

“

Giving up smoking is the  
easiest thing in the world.  
I know because I've done  
it thousands of times

---

MARK TWAIN



# Evidence-Based Pharmacologic Approaches to Smoking Cessation

© 2025 Canadian Task Force Guideline



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MAHC Grand Rounds  
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# Disclosures

Nothing to disclose with respect to this presentation



# Learning Objectives

1. Outline the key recommendations from the 2025 CTFPHC smoking cessation guidelines.
2. Describe the efficacy and safety considerations of pharmacologic treatments for smoking cessation.
3. Explain the rationale behind the CTFPHC position on the use of e-cigarettes for smoking cessation.



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Recommendations on  
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smoking cessation



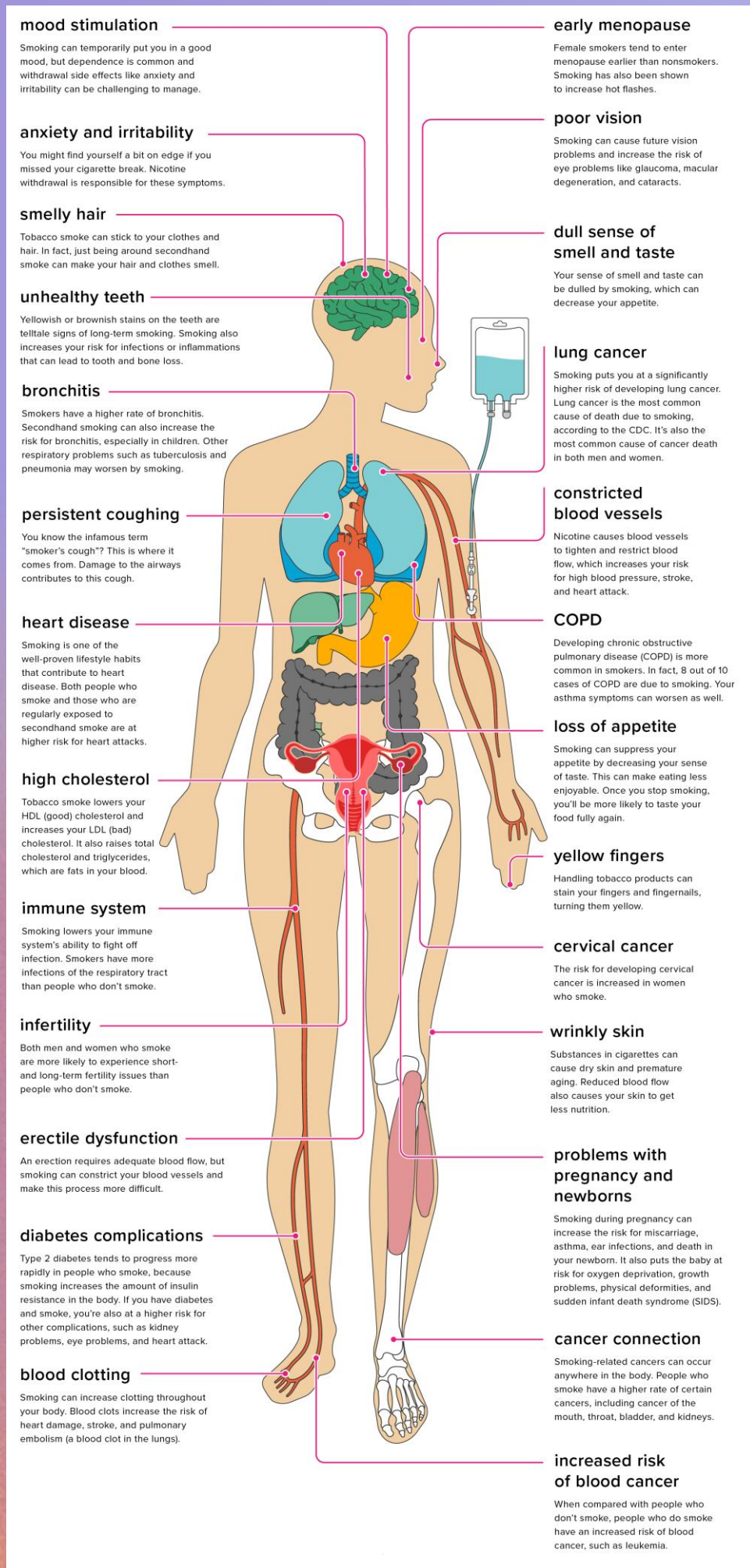
# Muskoka's Tobacco Problem

**14%** residents smoke cigarettes daily

**22%** young adults vaped in the past 30 days

**3-4x** risk of cigarette smoking in youth who vape





Every year in Simcoe Muskoka,  
tobacco smoking leads to:

850 deaths

3 500 hospitalizations

7 000 ER visits



# Recommendations on interventions for tobacco smoking cessation in adults in Canada

Brett D. Thombs, Gregory Traversy, Donna L. Reynolds, Eddy Lang, Stéphane Groulx and Brenda J. Wilson; for the Canadian Task Force on Preventive Health Care

CMAJ August 25, 2025 197 (28) E846-E861; DOI: <https://doi.org/10.1503/cmaj.241584>



**Canadian Task Force  
on Preventive Health Care**

**cmaj**



# Beyond the scope...



Does not apply to pregnant or breast/chest-feeding



Does not apply to traditional/ceremonial tobacco use by Indigenous peoples



Does not address recommendations for stopping other tobacco/nicotine products





# Pharmacologic Interventions



# Task Force “Menu”

Varenicline (Champix)

→ large benefit

Cytisine (Cravv)

→ moderate benefit

Bupropion (Zyban)

→ small to moderate benefit

NRT

→ moderate benefit

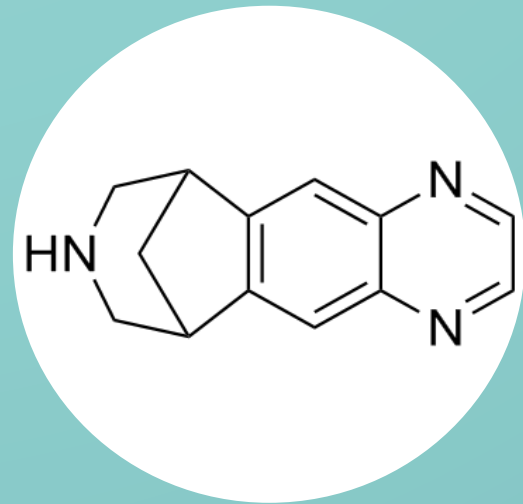


# Varenicline (Champix)

## 138 more per 1000 quit smoking

(27 RCTs, n=12 625, 95% CI: 118 to 159)

### Mechanism of Action



Partial nicotinic  
receptor agonist

- Reduces pleasure from smoking
- Prevents withdrawal symptoms

### Contraindications



No absolute  
contraindications

- Renal dosing

### Adverse Effects



No increased  
psychiatric or CV risks

- Nausea
- Insomnia
- Nightmares
- Headache

### Cost



Possible coverage with  
cessation program

- ODB: 12 weeks/year
- NIHB: 24 weeks/year
- Out of pocket: \$300 for 12 wks



# Varenicline Dosing Schedule



## Three-step increase in dose:



- Varenicline **0.5 mg** is a white oval tablet
- Varenicline **1 mg** is a light blue oval tablet
- Tablets to be swallowed whole with water - with or without food
- Ideally, tablets should be taken at the same time each day

## Dosing timetable:

When you begin taking varenicline, set a **smoking stop day** within week 2

	Week 1							Week 2						
	Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7	Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7
	0.5 mg	0.5 mg	0.5 mg	0.5 mg	0.5 mg	0.5 mg	0.5 mg	1 mg	1 mg	1 mg	1 mg	1 mg	1 mg	1 mg
	X	X	X	0.5 mg	0.5 mg	0.5 mg	0.5 mg	1 mg	1 mg	1 mg	1 mg	1 mg	1 mg	1 mg

..... Patient repeats for **weeks 3-12** .....

