



Vaping

(Electronic Cigarette Use)

The Truth

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m.o.v.e.
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The Tobacco Epidemic

"It's estimated that smoking is responsible for **30% of all cancer deaths** in Canada and is related to more than **85% of lung cancer cases.**"

(Canadian Cancer Society)

"Smoking contributes to the buildup of **plaque** in your **arteries**, reduces the **oxygen** in your **blood pressure** and makes your **heart work harder.**"

(Heart and Stroke Foundation of Canada)

"The most **common addiction** in Canada is **smoking.**"

(Public Health Agency of Canada)

All people who **smoke** are at increased risk for:

- ◆ Problems with their **heart** and blood vessels
- ◆ Certain types of **cancers**
- ◆ **Lung** and respiratory problems
- ◆ Other **health** issues
- ◆ Premature **death**

(Government of Canada)

Tobacco smoking is the biggest avoidable cause of disease and premature death in Canada³⁶. Just over 5.7 million Canadians smoke⁵². Every year 37,000 Canadians die from smoking; that's 101 people dead from smoking every day³²! The Centers for Disease Control and Prevention states, "For every person who dies



from a smoking related disease, about 30 more people suffer with at least one serious illness from smoking"³⁵. That's about 1.1 million Canadians or every person in the city of Edmonton³³ suffering with heart disease, stroke, COPD or cancer! The social cost to

the taxpayer was \$17 billion in 2002¹⁸ and yet governments collect only \$7.3 billion (2013) in tobacco taxes³⁴. But no one can put the price on the health destroying effects of smoking-related illnesses: years of decline and suffering, for the smoker and their loved ones. We have long known that smokers smoke for the nicotine but die from inhaling the

thousands of chemicals within the smoke from burning tobacco²³. We also know that once hooked, smokers have a less than 10% success at quitting¹³. Canadians deserve access to accurate information on every method to quit or reduce tobacco smoking.

Why is tobacco smoking so addictive?

The two aspects to tobacco addiction: nicotine and behaviour

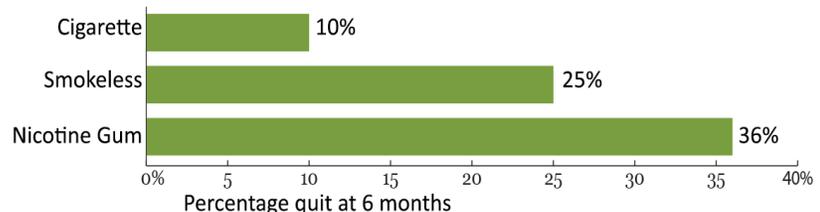
600 ingredients are added to tobacco cigarettes to enhance nicotine delivery and effects³⁷. Ammonium salts increase the amount of nicotine absorbed into the bloodstream; menthol numbs the lungs as well as eucalyptol and theobromine chemically stretch the passageway to the lungs to get more smoke into the lungs³⁸. Then, lactones reduce the body's ability to get rid of nicotine; and acetaldehyde acts as an antidepressant in the brain³⁸. Tobacco is *more addictive* than just nicotine on its own¹.

This chart shows the success rates of people trying to quit various sources of nicotine¹. The source of pure, pharmaceutical

grade nicotine found in nicotine gum is the least addictive because it is the easiest to quit.

The other addictive aspect of smoking is the repeated physical habit¹². The ritual of bringing a smoke to the mouth; tasting the smoke with a drag; feeling sensations in the throat and lungs on a big inhale; and seeing the visible large exhale are repeated 240 times a day for a pack-a-day smoker¹². That's 87,600 times a year! This physical habit is coupled with a hard hit of nicotine to the brain. Together, the nicotine addiction and physical habit make smoking one of the hardest things to quit¹.

Ref. 1. The addiction continuum of tobacco and nicotine products. The Success of volunteers taking placebo medications at 6 months, in quitting cigarettes, smokeless tobacco and nicotine gum.



The Vaporizer or 'Vape' (Electronic Cigarette)

What is it and what is the liquid inside?

Electronic cigarettes or 'vaporizers' are very simple electronic devices that use a rechargeable battery to power a heating element (coil) that heats the 'e-liquid' into a non-toxic vapor to be inhaled. An 'atomizer' holds the e-liquid in a 'tank' and wicks sit in the e-liquid to draw the right amount into the coil, to produce vapor. The vapor travels through the inner tube and is drawn through the mouthpiece. There is a computer chip in the battery to ensure power to the coil will not exceed 5-10 seconds.

The evolving vaporizer technology has been completely driven by consumer demand²¹. In the photo below: on the upper right is a 1st generation disposable cig-a-like and in the middle is a cartridge style. On the left is the 2nd generation style: The vaporizer or 'vape pen' or just 'vape'.

E-liquid has 4 just ingredients that have been approved for inhalation by Health Canada (HC): propylene glycol (PG), glycerin, nicotine and flavours⁵. The same ingredients are found in nicotine sprays:



Only 3.7% of vapers use the cig-a-likes⁶. Vape pens produce more vapor; deliver nicotine more effectively; have longer lasting batteries; hold more e-liquid; and come in many styles that allow the smoker to find the right one for them¹³. E-liquid comes in hundreds of flavours for taste preferences and in various strengths of nicotine allowing the 'vaper' to wean off⁶.

PG is used in medical inhalers, nebulizers, hospital air sanitizers and injectable medicines⁴. It has been extensively tested and is safe for inhalation⁴¹. Glycerin and flavours are in the cig-a-likes without nicotine approved for sale in Canadian pharmacies.

