

# Addressing Tobacco Use

Tuesday, July 20<sup>th</sup>, 2021



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The use of affirming language inspires hope and advances recovery.

**LANGUAGE MATTERS.**

**Words have power.**

**PEOPLE FIRST.**

The ATTC Network uses affirming language to promote the promises of recovery by advancing evidence-based and culturally informed practices.



**ATTC**

Addiction Technology Transfer Center Network  
Funded by Substance Abuse and Mental Health Services Administration



University of California Los Angeles  
Integrated Substance Abuse Programs

# Smoking Cessation

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Health Services  
LOS ANGELES COUNTY

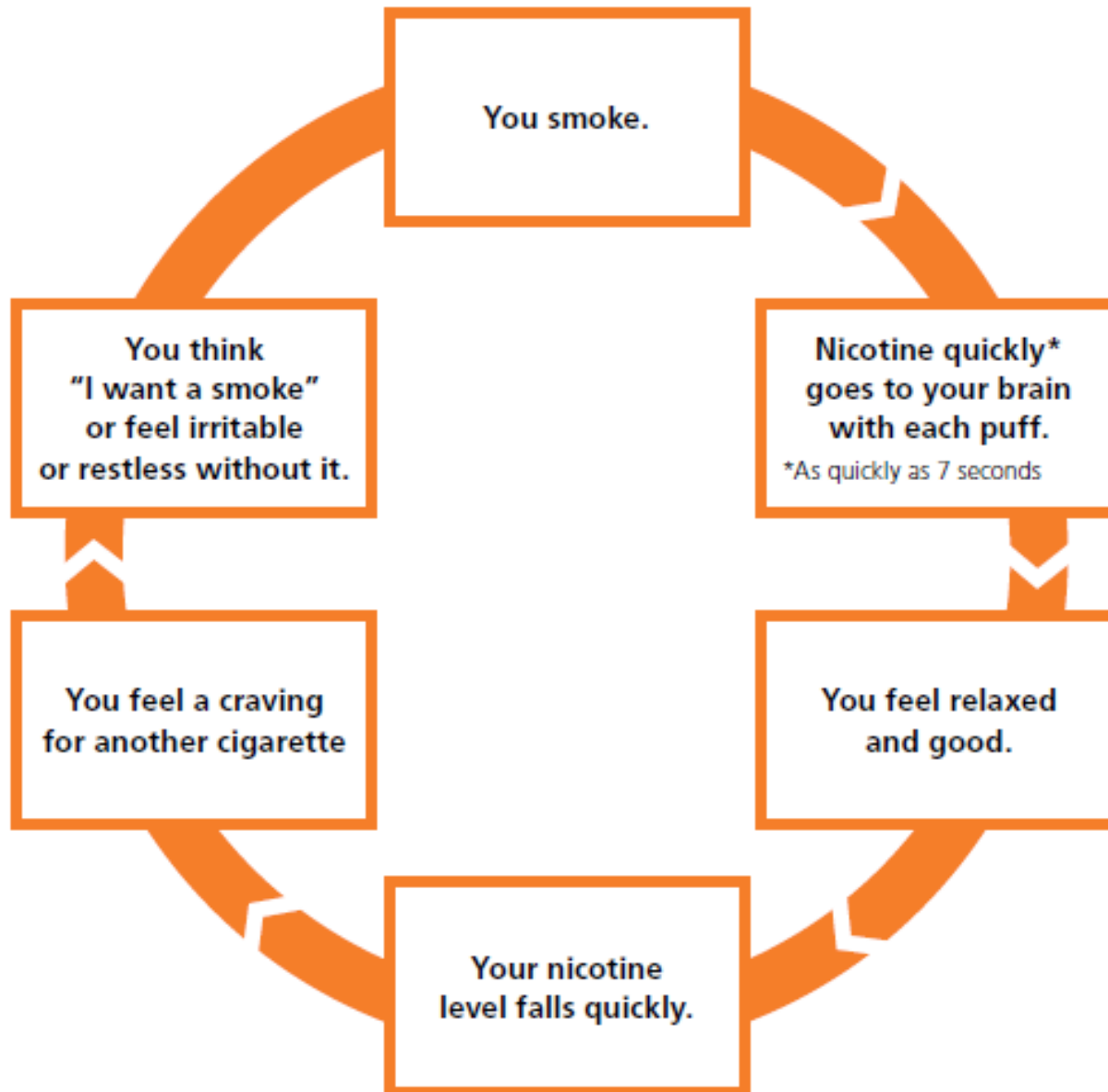


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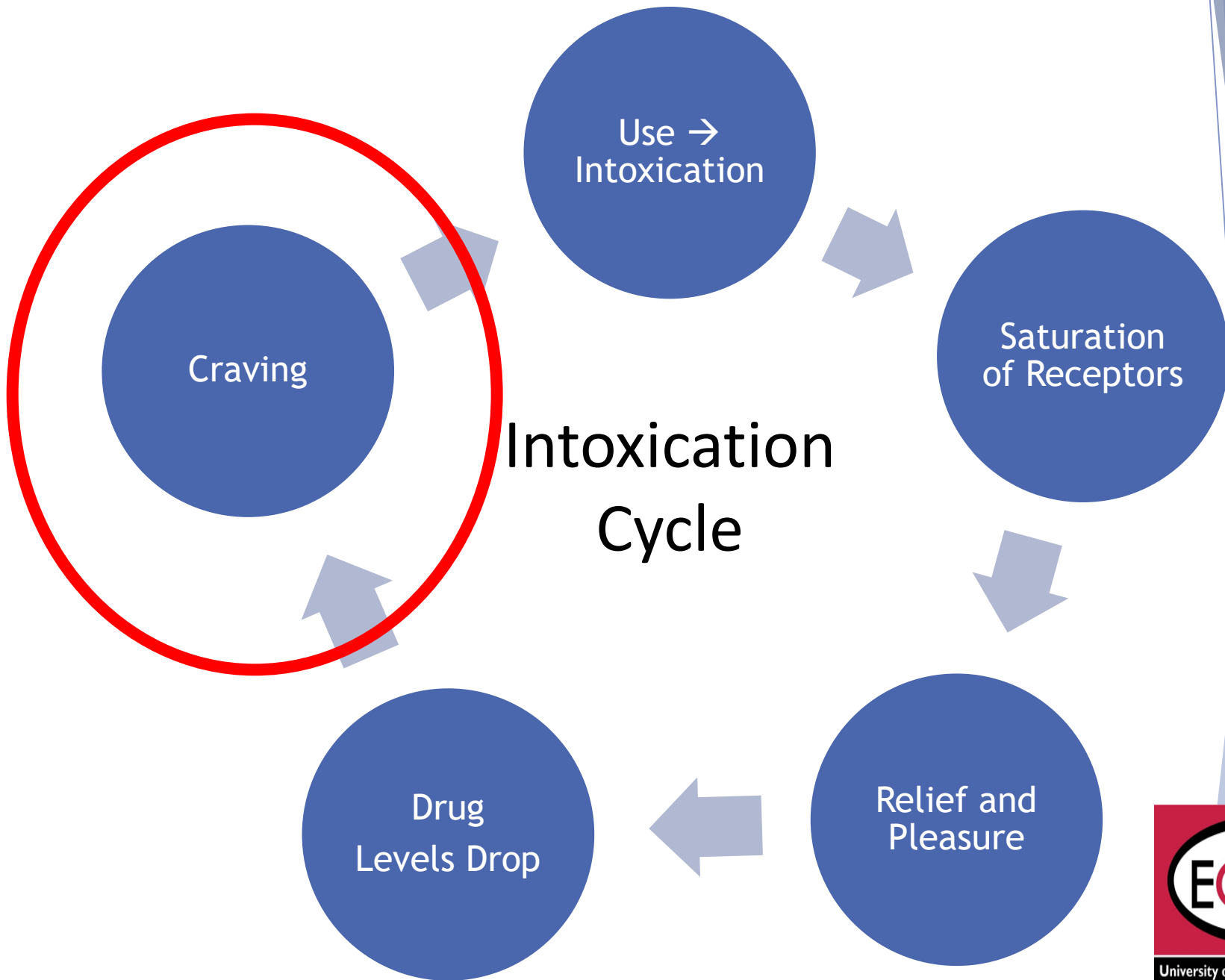
# Disclosures

There are no relevant financial relationships with ACCME-defined commercial interests for anyone who was in control of the content of this activity.





