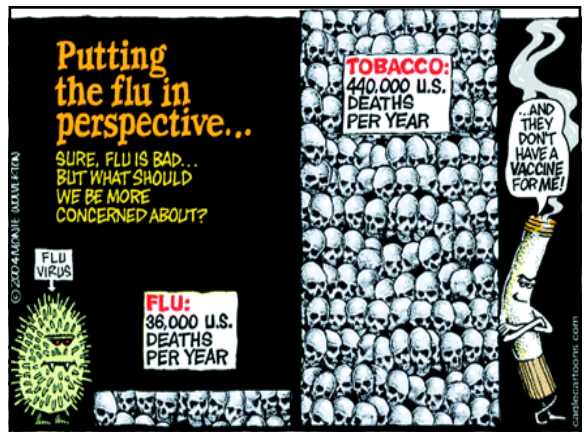


## Healthcare Providers' Role in Reducing Tobacco Use: Increasing Cessation Success

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**NATIONAL JEWISH**  
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Global Leader in Lung, Allergic and Immune Diseases



## Why do People Smoke?

### Dependence on Nicotine and Smoking

- Nicotine/tobacco addiction
- Self-medicating with nicotine
- Conditioned behavior

## Dependence on Nicotine and Smoking

- Within 7-10 seconds of inhaling a cigarette, nicotine reaches the brain
- Nicotine can be either stimulating or calming, depending on the dose of nicotine inhaled
- With each puff, the smoker can modulate the effects of nicotine

Average of 10 puffs per cigarette

1½ pack = 300 puffs

## Dependence on Nicotine and Smoking

- Coping skills – reduce anxiety, relieve stress, increase alertness
- Elevate mood
- Way to reward self
- Reliable companion/friend
- Control weight
- Intertwined with self-image

## Addictive Properties of Nicotine and Smoking

A cigarette is a perfect delivery device for nicotine

- Design maximizes addictive properties
- Additives enhance absorption of nicotine and delivery to brain

CIGARETTE PAPER    TOBACCO BLEND    PERFORATIONS    TIPING PAPER    ACETATE FILTER    POROUS PLUGWRAP



**Addictive Properties of Nicotine and Smoking**

- Rapid rate of absorption by the lungs and delivery to the brain
- Smoking causes positive and negative reinforcement

**Addictive Properties of Nicotine and Smoking**

- Within 7-10 seconds of inhaling a cigarette, nicotine reaches the brain
- Attaches to acetylcholine receptors
- Stimulates the release of neurotransmitters, chemicals that change how a person feels

**Addictive Properties of Nicotine and Smoking**

Neurotransmitters stimulated by nicotine

- Dopamine – pleasure, suppress appetite
- Norepinephrine – alertness, suppress appetite
- Acetylcholine – enhance cognition, alertness
- Serotonin – mood, suppress appetite
- Vasopresin – improve memory
- Beta-Endorphin – reduce anxiety, pain

**Addictive Properties of Nicotine and Smoking**

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**Addictive Properties of Nicotine and Smoking**

<b>Positive effects</b>	<b>Negative effects</b>
• Elevates mood	• Negative mood
• Reduces anxiety	• Increased anxiety
• Improves concentration	• Poor concentration
• Suppresses appetite	• Headache
• Lessens pain	• Acute cravings

## Adverse Effects of Smoking

- Burning of cigarette changes properties of ingredients
  - produces about 4,000 chemical compounds
- Cigarette smoke has  $>10^{15}$  free radicals per puff
  - lung tissue, blood, urine
- Oxidative stress → inflammation, cell damage
  - speeds up aging process, causes disease

Approximately 70% of smokers want to quit.

How can we assist them?

## Evidence Based Interventions



- PHS / USHHS Clinical Guideline: Treating Tobacco Use and Dependence, 2000 (Fiore et al.)
- Revision date January 2008

Cessation advice and support should be offered to **all** tobacco users.

