

Treating Tobacco Use Disorder in Vulnerable Populations



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Land Acknowledgement

We respectfully acknowledge the land on which we work is the traditional territory of the Coast Salish Peoples, including the unceded homelands of xʷməθkwəy̓əm (Musqueam), Skwxwú7mesh (Squamish), and Səlílwətał (Tsleil-Waututh) Nations



Disclosures

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Health Canada

Vancouver Coastal Health Authority

Fraser Health Authority

University of British Columbia

Ottawa Heart Institute

Providence Health Care

TEACH (Centre for Addiction and Mental Health, Toronto)

Horizon Health Authority

Doctors of BC

Government of Nunavut



****No tobacco/vaping or alcohol industry funding***



Learning Objectives

1

Highlight groups that are disproportionately affected by tobacco

2

Consider the rationale for treating tobacco use disorder in these groups

3

Examine contemporary approaches to clinical smoking cessation, particularly in MHA populations

Tobacco Use Disorder: DSM V

CONTROL



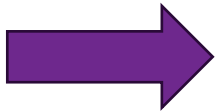
- 1. Tobacco is often taken in **larger amounts or over a longer period** than was intended.
- 2. There is a persistent desire or **unsuccessful efforts to cut down** or control use.
- 3. A **great deal of time is spent** in activities to obtain, use or recover from use.
- 4. **Craving**, or a strong desire or urge to use.

SOCIAL INSTABILITY



- 5. Recurrent use resulting in a **failure to fulfill major role obligations** at work, school, or home.
- 6. Continued use despite having **persistent or recurrent social or interpersonal problems**
- 7. Important **social, occupational, or recreational activities are given up** or reduced because of use.

HARM

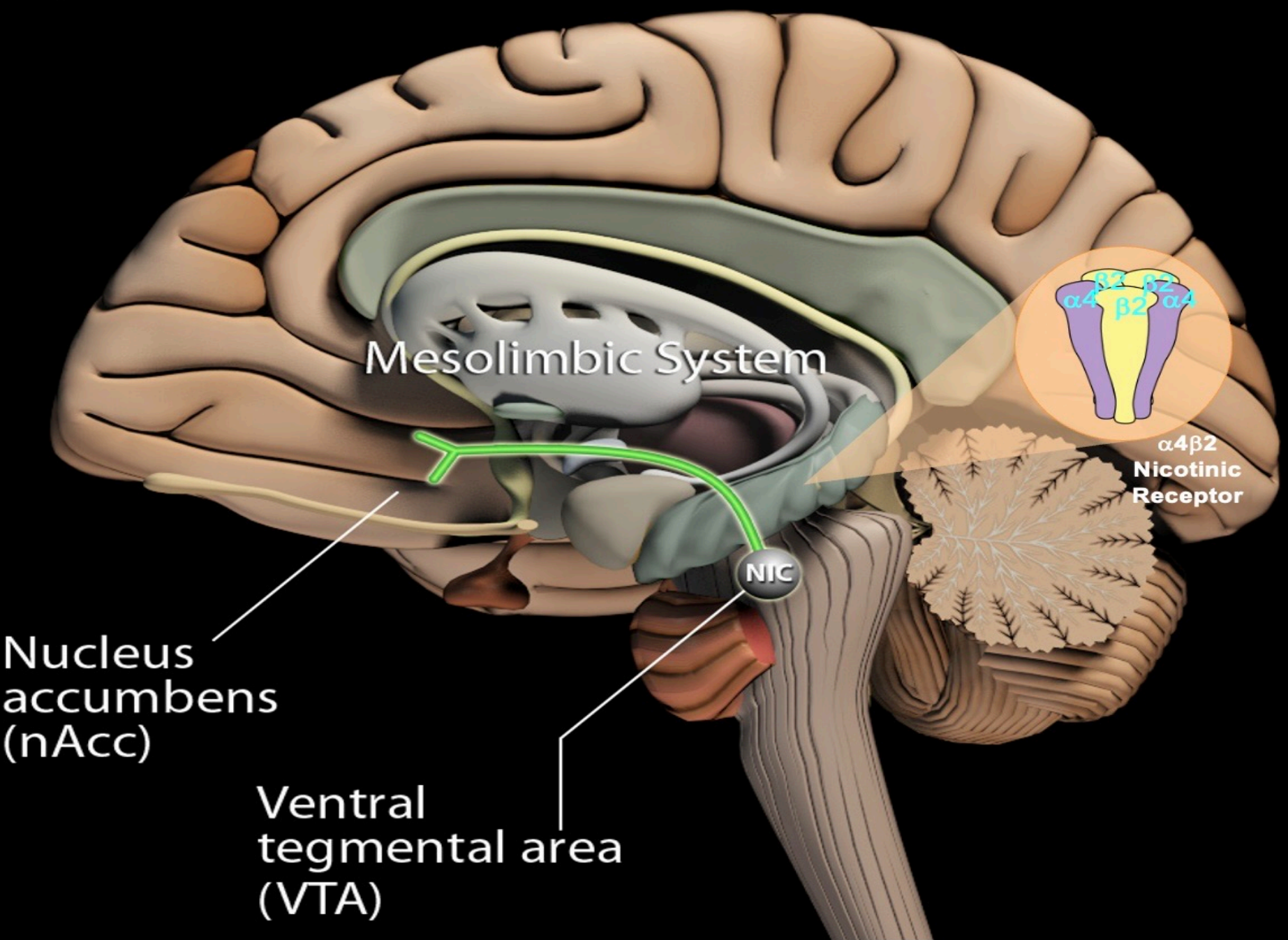


- 8. Recurrent use in situations in which it is **physically hazardous**.
- 9. Tobacco use is continued despite knowledge of having **persistent or recurrent physical or psychological problems...**