<https://www.quitplan.com/assets/documents/quitguide-english.pdf>



# Providers Have the Opportunity to Ask and Act

- ▶ 70% of tobacco users want to quit
- ▶ Without assistance only 5% are able to quit
- ▶ Most tobacco users try to quit on their own; more than 95% relapse
- ▶ Physicians using evidence-based programs can more than double the quit rates

Slide Credit: American Academy of Family Physicians

*Ending the Tobacco Problem: A Blueprint for the Nation.*

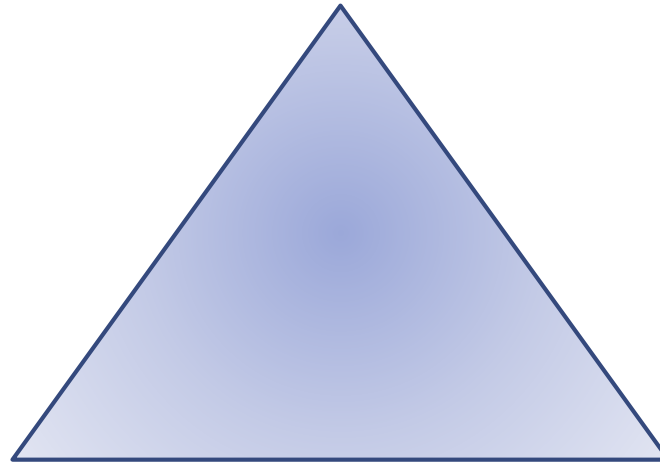
PHS Clinical Practice Guideline: *Treating Tobacco Use and Dependence: 2008 Update*





# Core Components of Smoking Cessation

**\*Medications**



**\*Counseling**

**\*Support**

\*When appropriate

Source: <https://www.samhsa.gov/treatment>



<https://www.nobutts.org/>



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# Smoking Cessation

A Report of the Surgeon General



U.S. Department of Health and Human Services



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# PHARMACOLOGIC PRODUCT GUIDE: FDA-Approved Medications for Smoking Cessation

