300 billion each year

- Even a failed quit attempt helps support cessation goals.
- Underdosing nicotine replacement therapy (NRT) contributes to failed quit attempts.
- Behavioral change is just as important as managing craving.
- Simply asking (not lecturing) about tobacco use helps people move towards cessation.



Smoking Cessation:

A Report of the Surgeon General



Ask Every Patient, Every Time



The "5A's" -

- Ask (everyone!)
 - What are your thoughts about smoking?
- Advise
- Assess
- Assist
- Arrange
- Don't forget to reassess your former smokers

Stage of Change

- Precontemplation
- Contemplation
- Preparation
- Action
- Maintenance



Case Study #1

- ▶ 46-year-old Male New Dx HTN, HLD, and has had MDD x 2 years (not on medication).
- ▶ He is worried about his health.
- ▶ Use: 20 cpd (1 ppd) x 30 years.
- No previous quit attempts.
- ▶ First cigarette < 5 minutes after awakening.

What do you think the hardest thing would be about quitting?

Behavioral Modification Small Changes Lead to Big Results

AM Work Break

Sit in a different spot Brush your teeth



After Work

Listen to music or audiobook

Hold something in your hand

as you drive

After Noon Meal

Go for a walk
Change your drink type

Evening Wind Down

Play a game on your phone

Text a friend

Move your body



Treating Physical Dependence

- Assess use (cigarettes per day, strength and quantity of e-juice, or tins per week).
- Assess time of first use each day (< or > 30 minutes?).
- Discuss use of NRT (Nicotine Replacement Therapy).
- How long should patients use NRT?



Nicotine Replacement Therapy (NRT)

NRT dosed 1mg Nicotine for each cigarette smoked per day 20 cigarettes/pack=1 pack/day= 21mg starting dose for patch

Nicotine Gum 2 mg, 4 mg

Nicotine Lozenges 2 mg, 4 mg

Nicotine Patch 7 mg, 14 mg, 21 mg/24 hours Nicotine Nasal Spray 1 mg per spray Nicotine Inhaler Each cartridge delivers 4mg



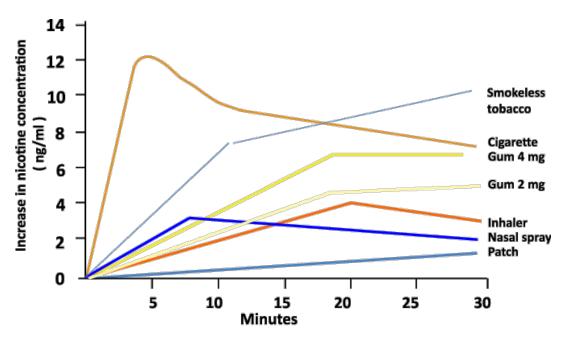








Comparative Nicotine Levels



Source: Balfour DJ & Fagerström KO. Pharmacol Ther 1996 72:51-81.

Oral Medication

Bupropion SR

(Avoid if seizure history or risk of seizures, anorexia/bulimia, liver failure. Use cautiously with mood disorders.)

Start 1 week prior to target quit date (TQD).

150mg daily x 3 days, then 150mg BID x4 days.

On TQD, stop smoking.

Continue 150mg po BID x 12 weeks. May treat for up to 12 months to reduce relapse. D/C does not require taper.

Oral Medication

Varenicline

(Reduced dose if severe kidney disease and do not use in pregnancy.)

Start 1 week prior to TQD.

0.5mg po daily x 3 days, then 0.5mg po BID x 4 days.

On TQD, stop smoking.

Start 1mg po BID x 12 weeks. .

May treat for up to 6 months to reduce relapse. D/C does not require taper. Initiation titration is to reduce the most common SE of nausea. Nightmares are more like vivid dreams, very disturbing to people who don't typically dream. Does not worsen PTSD nightmares. Improves after the first week or two. No drug/drug interactions. Eagle Study disproved worsening of psychiatric conditions with varenicline use.

Case Study #1 Follow-up

- ▶ 46-year-old Male New Dx HTN, HLD, and has had MDD x 2 years (not on medication).
- ▶ He is worried about his health.
- ▶ Use: 20 cpd (1 ppd) x 30 years.
- No previous quit attempts.
- ▶ First cigarette <5 minutes after awakening.



Caveats for Choosing NRT Vehicle and Amount of Replacement

Most effective regimens:

Combination of patch + prn

Combination varenicline + prn

- If someone smokes 40 cpd (2 packs) then how much nicotine replacement do they need?
- When do you use a 2mg vs 4mg dose of gum or lozenge?
- Where do you start with someone who vapes?

^{*}Use prn replacement only in pregnancy (allows for harm reduction, but reduced exposure for baby).



What About Vaping? Do e-cigarettes help you quit?

Nicotine salt allows more concentrated delivery of nicotine than cigarettes.

- ▶ Juul pod 5% is equivalent to 1 pack of cigarettes.
- ▶ E juice is not regulated- what you see may not be what you get.
 - Usually 90% food additives and 10% nicotine + flavorings.

Vaping changes smoking behaviors.

