

TREATING TOBACCO USE DISORDER: CESSATION TECHNIQUES AND PHARMACOTHERAPY

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OBJECTIVES

Discuss fundamentals of motivational interviewing as a tool for tobacco cessation counseling

Examine tobacco cessation techniques and concepts

Describe pharmacotherapy interventions for tobacco cessation



DISCLOSURES

I have no relevant financial relationships or commercial interests to disclose for this presentation.

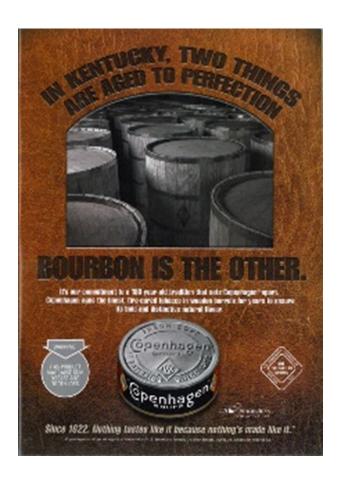
NICOTINE DOSE FROM A CIGARETTE



1 cigarette = approximately 1-1.5 mg of nicotine absorbed systemically

1 pack of cigarettes = 20 cigarettes ~ 20 mg

NICOTINE DOSE FROM ONE TIN CAN OF SMOKELESS TOBACCO



1 can of smokeless tobacco (Copenhagen®/Grizzly®) = approximately 4 packs of cigarettes (80 mgs nicotine)

HOW MUCH NICOTINE?



https://www.juul.com/

All JUUL e-cigs have a high level of nicotine

According to the manufacturer, a single JUUL pod contains as much nicotine as a pack of 20 regular cigarettes

Percentage of adults who are smokers (reported smoking at least 100 cigarettes in their lifetime and currently smoke every or some days) **WEST VIRGINIA** 24.8% VALUE <= 14.3% 14.4% - 16.5% 16.6% - 18.0% 18.1% - 20.4% >= 20.5%





THE NEED

All JUUL e-cigs have a high level of nicotine According to the manufacturer, a single JUUL pod contains as much nicotine as a pack of 20 regular cigarettes

"I've tried everything. This class is my last resort."
-Group Class Participant

SMOKING IMPACT

- Leading cause of preventable death in the US
 - Responsible for 1 out of every 5 deaths annually (5.5 million years of potential life lost)
- Main risk factor in four leading causes of death:
 - Heart disease
 - Cancer
 - Stroke
 - COPD
- Responsible for \$167 billion in annual health related economic losses in the US

SCREENING

- All adults at every visit
 - Only 20% of smokers will ask for help
- Assess readiness to quit
- Individualize counseling
 - 3 minute counseling session can increase cessation by >50%

The 5 's to Quit Tobacco













to the Patient Unwilling to Quit Tobacco











SUSTAIN TALK VS CHANGE TALK?



PATIENT CASE

- Karen is a 32 yo female, married with 2 children. She reports smoking 30 cigarettes per day for the last 16 years. You enter her inpatient room to provide smoking cessation counseling. The following statements were made by Karen during your session:
 - I'm just listening because I know my primary team recommended this.
 - I know smoking isn't good for you. Everyone knows that!
 - I can't quit now; all of my friends still smoke.
 - I mean, I don't want to be really old and still smoking, so some day I'm sure I will quit.
 - Smoking is my stress relief. It truly relaxes me.
 - The worst part about being a smoker is that it's difficult to find places to smoke anymore. Everywhere you turn is a non-smoking zone!

MOTIVATIONAL INTERVIEWING



MOTIVATIONAL INTERVIEWING

"...a collaborative, person-centered form of guiding to elicit and strengthen motivation for change." Miller & Rollnick 2009

- Build rapport
- Investigate the pros and cons
- Investigate and discover discrepancies
- Gauge readiness to change
- Comprehend feelings
- Support and encourage
- Assist person in problem solving

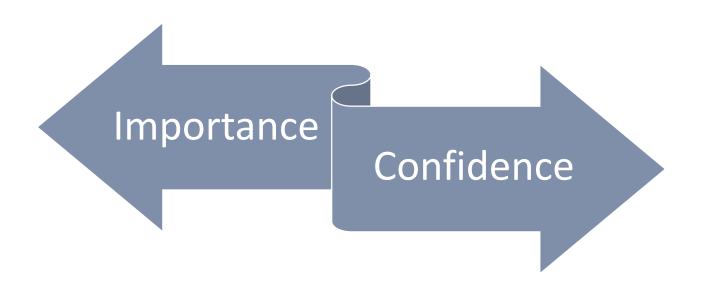
MI PRINCIPLES

- Express empathy with reflective listening
- Develop discrepancies with client input
- Avoid anger or judgement
- Roll with resistance with patient providing solutions
- Support self-efficacy-hope/knowledge leads to outcome