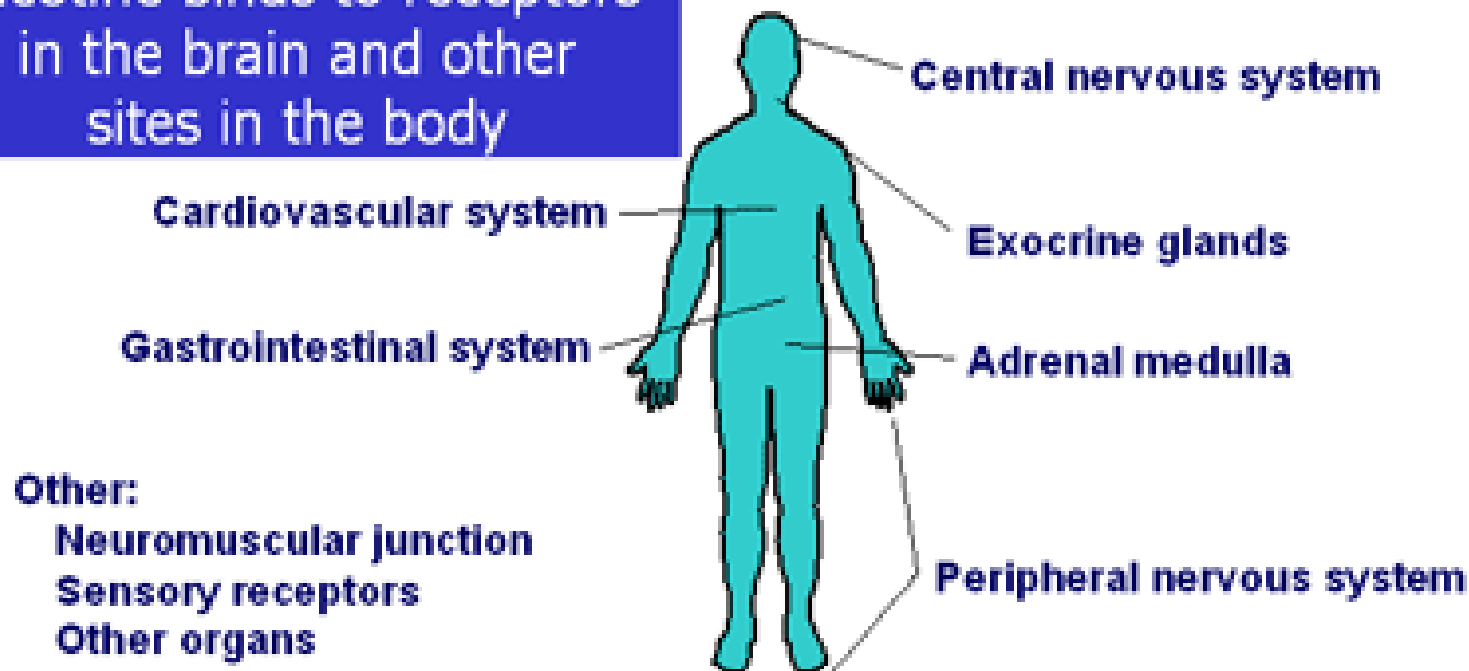
PRODUCT	NICOTINE REPLACEMENT THERAPY (NRT) FORMULATIONS					BUPROPION SR	VARENICLINE
	GUM	LOZENGE	TRANSDERMAL PATCH	NASAL SPRAY	ORAL INHALER		
	Nicorette <sup>1</sup> , Generic OTC 2 mg, 4 mg original, cinnamon, fruit, mint	Nicorette <sup>1</sup> , Generic Nicorette <sup>1</sup> Mini OTC 2 mg, 4 mg; cherry, mint	NicoDerm CQ <sup>1</sup> , Generic OTC (NicoDerm CQ, generic) 7 mg, 14 mg, 21 mg (24-hr release)	Nicotrol NS <sup>2</sup> Rx Metered spray 10 mg/mL nicotine solution	Nicotrol Inhaler <sup>2</sup> Rx 10 mg cartridge delivers 4 mg inhaled vapor	Zyban <sup>1</sup> , Generic Rx 150 mg sustained-release tablet	Chantix <sup>2</sup> Rx 0.5 mg, 1 mg tablet
PRECAUTIONS	<ul style="list-style-type: none"> <li>Recent (≤ 2 weeks) myocardial infarction</li> <li>Serious underlying arrhythmias</li> <li>Serious or worsening angina pectoris</li> <li>Temporomandibular joint disease</li> <li>Pregnancy<sup>3</sup> and breastfeeding</li> <li>Adolescents (&lt;18 years)</li> </ul>	<ul style="list-style-type: none"> <li>Recent (≤ 2 weeks) myocardial infarction</li> <li>Serious underlying arrhythmias</li> <li>Serious or worsening angina pectoris</li> <li>Pregnancy<sup>3</sup> and breastfeeding</li> <li>Adolescents (&lt;18 years)</li> </ul>	<ul style="list-style-type: none"> <li>Recent (≤ 2 weeks) myocardial infarction</li> <li>Serious underlying arrhythmias</li> <li>Serious or worsening angina pectoris</li> <li>Pregnancy<sup>3</sup> and breastfeeding</li> <li>Adolescents (&lt;18 years)</li> </ul>	<ul style="list-style-type: none"> <li>Recent (≤ 2 weeks) myocardial infarction</li> <li>Serious underlying arrhythmias</li> <li>Serious or worsening angina pectoris</li> <li>Underlying chronic nasal disorders (rhinitis, nasal polyps, sinusitis)</li> <li>Severe reactive airway disease</li> <li>Pregnancy<sup>3</sup> and breastfeeding</li> <li>Adolescents (&lt;18 years)</li> </ul>	<ul style="list-style-type: none"> <li>Recent (≤ 2 weeks) myocardial infarction</li> <li>Serious underlying arrhythmias</li> <li>Serious or worsening angina pectoris</li> <li>Bronchospastic disease</li> <li>Pregnancy<sup>3</sup> and breastfeeding</li> <li>Adolescents (&lt;18 years)</li> </ul>	<ul style="list-style-type: none"> <li>Concomitant therapy with medications/conditions known to lower the seizure threshold</li> <li>Hepatic impairment</li> <li>Pregnancy<sup>3</sup> and breastfeeding</li> <li>Adolescents (&lt;18 years)</li> <li>Treatment-emergent neuropsychiatric symptoms<sup>4</sup></li> </ul> <p><b>BOXED WARNING REMOVED 12/2016</b></p> <p><b>CONTRAINDICATIONS:</b></p> <ul style="list-style-type: none"> <li>Seizure disorder</li> <li>Concomitant bupropion (e.g., Wellbutrin) therapy</li> <li>Current or prior diagnosis of bulimia or anorexia nervosa</li> <li>Simultaneous abrupt discontinuation of alcohol or sedatives/benzodiazepines</li> <li>MAO inhibitors in preceding 14 days; concurrent use of reversible MAO inhibitors</li> </ul>	<ul style="list-style-type: none"> <li>Severe renal impairment (dosage adjustment is necessary)</li> <li>Pregnancy<sup>3</sup> and breastfeeding</li> <li>Adolescents (&lt;18 years)</li> <li>Treatment-emergent neuropsychiatric symptoms<sup>4</sup></li> </ul> <p><b>BOXED WARNING REMOVED 12/2016</b></p>
