

## UPDATES IN SMOKING CESSATION

CONSIDERATIONS FOR THE RELAPSED OR RECALCITRANT SMOKER

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### What year did Northwestern Memorial Hospital ban employees from smoking at nursing stations on the inpatient wards?

- **1964** (Surgeon general's first report on smoking being hazardous to health)
- **1971** (Cigarettes ads banned from Television and Radio)
- **1985** (Surgeon general's first report on the health hazards of second hand smoke came out)



## Objectives

### I. Counseling

- Motivational Interviewing
- Cold Turkey versus Weaning
- Telephone counseling and Apps

### II. Pharmacotherapy

- Long-term therapy
- Combination therapy
- eCigarettes

## Smoking Prevalence

	1965	1995	2005	2010	2013	2015
<b>Current Smokers</b>	42.5%	22.8%	20.9%	19.3%	17.8%	15.1%

Former Smokers ~25%

Never Smokers ~ 60%

CDC and National Health Interview Survey, 2016

## Characteristics of Smokers

- **Most smokers started < 18 years old**
- **Most want to quit**
- **40% of daily smokers have made quit attempt**
  - 96-98% Relapse without assistance
- **77% felt under informed about health effects**

## Basics for Office Smoking Cessation "The 5 A's"

Ask – "Do you smoke cigarettes [or use tobacco products]?"

- Additional history and "Do you want to quit"

Advise – "Smoking is harmful to your health." "I'd like to help you quit."

**Assess** – "Are you ready to quit?"

- If yes, investigate barriers to success.
- If no, Motivational Interviewing and 'The 5 R's'

Assist – how to quit: timeline, behaviors, expectations, meds...

Arrange

### The “5 R’s” in cessation counseling

Reasons, Relevance, Risks, Rewards, Road-blocks

- **Relevance** – “What are your goals for your health (work, family, life)?”
- **Reasons** – “What do you like about smoking?”
- **Risks** – “What do you see as the risks of continuing to smoke?”
- **Rewards** – “Do you see any rewards to quitting? What are they?”
- **Roadblocks** – “What do you worry will happen if you quit smoking?”

Acceptance and mindfulness > guilt and shame

### Basics for Office Smoking Cessation Pharmacotherapy

**Nicotine Replacement Therapy**  
**Bupropion**  
**Varenicline**

**CASE 1: 45 year old who is agreeable to quitting. He has successfully quit in the past but relapsed after a stressful period at work. He is anxious about quitting and not ready to set a quit date today.**

In addition to stress management counseling, what do you offer as an option for smoking cessation:

- Set a cold turkey quit date anyway
- Set up a weaning schedule
- Don't set a quit date; prescribe Varenicline and f/u in 1 month.
- Any of above
- None of above (move on to address other issues)

### Gradual Reduction vs Abrupt Cessation

- Meta-analysis of 10 RCTs
- In a real-life setting (with support)
  - Smokers quitting abruptly = 15% success rate.
  - Gradual quit (wean) = 14.1% success rate.

**Regardless of use of NRT, counseling or self-help methods.**

Lindson-Hawley. JAMA. 2013

### Gradual Reduction vs Abrupt Cessation

- RCT of ~700 smokers
- Reducers given 2 weeks

Abstinence Outcome	Abstinent, n (%)	
	Gradual-Cessation Group (n = 342)	Abrupt-Cessation Group (n = 355)
<b>Prolonged CO-validated Russell Standard abstinence†</b>		
4 wk after quitting	134 (39.2)	174 (49.0)
8 wk after quitting	100 (29.2)	130 (36.6)
6 mo after quitting	53 (15.5)	78 (22.0)

Lindson-Hawley. Annals. 2016

### A Novel Approach for the Unwilling or Unprepared

- 1,510 smokers unwilling or unable to quit in next month.
  - Willing to reduce and make a quit attempt within the next 3 months
- Randomized to varenicline or a placebo

	Varenicline	Placebo
<b>Cessation at Weeks 21-52</b>	<b>27%</b>	<b>9.9%</b>

Ebbert JO. JAMA. 2015

**CASE 2: Your 44 year old patient knows they should quit but is really (really) not ready. They want to know which of the following is 'safest':**

- A. 'Ultra light' cigarettes
- B. Beedi (self-rolled) cigarettes
- C. Menthol cigarettes
- D. e-Cigarettes



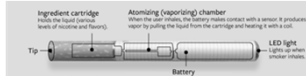
## Cigarettes



- Typical Filtered Cigarette Delivers 1-1.5mg of nicotine
  - 1 PPD smoker = 20 cigarettes = 20-25mg of nicotine
- Filters reduce 'tar'
- 'Light' cigs have vents that dilute smoke
- Menthol is an anesthetic

## Electronic Cigarettes

- **Nicotine and Non-nicotine**
- **Variable Nicotine delivery**
  - 10mg – 100mg per cartridge
  - Very Variable delivery (nicotine per puff)
- **Other chemicals present but lower concentrations than in cigarettes**



Toxin	Conventional cigarette (µg/cigarette in mainstream smoke)	Electronic cigarette (µg per 15 puffs)	Average ratio (conventional: electronic)
Carbonyl compounds			
formaldehyde	1.6-62	0.20-5.61	9
acetaldehyde	52-140	0.11-1.36	450
acrolein	2.4-62	0.07-4.19	15
Toluene	8.3-70	0.02-0.63	120
Nitrosamines			
N-nitrosomonicotine	0.005-0.19	0.00008-0.00043	390
NNK	0.012-0.11	0.00011-0.00283	40

## Electronic Cigarettes for smoking cessation

650 adult smokers randomized to e-cig, patch or placebo  
Abstinence at 6 months

- **eCig and Patch = 6-7%**
- **Placebo = 4%**

Those who didn't abstain, did reduce.