OARS

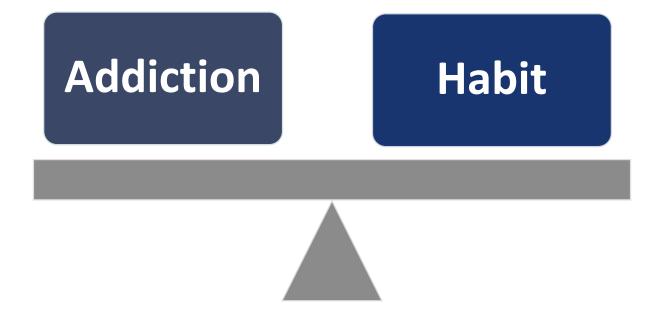
- Open-ended questions
- Affirming
- Reflective listening
- **S**ummarizing

FACTORS THAT INCREASE CHANGE





WHY DO PEOPLE SMOKE?



BREAKING THE HABIT

Trigger	Possible Alternative
Waking up	Change routine, brush your teeth or shower first thing, skip coffee or take it to go, don't read the newspaper, try a different meal for breakfast
Driving	Deep breathing, use straw or tooth pick, drink water, chew gum, listen to music
Completing a task	Take a break and go for a walk, stretch
Work break	Go for a walk outside, walk the stairs, avoid smoking area or co-workers who smoke
After a meal	Brush your teeth, do the dishes, have a small dessert, go for a walk
Before bed	Deep breathing, plan for the upcoming day
Stress	Prioritize, deep breathing, exercise
Boredom	Be prepared with alternatives- coloring book, make a list of people to write letters to, make To-Do Lists, make grocery lists, find a new interest
Anger	Exercise, deep breathing, come up with a plan to deal with the problem
Phone	Coloring book, doodle pad, make To-Do Lists

THE FOUR Ds



Tips from previous smokers:

- Review your reasons for quitting
- Suck on a lollipop or licorice
- Breathe through a straw or cinnamon stick that has been cut in half
- Chew gum or suck on a cough drop or hard candy (red hot fire balls)
- Clean your room, garage, office space
- Write in a journal
- Sit down and calculate what you will be saving by not smoking
- Munch on carrot sticks or pretzels
- Flip through a magazine

NICOTINE

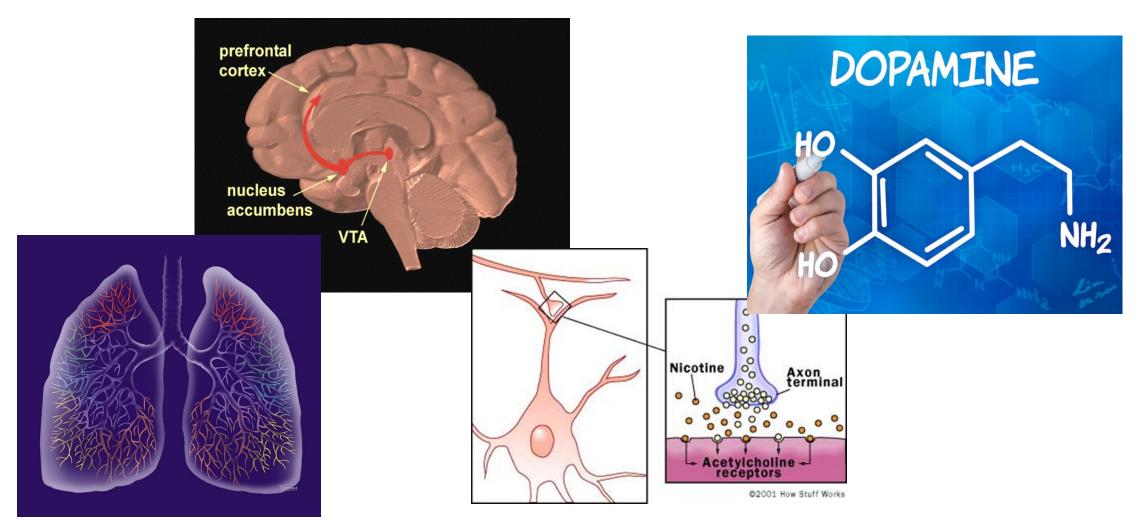
Poisonous substance found in the tobacco plant