DOSING	<p>1st cigarette ≤30 minutes after waking: 4 mg 1st cigarette &gt;30 minutes after waking: 2 mg</p> <p>Weeks 1-6: 1 piece q 1-2 hours</p> <p>Weeks 7-9: 1 piece q 2-4 hours</p> <p>Weeks 10-12: 1 piece q 4-8 hours</p> <ul style="list-style-type: none"> <li>Maximum, 24 pieces/day</li> <li>Chew each piece slowly</li> <li>Park between cheek and gum when peppery or tingling sensation appears (-15-30 chews)</li> <li>Resume chewing when tingle fades</li> <li>Repeat chew/park steps until most of the nicotine is gone (tingle does not return; generally 30 min)</li> <li>Park in different areas of mouth</li> <li>No food or beverages 15 minutes before or during use</li> <li>Duration: up to 12 weeks</li> </ul>	<p>1st cigarette ≤30 minutes after waking: 4 mg 1st cigarette &gt;30 minutes after waking: 2 mg</p> <p>Weeks 1-6: 1 lozenge q 1-2 hours</p> <p>Weeks 7-9: 1 lozenge q 2-4 hours</p> <p>Weeks 10-12: 1 lozenge q 4-8 hours</p> <ul style="list-style-type: none"> <li>Maximum, 20 lozenges/day</li> <li>Allow to dissolve slowly (20-30 minutes)</li> <li>Nicotine release may cause a warm, tingling sensation</li> <li>Do not chew or swallow</li> <li>Occasionally rotate to different areas of the mouth</li> <li>No food or beverages 15 minutes before or during use</li> <li>Duration: up to 12 weeks</li> </ul>	<p>&gt;10 cigarettes/day: 21 mg/day x 4-6 weeks 14 mg/day x 2 weeks 7 mg/day x 2 weeks</p> <p>≤10 cigarettes/day: 14 mg/day x 6 weeks 7 mg/day x 2 weeks</p> <ul style="list-style-type: none"> <li>Rotate patch application site daily; do not apply a new patch to the same skin site for at least one week</li> <li>May wear patch for 16 hours if patient experiences sleep disturbances (remove at bedtime)</li> <li>Duration: 8-10 weeks</li> </ul>	<p>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</p> <ul style="list-style-type: none"> <li>Maximum - 5 doses/hour or - 40 doses/day</li> <li>For best results, initially use at least 8 doses/day</li> <li>Do not sniff, swallow, or inhale through the nose as the spray is being administered</li> <li>Duration: 3 months</li> </ul>	<p>6-16 cartridges/day Individualize dosing; initially use 1 cartridge q 1-2 hours</p> <ul style="list-style-type: none"> <li>Best effects with continuous puffing for 20 minutes</li> <li>Initially use at least 6 cartridges/day</li> <li>Nicotine in cartridge is depleted after 20 minutes of active puffing</li> <li>Inhale into back of throat or puff in short breaths</li> <li>Do NOT inhale into the lungs (like a cigarette) but "puff" as if lighting a pipe</li> <li>Open cartridge retains potency for 24 hours</li> <li>No food or beverages 15 minutes before or during use</li> <li>Duration: 3-6 months</li> </ul>	<p>150 mg po q AM x 3 days, then 150 mg po bid</p> <ul style="list-style-type: none"> <li>Do not exceed 300 mg/day</li> <li>Begin therapy 1-2 weeks prior to quit date</li> <li>Allow at least 8 hours between doses</li> <li>Avoid bedtime dosing to minimize insomnia</li> <li>Dose tapering is not necessary</li> <li>Duration: 7-12 weeks, with maintenance up to 6 months in selected patients</li> </ul>	<p>Days 1-3: 0.5 mg po q AM</p> <p>Days 4-7: 0.5 mg po bid</p> <p>Weeks 2-12: 1 mg po bid</p> <ul style="list-style-type: none"> <li>Begin therapy 1 week prior to quit date</li> <li>Take dose after eating and with a full glass of water</li> <li>Dose tapering is not necessary</li> <li>Dosing adjustment is necessary for patients with severe renal impairment</li> <li>Duration: 12 weeks; an additional 12-week course may be used in selected patients</li> <li>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</li> </ul>

