Smoking Cessation 101
Sponsored by Alaska Pharmacists Association
By Amber L Briggs, PharmD, BC-ADM, CGP, BCPS, FASCP

Learning objectives
1. Describe the need for smoking cessation in the United States and Alaska
2. Understand the role of nicotine in smoking cessation
3. Understand the role of nicotine replacement therapy in smoking cessation
4. Discuss the stages of and approach to patient behavioral change
5. Define difference between transtheoretical model of behavior change and motivational interviewing

The tobacco epidemic kills nearly 6 million people a year, and more than 600,000 die each year from exposure to second-hand smoke. Eighty percent of these deaths occur in low- and middle-income countries.\(^1\) The major causes of smoking-related mortality are atherosclerotic cardiovascular disease (CVD), lung cancer, and chronic obstructive pulmonary disease (COPD). Eighty percent of COPD deaths are secondary to tobacco use and 30% of cancer related deaths are related to smoking.\(^5\) In 2007, tobacco use cost Alaskans $314 million in direct medical expenditures, and an additional $177 million in lost productivity due to tobacco-related deaths. More Alaskans die annually from the effects of tobacco use than from suicide, motor vehicle accidents, chronic liver disease and cirrhosis, homicide, and HIV/AIDS combined. An additional estimated 120 Alaskans die each year from lung cancer and heart disease caused by exposure to second hand smoke. The 2009 Alaska Tobacco statistics reveal that the state spends $491 million on tobacco related illness, programs, etc. The $491 million does not take into account the lost productivity due to tobacco related illness and costs due to second-hand smoke exposure related illness or deaths. “Tobacco is the single largest killer of Alaskans, claiming nearly 500 lives per year directly, and an additional 120 lives through second hand smoke.”\(^4\) Those who quit smoking reduce the risk of complications and death, even after development of related conditions.\(^5,6,7,8\)

Nicotine, an addictive substance, causes physical and psychological dependence in its users.\(^10\) There are three classes of medication that are used to assist in smoking cessation success; nicotine replacement therapy (NRT), bupropion, and varenicline (Table 2). Nicotine replacement therapy increases the likelihood of a successful attempt by a factor of 1.4-2.6 versus placebo.\(^12\) A recent study showed that nicotine replacement therapies increase the rate of quitting by 50% to 70%. Pharmacotherapy for smoking cessation addresses the nicotine withdrawal as well as reduces the reward behavior of smoking, to assist in reducing the difficulty in smoking cessation for patients. Pharmacists should be intimately involved in choosing a therapy that is best for each patient’s needs and other comorbid conditions.\(^49\) Pharmacists have been and continue to be successful in working with patients to quit smoking.\(^11\)

There are pharmacokinetic and pharmacodynamic changes with smoking when considering drug-drug interactions. The most common drug interactions are through the cytochrome P450 A12 system. Smoking decreases the effect of caffeine, fluvoxamine, olanzapine, and theophylline.\(^45,46,47,48\) From a pharmacodynamic standpoint, women older than 35 years of age who smoke greater than 15 cigarettes per day while on oral contraceptive therapy, are at a significant increased risk of stroke, myocardial infarction, and thromboembolism.\(^44\)

Medications:

Nicotine replacement therapy (NRT) delivers nicotine to a smoker to assist with nicotine withdrawal symptoms and cravings. There are several different products (Table 1) that provide different methods of nicotine delivery to the body. Nicotine patches, gum, and lozenges are available over the counter, while nicotine inhaler and nasal spray are only available with prescription. Nicotine is either absorbed through the skin in a patch, through the nasal mucosa by nasal spray or through the oral mucosa with nicotine gum, lozenge, or inhaler.\(^13\) Current guidelines recommend patients use a combination of products if one product alone is not successful, however, there are little safety data for the use of combination products.\(^15\) Although there is not a noticeable efficacy difference between individual NRT products,\(^8\) the delivery speed to the systemic circulation of each NRT product does differ. Not one product delivers nicotine as quickly as smoking actual cigarettes. The patch has a slow onset of action (time to peak 8-9 hours); however a patch has a constant delivery of nicotine over a 24 hour period, whereas the spray, gum, lozenge and inhaler onset is rapid (i.e. nasal spray onset 10-20 minutes) and duration is short (i.e. nasal spray t\(_{1/2}\) 1-2 hours).\(^9\) Adherence to the patch is easy for most patients, but it does not provide the patient with the flexibility of responding to immediate cravings as with the short acting products (e.g. inhaler, nasal spray, gum, lozenges). If instructed on the proper use of short acting products, patients can and will be successful in their use.\(^15,16,20\)
Table 1

