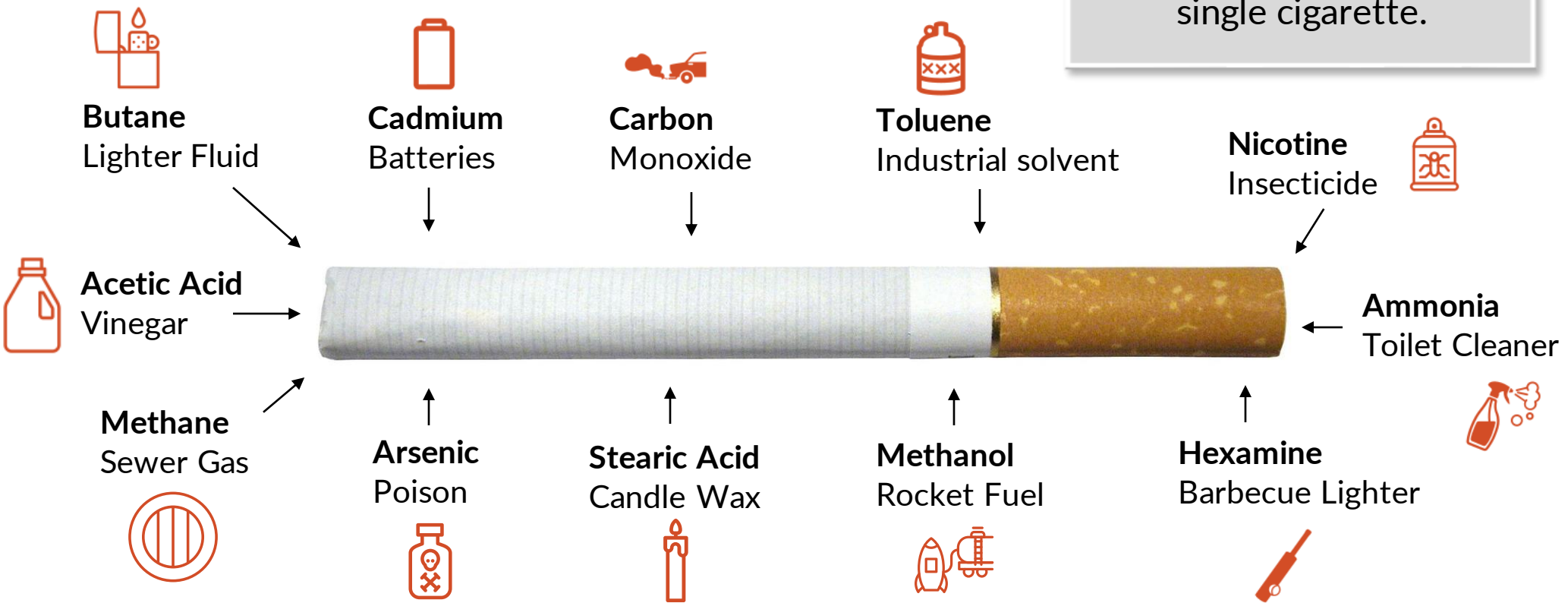


What's in a Cigarette?

More than 7,000 chemicals and 70 carcinogens in a single cigarette.



Anatomy of an E-Cigarette

Smoke without Fire

Sucking on an e-cigarette produces a cloud of nicotine-carrying vapor with none of the toxic by-products of burning tobacco.