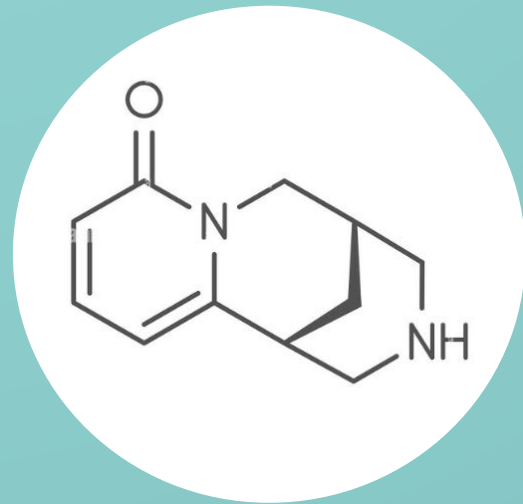


# Cytisine (Cravv)

## 64 more per 1000 quit smoking

(2 RCTs, n=937, 95% CI: 22 to 147)

### Mechanism of Action



Partial nicotinic  
receptor agonist

- Reduces pleasure from smoking
- Prevents withdrawal symptoms

### Contraindications



No absolute  
contraindications

- Recent MI
- Severe CAD
- Arrhythmias
- Uncontrolled HTN

### Adverse Effects



No serious  
adverse effects

- Nausea
- Dry mouth
- Nightmares
- Headache

### Cost



No coverage

- OTC
- Available in some pharmacies
- Purchase online
- ~\$90 for 25-day course



# Cytisine Dosing Schedule

<b>Days 1 to 3</b> 1 tablet every 2 hours (Daily: 6 tablets max)	<b>Days 4 to 12</b> 1 tablet every 2.5 hours (Daily: 5 tablets max)	
<b>Days 13 to 16</b> 1 tablet every 3 hours (Daily: 4 tablets max)	<b>Days 17 to 20</b> 1 tablet every 5 hours (Daily: 3 tablets max)	<b>Days 21 to 25</b> 1–2 tablets a day (Daily: 2 tablets max)

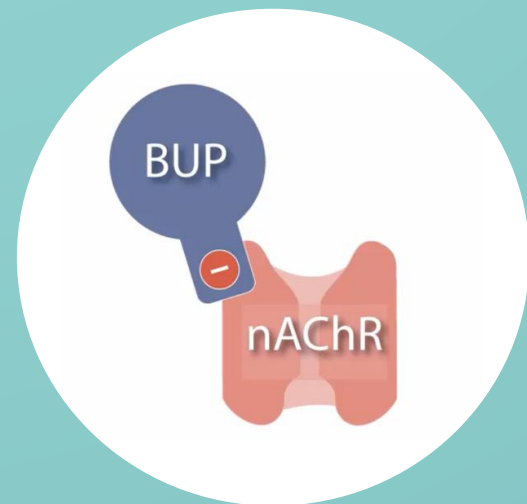


# Bupropion (Zyban)

## 128 more per 1000 quit smoking

(4 RCTs, n=404, 95% CI: 38 to 268)

### Mechanism of Action



NE-DA reuptake Inhibitor & Nicotinic receptor antagonist

- Reduce withdrawal symptoms
- Reduces pleasure from smoking

### Contraindications



- Seizure disorder
- Abrupt discontinuation of ETOH, benzos, barbiturates
- MAOi, Linezolid, methylene blue
- Anorexia or bulimia nervosa
- Renal dosing

### Adverse Effects



- Seizure
- Suicidal ideation (ages 18-24)
- Insomnia
- Agitation
- Anxiety
- Constipation
- Nausea

### Cost



Possible coverage with cessation program

- ODB: Zyban 12 weeks/year
- NIHB: 24 weeks/year
- Generic ~\$50/12 weeks



# Bupropion Dosing Schedule



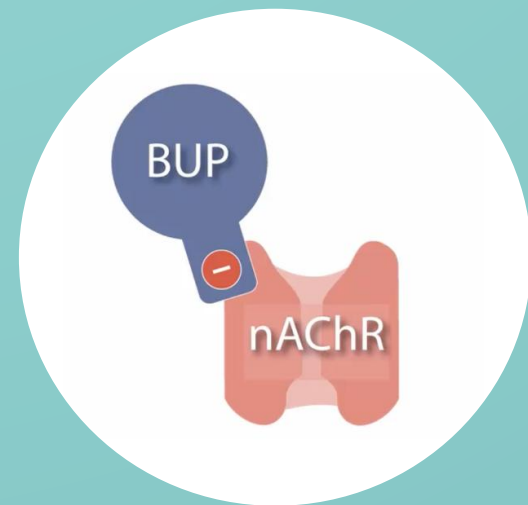


# NRT

## 44 more per 1000 quit smoking

(8 RCTs, n=3081, 95% CI: 22 to 73)