# Factors to Consider When Choosing a Medication Strategy

- ▶ Patient preference
- ▶ Clinician familiarity with the medications
- ▶ Contraindications for selected patients
- ▶ Previous patient experiences with a specific agent (positive or negative)
- ▶ Patient characteristics (concern about weight gain, history of depression)

# Figure 6: Nicotine Pharmacodynamics

Nicotine binds to receptors in the brain and other sites in the body

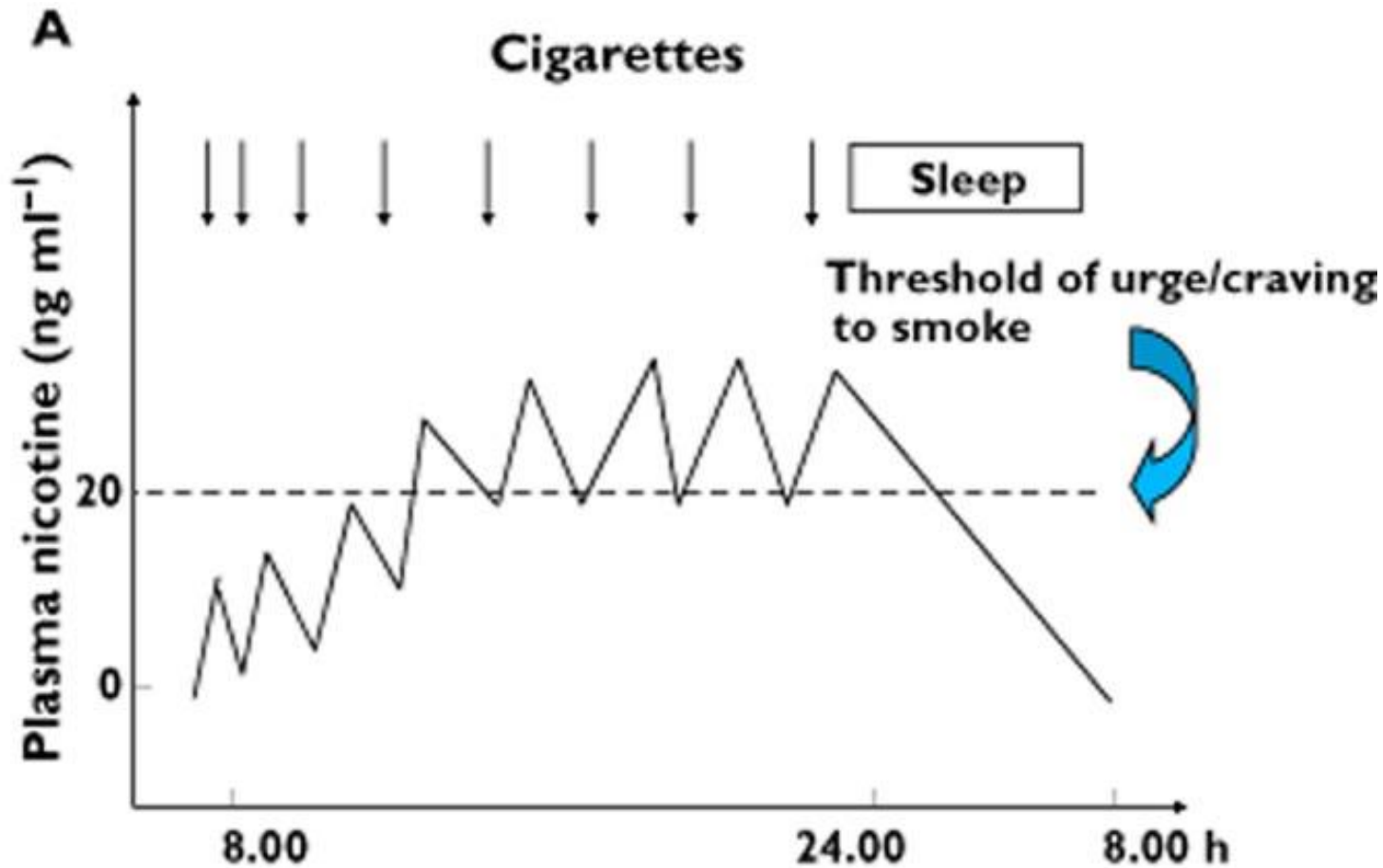


**Possesses stimulant and sedative properties**

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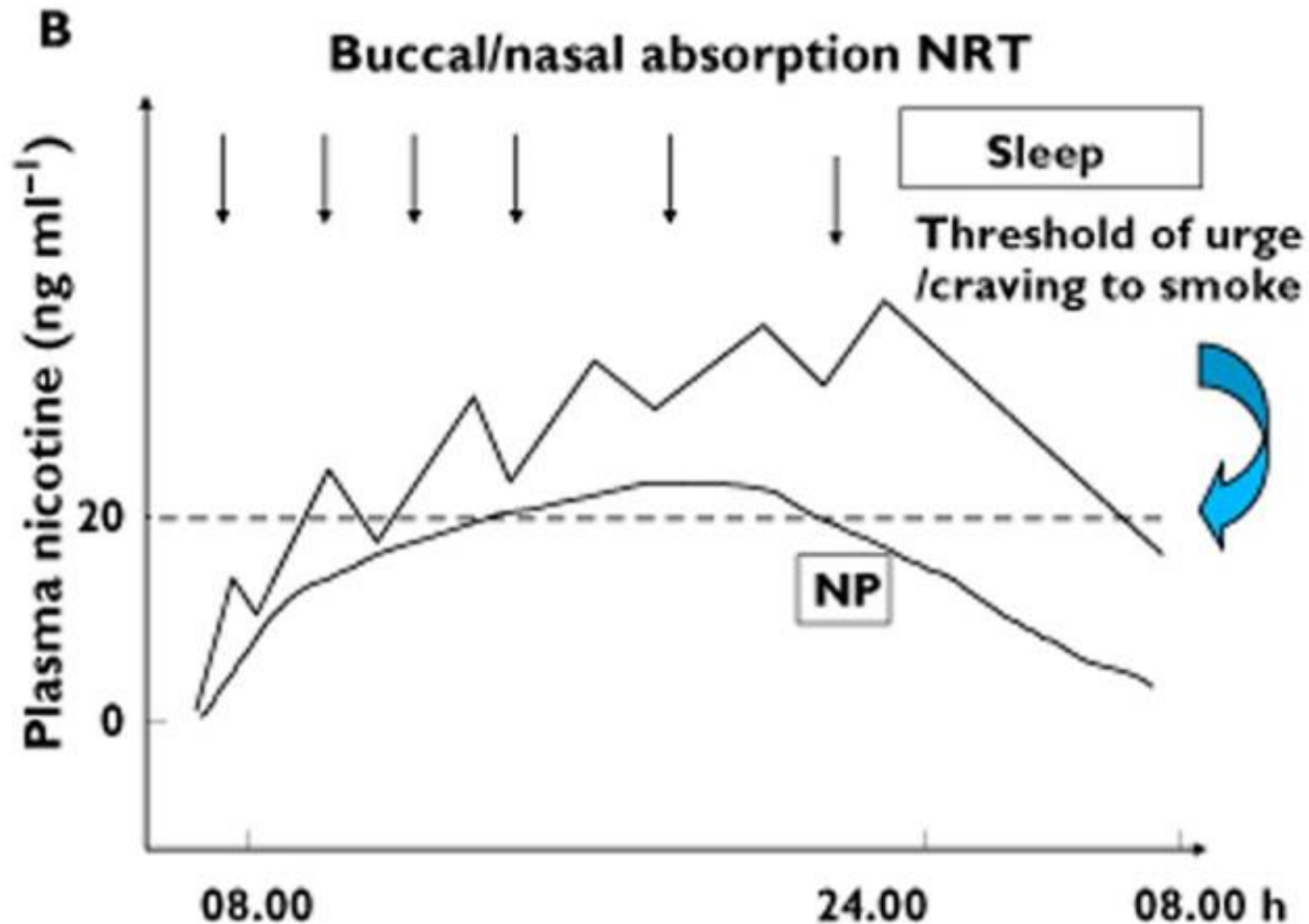


# Plasma nicotine levels with cigarette smoking



Aubin HJ, Luquiens A, Berlin I. Pharmacotherapy for smoking cessation: pharmacological principles and clinical practice. *Br J Clin Pharmacol*. 2014 Feb;77(2):324-36. doi: 10.1111/bcp.12116. PMID: 23488726; PMCID: PMC4014023. <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC4014023>

# Plasma nicotine levels with combination NRT



Aubin HJ, Luquiens A, Berlin I. Pharmacotherapy for smoking cessation: pharmacological principles and clinical practice. *Br J Clin Pharmacol*. 2014 Feb;77(2):324-36. doi: 10.1111/bcp.12116. PMID: 23488726; PMCID: PMC4014023. <http://www.ncbi.nlm.nih.gov/pmc/articles/pmid/23488726>



# Bupropion Cautions

## Precautions

- ▶ Concomitant therapy with medications/conditions known to lower the seizure threshold
- ▶ Hepatic impairment