LED lights up when the smoker draws on the cigarette

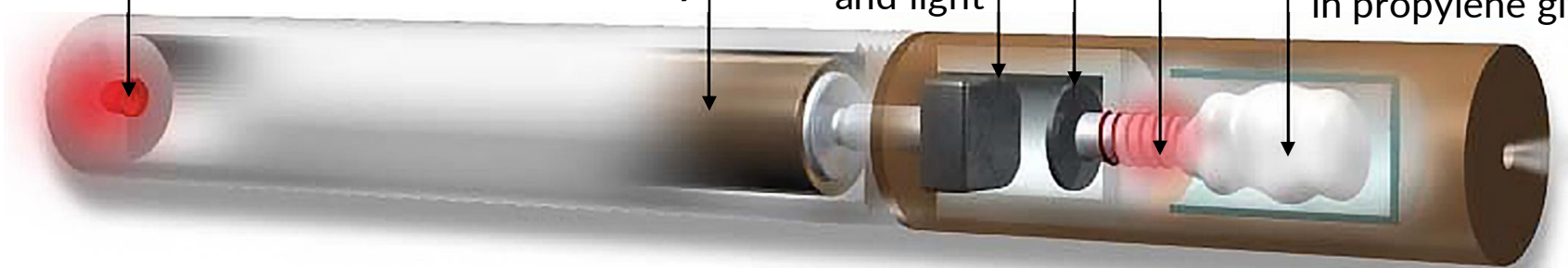
Sensor detects when smoker take a drag

Heater vaporizes nicotine

Microprocessor controls heater and light

Cartridge hold nicotine dissolved in propylene glycol

Battery



<https://www.businessinsider.com.au/e-cigarette-health-effects-2013-5>

Cigarettes vs E-Cigarettes

Comparison of Toxicants

Toxic Compound	Conventional Cigarette (μg in mainstream smoke)	E-cigarette (μg per 15 puffs)	Average Ratio (Conventional Cigarettes vs E-Cigarette)
Formaldehyde	1.6 - 52	0.20 - 5.61	9
Acetaldehyde	52 - 140	0.11 - 1.36	450
Acrolein	2.4 - 62	0.07 - 4.19	15
Toluene	8.3 - 70	0.02 - 0.63	120
NNN	0.005 - 0.19	0.00008 - 0.00043	380
NNK	0.012 - 0.11	0.0001 - 0.00283	40

NNN: N'-nitrosornicotine

NNK: 4-(methylnitrosoamino)-1-(3-pirydy)-l-butanone

Goniewicz 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.
Opioids (propoxyphene, pentazocine)	Smokers may need ↑ opioid dosages for pain relief.

Motivational Interviewing

“ Motivational Interviewing is about arranging conversations so that people talk themselves into change, based on their values and interests.

Miller and Rollnick, *Motivational Interviewing: Helping People Change*, 3rd Edition, 2013 ”

Motivational Interviewing:

- is a guiding style of communication.
- empowers people to change through their own meaning, importance, and capacity to change.
- honors a client's autonomy and facilitates the natural process of change.

Motivational Interviewing is particularly useful when:

- Ambivalence is high
- Confidence is low
- Desire is low
- Importance is low

Resource: **Motivational Interviewing Network of Trainers (MINT)**

Weblink: <https://motivationalinterviewing.org>

How Can It Help?

Motivational interviewing can be used to help tobacco-dependent clients move towards readiness to change. When applying motivational interviewing techniques, the goal should not be to get the client to quit using tobacco, but rather move them towards being ready to make a behavior change.

Learn More!

Learn more about Motivational Interviewing by taking a course that fits your skill level and needs. Scan the QR codes to see what's available!

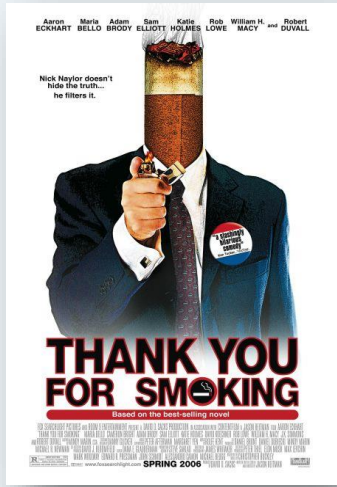


ASAM Course Offerings



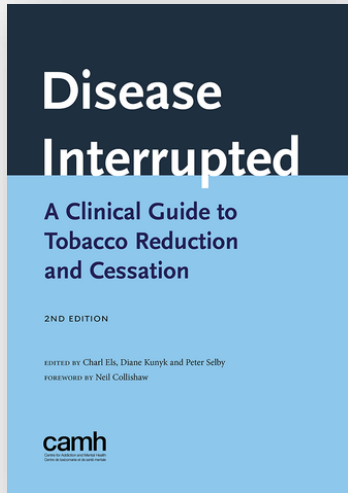
MINT Course Offerings

Additional Resources



THANK YOU FOR SMOKING

Movie synopsis: Nick Naylor (Aaron Eckhart), a lobbyist for big tobacco, finds it difficult to balance his duties defending the dangerous substance with those of being a good role model for his young son. Nick's life gets even more complicated when a liberal senator mounts an anti-smoking campaign that he must counter. Based on the novel by Christopher Buckley.



DISEASE INTERRUPTED

A Clinical Guide to Tobacco Reduction and Cessation (2nd ed.)
Edited by Charl Els, Diane Kunyk and Peter Selby
Foreword by Neil Collishaw

Disease Interrupted supports health care practitioners in delivering tobacco cessation interventions to help people overcome the harmful, often devastating, effects of tobacco use and addiction.



ANATOMY OF A CIGARETTE

by Lexi Krock
PBS
NOVA online



TOBACCO ADDICTION

Authors: Peter Selby, M.B., B.S., Laurie Zawertailo, Ph.D.
The New England Journal of Medicine 2022; 387:345-354



Smoking addiction causes substantial illness and death; morbidity and mortality are markedly reduced with cessation. Effective treatments for smoking addiction include medications and counseling.

TREATMENT OF TOBACCO USE AND DEPENDENCE

Author: Nancy A. Rigotti, M.D.
The New England Journal of Medicine 2002; 346:506-512

A 66-year-old woman with stable angina and a history of depression smokes 25 cigarettes daily. She would like to stop smoking but is concerned about weight gain. She has tried to quit several times on her own without success. What should her physician recommend?



VAPING CESSATION GUIDANCE RESOURCES
camh: The Centre for Addiction and Mental Health