Causes blood vessel constriction, increased blood pressure, increased breathing and heart rates, and lowered temperature in the extremities

Responsible for addiction



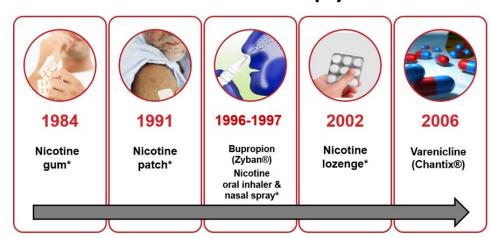
ADDICTION PATHOPHYSIOLOGY



QUITTING AIDS

- Nicotine replacement products
 - Patch
 - Gum
 - Lozenges
 - Inhaler
 - Nasal spray

- Bupropion (Zyban®)
- Varenicline (Chantix®)
- Chewing tobacco replacement (BACC OFF®)
- Behavioral therapy



Fiore MC, et al. Treating Tobacco Use and Dependence: 2008 Update. Clinical Practice Guideline.



NICOTINE PATCH

Manufacturer labelling

- >10 cigarettes/day:
 - 21 mg/day x 4–6 weeks
 - 14 mg/day x 2 weeks
 - 7 mg/day x 2 weeks
- ≤10 cigarettes/day:
 - 14 mg/day x 6 weeks
 - 7 mg/day x 2 weeks

Updated dosing

- Match mg to number of cigarettes
- Max: two 21 mg patches
- Example:
 - Smoking 1.5 ppd = 21 mg patch + 7 mg patch
- Decrease dose in 7-14mg steps every 2-6 weeks

NICOTINE PATCH

- Can apply anywhere from neck to waist
- Rotate patch application site daily
- Do not apply a new patch to the same skin site for one week if possible
- May wear patch for 16 hours if patient experiences sleep disturbances (remove at bedtime)
- Duration: 8–10 weeks, beyond



NICOTINE PATCH

• Side effects: local skin reactions, headache, sleep disturbances

Advantages	Disadvantages
Long-acting	Can't be titrated acutely to manage cravings
Better adherence	Not recommended for patients with dermatologic conditions
Combination with other agents	Slow onset
Use least obvious to others	Less flexible dosing

NICOTINE GUM

Dosing

- Step 1: Select strength
 - 1st cigarette ≤30 minutes after waking: 4 mg
 - 1st cigarette >30 minutes after waking: 2 mg
- Step 2: Taper frequency
 - Weeks 1–6: 1 piece q 1–2 hours
 - Weeks 7–9: 1 piece q 2–4 hours
 - Weeks 10–12: 1 piece q 4–8 hours
- Max: 24 pieces/day
- Duration: 12 weeks, beyond

Directions

- Chew each piece slowly
- Park between cheek and gum when peppery or tingling sensation occurs (~15– 30 chews)
- Resume chewing when tingle fades
- Repeat chew/park steps until most of the nicotine is gone (tingle does not return; generally 30 min)
- Park in different areas of mouth
- No food or beverages 15 minutes before or during use

Nicotine gum [prescribing information]. 2014



NICOTINE PATCH

• Side effects: mouth soreness, hiccups, dyspepsia, hypersalivation

Advantages	Disadvantages
May delay weight gain	Frequent dosing/adherence
Titrate to manage withdrawal symptoms	Problematic if patient had extensive dental work
Combination with other agents	Proper chewing technique is required for effectiveness and to minimize adverse effects

NICOTINE LOZENGE

Dosing

- Step 1: Select strength
 - 1st cigarette ≤30 minutes after waking: 4 mg
 - 1st cigarette >30 minutes after waking: 2 mg
- Step 2: Taper frequency
 - Weeks 1–6: 1 lozenge q 1–2 hours
 - Weeks 7–9: 1 lozenge q 2–4 hours
 - Weeks 10–12: 1 lozenge q 4–8 hours
- Max: 20 lozenges/day
- Duration: 12 weeks, beyond