DEPENDENCE



- 10. **Tolerance**
- 11. **Withdrawal**

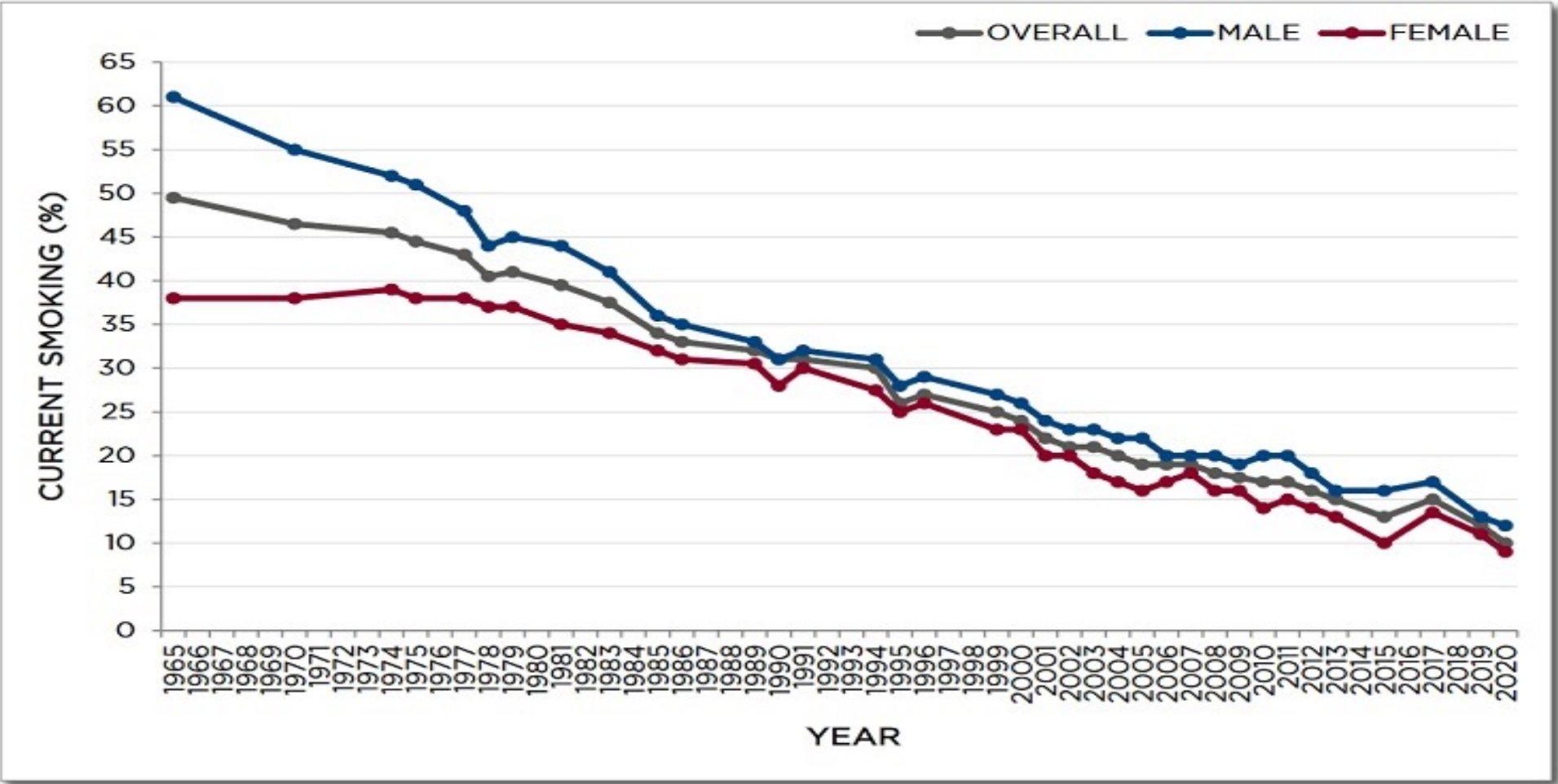


1

Highlight groups that are disproportionately affected by tobacco

camh

Canadian Smoking Prevalence Rates: 1965-2020



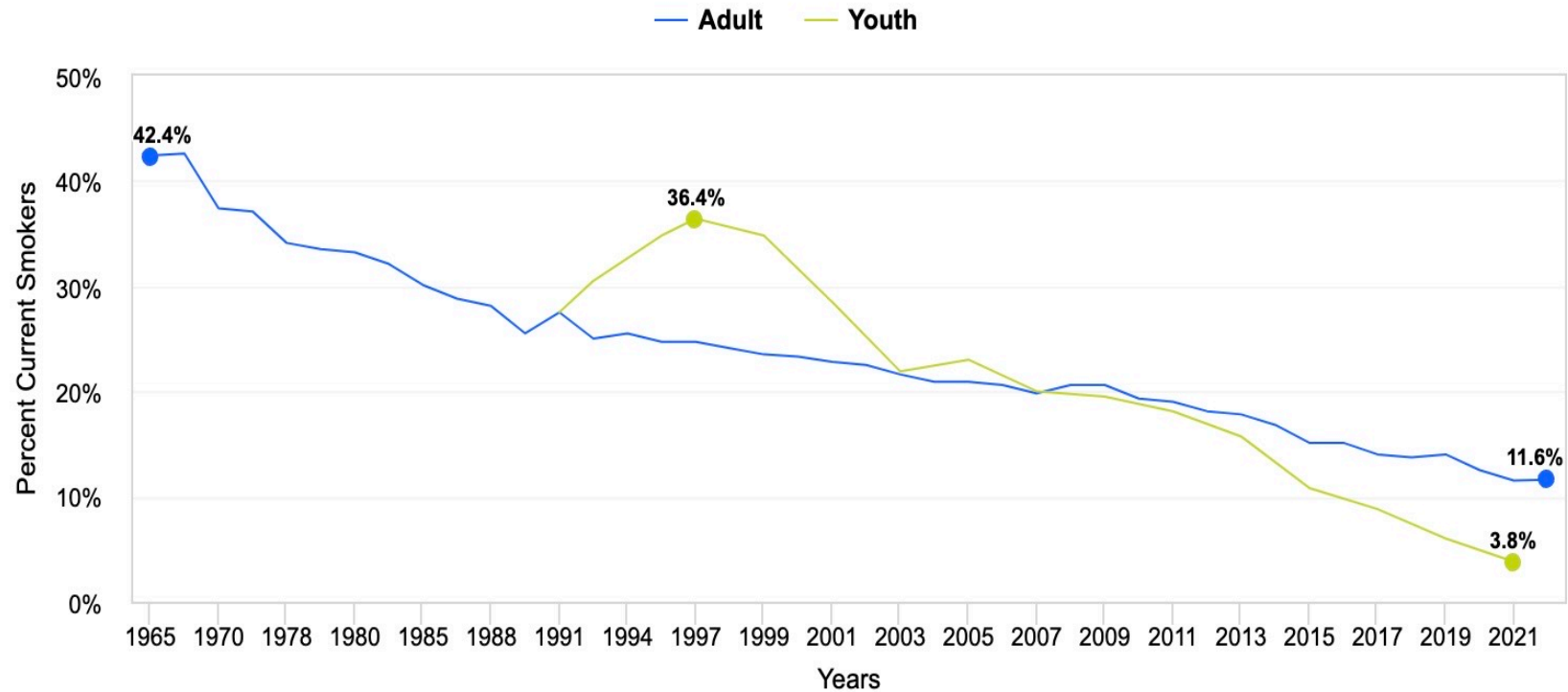
*INCLUDES DAILY AND NON-DAILY SMOKERS

DATA SOURCES: 1965-1986: A CRITICAL REVIEW OF CANADIAN SURVEY DATA ON TOBACCO USE, ATTITUDES AND KNOWLEDGE (HEALTH AND WELFARE CANADA, 1988); 1989-1989: SMOKING BEHAVIOUR OF CANADIANS: A NATIONAL ALCOHOL AND OTHER DRUGS SURVEY REPORT, 1989 (HEALTH AND WELFARE CANADA, 1992); 1990: CANADA'S HEALTH PROMOTION SURVEY 1990: TECHNICAL REPORT (HEALTH AND WELFARE CANADA, 1993); 1991: HEALTH STATUS OF CANADIANS: REPORT OF THE 1991 GENERAL SOCIAL SURVEY (STATISTICS CANADA); 1994: NATIONAL POPULATION HEALTH SURVEY (STATISTICS CANADA); 1995, 1996: GENERAL SOCIAL SURVEY (STATISTICS CANADA) [ALL AS QUOTED IN: PHYSICIANS FOR A SMOKEFREE CANADA, SMOKING IN CANADA, 2008]; 1999-2012: CANADIAN TOBACCO USE MONITORING SURVEY (HEALTH CANADA); 2013, 2015, 2017: CANADIAN TOBACCO, ALCOHOL AND DRUGS SURVEY (HEALTH CANADA); 2019, 2020: CANADIAN TOBACCO AND NICOTINE SURVEY (HEALTH CANADA).