<table>
<thead>
<tr>
<th>Nicotine Withdrawal Symptoms</th>
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</thead>
<tbody>
<tr>
<td>• Dysphoric or depressed mood</td>
</tr>
<tr>
<td>• Insomnia</td>
</tr>
<tr>
<td>• Irritability</td>
</tr>
<tr>
<td>• Frustration</td>
</tr>
<tr>
<td>• Anger</td>
</tr>
<tr>
<td>• Anxiety</td>
</tr>
<tr>
<td>• Difficulty concentrating</td>
</tr>
<tr>
<td>• Restlessness</td>
</tr>
<tr>
<td>• Decreased heart rate</td>
</tr>
<tr>
<td>• Increased appetite</td>
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<tr>
<td>• Weight gain</td>
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</tbody>
</table>

Nicotine patches allow for constant “infusion” of nicotine transdermally, avoiding first pass metabolism. Nicotine levels are lower and fluctuate less with the transdermal patch than with smoking cigarettes. Nicotine patches should be applied each morning to an area without hair on the skin of the chest, back or abdomen. The patch will remain in place until time to change, when a new patch is placed at a different site. Advise patients to rotate sites over a seven day period and do not leave patches on for greater than 24 hours. Patients should be instructed not to cut the patch because this could lead to rapid evaporation of the nicotine, making the patch ineffective. Effective dosing includes a tapering regimen over several weeks (Table 2). Patients weighing less than 45 kg or who smoke less than ten cigarettes per day should begin with the 14 mg patch. Encourage patients to fold patch with adhesive side together, placing patch in empty packaging, prior to disposal. All nicotine replacement products should be kept out of the reach of children in a secured location. Adverse events with the nicotine patch include local irritation (e.g. rash, puritus), vivid dreams and insomnia. In some cases where insomnia and/or vivid dreams are severe, recommend that patients remove the patch at bedtime, replacing it first thing in the morning. Upon awakening the patient will be absent of nicotine coverage, potentially leading to serious morning nicotine cravings. A supplement use of nicotine gum upon arising may assist with this issue.19,20

Table 2: Smoking Cessation Medications Summary17-21,34

<table>
<thead>
<tr>
<th>Gum</th>
<th>Lozenge</th>
<th>Transdermal Patch</th>
<th>Nasal Spray</th>
<th>Oral Inhaler</th>
<th>Bupropion SR</th>
<th>Varenicline</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adverse Events</td>
<td>Mouth soreness</td>
<td>Hiccups</td>
<td>Dyspepsia</td>
<td>Hyper-salivation</td>
<td>Lightheadedness</td>
<td>Nausea</td>
</tr>
<tr>
<td></td>
<td>Mouth soreness</td>
<td>Hiccups</td>
<td>Dyspepsia</td>
<td>Hyper-salivation</td>
<td>Lightheadedness</td>
<td>Nausea</td>
</tr>
<tr>
<td></td>
<td>Skin irritation</td>
<td>(erythema, pruritus, burning)</td>
<td>Dizziness</td>
<td>Headache</td>
<td>Insomnia</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Nasal irritation</td>
<td>Rhinitis</td>
<td>Sneezing</td>
<td>Cough</td>
<td>Dizziness</td>
<td>Headache</td>
</tr>
<tr>
<td></td>
<td>Oral, throat irritation</td>
<td>Dizziness</td>
<td>Headache</td>
<td>Insomnia</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Insomnia</td>
<td>Dry mouth</td>
<td>Tachy-arrhythmia</td>
<td>Nausea</td>
<td>Tremor</td>
<td>Agitation</td>
</tr>
<tr>
<td></td>
<td>Nausea</td>
<td>Vomiting</td>
<td>Insomnia</td>
<td>Nightmares/ normal dreams</td>
<td>Headaches</td>
<td>Somnolence</td>
</tr>
</tbody>
</table>

| Contraindications | Hypersensitivity to nicotine or any other product component | Hypersensitivity to menthol (inhalation) | Hypersensitivity to nicotine or any other product component | Hypersensitivity to menthol (inhalation) | Hypersensitivity to nicotine or any other product component | Hypersensitivity to menthol (inhalation) | Seizure disorders | Bulimia | Anorexia | Concomitant use of MAOI use within 14 days of discontinuing MAOI | Abrupt discontinuation of alcohol or sedatives (benzodiazepines) | Known hypersensitivity or skin reactions to varenicline |
### Precautions