Directions

- Allow to dissolve slowly (20–30 minutes)
- Nicotine release may cause a warm, tingling sensation
- Do not chew or swallow
- Occasionally rotate to different areas of the mouth
- No food or beverages 15 minutes before or during use



NICOTINE LOZENGE

• Side effects: mouth irritation, nausea, hiccups, heartburn, headache, sore throat, dizziness

Advantages	Disadvantages
May delay weight gain	Frequent dosing/adherence
Titrate to manage withdrawal symptoms	GI side effects
Combination with other agents	Affected by pH: coffee, fruit juice, etc

NICOTINE INHALER

Dosing

- 6–16 cartridges/day
- Individualize dosing: Initially use 1 cartridge q 1–
 2 hours
- Initially use at least 6 cartridges/day
- Duration: 3–6 months, beyond

Directions

- Inhale into back of throat or puff in short breaths
- Do NOT inhale into the lungs (like a cigarette) but "puff" as if lighting a pipe
- Best effects with continuous puffing for 20 minutes
- Nicotine in cartridge is depleted after 20 minutes of active puffing
- Open cartridge retains potency for 24 hours
- No food or beverages 15 minutes before or during use



NICOTINE INHALER

• Side effects: throat irritation, cough, headache, rhinitis, hiccups

Advantages	Disadvantages
Mimics hand-to-mouth ritual	Frequent dosing/adherence: 80 puffs = nicotine in 1 cigarette
Titrate to manage withdrawal symptoms	Prescription only
Combination with other agents	Cost



NICOTINE NASAL SPRAY

Dosing

- 1–2 doses/hour (8–40 doses/day)
- One dose = 2 sprays (one in each nostril)
- Each spray delivers 0.5 mg of nicotine to the nasal mucosa
- Max: 5 doses/hour or 40 doses/day
- For best results, initially use at least 8 doses/day
- Absorbed through nasal mucosa: do NOT inhale/sniff
- Duration: 3–6 months, beyond

Directions

- Prime the pump (before first use)
- Re-prime (1-2 sprays) if spray not used for 24 hours
- Blow nose (if not clear)
- Tilt head back slightly and insert tip of bottle into nose as far as comfortable
- Breathe through mouth and spray once in each nostril
- Do not sniff or inhale while spraying



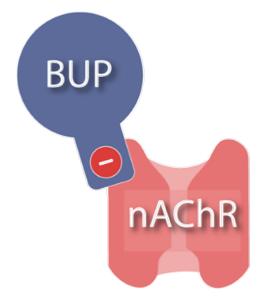
NICOTINE NASAL SPRAY

 Side effects: nasal irritation, burning, rhinitis, tearing, sneezing, cough, headache

Advantages	Disadvantages
Titrate to manage withdrawal symptoms	Frequent dosing/adherence
Combination with other agents	Nasal administration
Fastest onset of all NRT	Prescription only

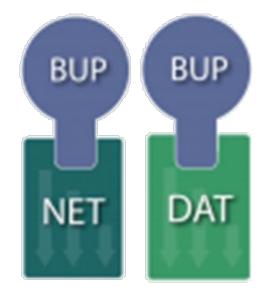
BUPROPION (ZYBAN®)

- Non competitive antagonist of nAch receptors
- Might contribute to antidepressant effects as well as effectiveness in smoking cessation



- Reuptake inhibition of:
- Norepinephrine transporter (NET)
- Dopamine transporter (DAT)
- MOA may involve the presynaptic release of

DA and NE



BUPROPION SR

- 150 mg po q AM x 3 days, then 150 mg po BID
- Do not exceed 300 mg/day
- Begin therapy 1–2 weeks prior to quit date
- Allow at least 8 hours between doses
- Avoid bedtime dosing to minimize insomnia
- Dose tapering is not necessary
- Duration: 7–12 weeks, with maintenance up to 6 months in selected patients



BUPROPION

• Side effects: insomnia, dry mouth, nervousness, nausea, constipation, rash, seizure risk (0.1%), neuropsychiatric symptoms (rare)

Advantages	Disadvantages
May delay weight gain	Seizure risk increased
Beneficial in patients with depression	Precautions may preclude patients
Use in combination with NRT	Monitor for neuropsychiatric symptoms