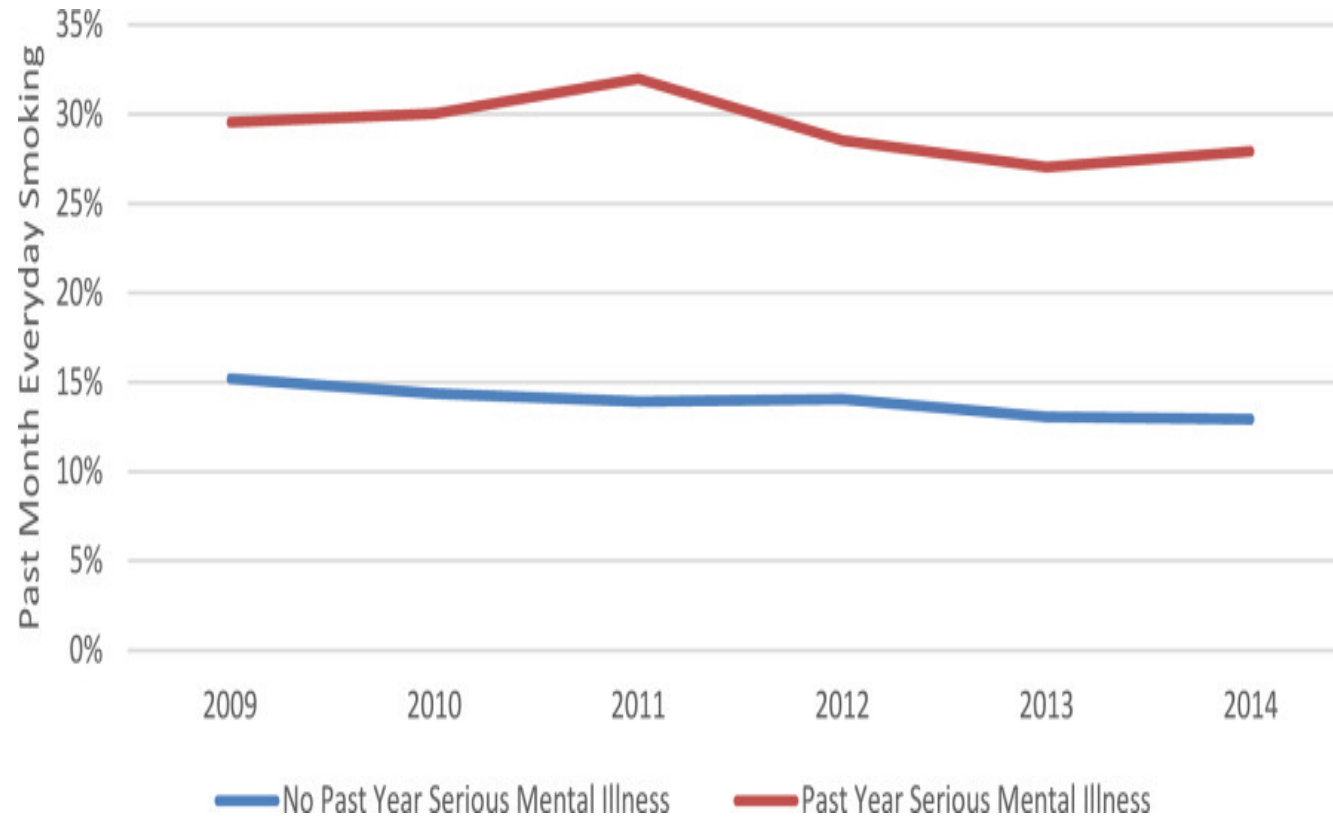
United States Smoking Prevalence Rates: 1965-2021

Cigarette smoking rates have fallen significantly for both youths and adults

American Lung Association analysis of CDC data: NHIS 1965-2022; YRBSS 1995-2021.