<http://www.surgeongeneral.gov/tobacco/>

## Evidence Based Interventions

- Tobacco dependence is a chronic disease
  - requires ongoing rather than acute care
- Relapse is a component of the chronic nature of nicotine dependence
  - not an indication of personal failure by the patient or the clinician

## Evidence Based Interventions

Some smokers

- successfully quit without previous planning

For most smokers

- combination of counseling plus quit smoking medicine(s)

Pharmacotherapy Options

## First-line Pharmacotherapies

The FDA has approved 7 medications for smoking cessation

- Decrease the desire to smoke
- Reduce cravings and withdrawal symptoms
- Lessen reinforcing effects of nicotine

## First-line Pharmacotherapies

- Non-nicotine Medication
  - Bupropion hydrochloride SR
  - Varenicline
- Nicotine Replacement Therapy
  - Nicotine gum
  - Nicotine transdermal patch
  - Nicotine inhaler
  - Nicotine nasal spray
  - Nicotine lozenge

## Bupropion SR

- Brand names of Bupropion SR
  - Zyban® for smoking cessation
  - Wellbutrin® for depression
- Available by prescription
- Mechanism of action: presumably blocks neural reuptake of dopamine
- Start 1-2 weeks before Quit Date
- Prescribed for 7-12 weeks

## Bupropion SR

- Contraindications
  - Seizure disorder, history of eating disorders, use of MAO inhibitor within previous 2 weeks
- Side effects
  - Trouble sleeping, dry mouth, headache
- May be good choice for
  - Patients who have struggled with sadness, feelings of depression with past quit attempts

## Varenicline

Chantix – available July 2006

- Partial nicotine agonist - new class of quit smoking medicine
- Produces both agonist and antagonist effects through selective receptor binding
  - lessens withdrawal symptoms
  - blocks satisfying effects of smoking

## Varenicline

- Available only by prescription
- Begin taking one week before Quit Date
- Prescribed for 12 weeks, continue additional 12 weeks if smokefree (total 6 months)
- Adverse effects: nausea, headache, trouble sleeping, abnormal dreams

## Nicotine Replacement Therapy

- Form of nicotine that is made by pharmaceutical companies and approved by FDA
- How it differs from smoking a cigarette
  - Does not contain harmful gases and tars
  - Less nicotine
  - Absorbed differently
  - Not as addictive
- Start on Quit Date

## Nicotine Patch

- Delivers a constant, steady dose of nicotine
- Patch applied to skin once a day
  - **Better compliance**
- Available as both prescription and OTC
- Passive NRT - lessens "drive" cravings associated with chronic nicotine intake



## Nicotine Patch

- Available in 21mg, 14mg, 7mg strength
  - Dosing based on number of cigarettes smoked per day
- Treatment duration 8-12 weeks
- Wear patch for 24 hours
  - Remove at bedtime if trouble sleeping
- Rotate placement to reduce skin irritation
  - Do not reuse site for 7 days



## Nicotine Replacement Therapy

### Active NRT

- Delivers nicotine more quickly (than passive)
- Can adjust frequency of doses
  - Use fixed schedule initially
  - Taper to ad lib use and eventual discontinuation
- Quick relief treatment for "breakthrough" or cue triggered cravings

## Nicotine Gum

Nicorette, generic brands, Thrive

- Active NRT
- Nicotine absorbed by mouth
- Available without prescription
- 4mg - 25 or more cigarettes per day
- 2mg - 24 or fewer cigarettes per day

## Nicotine Gum

### Correct technique - "Chew and Park"

- Chew **slowly** until you feel a tingle, then park between cheek and gum
- Chew the gum slowly and intermittently for about 30 minutes until the taste is gone

## Nicotine Lozenge

### Commit® lozenge

- Nicotine absorbed by mouth
  - Lozenge dissolves slowly
- Available without a prescription
- Recent evidence demonstrates increased quit rates with spit tobacco

## Nicotine Lozenge

- Available in 2mg and 4mg
  - Use 4 mg lozenge if smoke first cigarette 30 minutes or less of waking
  - Use 2 mg lozenge if smoke first cigarette more than 30 minutes after waking
- Correct technique – Take, tingle, shift
  - Allow the lozenge to dissolve slowly for about 30 minutes
  - Don't swallow or chew it
  - Wait 15 minutes after beverage before using

## Nicotine Inhaler

### Nicotrol® Inhaler

- Cigarette like device
- Nicotine absorbed by mouth
- Only NRT that addresses hand-to-mouth habit
- Available by prescription



## Nicotine Nasal Spray

### Nicotrol® Nasal Spray

- Available by prescription
- Delivers nicotine very quickly and helps with cravings
- Don't inhale
- Don't use with respiratory or sinus conditions