- ▶ Pregnancy and breastfeeding
- ▶ Adolescents (<18 years)
- ▶ Treatment-emergent neuropsychiatric symptoms (BOXED WARNING REMOVED 12/2016)

## 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 like benzodiazepines
- ▶ MAO inhibitors in preceding 14 days; concurrent use of reversible MAO inhibitors

# Varenicline Precautions

- ▶ Severe renal impairment (dosage adjustment is necessary)
- ▶ Pregnancy and breastfeeding
- ▶ Adolescents (<18 years)
- ▶ Treatment-emergent neuropsychiatric symptoms (BOXED WARNING REMOVED 12/2016)
- ▶ Cardiovascular risk

# Varenicline Side Effects

- ▶ Nausea
- ▶ Sleep disturbances (insomnia, abnormal/vivid dreams)
- ▶ Headache
- ▶ Flatulence
- ▶ Constipation
- ▶ Taste alteration
- ▶ Neuropsychiatric symptoms (rare)

# During Pregnancy

- ▶ **Psychotherapy** remains first-line
- ▶ No evidence of perinatal harms related to NRT use among pregnant women, although studies examining rare harms are limited
- ▶ Conventional wisdom is that NRT is safer than smoking.
- ▶ Insufficient data to support use of varenicline and/or bupropion

Patnode, C. D., Henderson, J. T., Thompson, J. H., Senger, C. A., Fortmann, S. P., & Whitlock, E. P. (2015). Behavioral Counseling and Pharmacotherapy Interventions for Tobacco Cessation in Adults, Including Pregnant Women: A Review of Reviews for the US Preventive Services Task Force Interventions for Smoking Cessation. *Annals of internal medicine*, 163(8), 608-621.



