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# HIV & TOBACCO USE

PHARMACOLOGIC AND BEHAVIORAL METHODS  
TO HELP YOUR PATIENTS QUIT



**HIV PROVIDER REFERENCE SERIES**

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# HIV & Tobacco Use

Pharmacologic and behavioral methods to help your patients quit

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## BACKGROUND

- Smoking prevalence among persons living with HIV (PLWH) is 2-3 times greater than the general population (Kwong, & Bouchard, 2010).
- Cigarette smoking is associated with a decreased response to antiretroviral therapy (ART), development of oral candidiasis, oral hairy leukoplakia, pneumonia, cancer, cardiovascular disease, and pulmonary disease (Kwong, & Bouchard, 2010).
- Tobacco use can decrease the benefits of ART (Hurt et al., 1997).
- Stopping or reducing cigarette smoking can have significant impact on HIV-related co-morbidities and tobacco-related illnesses and should be a priority for clinicians. Tobacco use is considered a modifiable risk factor in the development of cardiovascular disease, and an independent risk factor for the development of malignancies (Hurt et al., 1997; Petoumenos et al., 2011).
- Tobacco cessation, particularly below the age of 40, can substantially reduce the risk of death associated with cigarette smoking (Lifson & Lando, 2012).
- Addiction to cigarettes has been shown to be as intense as heroin and cocaine addictions (U.S. Department of Health and Human Services, 1988).
- Successful interventions for smoking cessation should address both physiological and behavioral aspects of smoking (Fiore et al., 2008; Smith et al., 2009).
- HIV providers are less likely to discuss smoking status and cessation strategies with patients even when the patient has multiple interactions with the health care system (Hurt et al., 1997).
- Research has shown that as few as 3 minutes of counseling provided by physicians has an impact on cessation rates (Fiore et al., 2008).
- Social support, through individual or group therapy, is an important factor contributing to long-term success. The use of technology, such as counseling via cell phones, is an option for social support, and has been shown to be an effective strategy in conjunction with nicotine-replacement therapy (Hurt et al., 1997).
- Using a multi-disciplinary team with a focus on managing co-morbid conditions improves the likelihood of smoking cessation (Fiore et al., 2008).

The U.S. Surgeon General developed guidelines for clinicians to use during clinic visits to help patients with smoking cessation or modification. The 5A model provides a structured approach to assessment and management of smokers (Fiore et al., 2008).

## THE 5A MODEL

**ASK** every patient at every visit about tobacco use.

**ADVISE** every patient about the benefits of smoking cessation. Use a clear, strong, and personalized message urging tobacco users to quit.

**ASSESS** the patient's readiness to quit at this time. For those not ready to quit, other harm reduction strategies should be used (e.g., decreasing the number of cigarettes smoked per day, smoking only in specific settings).

**ASSIST** patients who are willing to quit by developing a quit plan, using approved medications (if appropriate) and providing practical counseling, support, and supplementary materials. A combination of counseling and medications has been found to be the most successful intervention.

**ARRANGE** follow-up visits during the quit process. Follow up within 1 week after the agreed-upon quit date. Assess problems, review medication side effects, and provide reminders about additional resources.

## STAGES OF CHANGE FOR SMOKING CESSATION

(Prabhatet al., 2013; Prochaska & Velicer, 1997; Prochaska, 2008)

**Pre-Contemplation:** The patient is not considering quitting and does not expect to make any change in behavior in the next 6 months.

**Provider Goal:** Raise awareness by discussing the problem of ongoing tobacco use with the patient and keeping him/her engaged.

**Contemplation:** The patient plans to quit smoking in the next 6 months.

**Provider Goal:** Keep the patient talking, reinforce benefits of smoking cessation.

**Preparation:** The patient anticipates quitting smoking within the next month and is actively making plans.

**Provider Goal:** Help the patient determine the best course of action.

**Action:** The patient initiates a course of action.

**Provider Goal:** Decrease barriers to change, encourage progress.

**Maintenance:** The patient has stopped smoking and remains abstinent from smoking for 6 months.

**Provider Goal:** Help the patient stay focused, reduce relapse risk.

**Relapse:** About 80% of smokers will relapse (go back to using tobacco) during the first month of a quit attempt.

**Provider Goal:** Help the patient avoid becoming discouraged. Re-engage the patient in the change process. Identify what was successful with previous attempts and focus on new strategies for behavior change.

## FOR PATIENTS NOT READY TO QUIT

Patients who are not ready to quit may have other priorities or be unaware of the effects of tobacco use. Brief motivational interviewing techniques may be helpful in these situations (Fiore et al., 2008; Cook, Corwin, & Bradley-Springer, 2013).