### Forms



- Spray → 5-10 min
- Pouch → 5-10 min
- Inhaler → 10-15 min
- Lozenge → 15-30 min
- Gum → 20-30 min
- Patch → 1-2 hr

### Contraindications



#### No absolute contraindications

- Recent MI ( $\leq 2$  weeks)
- Unstable angina
- Arrhythmias

### Adverse Effects



- Palpitations
- Chest pain
- Hiccups
- Nausea
- Skin irritation
- Throat irritation
- Runny nose

### Cost



#### Possible coverage

- Free trials through various programs
- NIHB: 252 patches/year + 1 PRN product



# NRT Dosing Guide

Rule of Thumb – Replace each cigarette with 1 mg NRT

<1/2 PPD → short-acting NRT PRN

>1/2 PPD → patch qdaily + short-acting NRT PRN

Wait until 6 weeks smoke-free then decrease dose by 7mg q2weeks



**IF YOU SMOKE YOUR FIRST CIGARETTE:**

**AFTER 30 MINUTES** of waking up | USE 2mg GUM

**WITHIN 30 MINUTES** of waking up | USE 4mg GUM

→ or 1-2mg lozenge

→ or 2-4mg lozenge or 4mg pouch





# E-Cigarettes for Smoking Cessation?



# Nicotine vs Non-Nicotine E-Cigarettes

Low certainty evidence

## Non-nicotine e-cigarettes

Possible small smoking cessation benefit with  
**nicotine patch + behavioural** interventions

(1 RCT, n=624, 16 more per 1000 quit, 95% CI 12 fewer to 109 more)

## Nicotine e-cigarettes

Possible small to moderate smoking cessation  
benefit compared to non-nicotine e-cigarettes  
with **nicotine patch + behavioural** interventions

With behavioural → 32 more per 1000 quit (1 RCT, n=674, 95% CI 19 fewer to 196 more)

With behavioural + nicotine patch → 46 more per 1000 quit (1 RCT, n=999, 95% CI 2 fewer to 200 more)

70% of people who  
tried e-cigarettes for  
smoking cessation  
continued vaping  
beyond 6 months



# It Depends...

Task Force conditionally recommends against e-cigarettes for smoking cessation

Consider use of e-cigarettes (with or without nicotine) if patient:

- Unsuccessfully attempted other interventions
- Strong preference for e-cigarettes / unwilling to try other interventions

Inform patients of risks / uncertainties:

- No approved therapeutic e-cigarettes with consistent formulations
- Lack of long-term safety data
- Ongoing use of e-cigarettes with nicotine does not address **nicotine addiction**



# Pharmacologic + Behavioural

Task Force strongly recommends use of combined therapies

71 more per 1000 quit smoking

(52 RCTs, n=19 488, 95% CI: 58 to 84)

Proven for NRT and bupropion





# Behavioural Interventions



# Task Force strongly recommends:

**Group counselling** → 108 more per 1000 quit

(9 RCTs, n=1089, 95% CI: 54 to 186)

**Individual counselling** → 40 more per 1000 quit

(27 RCTs, n=11 100, 95% CI: 28 to 54)

**Text messaging service** → 37 more per 1000 quit

(12 RCTs, n=11 885, 95% CI: 26 to 50)

**Brief advice from HCP** → 36 more per 1000 quit

(26 RCTs, n=22 239, 95% CI: 28 to 46)

**Self-help materials** → 10 more per 1000 quit

(11 RCTs, n=13 241, 95% CI: 2 to 19)





# What about other interventions?

Task Force strongly recommends against:

- Hypnosis
- Acupuncture (11 more per 1,000, 95% CI: 15 fewer to 43 more)
- Continuous auricular stimulation
- Laser therapy
- Electrostimulation
- S-adenosyl-L-methionine (SAMe)
- St John's Wort