# After Pregnancy

- ▶ The use of **nicotine replacement therapy** while **breastfeeding** is safer than continuing smoking as it reduces infant exposure to cigarette smoke
- ▶ Lactated nicotine is ~50 times less than maternal exposure
- ▶ Bupropion & metabolites are present in small quantities in the breast milk of lactating women.
- ▶ Unknown whether varenicline is secreted in human breast milk

Dempsey DA, Benowitz NL. Risks and benefits of nicotine to aid smoking cessation in pregnancy. *Drug Saf* 2001;24(4):277-322.



# Patients With Mental Illness

- ▶ Most will need medication
- ▶ May need higher doses, longer duration of treatment and combination of medications
- ▶ Patients with bipolar disorder should only receive bupropion if on mood stabilizer
- ▶ Each agent is effective for those with schizophrenia

PHS Clinical Practice Guideline: *Treating Tobacco Use and Dependence: 2008 Update*  
Signal Behavioral Health Network and the Colorado State Tobacco Education & Prevention Partnership  
(STEPP). *Smoking Cessation for Persons with Mental Illness: A Toolkit for Health Providers*. 2009



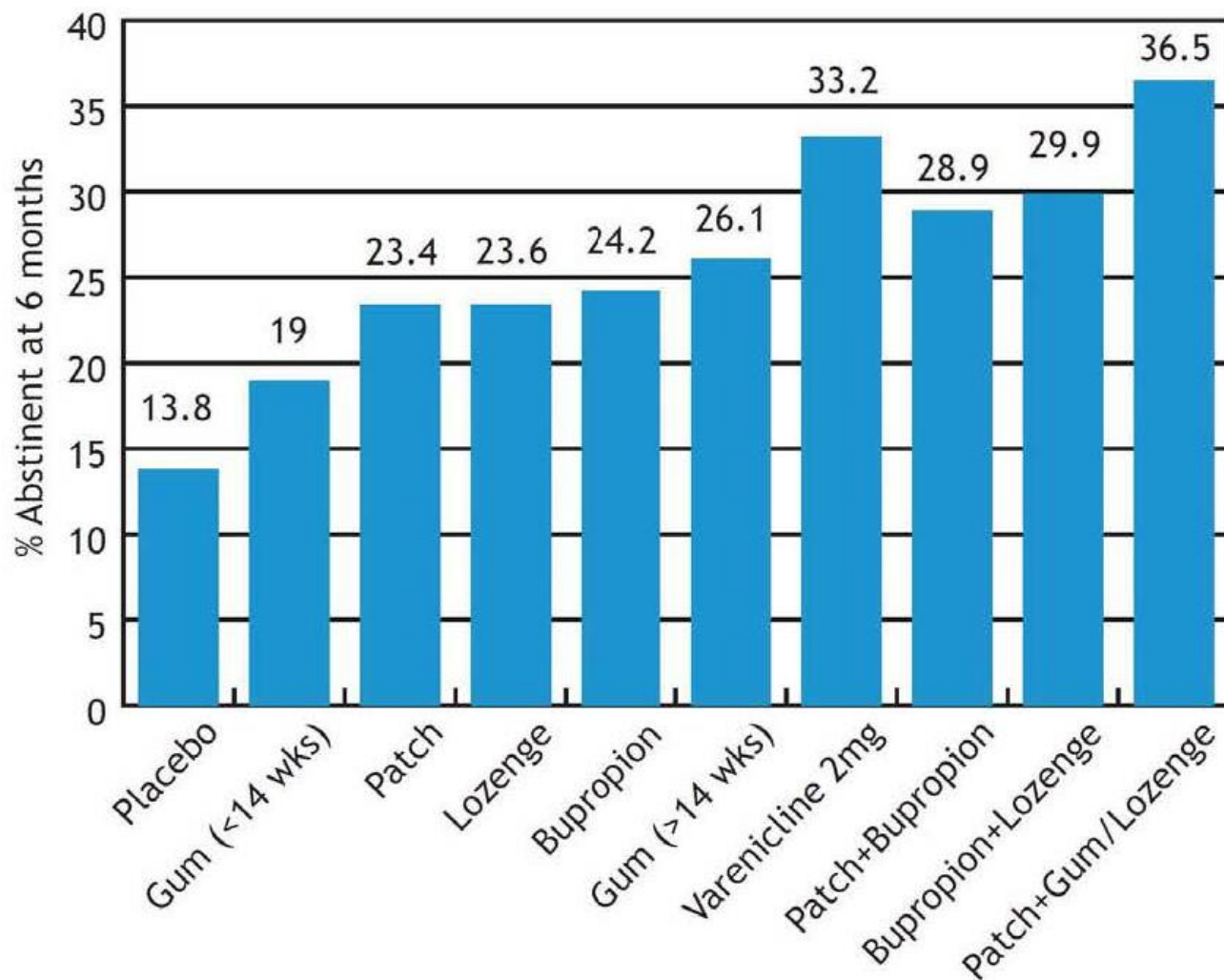
# Quitting in Rehab?

- ▶ Stopping smoking during first year of substance use treatment predicted alcohol and drug treatment outcomes:
  - ▶ 1 year: 14.1% smokers stopped, 10.7% of the non-smokers started.
  - ▶ Smokers who stopped were more likely in remission from SUD, OR 2.4 (year 1 data).

*Tsoh, et al. Drug and alcohol dependence 114.2 (2011): 110-118.*



**FIGURE 1. EFFICACY OF MEDICATIONS FOR SMOKING CESSATION**<sup>6,9,12-1</sup>



United States Department of Veterans Affairs. Primary Care & Tobacco Cessation Handbook. Washington, DC : U.S. Department of Veterans Affairs, Veterans Health Administration, 2014. Retrieved from <https://pulsesearch.princeton.edu/catalog/9567271> - Accessed 12/1/2015.