<table>
<thead>
<tr>
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<tbody>
<tr>
<td>Serious cardiac arrhythmias, myocardial infarction, history or recent; may increase heart rate</td>
</tr>
<tr>
<td>Concurrent use of other nicotine-containing products increase the risk of cardiovascular events</td>
</tr>
<tr>
<td>Temporomandibular joint disease</td>
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<tr>
<td>Pregnancy and breastfeeding</td>
</tr>
<tr>
<td>Hypertension may be increased</td>
</tr>
<tr>
<td>Pregnancy and breastfeeding</td>
</tr>
<tr>
<td>Severe or worsening angina</td>
</tr>
<tr>
<td>Serious cardiac arrhythmias, coronary heart disease, myocardial infarction, history or recent; may increase heart rate</td>
</tr>
<tr>
<td>Concurrent use of other nicotine-containing products increase the risk of cardiovascular events</td>
</tr>
<tr>
<td>Risk of malignant hypertension with hypertension history</td>
</tr>
<tr>
<td>Underlying chronic nasal disorders</td>
</tr>
<tr>
<td>Severe reactive airway disease; may exacerbate condition</td>
</tr>
<tr>
<td>Pregnancy and breastfeeding</td>
</tr>
</tbody>
</table>

### Dosage

| Dosage | Heavy smokers (more than 25 cigarettes per day), 4 mg every 1-2 hr for weeks 1-6, then 4 mg every 2-4 hr for weeks 7-9, then 4 mg every 4-8 hr for weeks 10-12 | Heavy smokers (more than 25 cigarettes per day), 4 mg every 1-2 hr for weeks 1-6, then 4 mg every 2-4 hr for weeks 7-9, then 4 mg every 4-8 hr for weeks 10-12 | For smoking history over 10 cigarettes/day, 21 mg patch/day for 4-6 wk, then use one 14 mg patch/day for 2 wk, then use one 7 mg | Inhale with continuous puffing over 20 min; initial, 6 to 16 cartridges/day for up to 12 weeks, then gradually discontinue over 6 to 12 weeks; 1 spray in each nostril initially 1 to 2 times per hour, at least 8 times/day up to MAX of 5 doses/h, 40 doses/24 h; gradually discontinue; MAX | 150 mg orally of SR tablets in the morning for 3 days, then increase to 150 mg 2 times a day (MAX dose 300 mg/day) for 7-12 weeks; treatment should begin |
| Day 1: 0.5 mg po qd |
| Days 2-3: 0.5 mg po qid |
| Maintenance ≥ Day 8: 1 mg po bid for 11 weeks Start one week prior to target quit date |
**Light smokers** (less than 25 cigarettes per day), 2 mg every 1-2 hr for weeks 1-6, then 2 mg every 2-4 hr for weeks 7-9, then 2 mg every 4-8 hr for weeks 10-12

**Light smokers** (less than 25 cigarettes per day), 2 mg every 1-2 hr for weeks 1-6, 2 mg every 2-4 hr for weeks 7-9, 2 mg every 4-8 hr for weeks 10-12

**Patch/day for 2 weeks**

**MAX 16 cartridges/day**

**duration, 3 months**

1 week before the patient stops smoking

If successfully quit smoking at the end of 12 weeks, may continue for another 12 weeks