## Combination Therapy

- Encourage use in patients unable to quit using single agent
- Currently, not an FDA-approved treatment option

## Combination Therapy

- Combination NRT
  - slow delivery of nicotine that helps to relieve cravings and withdrawal symptoms
  - fast acting nicotine product for immediate relief of breakthrough cravings
- Caution patients on risk of nicotine overdose

## Combination Therapy

- Passive
  - Long-term "Control"
  - Zyban, Nicotine patch
- Active
  - Fast-acting "Rescue"
  - Nicotine gum, nasal spray, inhaler, lozenge

## Behavior Counseling

### Stages of Change and Motivational Intervention



## Stages of Change Model (SOC)

- Precontemplation
- Contemplation
- Preparation
- Action
- Maintenance

## Stages of Change

- Original investigators: Prochaska, Velicer, & DiClemente (1984-present)
- Effective interventions based on SOC have been successfully evaluated in multiple clinical trials (Velicer & Prochaska, et al., 1998)

<http://www.uri.edu/research/cprc/intervention.htm>

## Stages of Change

### Distribution of Active Smokers

- Approximately 40% of smokers are not thinking about change (Pre-contemplation)
- 40% are considering but ambivalent about change (Contemplation)
- 20% have set a Quit Date in next 30 days (Preparation)

*Velicer, et al., 1995*

## Facilitating Behavior Change

- Why do People Change their Behavior?
  - They want to
  - They have to
- How can healthcare professionals assist with behavior change?

## Motivational Intervention

MI is an intervention that facilitates behavior change

- specialized set of therapeutic skills
- non-confrontational approach
- facilitates transition through Stages of Change

HAVE TO CHANGE → WANT TO CHANGE

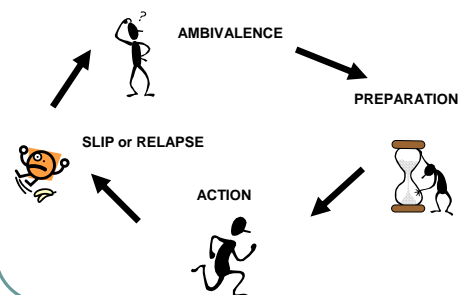
## Motivational Intervention

- Promotes accurate empathy
- Decreases resistance
- Uses meaningful questions that generate self-exploration
- Encourages clients to express their own reasons for making change
  - Change Talk - client argues for change, not the therapist
- Enhances self-motivation to change

## Summary of MI Clinical Trials

- MI found to be effective not only with smoking but with a variety of high-risk and addictive behaviors (Burke, et al., 2003)
- Provides an engaging experience and is more likely to retain clients in treatment for longer period of time
- Even 1 session of effective MI has been found to outperform 12 sessions of extended treatment for addictive behaviors

## Smoking Stages of Change



### Ambivalence – Client Tasks

- Consider the possibility of change
- Think about quitting sometime in the future
- Evaluate risks - rewards of change
- Make the decision to quit

### Ambivalence - Coach

- Explore client's motivating factors
- Explore past quit attempts
- Explore expectations and barriers about future quit attempt
- Set small, achievable goals for changing behavior

### Explore Motivating Factors

- Intrinsic motivation
  - Beliefs, values, identity
- Extrinsic motivation
  - Incentives, rewards
- Personal and relevant
  - Cultural values, gender, age
  - Current and past use of tobacco
- Health benefits/concerns for family, self
  - Incorporate secondhand smoke messages



### Explore Past Quit Attempts

- Reframe if client perceives as failure
  - Majority of tobacco users make multiple quit attempts before successfully quitting
- Learn from and build on past quit attempts
  - What was and was not helpful
  - What led to relapse and how would handle differently

### Explore Expectations and Barriers

- Expectations
  - Ease or difficulty of quitting
  - Withdrawal symptoms, cravings
- Level of commitment
- Barriers, roadblocks
  - What is preventing you from setting a quit day?
  - How can we challenge this roadblock?
- Use of quit smoking medicines
  - Concern that NRT is harmful

## Set Small, Achievable Goals

- Harm Reduction Goals
  - Delay each cigarette, reduce number of cigarettes, switch brand, avoid smoking in certain areas
- Set a meaningful Quit Day
  - What goals can you set to bring you closer to setting a quit day?