BUPROPION

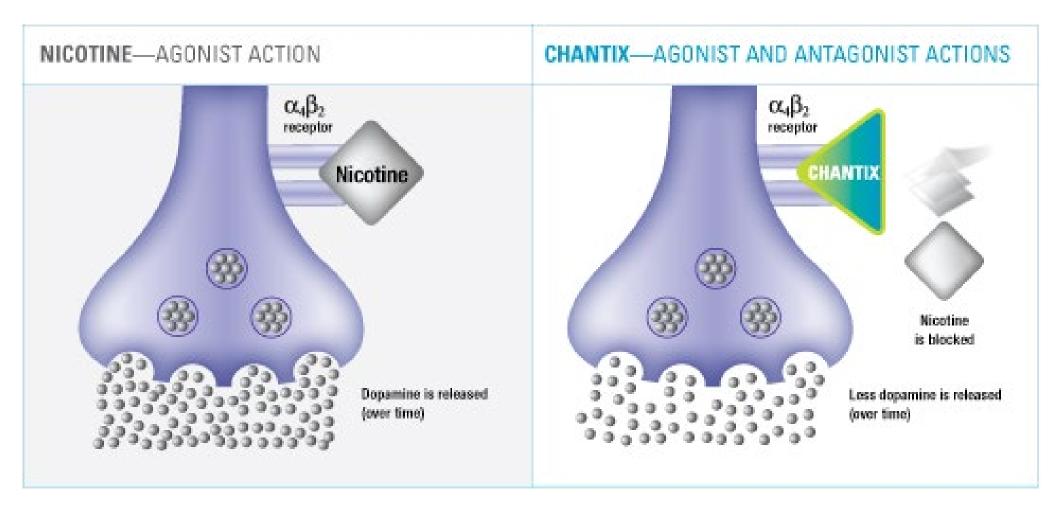
Precautions:

- Concomitant therapy with medications/conditions known to lower the seizure threshold
- Hepatic impairment
- Pregnancy (category C) and breastfeeding
- Adolescents (<18 years)
- Treatment-emergent neuropsychiatric symptoms

Contraindications:

- Seizure disorder
- Concomitant bupropion (e.g., Wellbutrin) therapy
- Current or prior diagnosis of bulimia or anorexia nervosa
- Simultaneous abrupt discontinuation of alcohol or sedatives/benzodiazepines
- MAO inhibitors in preceding 14 days; concurrent use of reversible MAO inhibitors

VARENICLINE (CHANTIX®)



VARENICLINE

- Days 1–3: 0.5 mg po q AM
- Days 4–7: 0.5 mg po BID
- Weeks 2–12: 1 mg po BID
- Begin therapy 1 week prior to quit date
- Take dose after eating and with a full glass of water
- Dosing adjustment is necessary for patients with severe renal impairment

- Duration: 12 weeks; an additional 12-week course may be used in selected patients
- May initiate up to 35 days before target quit date OR may reduce smoking over a 12-week period of treatment prior to quitting and continue treatment for an additional 12 weeks
- Dose tapering is not necessary



VARENICLINE

 Side effects: nausea, sleep disturbances, skin/mouth redness or peeling rash/blisters, constipation/gas, neuropsychiatric symptoms

Advantages	Disadvantages
Different MOA for patients who have failed other agents	Cost
	Monitor for neuropsychiatric symptoms

Boxed warning removed December, 2016



VARENICLINE

Precautions:

- Severe renal impairment (dosage adjustment necessary)
- Pregnancy (category C) and breastfeeding
- Adolescents (<18 years)
- Treatment-emergent neuropsychiatric symptoms
 - Black box warning removed

NEUROPSYCHIATRIC SAFETY AND EFFICACY OF VARENICLINE, BUPROPION, AND NICOTINE PATCH IN SMOKERS WITH AND WITHOUT PSYCHIATRIC DISORDERS (EAGLES)

- 8,144 participants in 16 countries
- Double blind, randomized, placebo controlled clinical trial
- Results:
 - Varenicline and bupropion SR can be used safely by psychiatrically stable smokers
 - Varenicline appears to be the most effective pharmacotherapy (of all currently available monotherapy medications)



WHICH TO CHOOSE?