Reduce dose in renal impairment

<table>
<thead>
<tr>
<th>Special Directions</th>
<th>Stop smoking completely as soon as treatment begins</th>
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<th>patch/day for 2 weeks</th>
<th>MAX 16 cartridges/day</th>
<th>duration, 3 months</th>
<th>1 week before the patient stops smoking</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Do not eat or drink 15 min before using or while the gum is in mouth</td>
<td>Do not eat or drink 15 min before using or while the gum is in mouth</td>
<td>For smoking history of 10 or fewer cigarettes/day: 14 mg patch/day for 6 wk, then use one 7 mg patch/day for 2 weeks</td>
<td></td>
<td></td>
<td>If successfully quit smoking at the end of 12 weeks, may continue for another 12 weeks Reduce dose in renal impairment</td>
</tr>
<tr>
<td></td>
<td>To help avoid insomnia avoid bedtime dosing. Administer first dose early in day and second dose at least eight hours later. Do not chew or crush extended release product</td>
<td>Give with food and full glass of water Provide REMS medication guide</td>
<td></td>
<td></td>
<td></td>
<td></td>
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</table>

MAOI: momamine oxidase inhibitor

Nicotine gum is bound to a polacrilax resin with a buffering agent. When chewed, the nicotine is released from the gum, and absorbed through the oral mucosa. Unfortunately, if the gum is chewed too fast, some nicotine may be swallowed causing gastrointestinal (e.g. nausea, vomiting), esophageal side effects as well as lightheadedness, irritation of throat and mouth, and hiccups. Every time a patient has an “urge” to smoke, gum should be chewed. Ensure patients are aware of the “chew and park” use of nicotine gum. The gum is chewed until a peppery taste appears, “parked” in the cheek until the taste disappears. Then the gum is chewed in the same manner to release more nicotine. This continues for about 30 minutes and the piece of gum should be removed and disposed of properly. Remind patient to not consume coffee and/or carbonated drinks (i.e. acidic drinks) prior to and during the chewing nicotine gum because the lowering of pH, ionizes the nicotine, decreasing absorption. Four mg a day dose is recommended for those who smoke 25 or more cigarettes per day and 2 mg dose is recommended for lighter smokers. At least 9 pieces of gum daily should be used to improve chances of quitting successfully.19,20

The nicotine lozenge is similar to the nicotine gum, however, it may be easier to use properly because it does not need to be chewed. Placed in the mouth, the lozenge should be allowed to dissolve over 20 to 30 minutes while moving the lozenge periodically with tongue from one side of the mouth to the other. The 4 mg dose is recommended for smokers who smoke within 30 minutes of awakening (a measure of greater nicotine dependence) while the 2 mg dose is recommended for other smokers. Recommended duration of action for higher dose is 6 weeks, with a follow-up dose reduction for 6 more weeks. No eating or drinking is recommended for 15 minutes before and 15 minutes during sucking on lozenge. As with the gum, at least nine pieces is recommended daily to be used to ensure success.19,20

Nicotine inhaler releases nicotine through the oral mucosa, without delivery to the lungs when inhaled. Each inhalation delivers 4 mg of nicotine. Because the nicotine inhaler simulates the use of a cigarette, smokers are assisted with the nicotine dependence as well as the habitual addiction of smoking cigarettes. Recommendation is for patient to use the inhaler by continuous puffing for at least twenty minutes. The nicotine in the inhaler is used by four 5 minute sessions or one 20 minute session of active puffing by the patient. The dosage recommended is 6 to 16 cartridges a day for the first six to twelve weeks then a gradual reduction over the next six to twelve weeks until discontinued. Ensure that
the inhaler is used at temperatures greater than 60 degrees Fahrenheit because colder temperatures decrease the amount of nicotine delivered.\(^\text{18,20}\)

The nicotine nasal spray delivers an aqueous solution of 0.5 mg of nicotine to the nasal mucosa, resulting in a more rapid rise (in 10 minutes) in plasma nicotine concentration when compared to other NRTs. This mirrors the actual nicotine levels when smoking cigarettes. The pump needs to be primed before use by spraying into a tissue six to eight times. If the pump is not used in 24 hours, it will need to be primed again. One spray should be used in each nostril hourly initially and increased as needed. No more then 5 doses per hour or 40 doses per 24 hours should be used. Recommend patients to use for 6 to 8 weeks then taper for 4 to 6 weeks. Remind patient not to sniff while administering the nasal spray and to spray into each nostril.\(^\text{17,20}\)

Use NRT cautiously in patients within two weeks following a myocardial infarction, in patients with serious or worsening angina, and in patients with serious arrhythmias.\(^\text{15}\) Twelve weeks of therapy is suggested; however, longer use can be utilized in patients if they are at high risk for relapse because the benefits of smoking cessation outweigh the risks of long term nicotine replacement therapy.