Motivational interviewing is a specialized counseling technique that uses 4 basic principles (Fiore et al., 2008; Prochaska & Velicer, 1997; Cook et al., 2013):

### 1. Expressing Empathy:

*“It must be hard to think about quitting...”*

### 2. Developing Discrepancy:

*“You said you are worried about the effect smoking has on your immune system. Tell me more about that.”*

### 3. Rolling with Resistance:

*“It sounds like now is not a good time to stop smoking. What do you think about not quitting, but to modify the way you smoke so you can be healthier?”*

#### 4. Supporting Self-Efficacy:

*“We’ve discussed a number of ideas to help you change your smoking habits. Would you like to try any of these things? It is your decision.”*

**The content of motivational interviewing should address the 6 Rs.**

#### THE 6 Rs

**Relevance:** Encourage patient to indicate how quitting is personally relevant.

**Risks:** Help patient identify risks and potential negative consequences of tobacco use, such as respiratory symptoms, lower CD4+ T cell counts, cancer, and cardiovascular disease.

**Rewards:** Help identify potential benefits of tobacco cessation most relevant to the patient, such as improved health, saving money, breathing easier, making partner happy, etc.

**Roadblocks:** Help patient identify barriers to quitting and problem solve with the patient on ways to address these barriers.

**Repetition:** Repeat motivational interventions every time a not-ready-to-quit patient visits the clinic.

**Reconsider:** Discuss the option of modifying smoking behavior. Any decrease is an improvement. For instance, the patient could decrease smoking by 1 cigarette per day or could agree to stop smoking in the car. This approach can help the patient gain confidence in her/his ability to change behavior.

#### FOR PATIENTS WHO ARE ATTEMPTING TO QUIT

- Help patients develop a written plan that includes access to support (counseling and/or pharmacology, as desired) and set a quit date. Give a copy of the plan to the patient and keep one in the clinic chart.
- Follow up with the patient 1 week after agreed upon quit date to offer support and identify potential risks for relapse.
- Frequent follow up and support during the quit phase improves abstinence rates (Fiore et al., 2008).
- Follow up can be by telephone, in person, or over the internet (Fiore et al., 2008).

- For patients who are prescribed medications such as bupropion or varenicline, assess for mood changes and other side effects (Fiore et al., 2008; Kwong, & Bouchard, 2010).

## **COPING WITH CRAVINGS AND WITHDRAWAL**

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- Withdrawal symptoms and craving cigarettes during the first few weeks of a quit attempt are common. Discuss these techniques to help minimize cravings and withdrawal with the patient:
- Delay the urge to smoke by doing another activity, such as taking a walk, exercising, or meditating. Cravings will often pass if the urge to smoke is delayed by 5 minutes.
- Deep breathing and relaxation may reduce cravings.
- Getting enough sleep may reduce fatigue and irritability.
- Many people turn to food as a substitute because nicotine's stimulant properties may serve as an appetite suppressant. Encourage patients to surround themselves with healthy, low-calorie snacks, and to increase physical activity.

## **NICOTINE REPLACEMENT THERAPIES (NRT)**

### **Over the Counter (OTC)**

Nicotine Gum  
 Nicotine Lozenges  
 Nicotine Patch

### **Prescription Only**

Nicotine Inhaler  
 Nicotine Nasal Spray

## **TREATMENT CONSIDERATIONS**

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- Nicotine replacement provides nicotine to the individual without the action and habit of smoking. Individuals who use NRT are twice as likely to be successful at smoking cessation (Fiore et al., 2008; Smith et al., 2009).
- The most successful intervention includes the transdermal nicotine replacement patch with ad lib nicotine gum, nasal spray, or lozenges (Fiore et al., 2008).
- A combination of nicotine replacement strategies is safe, particularly for patients smoking at least a pack per day. The use of both long-acting agents to aid with withdrawal symptoms and short-acting agents to help curb cravings is recommended.

### Dosing

Dosing recommendations vary based on amount of cigarette use. Individualize treatment. Provides the most continuous-delivery nicotine replacement method possible.

Place new patch on a relatively hairless location; rotate sites to avoid irritation. Apply upon waking. If sleep disturbances occur, remove patch prior to bed or use the 16-hour patch.

### Sample treatment recommendations:

- For smokers who smoke 10 or more cigarettes per day:
  - Start: 21 mg/24 hours for 6 weeks
  - Followed by: 14 mg/24 hours for 2 weeks
  - Followed by: 7 mg/24 hours for 2 weeks
- For smokers who smoke less than 10 cigarettes per day:
  - Start: 14 mg/24 hours for 6 weeks
  - Followed by: 7 mg/24 hours for 2 weeks

### Common Side Effects

Local skin reactions, insomnia, and/or vivid dreams

### Comments

- Use with caution in patients with cardiovascular disease (especially within 2 weeks of myocardial infarction), serious arrhythmias, or unstable angina pectoris.
- Do not use if pregnant.