- Studies with conflicting results on most effective:
 - Patch + lozenge >>>
 - Varenicline > NRT
 - Guidelines: equally effective
- Patient preference
- Advantages vs disadvantages
- Combination NRT more effective



DURATION OF NRT

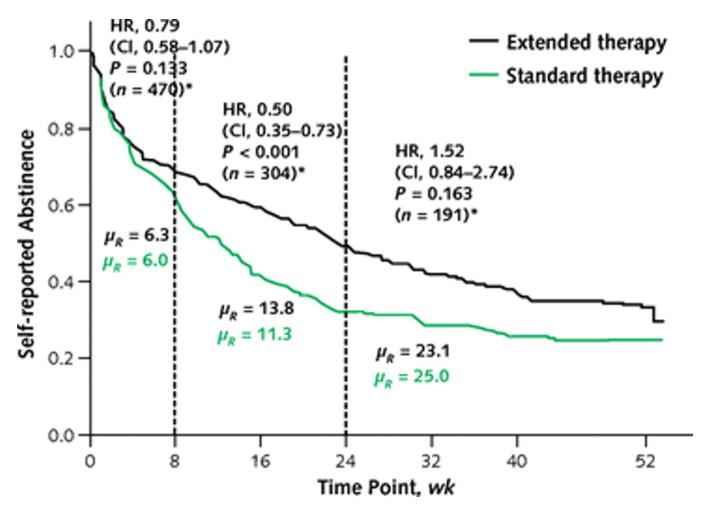
 Most patients want to stop NRT too soon or will not use enough prn therapies initially

 Nicotine patch therapy for 6 months outperforms a standard 8 week treatment course

USPHS CLINICAL PRACTICE GUIDELINE- 2008 LONG-TERM MEDICATION USE

- Tobacco users who report persistent withdrawal symptoms
- Tobacco users who have had relapse after stopping medication
- Tobacco users at higher risk for relapse
 - More dependent (>20 CPD; smokes within 30 minutes of waking)
 - Other smokers in household
 - Psychiatric comorbidity (includes substance abuse history)
- Tobacco users who desire long-term therapy
- Use does not present a known health risk

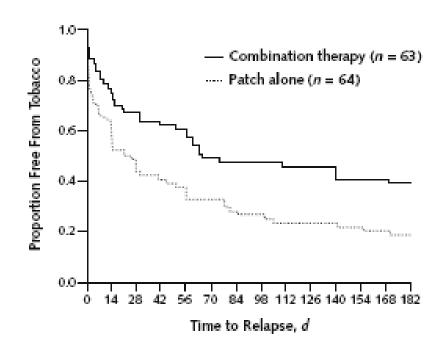
NICOTINE PATCH 8 VS 24 WEEKS



Schnoll R A et al. Ann Intern Med 2010;152:144-151

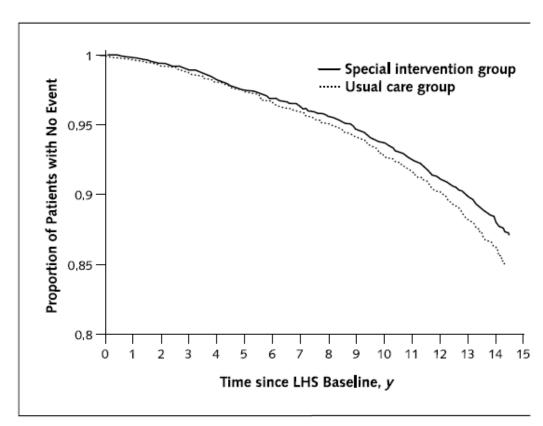
TRIPLE COMBINATION THERAPY

Figure 2. Time to relapse, by treatment group.



- RCT of 127 smokers with known CVD, COPD, cancer, diabetes
- Compared triple combination (nicotine patch + bupropion + nicotine inhaler; 89 days) to patch alone (35 days)
- At 6 months 7 day point prevalence abstinence: triple therapy (35%) vs patch (19%) (OR 2.57, 95% CI 1.05 to 6.32, p-value 0.04)

BEHAVIOR THERAPY



All-cause 14.5 year survival

461 of 3923 patients died in the special intervention group vs. 270 of 1964 patients in the usual care group (P = 0.031, log-rank test). LHS = Lung Health Study.



PATIENT CASE

- Kelly is a 55 yo female who has smoked 2.5 packs/day for the past 40 years. She smokes her first cigarette immediately after waking.
- She has only tried nicotine patches in the past to try to quit. She said a 21 mg patch "helped... but the cravings were still too strong." She relapsed and began smoking again in 2 days.
- She is interested in trying Bupropion and is also considering NRT. She thinks the patch and inhaler would be most helpful for her.
- What addition questions would you like to ask Kelly?
- What are your therapeutic recommendations?