Bupropion, an aminoketone antidepressant, is structurally different from all other marketed antidepressants. Although marketed as an antidepressant, bupropion has also been marketed as Zyban\(^\text{®}\) (bupropion extended release-XL). Generic bupropion is available for dispensing, however, be cautious about the various products available, the difference between sustained release (SR) and XL products, to reduce the risk for dispensing errors.\(^\text{21}\) Bupropion is effective as monotherapy\(^\text{22,23}\) and combination with NRT is more efficacious than with nicotine alone per one study.\(^\text{24}\) Start Bupropion about one week prior to agreed upon quit date to ensure drug levels reach steady state (t\(_{1/2} \approx 21\) hours after multiple dosing). Starting dose is 150 mg po qday for three days, increasing to 150 mg po bid thereafter for a total of twelve weeks. For patients who are successful in quitting, bupropion is approved for treatment up to six months to maintain remission.\(^\text{25}\) If patients cannot tolerate the 300 mg daily dose, there have been two trials stating effectiveness of 150 mg total daily dose.\(^\text{23,26}\) Bupropion is contraindicated in patients with history of seizure disorder, anorexia, bulimia, MAO inhibitors within 14 days, abrupt discontinuation of alcohol or benzodiazepine use. Box warnings include concern for suicidal thinking, actual suicidal attempts.\(^\text{25,30}\) Use bupropion very cautiously in patients with concomitant medications that lower the seizure threshold (e.g. antipsychotics, theophylline, tramadol) and patients with severe hepatic impairment. Adverse reactions include restlessness, anxiety, jitteriness, anorexia, mental slowing, and increased risk of seizures (i.e. lowering of seizure threshold), tachycardia, headache, insomnia, dry mouth, and nausea to name a few. To reduce the insomnia commonly reported with bupropion, dose 2 times per day at least 8 hours apart, but avoid bedtime dosing.\(^\text{25}\)

Varenicline is a partial neuronal \(\alpha_4 \beta_2\) nicotinic receptor agonist. The partial stimulation of the \(\alpha_4 \beta_2\) nicotinic receptor reduces symptoms of nicotine withdrawal and stimulates dopamine activity but to a lesser amount than nicotine.\(^\text{27,28,29}\) Pharmacists should recommend that patients take varenicline with food and a full glass of water. Encourage patients to watch out for behavioral symptoms and psychiatric changes.\(^\text{27}\) The FDA states “it is important to discuss the possibility of serious neuropsychiatric symptoms in the context of the benefits of quitting smoking with patients before prescribing these medications. Varenicline and bupropion are both effective smoking cessation aids and the health benefits of smoking cessation are immediate and substantial.”\(^\text{30,31}\) The neuropsychiatric events with varenicline are still being evaluated by the FDA.\(^\text{32}\) Smokers are predisposed to increased incidences of suicidal behavior, depressed mood, anxiety, anger, irritability, and impaired cognitive function with nicotine withdrawal, therefore, it is difficult to associate these events to the medication or to simply the nicotine withdrawal the patient is experiencing with smoking cessation. Nevertheless, it is important that providers, such as pharmacists, carefully monitor patients and advise patients concerning the potential adverse events may occur as well as to whom to report these symptoms. Carefully weigh risks and benefits before starting varenicline in patients with unstable psychiatric conditions. In addition to neuropsychiatric issues, adverse events for varenicline include nausea, insomnia, abnormal dreams/nightmares, constipation, and headache. In 2011, the FDA issued a warning concerning the potential increase in cardiovascular events in patients with known cardiovascular disease and varenicline use. As with the neuropsychiatric events, risk and benefits need to be evaluated carefully for each patient before starting therapy.\(^\text{33}\) Dosing of varenicline is 0.5 mg po one time per day for days one to three, and then increased to 0.5 mg po bid on days four to seven. Maintenance dose is 1 mg po daily for eleven weeks. Patients should be instructed to select a quit date and start varenicline seven days prior to that date. In some cases, patients can select a quit date up to 35 days after starting medication. If patient remains smoke free at the twelve week mark, therapy should continue for twelve more weeks to ensure success.\(^\text{27}\)

Other therapies such as clonidine, nortriptyline, cytosine, anxiolytics, cannabinoid receptor antagonists, nicotine vaccine, selegiline, bromocriptine, topiramate nicotine lollipops, nicotine water, hypnosis, acupuncture, and smokeless cigarettes have all been evaluated for smoking cessation; however, these therapies will not be discussed in this review.