### Dosing

For smokers who smoke less than 25 cigarettes per day, start with 2 mg.

For smokers who smoke more than 25 cigarettes per day start with 4 mg.

Chew one piece of gum every 1 to 2 hours for the first weeks; continue for up to 12 weeks. Maximum: 24 pieces per day.

Chew gum until “peppery” or “flavored” taste emerges. Keep gum “parked” between cheek and gum for 30 minutes until taste dissipates.

### Common Side Effects

Mouth soreness, hiccups, dyspepsia, jaw ache

### Comments

- Use with caution in patients with cardiovascular disease (especially within 2 weeks of myocardial infarction), serious arrhythmias, or unstable angina pectoris.
- Do not eat or drink anything except water for 15 minutes before or during gum use.
- Do not use if pregnant.

### Dosing

For patients who smoke their first cigarette more than 30 minutes after waking, start with 2 mg dose. For patients who smoke their first cigarette within 30 minutes of waking, start with 4 mg. Most patients should use 1 lozenge every 1-2 hours during the first 6 weeks.

Allow lozenge to dissolve in mouth; do not chew or swallow. Most individuals should use 9 lozenges per day, with a maximum of 20 per day.

Lozenges should be used for up to 12 weeks, decreasing dosing from 1 lozenge every 1 to 2 hours for the first 6 weeks, to 1 lozenge every 2 to 4 hours during weeks 7-9 and 1 lozenge every 4 to 8 hours during weeks 9-12.

### Common Side Effects

Mouth irritation, nausea, hiccups, heartburn, headache, and cough

### Comments

- Use with caution in patients with cardiovascular disease (especially within 2 weeks of myocardial infarction), serious arrhythmias, or unstable angina pectoris.
- Do not eat or drink anything except water for 15 minutes before or during gum use.
- Do not use if pregnant.

## NICOTINE INHALER (OTC)

### Dosing

Inhale with continuous puffing over 20 minutes.

Recommended dose is 6-16 cartridges/day as needed for 6-12 weeks.

Each 10 mg cartridge delivers 4 mg of nicotine over 80 inhalations.

Duration of therapy is up to 6 months; taper dose in last 3 months.

### Common Side Effects

Local irritation in the mouth and throat, cough, rhinitis

### Comments

- Use with caution in patients with cardiovascular disease (especially within 2 weeks of myocardial infarction), serious arrhythmias, or unstable angina pectoris.
- Do not use if pregnant.

### Dosing

One dose is equivalent to 0.5 mg to each nostril (1 mg total).

Patient should use 1 to 2 sprays in each nostril per hour, increasing as needed for symptom relief.

Minimum recommended treatment is 8 doses per day, with a maximum limit of 40 doses per day or 5 doses per hour.

Recommended duration of therapy is 3 to 6 months.

Do not sniff, swallow, or inhale through the nose while administering doses. Tilt head back slightly when dosing.

### Common Side Effects

Nasal irritation, transient changes in ability to smell and taste

### Comments

- Use with caution in patients with cardiovascular disease (especially within 2 weeks of myocardial infarction), serious arrhythmias, or unstable angina pectoris.
- Do not use if pregnant.
- Do not use in persons with severe reactive airway disease.
- Nicotine nasal spray has highest dependence potential of all other nicotine replacement therapies.

# NON-NICOTINE REPLACEMENT THERAPIES

## Prescription Only

### First Line Agent

Bupropion Sustained Release  
Varenicline

### Second Line Agent

Clonidine  
Nortriptyline

- Side effects of some smoking cessation therapies, such as varenicline and bupropion, may be exacerbated by HIV medications, such as efavirenz. Monitor symptoms (such as depression, mood changes, and sleep disturbances) closely (Kwong & Bouchard, 2010).

## BUPROPION SUSTAINED RELEASE (RX)

### Dosing

Begin 1-2 weeks before quit date.

Start at 150 mg daily for 3 days, and then increase to 150 mg twice daily for 7-12 weeks.

May consider longer-term therapy.

### Efficacy

When started in patients outside of the inpatient setting, the use of bupropion doubles the success rate at smoking cessation when used as monotherapy (Hurt et al., 1997).

### Common Side Effects

Insomnia, dry mouth

**\*WARNING:** Antidepressant medicines may increase suicidal thoughts or actions in some children, teenagers, and young adults within the first few months of treatment. Depression and other serious mental illnesses are the most important causes of suicidal thoughts and actions. Some people may have a particularly high risk of having suicidal thoughts or actions.