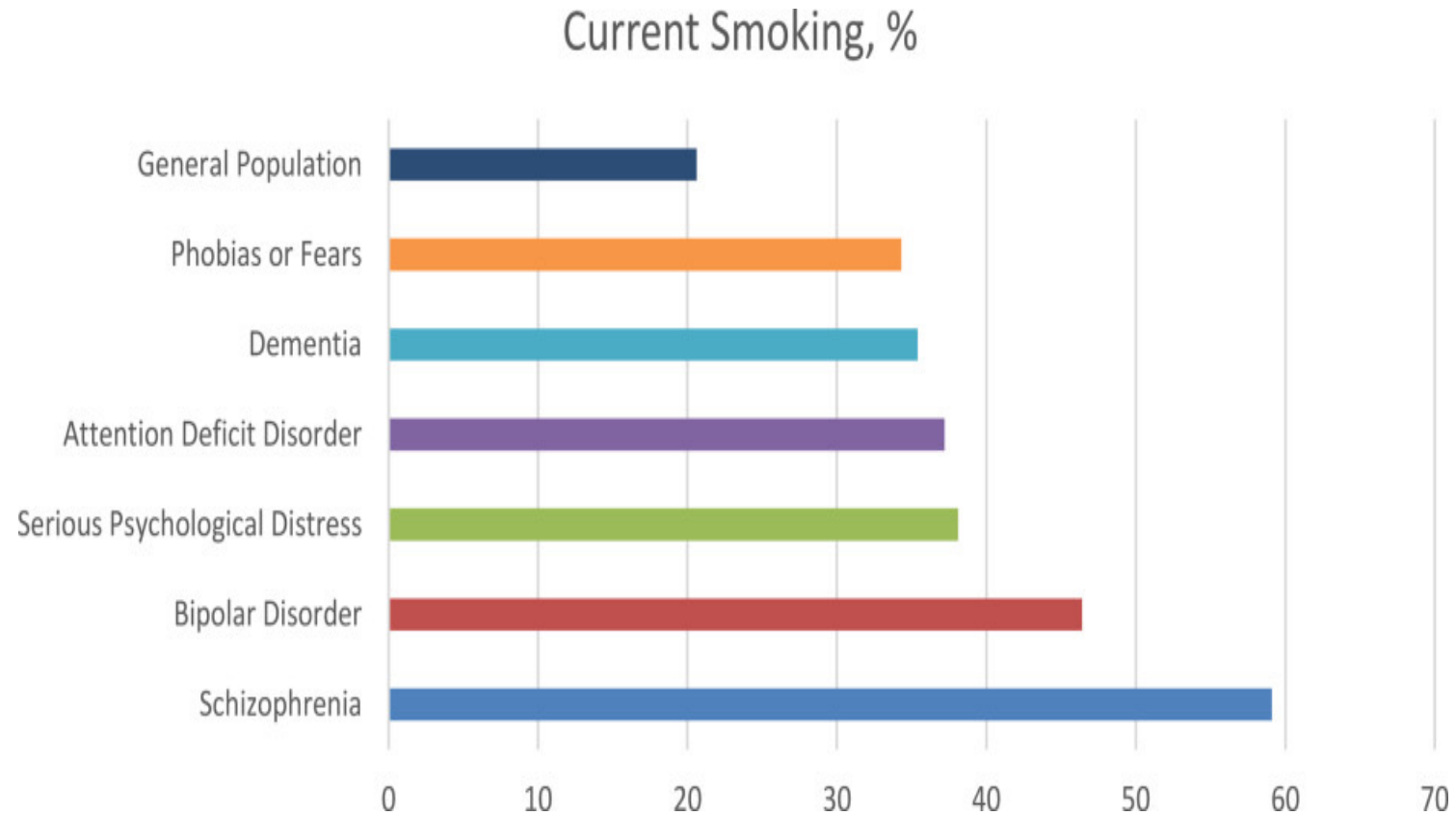


Disparities in adult cigarette smoking prevalence (United States)



Current Cigarette Smoking by Serious Mental Illness Status (National Survey on Drug Use and Health, 2009-2014)

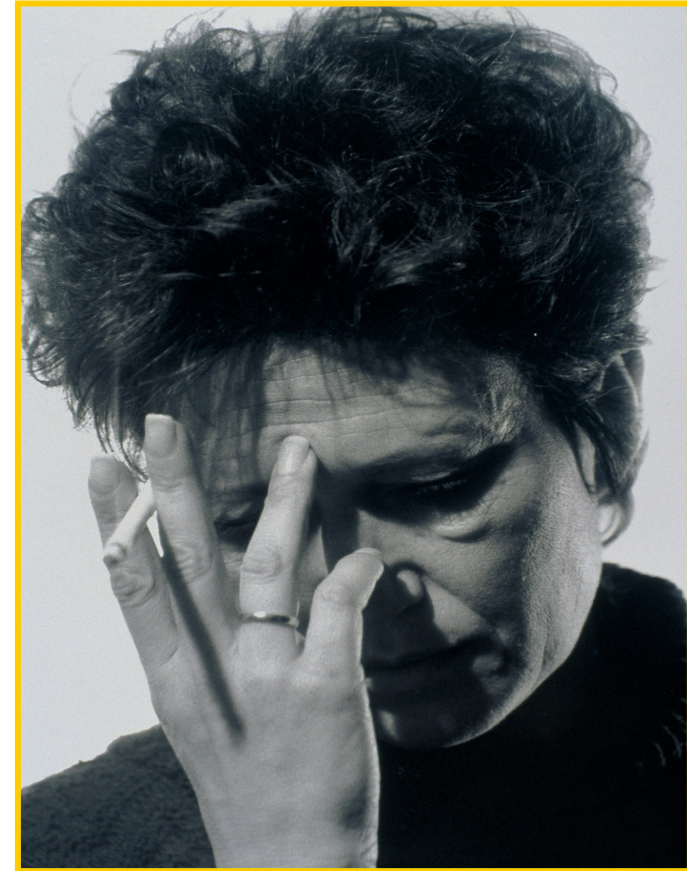
Disparities in adult cigarette smoking prevalence (United States)



Smoking Rates for Persons With Lifetime Mental Illness (National Health Interview Survey, 2007)

Smoking and Schizophrenia: Patient Perceived Benefits

- *Improve psychiatric symptoms?*
 - *Improve cognitive functioning?*
 - *Reduce medication side effects*
 - *“self-medication hypothesis”*
-
- *“shared genetic vulnerability hypothesis”*
 - *Mental Health Service culture?*



Association Between Smoking Behavior and Cognitive Functioning in Patients With Psychosis, Siblings, and Healthy Control Subjects: Results From a Prospective 6-Year Follow-Up Study. Vermeulen JM et al. Am J Psychiatry. 2018 Nov 1

Williams et al. Addict Behav. 2004;29:1067-1083;

High Prevalence Groups

The lower a group's income, education, employment status, or job skill level, the higher its rate of smoking.

Prevalence of smoking among Canadian adults is:

3.9x
HIGHER

for those who **did not complete high school** than for university graduates

2.6x
HIGHER

for **unskilled workers** than for those in professional occupations

1.9x
HIGHER

for those in the **lowest income group** than for those in the highest income group

Smoking is

2.4x
HIGHER

among Inuit

1.9x
HIGHER

among First Nations living off reserve

1.7x
HIGHER

among Métis

than among non-Indigenous adults

Inequities experienced by First Nations, Inuit and Métis populations are a direct result of colonial policies and practices that included massive forced relocation, loss of lands, creation of the reserve system, banning of Indigenous languages and cultural practices, and creation of the residential school system. Unaddressed intergenerational trauma adds to the ongoing challenges faced by Indigenous peoples.



Why aren't vulnerable populations benefitting?

Intervention generated inequities

- *policy has led to the concentration of smoking in those who can least afford to smoke (Bell et al 2010)*
- *marginalization and further stigma (Chapman and Freeman 2008; Bayer and Stuber 2005)*
- *Non-response from the health care system- tailored interventions, lack of coverage of medications, few integrated programs, staff also smoke at high rates*
- *Research into effective interventions are few*

2

Consider the rationale for treating tobacco use disorder in these groups

Burden of illness

- 1. Smoking prevalence is high in vulnerable populations (Drope et al 2018)*
- 2. People with Severe Mental Illness die 15-25 years earlier than the general population mostly due to the effects of smoking (Gatov et al 2017)*
- 3. Want to quit, can quit and there are ways to help!*
- 4. Quitting smoking improves mental health (Taylor et al 2021), increases abstinence from other substances (McKelvey 2017)*

MHA Patients Want To Quit.....