PATIENT CASE

- Donald (age 40) has been rubbing snuff since he was 13 years old. He used one can of smokeless tobacco (Copenhagen®) a day while at work in a mechanic shop.
- His BP today is 120/88. He states he is very healthy and takes no medications.
- Donald wants to quit. He tried to quit rubbing one month ago but was unsuccessful with this quit attempt after one day.
- How much nicotine is Donald using per day?
- What therapeutic options are available for Donald?

SMOKELESS TOBACCO CESSATION

- 1 can smokeless tobacco = nicotine in 4 packs cigarettes
- Match nicotine patch to nicotine level based on amount utilized per WEEK
 - >3 cans or pouches/week = 42 mg/day patches
 - 2-3 cans or pouches/week = 21 mg/day patch
 - <2 cans or pouches/week = 14 mg/day patch</p>
- Gum or lozenge
 - <3 cans per week: 2 mg</p>
 - ≥3 cans per week: 4 mg
 - 1-2 pieces every 1-2 hours for up to 12 pieces/day

SMOKELESS TOBACCO CESSATION



- Pick a flavor and ask a friend to help mix substitute tobacco blend (STB)
- Partner: keep blending rate confidential, listening to and encouraging the chewer
- Basic blending instructions:
- Week one: blend 10% STB with 90% tobacco
- Week two: blend 20% STB and 80% tobacco
- Week three: blend 30% STB and 70% tobacco
- Increase each week's blend ration another
 10% until the chewer is using 100% STB

HOW TO QUIT E-CIGS

- No literature on cessation for E-Cigs
- Treat as quitting regular cigarettes, given nicotine is the target
 - Calculate amount of nicotine used per day
 - Determine nicotine replacement therapy



NICOTINE REPLACEMENT THERAPY

- Nicotine patches
 - 1 JUUL pod = 20 cigarettes (1 pack)
 - 1 JUUL pod = 20 mg nicotine
 - Match mg nicotine used per day to mg in nicotine patch
 - 1 JUUL pod per day = use 21 mg nicotine patch daily

 Nicotine gum or lozenge 1 piece every 1-2 hours as needed (can be used in combination with patches)



SPECIAL POPULATIONS

- Kids
 - Ask about use and provide education for abstinence
 - Offer cessation for parents in peds clinics?
- Pregnant women
 - Reproductive concerns with smoking during pregnancy
 - Use the 5 A's
 - Encourage abstinence without pharmacotherapy, but not without assistance
 - NRT only after weighing risks/benefits

KARA'S EXPERIENCES

Breathe Well, Live Well

- Interprofessional team
- 6 weekly group visits
- Mondays, 6-7 pm
- No cost to patient
- Help with nicotine replacement products
- Behavior therapy
- Student involvement

Understanding Habit and Addiction

1. Trigger:_

Cessation Techniques

Plan to delink:

2. Trigger:

Plan to delink:

Developing a Quit Plan

Preventing Relapse

Reflections

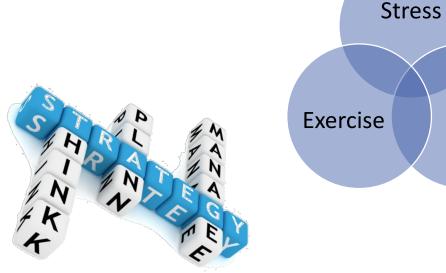
Diet



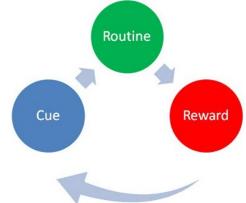
- Decrease cancer risk
- 2. For my daughter
- 3. To save money



plan to break the link between them and your smoking.









CLASS STRENGTHS

- Story telling
- Participation
- Sharing struggles
- Encouragement
- Reflection
- Interprofessional teamwork



SMOKE FREE — QUIT SMOKING NOW APP

- QuitGuide is a free app that helps you understand your smoking patterns and build the skills needed to become and stay smoke-free
- Use the app to track your cravings by time of day and location, and get motivational messages for each craving you track



RESOURCES

- ATTUD: Association for the Treatment of Tobacco Use and Dependence
- http://lungusa2.org/cessation2/statedetail.php?stateId=54#



SUMMARY

Talk to patients about tobacco cessation.

- Use of NRT, prescription medications, and behavior therapy increases success.
- Determine cessation options based on patientspecific factors.