**Behavior therapy:**

Tobacco use is not only the physiological addiction but also a behavioral addiction. A combination of therapy with nicotine replacement and behavioral therapy is necessary to ensure success. The cessation of high-risk behaviors, such as smoking, and the acquisition of health-enhancing behaviors, such as exercise, involves progression through five stages (i.e. transtheoretical model of behavior change) of readiness to change (Table 3). (1) Precontemplation—not thinking about change; (2) Contemplation—considering change in the near future. (3) Preparation—seriously considering change
in the near future. (4) Action—in the process of behavior change. (5) Maintenance and relapse—continued change for an extended period. For most patients, behavior changes slowly. In Precontemplation stage, most smokers do not see the harms of smoking to affect them personally, feeling immune to the negative health connotations of tobacco that may influence others. In contemplation, patients do not see the benefit, but feel the loss, however perhaps changing in the future will occur. During Preparation stage, patients are taking the steps needed to make the change while in the Action stage patients are actually taking “action”. During the Maintenance stage, patients are learning how to maintain behavioral change over a lifetime. At times during Maintenance stage, patients may have a relapse and will have to start the process over again. This approach over the strictly educational and admonishing for bad behavior can be tailored to patients’ specific needs and will be successful. Using listening skills and motivational interviewing will enhance success and will enhance the ability to empower patients to make the change they need to make for the improved health related outcomes. Recognize the patient as an individual, as a person, capable of change, as well as recognize the importance of the patient’s individual role in the change process.

Table 3 Stages of Change Model

<table>
<thead>
<tr>
<th>Stage in transtheoretical model of change</th>
<th>Patient stage</th>
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<tbody>
<tr>
<td>Precontemplation</td>
<td>Not thinking about change</td>
</tr>
<tr>
<td></td>
<td>May be resigned</td>
</tr>
<tr>
<td></td>
<td>Feeling of no control</td>
</tr>
<tr>
<td></td>
<td>Denial: does not believe it applies to self</td>
</tr>
<tr>
<td></td>
<td>Believes consequences are not serious</td>
</tr>
<tr>
<td>Contemplation</td>
<td>Weighing benefits and costs of behavior, proposed change</td>
</tr>
<tr>
<td>Preparation</td>
<td>Experimenting with small changes</td>
</tr>
<tr>
<td>Action</td>
<td>Taking a definitive action to change</td>
</tr>
<tr>
<td>Maintenance</td>
<td>Maintaining new behavior over time</td>
</tr>
<tr>
<td>Relapse</td>
<td>Experiencing normal part of process of change</td>
</tr>
<tr>
<td></td>
<td>Usually feels demoralized</td>
</tr>
</tbody>
</table>

The goal for pharmacists is to identify which stage the patient is currently staged, thereby helping patients move on successfully to the next phase. For example, with a patient in Precontemplation stage, a pharmacist could provide the patient with personalized information and allow the patient to express feelings about smoking cessation. During Contemplation stage, pharmacists could encourage patients to develop support networks, could provide patients with positive feedback for patient’s ability and capability to make change, as well as emphasize benefits expected from smoking cessation. During the Preparation stage, pharmacists can help the patient prepare for the challenges of smoking cessation as well as help with any pharmacological needs at this time. During the Action stage, pharmacists can ensure nicotine replacement and/or other therapy is available for patients, education has been completed about the medications and reinforcement the benefits will continue to be provided. Pharmacists can provide continual encouragement, support and resources through changes and difficulties encountered during the Maintenance stage to ensure patient may need to be successful.