### Comments

Contraindicated in patients who have a history of seizures or eating disorders, who are taking other forms of bupropion, or who have used an MAO inhibitor in the previous 14 days. Always check for drug-drug interactions.

## VARENICLINE (RX)

### Dosing

Begin 1 week before quit date.

Start at 0.5 mg daily for 3 days, increase to 0.5 mg twice daily for 4 days, then 1 mg twice daily for duration of therapy.

Typical duration is 12 weeks.

Varenicline is approved for maintenance therapy for up to 6 months.

### Common Side Effects

Nausea, sleep disturbance, and abnormal, vivid or strange dreams

Interventions: To reduce nausea, take with food and at least 8 ounces of water.

To reduce insomnia, take second dose at dinner rather than at bedtime.

**\*WARNING:** The FDA has issued warnings regarding depressed mood, agitation, behavior change, suicidal ideation, self-harm, and suicide associated with the use of varenicline. Patients who drive or operate heavy machinery should use caution.

### Comments

- Use with caution in patients with a history of psychiatric illness. Monitor closely for mood or behavior changes.
- Use with caution in patients with significant kidney disease ( $\text{CrCl} < 30 \text{ mL/min}$ ) or on dialysis.
- Always check for drug-drug interactions.

### Dosing

Begin treatment 10-28 days before quit date.

Start at 25/mg day and increase to target dose of 75-100 mg/day.

Treatment duration is approximately 12 weeks; some may consider extending treatment up to 6 months.

### Common Side Effects

Sedation, dry mouth, blurred vision, urinary retention, lightheadedness, shaky hands

**\*WARNING:** Antidepressant medicines may increase suicidal thoughts or actions in some children, teenagers, and young adults within the first few months of treatment. Depression and other serious mental illnesses are the most important causes of suicidal thoughts and actions. Some people may have a particularly high risk of having suicidal thoughts or actions.

### Comments

- Use with caution in patients with cardiovascular disease.
- Do not co-administer with MAO inhibitors.
- Do not discontinue abruptly because of withdrawal effects.
- Overdose may produce life-threatening cardiovascular toxicity, seizures, and/or coma.
- Always check for drug-drug interactions.

### **Dosing**

The amount of nicotine delivered through the device is variable and not regulated by the FDA. There are several manufacturers of electronic cigarettes, creating different products that deliver different amounts of nicotine and other chemicals (Bullen et al., 2013).

### **Efficacy**

E-cigarettes are not FDA-approved and benefits of using of electronic cigarettes are unknown (Food and Drug Administration, 2009).

### **Common Side Effects**

Dry mouth, throat irritation

**\*WARNING:** Small amounts of carcinogenic chemicals have been detected in e-cigarettes. Similarly, nicotine has been found in e-cigarettes labeled as nicotine-free. The long-term effects of using e-cigarettes are unknown, and likely vary depending on the manufacturer, frequency, and duration of use (Bullen et al., 2013).

### **Comments:**

Electronic cigarettes are battery-powered devices that mimic the action of cigarette smoking and provide inhaled doses of nicotine. To date, few randomized controlled trials have assessed the safety and efficacy of either nicotine-containing or nicotine-free electronic cigarettes (Bullen et al., 2013).

- Acknowledge and congratulate success.
- Encourage continued abstinence.
- Review any benefits experienced after stopping cigarettes.
- Help anticipate threats to maintaining abstinence from tobacco (e.g. depression, weight gain, alcohol, other tobacco users) and ways to manage threats.
- Maintain supportive stance, especially during relapse episodes.

### **Strategies for dealing with issues that may lead to relapse**

#### Lack of Support

- Schedule follow-up visits or telephone calls with patient.
- Help patient identify support systems within the community, family, and friends.
- Refer to organizations that offer counseling and support.

#### Negative mood or depression

- Provide counseling or refer to a specialist.

#### Strong or prolonged withdrawal symptoms

- Consider extending use of approved medication or add/combine medications to reduce withdrawal symptoms.

#### Weight gain

- Encourage physical activity.
- Emphasize benefits of quitting smoking relative to health risks of weight gain.
- Emphasize importance of healthy diet.
- Suggest low-calorie foods and snacks.
- Refer to dietician.

#### Smoking relapse

- Maintain support, explore situation(s) that lead to relapse, and point out successes prior to relapse.
- Discuss alternate pharmacologic and behavioral therapies.
- Encourage another quit attempt or recommitment.
- Reassure that quitting may take multiple attempts and use lapse as a learning experience.
- Provide or refer for intensive counseling.

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## RESOURCES

- American Cancer Society: [www.cancer.org](http://www.cancer.org)
- American Lung Society: [www.lungusa.org](http://www.lungusa.org)
- National Quit Smoking Helpline: 1-800-QUIT NOW



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