Bullen. The Lancet. 2013.

**\*There remain significant public health concerns that E-cigs are a gateway drug for youth**

**CASE 3: 45 year with bipolar disorder old who is ready to set a quit date. He has successfully quit using NRT in the past, but relapsed after stopping medication at 3 months. He had a similar experience with Varenicline.**

Which of the following treatment options would you avoid:

- A. 3 month course of Varenicline and Bupropion
- B. 3 month course of Varenicline and NRT
- C. 6 month course of NRT
- D. 6 month course of Varenicline

## Pharmacotherapy: Efficacy at one year

Treatment Type	Quit Rate (Percent)	
	Placebo	Treatment
Nicotine Patch	12	19
Bupropion	12	23
Varenicline	9	22

**NNT is 5-14 smokers to get 1 person to quit.**

Karnath, B. Am J Med 2002.  
Gonzales D et al, JAMA 2006.

## Pharmacotherapy

### NRT and Bupropion

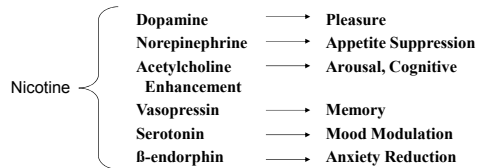
**Nicotine: Patch + Gum, Lozenges, Nasal Spray, Inhaler**

**Bupropion: noradrenergic, dopaminergic**

- 0.1% seizure risk
- Mitigates weight gain
- Treats depression

## Varenicline

Partial Agonist/Antagonist to the Nicotine Receptor



Cytisus laburnum:  
Golden Rain Tree

## Varenicline FAQs

- Psychiatric patients - **Black Box warning**
  - Neuropsychiatric symptoms POSSIBLY potentiated by Varenicline.
  - **No differences in SI, behavior or changes in depression or anxiety.**
- Cardiovascular risk
  - Early trial showed a non-clinically significant increase in MI
  - Subsequent RCT and Cohort studies showed no increase

## Pharmacotherapy

### Options for the Relapsed Smoker

#### Longer Term Therapy

- Varenicline for 6 months – 2006 RCT shows effective
- Nicotine patch for 6 months – 2015 RCT shows effective

#### Combination Therapy

- Varenicline plus Patch – 2014 RCT show effective
- Varenicline plus Bupropion – 2014 RCT non-sig effect
  - Subgroup analysis on heavy smokers showed a sig effect.

**CASE 4: 66 year old on Medicare is ready to quit. Which of the following is not covered?**

- Individual (in person) counseling
- Nicotine Patches
- Bupropion
- Varenicline

## Insurance and Affordable Care Act

- **Medicare**
  - Part D only covers prescription medication (not OTC patches!)
  - Individual counseling for 8 sessions per year
- **Medicaid (33.3% of Medicaid enrollees smoke)**
  - Covers comprehensive tobacco cessation treatment for pregnant women.
  - Requires coverage of all tobacco cessation meds (started 2014)
- **Health Insurance Exchanges (31.5% of the uninsured smoke)**
  - Coverage of comprehensive tobacco cessation treatment required but not clearly enforced
- **Employer-Sponsored Insurance**
  - Requires coverage of all preventive services given an 'A' or 'B' rating by the USPSTF, including tobacco cessation

## Cost of a Pack of Cigarettes



Chicago Tribune  
NEWS

Home > Front Page > News > Sports > Business > Lifestyles > Opinion > A&E

Home > Featured Articles > Cook County

**Dig deeper for smokes in Cook County**

Chicago:  
~\$5.00 + ~\$6.50 in taxes = ~\$11.50

## Resources for Counseling

- **Telephone**
  - 1-800-QUIT-NOW
- **Formal Counseling Programs**
  - Hospital and Clinic based
  - Employer based
  - Insurance coverage variable
- Online programs
  - [www.smokefree.gov](http://www.smokefree.gov)
- Text Alerts
  - SmokefreeText
- Smartphone Apps



## Bonus: Prevention in Smokers

- National Lung Cancer Screening Trial
  - ACCP Recommends Screening for patients:
    - 55-74 years old
    - >30 pack years
    - Current smoker or quit within last 15 years
- USPSTF AAA Screening
  - One time Abdominal Aorta Ultrasound in men > 65 years old with tobacco history
- Primary and Secondary CAD Prevention
- Vaccination
  - Influenza, Pneumococcal(PPSV23 and PCV13)

## Bonus: Nicotine vaccines for smoking cessation



- 3'-aminomethylnicotine instigates antibodies that bind nicotine, causing a complex too large to enter the brain.
- Success in rat studies
- Phase III trials unsuccessful

Hartmann-Boyce. Cochrane Database Syst Rev. 2012.

## CONCLUSIONS

- Use **Motivational Interviewing** for the unmotivated (**The 5 R's**)
- **Options for quitting strategies:**
  - Cold Turkey, Weaning or even Varenline while they smoke
- **Counseling options:** in-person, telephone and apps
- **Meds** – they work!
  - **Default:** Nicotine Patch with everyone. Bupropion and Varenicline effective.
  - **Relapse** – Use meds for longer durations or use in combination.
- **E-Cigarettes** – Option for cessation. Major public health concerns.