- No start/stop encourages a more continuous use.
- False sense of "safe" product- may reduce risk, but not harm free.



Quitting Vaping

Different Challenges in Quitting

- Dosing NRT is more difficult due to the variable concentration levels and higher levels of dependence.
- Constant use makes it harder to interrupt/change pattern of use.
- Youth use is big concern. Leads to high level of nicotine dependence in the developing brain.
- Variety of flavors = novelty. Does not have harsh nicotine flavor of cigarettes.

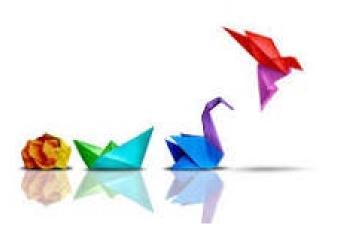


Vape Sensors

"We are up against a billion-dollar industry and the resourcefulness of youth."



Newly Quit Smoker? Consider the effects of tobacco cessation on their medications.



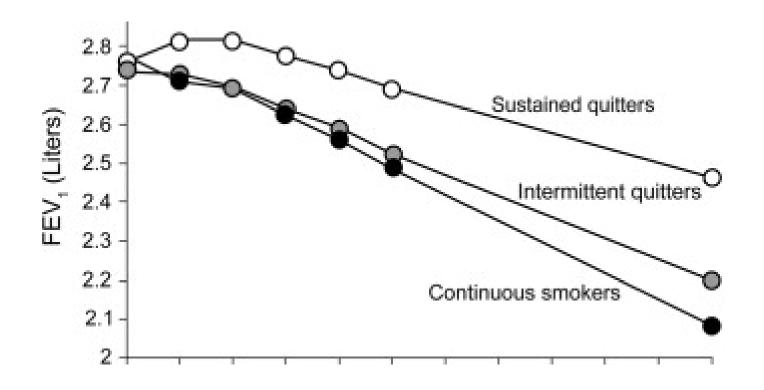
- May need dose reduction by 36% for the following:
 - Propranolol (Inderal)
 - Fluvoxamine (Luvox)
 - Lamotrigine (Lamictal)
 - Olanzapine (Zyprexa)
 - Clozapine (Clozaril)
 - Meds metabolized on the CYP1A2

Case Study #2

- ▶ 74-year-old female Hx of MI 5 years ago, recent hospitalization for COPD exacerbation.
- ▶ Has used 15 cpd x 52 years.
- ▶ First cigarette is > 30 min after awakening.
- Quit once for 6 months following her MI cold turkey.
- ▶ Feels it is too late for her to quit.

What do you like about smoking?

Tobacco Cessation and Lung Function Over Time



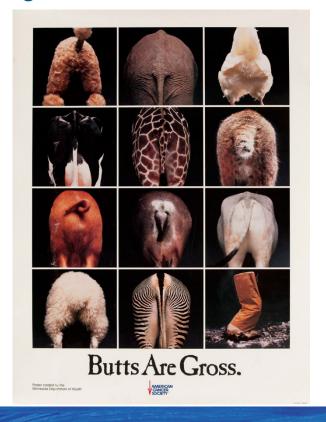
Case Study #3

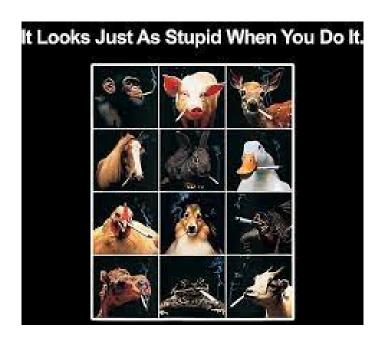
- ▶ 31-year-old Trans male Hx SUD, Bulimia, Bipolar II, Generalized Anxiety.
- ▶ Use: 30 cpd and vapes 6 % nicotine salt.
- Heard that Chantix (varenicline) causes nightmares and increases risk of SI.
- Quit x 3 months while incarcerated for controlled substance charges.
- ▶ In CD tx now, worried about "giving up everything all at once".

Case Study #4

- ▶ 62-year-old Male Hx DM, HTN, HLD.
- ▶ Use: Chews a tin of Copenhagen daily x 20 years.
- ▶ Smoked 20 cpd x 20 years, then switched to chewing tobacco.
- Sometimes uses both cigarettes and chewing tobacco.
- Previous quit attempts x 4.
 - Cold turkey.
 - Nicotine patch, gum (purchased OTC).
 - Varenicline made him nauseated and gave him nightmares.

Working Towards a Tobacco Free Future: Effective Strategies





Nationally, every 10 percent increase in cigarette prices reduces youth smoking by about seven percent and total cigarette consumption by about four percent.



Coding for Services

Tobacco Cessation counseling is a reimbursable service.

Note must include

1. Dx

Nicotine Use, cigarette (chewing tobacco) (electronic device) with/without complication

ICD 10: F17.210 (without complication)

F17.219 (with complication)

2. Time Statement

3-10 minutes was used in counseling for tobacco cessation OR > 10 minutes was used in counseling for tobacco cessation.



The answer to the question you don't ask is always "NO".

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