# Recommended Medication Strategy

Non-Daily tobacco product user - offer prn nicotine replacement therapy

<p>If 2 or fewer cigarettes or equivalents during a typical smoking episode:  <input type="checkbox"/> Nicotine Gum or Lozenge 2mg, take up to 5x/d prn smoking urge</p>	<p>If 3 or more cigarettes or equivalents during a typical smoking episode:  <input type="checkbox"/> Nicotine Gum or Lozenge 4mg, take up to 5x/d prn smoking urge</p>
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Smoking 1/4 ppd (corresponds to 8 or fewer nicotine cigarettes or equivalents daily):

<p><b>Start with:</b></p>	<p><b>Combine with:</b></p>	<p>If patient interested in an additional agent that can help treat depression and mitigate weight gain, add:</p>
<p><input type="checkbox"/> Nicotine Patch 7mg / 24 hour, apply to bare skin in the morning and take off at bedtime</p>	<p><input type="checkbox"/> Nicotine Gum or Lozenge 2mg, take up to 5x/d prn smoking urge</p>	<p><input type="checkbox"/> Bupropion XL 150mg daily for three days, then 300mg daily thereafter</p>
<p><b>Or if the patient has not responded to or tolerated nicotine patches in the past, or declines nicotine patches:</b></p>		
<p><input type="checkbox"/> Varenicline 1mg, take ½ tab daily x3d, then ½ tab BID x4d, then 1 tab BID thereafter</p>	<p><input type="checkbox"/> Nicotine Gum or Lozenge 2mg, take up to 5x/d prn smoking urge</p>	<p><input type="checkbox"/> Bupropion XL 150mg daily for three days, then 300mg daily thereafter</p>



# Recommended Medication Strategy

Smoking 1/2 ppd (corresponds to 9-15 nicotine cigarettes or equivalents daily):

<b>Start with:</b>	<b>Combine with:</b>	If patient interested in an additional agent that can help treat depression and mitigate weight gain, add:
<input type="checkbox"/> Nicotine Patch 14mg / 24 hour, apply to bare skin in the morning and take off at bedtime	<input type="checkbox"/> Nicotine Gum or Lozenge 2mg or 4mg take up to 5x/d prn smoking urge	<input type="checkbox"/> Bupropion XL 150mg daily for three days, then 300mg daily thereafter
<b>Or if the patient has not responded to or tolerated nicotine patches in the past, or declines nicotine patches:</b>		
<input type="checkbox"/> Varenicline 1mg, take ½ tab daily x3d, then ½ tab BID x4d, then 1 tab BID thereafter	<input type="checkbox"/> Nicotine Gum or Lozenge 2mg or 4mg take up to 5x/d prn smoking urge	<input type="checkbox"/> Bupropion XL 150mg daily for three days, then 300mg daily thereafter

Smoking 1 ppd (corresponds to 16-20 nicotine cigarettes or equivalents daily):

<b>Start with:</b>	<b>Combine with:</b>	If patient interested in an additional agent that can help treat depression and mitigate weight gain, add:
<input type="checkbox"/> Nicotine Patch 21mg / 24 hour, apply to bare skin in the morning and take off at bedtime	<input type="checkbox"/> Nicotine Gum or Lozenge 4mg take up to 5x/d prn smoking urge	<input type="checkbox"/> Bupropion XL 150mg daily for three days, then 300mg daily thereafter
<b>Or if the patient has not responded to or tolerated nicotine patches in the past, or declines nicotine patches:</b>		
<input type="checkbox"/> Varenicline 1mg, take ½ tab daily x3d, then ½ tab BID x4d, then 1 tab BID thereafter	<input type="checkbox"/> Nicotine Gum or Lozenge 4mg take up to 5x/d prn smoking urge	<input type="checkbox"/> Bupropion XL 150mg daily for three days, then 300mg daily thereafter

Smoking >1 ppd (corresponds >20 nicotine cigarettes or equivalents daily):

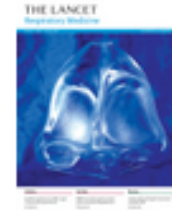
- If the patient is taking nicotine patches, should prescribe additional patches for tobacco product users who use greater than 1 ppd or the equivalent in tobacco products to match or exceed their daily tobacco consumption. There are no dose adjustments for varenicline or bupropion for heavy tobacco product users - dose as 1ppd smoker.



# THE LANCET

## Respiratory Medicine

Volume 4, Issue 2, February 2016, Pages 116-128



### Articles

## E-cigarettes and smoking cessation in real-world and clinical settings: a systematic review and meta-analysis

Sara Kalkhoran MD <sup>a</sup>, Prof Stanton A Glantz PhD <sup>a, b</sup>  

E-cigarettes are associated with significantly less quitting among smokers.

Kalkhoran, S., & Glantz, S. A. (2016). E-cigarettes and smoking cessation in real-world and clinical settings: a systematic review and meta-analysis. *The Lancet Respiratory Medicine*, 4(2), 116-128.



# PERSISTENCE



**THANK YOU!**



# Questions?

[bhurley@ucla.edu](mailto:bhurley@ucla.edu)

Interested in more? Come to:

- ▶ ASAM Annual Meeting (Florida in April 2022!)

<http://www.asam.org>

- ▶ CSAM Annual Meeting (Aug or Sept 2021!)

<http://csam-asam.org>

- ▶ AAAP Annual Meeting (Virtual! Dec 2021)

<http://www.aaap.org>