- Most smokers (80%) in a MMT population were “somewhat” or “very” interested in quitting.*
- In an outpatient program for “alcohol abusers”, more than 75% were willing to consider stopping smoking.*
- In substance dependent in-patients, 77% were “certain” they wanted to quit smoking.*
- In SCZ, the majority were interested in attending a smoking cessation group and appeared to be motivated.*

Ellingstad TP et al (1999) Alcohol Abusers Who Want To Quit Smoking. Drug and Alcohol Dependence.

Richter KP et al. (2001) Tobacco Use and Quit Attempts Amongst Methadone Clients. AJPH

Irving, L M et al. (1994). Drug and alcohol inpatients' attitudes about smoking cessation. Journal of Substance Abuse

Addington J et al (1997) Readiness to stop smoking in schizophrenia. Can J Psychiatry

Changes in mental health after smoking cessation: systematic review

*Investigate change in mental health after cessation v continuing to smoke
Studies that assessed mental health before and after cessation*

“Smoking cessation is associated with REDUCED depression, anxiety and stress...IMPROVED positive mood and quality of life...effect equal for those with psychiatric disorders as without...”





**Canadian Action Network for the
Advancement, Dissemination and Adoption
of Practice-Informed Tobacco Treatment**

Dr. Peter Selby, Principal Investigator

www.can-adaptt.net

CAN-ADAPTT. (2008). Canadian Smoking Cessation Clinical Practice Guideline. Toronto, Canada: Canadian Action Network for the Advancement, Dissemination and Adoption of Practice-informed Tobacco Treatment, Centre for Addiction and Mental Health.

Summary Statement #1 –

**Health care providers should screen persons with mental illness and/or addictions for tobacco use.
GRADE*: 1A**

Summary Statement #2 –

**Health care providers should offer counselling and pharmacotherapy treatment to persons who smoke and have a mental illness and/or addiction to other substances.
GRADE*: 1A**

Summary Statement #3 –

**While reducing smoking or abstaining (quitting), health care providers should monitor the patients'/clients' psychiatric condition(s) (mental health status and/or other addiction(s)). Medication dosage should be monitored and adjusted as necessary.
GRADE*:1A**

US PHS Guideline – Treating Tobacco Use and Dependence: 2008 Update

1. *Recognize tobacco dependence as a chronic disease*
 - *Repeated intervention and multiple quit attempts may be necessary*
2. *Document smoking status and willingness to quit on a regular basis*
3. **Support every patient identified as willing to quit with counselling and medications**
 - **Tobacco dependence treatments work across a broad range of populations**
4. *Understand that even brief tobacco dependence treatment can be effective*
5. *Use individual, group, and telephone counselling*
 - *More intense treatment increases effectiveness*
 - *Practical tips on how to quit and providing social support as part of treatment improves success rates*



Management of Smoking in People with Psychiatric Disorders and SUD

Limited efforts to treat this population

Providers rarely screen and mostly not trained

Needs to be seen as a “co-occurring” disorder

Integrated, intensive treatment



3

Examine contemporary approaches to clinical smoking cessation, particularly in MHA populations

Case Study: 53 y/o, male, single, shared accommodation, unemployed

Current Diagnoses

- COPD-moderate x 2 years
- Chronic schizophrenia x 31 years.
- Childhood adverse events (father was alcoholic, physical abuse)

Smoking Hx

- Initiated Age 11, **40 cpd**.
- **TFC <5 minutes** (smokes indoors). House mate smokes. Quit 3 weeks when hospitalized for a psychotic episode 4 years ago (NRT), relapse on discharge.

Previous attempts/medications

- “Switched” to vaping and is now a “dual user”. Has tried NRT (standard dose) and bupropion for maximum 3 weeks (with minimal success).

Other substance use

- 5 cups of coffee/day
- Daily THC (smoked) 0.5g/day
- 2 standard units of wine daily (up to 5 on weekend “binges”)



Case Study

Current medications

- 1) Clozapine 300mg
- 2) Trazadone 50mg HS
- 3) Albuterol prn
- 4) Fluticasone and salmeterol combination powder inhaled

Current mental status is stable

States that it is too hard to quit and nothing works and not prepared to try.....

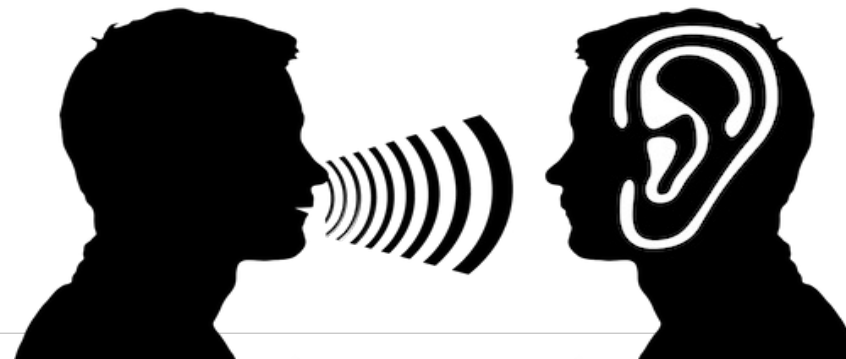


Patient is ambivalent!