# Smoking Cessation Supports





UNIVERSITY OF OTTAWA  
**HEART INSTITUTE**

**INSTITUT DE CARDIOLOGIE**  
DE L'UNIVERSITÉ D'OTTAWA

## **Quit Smoking Program**

**Prevention and Wellness Centre**

**Phone: 613-696-7069**

Free, virtual one-on-one support

- 12-week trial of NRT
- Varenicline or Bupropion
- Quit Card Program
- f/u appointments q1month x6
- Wait time for consult ~1 week

Patients can self-refer

<https://www.ottawaheart.ca/clinic/quit-smoking-program>





# Youth-VAST

**ARE YOU A YOUTH (AGES 12-21)  
STRUGGLING WITH:**

- **vaping/nicotine use**
- **substance use, (e.g. cannabis), or**
- **excessive technology use?**

**YOUTH-VAST CAN HELP!**



Free, virtual services:

- Assessment
- Individual treatment
- Group treatment
- Family education

Patients can self-refer

<https://www.camh.ca/en/patients-and-families/programs-and-services/youth-vast>





## STOP program

- NRT, counselling supports
- Available through FHTs, Chigamik CHC, NP-led clinic in HV

## STOP on the Net program

- Available to Ontarians aged 18+
- Free 6-week trial of NRT

Patients can self-refer to join STOP on the NET

<https://intrepidlab.ca/en/stop/stop-on-the-net>





**Centre de santé communautaire  
CHIGAMIK  
Community Health Centre**

## Quit Café

- Smoking cessation support group with weekly meetings
- One-on-one support / counselling
- Free 26-week trial of NRT

Patients can self-refer

<https://www.chigamik.ca/>





## Expand Project

- Free 4-week trial of NRT
- Available to queer and trans people aged 18-29

Patients can self-refer

<https://www.expandproject.ca/s/nrt-page>



# smokers' helpline



## Canadian Cancer Society



### Online Quit Program

Build your personal Quit Plan on SHL online.

24/7 access to tailored motivational content to support you getting and staying smoke and vape-free.



### Help by Phone

You want to quit and we can help!

SHL phone clients are up to 8 times more likely to be smoke-free after 6 months than quitters who go it alone.



### Text Message Support

Receive support on the go while quitting smoking and/or vaping with evidence-based, supportive text messages customized to your quit date.

Everyone has different withdrawal symptoms, but it's a sign that your body is adjusting to life without nicotine. Learn more by texting **WITHDRAWAL**.

Did you know that 8 hours after quitting smoking your oxygen levels return to normal and your risk of a heart attack reduces?

Try one of the 4 D's to get over your cravings: Delay, Distract, Deep breathe, Drink water. Or text **CHAT** for more tips from our Quit Coaches!

What will you do with all the money you save? Make a list, start a money jar, and save your money up to spend on a big reward!

Smokers' Helpline & Chat hours: Mon-Thu 8am-9pm; Fri 8am-6pm; Sat/Sun 9am-5pm. Telehealth ON: 10am-10pm, Care Coach Assistants 24/7. All times Eastern.



# Recommendations on interventions for tobacco smoking cessation in adults in Canada

## RECOMMENDATIONS

- **Know** your patients' smoking status
- **Encourage** all patients who smoke to quit
- **Offer** 1 or more recommended smoking cessation interventions
- **Engage** in shared decision-making to determine best option(s)

## Interventions

### Strongly recommended

- **Behavioural**
  - Primary care advice
  - Individual or group counselling by trained cessation counsellor (in person or by telephone)
  - Text messaging interventions
  - Self-help materials
- **Pharmacotherapy**
  - Bupropion
  - Cytisine
  - Nicotine replacement therapy (patch, gum, lozenges, inhaler and/or spray)
  - Varenicline
- **Combined behavioural and pharmacotherapy interventions**

### Conditionally recommended

- Interactive computer-based or online programs with direct behavioural support

### Strongly recommended against

- Acupuncture
- Hypnotherapy
- Laser therapy
- Continuous auricular stimulation
- Electrostimulation
- St. John's Wort
- S-adenosyl-L-methionine

### Conditionally recommended against

- Interactive computer-based or online programs without additional support
- E-cigarettes\*

We suggest against using e-cigarettes,\* except in people who:

- have unsuccessfully tried other interventions
- are unwilling to try other interventions
- express a strong preference for e-cigarettes

No e-cigarettes have been approved for smoking cessation in Canada.

\*With or without nicotine.







Thanks for listening!  
Questions?