Table 4
Five “R’s” for smokers who are unwilling to quit

<table>
<thead>
<tr>
<th>Intervention</th>
<th>Technique</th>
</tr>
</thead>
<tbody>
<tr>
<td>Relevance</td>
<td>Motivational information has the greatest impact if it is relevant to a patient’s disease status or risk, family or social situation (e.g., having children in the home), health concerns, age, gender, and other important patient characteristics (e.g., prior quitting experience, personal barriers to cessation).</td>
</tr>
<tr>
<td>Risks</td>
<td>Ask the patient to identify potential negative consequences of tobacco use. The clinician may suggest and highlight those that seem most relevant to the patient. The clinician should emphasize that smoking low-tar/low-nicotine cigarettes or use of other forms of tobacco (e.g., smokeless tobacco, cigars, and pipes) will not eliminate these risks.</td>
</tr>
<tr>
<td>Rewards</td>
<td>Ask the patient to identify potential benefits of stopping tobacco use. The clinician may suggest and highlight those that seem most relevant to the patient.</td>
</tr>
<tr>
<td>Roadblocks</td>
<td>Ask the patient to identify barriers to quitting and note elements of treatment (problem solving, pharmacotherapy) that could address barriers.</td>
</tr>
<tr>
<td>Repetition</td>
<td>The motivational intervention should be repeated every time an unmotivated patient visits pharmacy. Remind smokers that it takes several tries for many people to quit smoking successfully.</td>
</tr>
</tbody>
</table>

Smokers must want to quit smoking and have the equipment and skills to be successful in the quit attempt. This is where pharmacists can and do have an impact in patients’ success. Every smoker should be asked if he or she is willing to quit smoking. The importance of specific advice to quit smoking should always be based on the patient’s stage of change. Patients should be offered counseling by the pharmacists but it should be remembered that, not every patient counseled by the pharmacist would be prepared and/or willing to consider quitting. For smokers who are not interested in smoking cessation right now, the risks of smoking, the reasons to continue to smoke (i.e. what patient likes about smoking), and a personalized message to encourage smoking cessation could be employed. The pharmacist should determine the patient’s daily cigarette use, the desire to stop smoking and the details of successes and failures of previous attempts. The dependence on nicotine will allow the pharmacist to know the difficulty a patient may have and the intensity of treatment, both pharmacological and behavioral, that will be needed for the patient to be successful.34,35

While often linked with the transtheoretical model of behavior change, motivational interviewing could stand all on its own to help with enacting change. Motivational interviewing helps patients clearly identify problems and barriers to changing behavior. Discussing issues of change with patients in this manner will reduce confrontation using empathy and listening skills for success at motivating patients to change. With motivational interviewing, pharmacists can utilize the five R’s of behavior change, relevance, risk, rewards, roadblocks, and repetition. Risks can be discussed as acute risks vs. long-term risks. Environmental risks could be discussed as well (e.g. spouse and children exposure). Examples of rewards include improved health, better tasting food, improved sense of smell, money saved, items clean smelling, example to other family members and friends and many more. Roadblocks for patients may include withdrawal symptoms, fear of failure, weight gain, and lack of support, depression and the actual enjoyment of tobacco. Being aware of these issues, a pharmacist can actively listen, respond to concerns in an effective and persuasive manner; assisting and empowering patients to work through and resolve issues related to smoking cessation.39,40,41

Those who wish to commit to smoking cessation need more than just pharmacological intervention. Successful cessation includes a combination of behavioral and pharmacological interventions.20 Pharmacists should always discuss with the patients medication therapy is not the only cure for tobacco addiction.49 Smoking cessation should be a combination of therapy including support groups, counseling, and behavior changing techniques.20 Patients should choose a day as their quit day, prepare by removing all smoking paraphernalia, telling family and friends of their plan, and choose a smoking cessation aid. Review with patients past attempts, discuss what was successful and what was not successful, as well a develop a solution to previous problems and barriers to smoking cessation.34

Relapse:

Relapse often occurs with smoking cessation. Many patients believe that one cigarette will not lead back to smoking, however, often it does. Within the first six to twelve months after smoking cessation attempt, patients are at the highest risk for relapse. Pharmacists’ goal is to motivate and encourage patients to try again. Pharmacists can work with patients, with reflective listening, to determine what lead to failure and work with patients to develop a plan to overcome this in the future. Patients may not be ready to immediately quit smoking after a relapse; therefore, the process of determining the stage of action the patients is currently in will be necessary once again. Motivational interviewing needs to continue. We only fail if we stop trying. Create a supportive atmosphere and patients will be successful.42,43

Pharmacists’ Role:

Pharmacists serve several roles in smoking cessation, advising, recommending, and referring. Advising about smoking cessation can be incorporated into pharmacists’ daily pharmacy practice in the community pharmacy setting. Every patient who arrives at the pharmacy can be asked about his or her tobacco status. Smoking history, as with medication allergy information, is a vital component of any health history. The smoking status should be incorporated into the pharmacy file and status should be evaluated at each visit during medication counseling sessions to monitor progress. Stage of action can be determined as described previously and pharmacists should encourage patients based on the stages and recommendations for each stage. Documenting potential drug interactions with nicotine should be noted during the drug utilization review of prescription filling. Although all patients who smoke should be targeted, time is limited in the busy community pharmacy setting; therefore, high-risk populations could be addressed first: those with respiratory/inhaled therapy (e.g. anticholinergics, β2 agonists, corticosteroids), statins, anticoagulants, antiplatelets, medications for diabetes, and/or nitrates. Provide patients with a powerful, directed and personal reason to quit. Do not lecture, nag, scare, and “cheerlead” patients for this approach is not successful in motivating behavior change. Pharmacists should use motivational interviewing skills, strongly encouraging patients to quit, by motivating and educating patients. Many pharmacists are hesitant to provide smoking cessation advice because of the belief that a long smoking cessation program is necessary or the belief that a large amount of time is needed to counsel. However, pharmacists’ role is vital even with the initiation of therapy and referring to appropriate programs as necessary.
Conclusion

Patients continue to smoke despite the bombardment of information advocating its harmful effects. Pharmacists are in a unique role to impact smoking cessation rates. Utilizing Stage of Change Model, motivational interviewing and knowledge of drug therapy, pharmacists can and do improve the success rates of patients who smoke. Interventions can take very little time and will have a positive impact on patients’ lives. Pharmacists’ role is to ask, advise, motivate, educate, recommend therapy, and refer if needed.

References:

Smoking Cessation 101

Learning Assessment Questions:

1. Nicotine withdrawal symptoms include all EXCEPT which one of the following:
   a. Insomnia
   b. Irritability
   c. Acute myocardial infraction
   d. Dysphoric or depressed mood

2. Precontemplation stage is described as:
   a. Not thinking about change
   b. Experimenting with small changes
   c. Taking a definite action to change
   d. Weighing benefits and costs of behavior

3. Precautions/Warnings for Bupropion SR include all the following EXCEPT:
   a. Bulimia/Anorexia
   b. Seizure disorders
   c. Concomitant use of MAOI
   d. History of chronic obstructive respiratory disorder

4. Patients should be instructed to select a quit date and start varenicline ________ days prior to that date.
   a. zero
   b. two
   c. three
   d. seven

5. Varenicline’s mechanism of action is:
   a. nicotine replacement
   b. serotonin reuptake inhibitor
   c. aminoketone antidepressant
   d. partial neuronal α4β2 nicotinic receptor agonist

6. Which of the following is NOT a medication used to assist patients in smoking cessation?
   a. Sertraline
   b. Bupropion
   c. Varenicline
   d. Nicotine replacement therapy

7. Which of the following is NOT an available nicotine replacement product delivery method?
   a. Nasal
   b. Buccal
   c. Dermal
   d. Sublingual

8. Motivational interviewing uses ______________ to assist change.
   a. arguing
   b. lectures
   c. confrontation
   d. active listening

9. If patient has a history of smoking ≥ 25 cigarettes per day, which strength of nicotine gum should the pharmacist recommend?
   a. 2 mg
   b. 4 mg
   c. 6 mg
   d. 8 mg

10. One piece of nicotine gum lasts for_______minutes.
    a. 10
    b. 20
    c. 30
    d. 60

11. Nicotine gum should be chewed like chewing gum to have full effect.
    a. True
    b. False

12. If a patient smokes ≤ ten cigarettes a day, which strength of nicotine patch should the pharmacist recommend as initial therapy?
    a. 7 mg
    b. 14 mg
    c. 21 mg
    d. 42 mg

13. Bupropion XL and Bupropion SR are interchangeable products.
    a. True
    b. False

14. The minimum time between bupropion dosing is:
    a. 6 hours
    b. 8 hours
    c. 12 hours
    d. 24 hours

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LESSON EVALUATION

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To obtain CPE credit for this lesson you must answer the questions on the quiz (70% correct required). Should you score less than 70%, you will be asked to repeat the quiz. In May and November of each year we will mail a statement of credit, unless otherwise arranged with the AKPhA office.

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