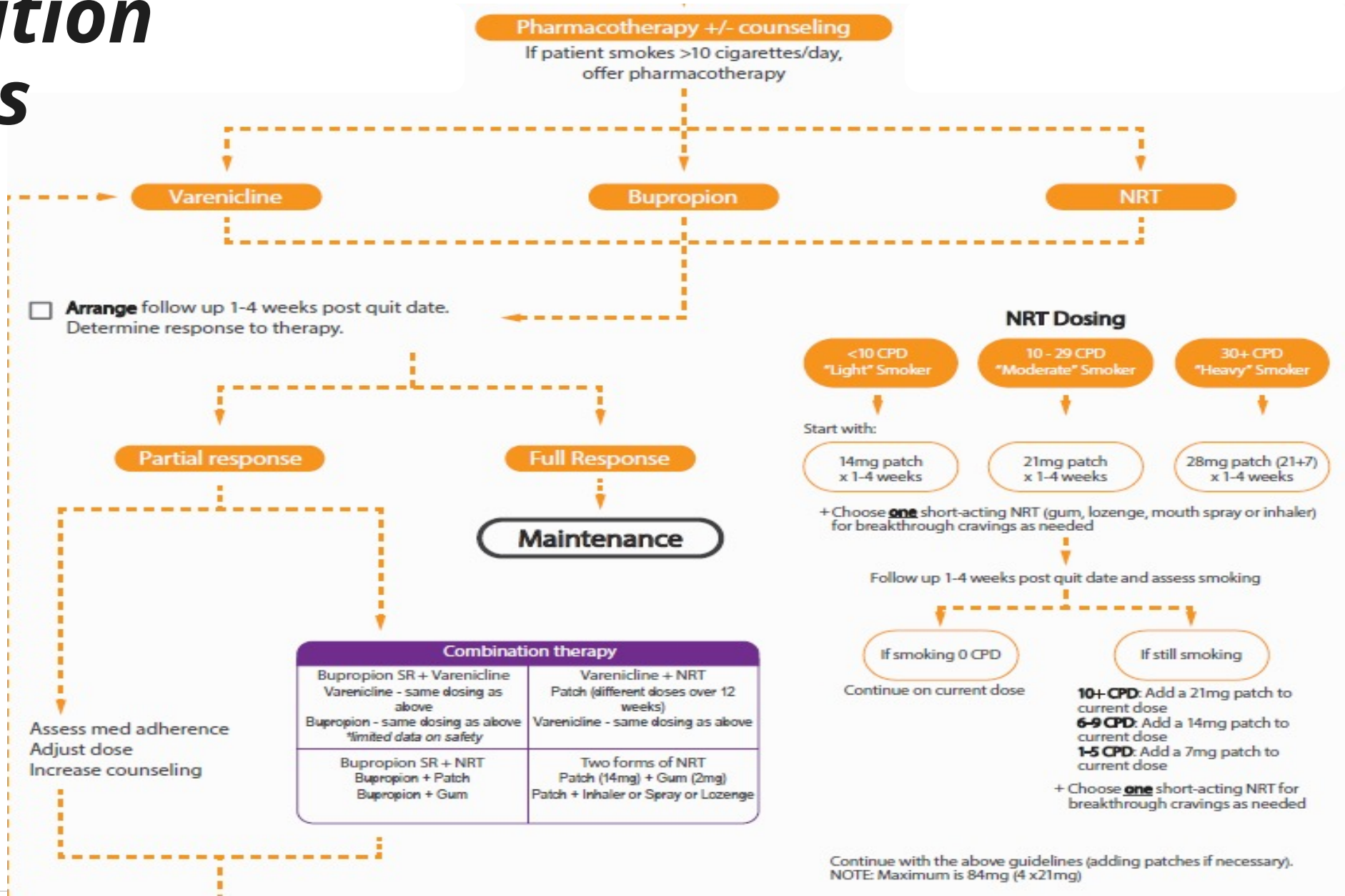
Use MI to reduce ambivalence and increase readiness

***Encouraged to
make home
smoke-free***

***Begin tracking
smoking***



Medication Options



Efficacy of Cessation Therapies

NRT (combination) *3.6 times more likely to quit**

Varenicline *3.1 times more likely to quit**

Bupropion *2.0 times more likely to quit**

NRT (patch alone) *1.9 times more likely to quit**

**compared to placebo*



Other Combinations

Varenicline + NRT patch

n=435, multi-centre, RCT

Varenicline/Nicotine patch v Varenicline

12 weeks Rx + 12 weeks f/u

*Continuous abstinence rates week 9-12: **55.4% v 40.9%** (OR 1.85)*

No difference in adverse events (except skin rash)

Conclusions and Relevance: *Varenicline in combination with NRT was more effective than varenicline alone at achieving tobacco abstinence at 12 weeks (end of treatment) and at 6 months*

Koegelenberg CF et al. Efficacy of varenicline combined with nicotine replacement therapy vs varenicline alone for smoking cessation: a randomized clinical trial.

JAMA. 2014 Jul;312(2):155-61.



Neuropsychiatric safety and efficacy of varenicline, bupropion, and nicotine patch in smokers with and without psychiatric disorders (EAGLES): a double-blind, randomised, placebo-controlled clinical trial.