## Preparation

- Ready to quit in the next 30 days
- Prepare a smokefree environment
  - Continue to make small changes in smoking behaviors
  - Identify high risk situations
  - Create a Quit Plan

## Preparation

- Prepare a smokefree environment
  - Home
  - Car/vehicle
  - Workplace
- Make small changes in smoking behaviors
  - Change routines
  - Make smoking more inconvenient
  - Delay, reduce cigarettes

## Preparation

- Identify high risk situations
- Smoking cues or triggers
  - Cravings

## Identify High Risk Situations

- Smoking Cues
- Internal Cues
    - Feeling bored, happy, upset, nervous
  - External Cues
    - Taking a break at work, after a meal, out with friends who smoke, smoking in movies

## Preparation

- Create a Quit Plan
- Use of quit medicines
    - Review options, obtain prescription if needed
  - 3 A's Strategies
    - Avoid triggering situations
    - Alter Situations – change habits, routines
    - Alternatives – toothpicks, straws, mints, gum, cinnamon sticks, etc.

## Identify High Risk Situations

### 2 types of cravings

- Breakthrough – cue-triggered craving, experienced as an urge
  - typically lasts 5-8 minutes
  - passes whether you smoke or not
- Background – internal drive caused by chronic nicotine intake, similar to hunger

## Action - Quitting

### Complete cessation

- Dealing with withdrawal symptoms and cravings
- Use positive coping strategies
- Correctly use quit smoking medicine(s)
- Fill the void

## Action - Quitting

### Tips to manage cravings and withdrawal

- Deep breathing
- Drink water
- Walking (even a short walk)
- Isometric exercises (tensing and relaxing muscles)
- Stretching exercises
- Use quit smoking medicine correctly

## Action - Quitting

### Practice positive coping strategies

- Relaxation techniques
- Anger management skills
- Positive self-talk
- Find your internal or external strength

## Action - Quitting

### Correctly use quit smoking medicine(s)

- Majority of issues with NRT are associated with improper use
- Correct technique
- Scheduled or ad lib use

## Action - Quitting

### How to fill the void

- Increase physical activity
- Health eating strategies
- Reward yourself
- Participate in meaningful activities

## Slip / Relapse

### After quitting

- Slip – smoking again up to 4 days
  - Slips are part of the process and can learn from it
  - Trace how slip happened
  - Problem-solve what could have done differently

## Slip / Relapse

### After quitting

- Relapse – return to smoking
  - more than 4 days
- Common reasons for relapse
  - Others smoking
  - Drinking alcohol
  - Negative Mood
  - Stress
  - Weight gain

## Relapse Prevention Strategies

- Avoid spending time with others who smoke
- Temporarily avoid or reduce alcoholic beverages
- Consult with healthcare provider
  - individual counseling, psychotropic medication
- Use NRT or smoking cessation medications

## Stress Management Strategies

- Smoking actually increases stress level
  - Former smokers report they have less stress than when smoking
- Practice positive coping strategies
  - Observe coping skills of non-smokers
  - Time management strategies
  - Relaxation techniques

## Strategies to Minimize Weight Gain

- Average weight gain is 10-21 lbs.
- Emphasize the goal as limiting weight gain, not weight loss.
- Focus on healthy eating and physical activity rather than strict dieting.
- Discuss pharmaceutical aids that can help **delay** weight gain (Bupropion and nicotine replacement products)

## Maintenance

- Embrace smokefree lifestyle
- Reinforce identify of self as a non-smoker
- Develop a “smoking is not an option” attitude – no excuses!
- Continue to use 3 A’s strategies
- Be prepared for high risk situations
- Make it inconvenient and time-consuming to smoke



## Resources

### 2 A's and an R

- Ask
- Advise
- Refer

### Quit Line Service

**1-800-QUIT-NOW**

**Wyoming Quit Tobacco Program**

## Resources

### Tobacco Free Wyoming

<http://www.tobaccofreewyoming.net/>

#### For Providers

<http://www.ctri.wisc.edu/HC.Providers/healthcare.htm>

- Medication Chart

<http://www.aafp.org/online/en/home/clinical/publichealth/tobacco/toolkit.html>

<http://www1.tobaccocme.com/TopicReq?id=1>

<http://www.medscape.com/viewprogram/3607?src=mp>