Robert M Anthenelli, Neal L Benowitz, Robert West, Lisa St Aubin, Thomas McRae, David Lawrence, John Ascher, Cristina Russ, Alok Krishen, A Eden Evins

Lancet 2016; 387(10037):2507-20.

EAGLES

Population	Intervention 12 week treatment – 12 week non treatment	% Abstinence Rate + OR (95%CI) (week 9-12)	% Abstinence Rate + OR (95% CI) (week 9-24)	What does this <u>mean?</u>
<ul style="list-style-type: none"> - Smokers age 18-75 years - DSM IV criteria for mood disorder - > 10 cpd 	Varenicline 1 mg twice/day (n = 1026) vs Placebo (n = 1015)	29.2% vs 11.4 % 3.24* (2.56 – 4.11)	18.3% vs 8.3% 2.50* (1.90 – 3.29)	<p>Smokers with psychiatric disorder treated with varenicline, bupropion and NRT show significantly greater odds of continuous abstinence compared to placebo group.</p>
	Bupropion 150 mg twice/day (n = 1017) vs Placebo (n = 1015)	19.3% vs 11.4% 1.87* (1.46 – 2.39)	13.7% vs 8.3% 1.77* (1.33 – 2.36)	
	NRT 21 mg per day (n = 1016) vs Placebo (n = 1015)	20.4% vs 11.4% 2.00* (1.56 – 2.55)	13.0% vs 8.3% 1.65* (1.24 – 2.20)	

Practical Approaches to Cessation Success

Make “best practice” use of cessation pharmacotherapy

- Patient preference may assist in identifying an agent*
- Be prepared to titrate dose and duration of therapy to enhance likelihood of success*
- Combination therapy may be helpful for some smokers*
- A “Reduce to Quit” approach can be helpful.....*

An Alternative Approach To Cessation: “Reduce to Quit”

Reducing cigarettes pre-quit day, and abrupt cessation approaches produce similar quit rates

Patients should be given the choice to quit via either approach

Reduction approaches can include the use of pre-quit NRT

Cigarette smoking and concurrent NRT does not pose increased risk

Pharmacotherapy & Behavioural Support



- ***Setting a Quit Date***
 - *People with a TQD are >10% more likely of being quit at 6mos follow-up*
- ***Encourage behavioural interventions (regardless of which medication they are using)***

Selby, P et al. (2014)

Drug Interactions with Tobacco Smoke

The majority of PK interactions with smoking are the result of induction of hepatic cytochrome P450 enzymes (primarily CYP1A2)

Pharmacokinetic Interactions

Alprazolam (Xanax)	Conflicting data on significance, but possible ↓ plasma concentrations (up to 50%); ↓ half life (35%)
Caffeine	↑ Metabolism (induction of CYP1A2); ↑ clearance (56%). Caffeine levels like ↑ after cessation
Clopidogrel (Plavix)	↑ Metabolism (induction of CYP1A2) of clopidogrel to its active metabolite. Clopidogrel's effects enhanced in smokers (≥10 cigarettes/day only): significant ↑ platelet inhibition, ↓ platelet aggregation, improved clinical outcomes in ST-segment elevation myocardial infarction
Clozapine (Clozaril)	↑ Metabolism (induction of CYP1A2); ↓ plasma concentrations (18%) ↑ Levels upon cessation may occur; closely monitor drug levels and reduce dose as required to avoid toxicity.
Insulin, subcutaneous	Possible ↓ insulin absorption secondary to peripheral vasoconstriction; smoking may cause release of endogenous substances that cause insulin resistance. PK & PD interactions likely not clinically significant; smokers may need ↑ doses
Olanzapine (Zyprexa)	↑ Metabolism (induction of CYP1A2); ↑ clearance (98%); ↓ serum concentrations (12%) Dosage modifications not routinely recommended but smokers may need ↑ dosages.

Smoking, Mental Illness and Public Health

- *The leading preventable cause of death worldwide and **disproportionately affects MHA populations***
- *MHA providers have historically not addressed this issue due to the **FALSE** belief that outcomes are compromised*
- *Efficacious **counselling and pharmacotherapy** treatments are available*
- *Better **coverage** of these treatments is required*
- ***Sustained efforts of clinicians, policy makers and researchers required to address tobacco caused harms***



ACKNOWLEDGEMENTS: Nicotine Dependence Clinic, CAMH

Treatment Programs



Smoking Cessation Clinic

The Smoking Cessation Clinic supports PHC and VCH patients and clients in reducing or quitting smoking as part of their health care journey.



Patients are invited to self-refer by emailing jrcinfo@providencehealth.bc.ca or phoning 604-806-8060 ext 2.

Location

Room B512
John Ruedy Clinic (JRC)
5th Floor Burrard Building
St. Paul's Hospital

Hours

9:00 AM - 3:30 PM
Wednesdays and
Thursdays



Take control of your tobacco use

Free drop-in smoking cessation group

- **Dates:** Starting Oct. 19, every Wednesday from 3:30 p.m. – 4:30 p.m.
- **Location:** Room 4166, Gordon and Leslie Diamond Health Care Centre, Vancouver General Hospital, 2775 Laurel Street, Vancouver
- **Further information:** Email: helptoquit@VCH.ca or call: 604.875.5052



Vaping, Nicotine Pouches....



Questions & Discussion



ACKNOWLEDGEMENTS: Nicotine Dependence Clinic, CAMH