Nicorette Quickmist vs. Electronic Cigarette E-Liquid

Nicorette Quickmist	Electronic Cigarette
Propylene glycol	Propylene glycol
Anhydrous ethanol	
Trometamol	
Poloxamer 407	
Glycerol	Vegetable Glycerin
Sodium hydrogen carbonate	
Levomenthol	
Mint flavour	Flavoring
Cooling flavour	
Sucralose	
Acesulfame potassium	
Hydrochloric acid	
Purified water	
Nicotine	Nicotine

Nicotine

Nicotine is an addictive mild stimulant¹. It elevates mood, stimulates cognitive function and increases energy¹. Nicotine is one of the safest medicines and is used to treat neurological disorders¹. Most people have it in their bodies because it is in foods such as tomatoes, potatoes and peppers²⁰. The amounts in foods are too low to cause any effect²⁰. As with caffeine, water and Tylenol, massive doses of anything including nicotine can be toxic (1mg of nicotine per kilogram of body weight). The amount of nicotine found in vapor is 1/10 of what is found in tobacco smoke²⁴.

"More subjects would use the **e-cigarette** to make a quit attempt (**76%**) than the **inhaler** (**24%**)"

(E-cigarette versus nicotine inhaler: Comparing the perceptions and experiences of inhaled nicotine devices. (2014) Steinberg, Zimmermann, Delnevo, Lewis, Shukla, Coups, & Foulds)

"People **smoke** for **nicotine** but they **die** from the **tar**."

(Professor Michael Russell, 1976)

"The **burden of proof** is on the regulatory agency to **demonstrate** that the **product is unreasonably dangerous** for its intended use...**electronic cigarette prohibition will do harm** to hundreds of thousands of vapers already using electronic cigarettes in place of tobacco ones - a **clear violation of no maleficence**."

(Electronic cigarettes as a harm reduction strategy for tobacco control: A step forward or past mistakes? (2010) Cahn, & Seigel)

Vaping: What the Science Tells Us

Are there risks to the vaper?

“Current state of knowledge about chemistry of liquids and aerosols associated with electronic cigarettes indicates that there is **no evidence that vaping produces inhalable exposures to contaminants** of the aerosol that would warrant health concerns by the **standards** that are used to **ensure safety of workplaces.**”

(Peering through the mist: Systematic review of what the chemistry of contaminants in electronic cigarettes tells us about health risks. (2014) Burstyn)

"The **amount** or dose of a **chemical** entering the body is probably the **single most important factor** which determines whether a chemical will **cause poisoning.**"

(Canadian Centre for Occupational Health and Safety)

"**Risk reduction** of ecigs is at least **95%**, and probably **99%**"

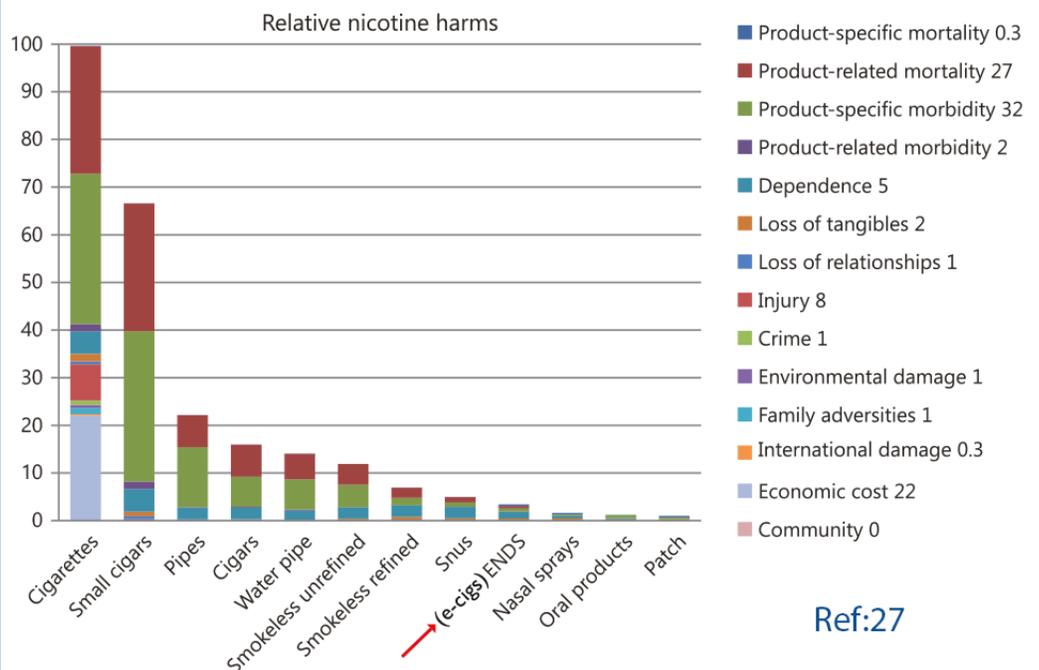
(Professor Hajek)

There have been over 600 published papers on electronic cigarettes⁹. No serious adverse effects have been caused by vaping⁹. Dozens of samples of eliquid and vapor have been studied and analyzed²⁴. The amount of cancer causing chemicals found in *just 2* out of *dozens* of samples of eliquid tested is the same amount found in a nicotine patch⁸. These levels are 500-1400 fold lower than tobacco smoke²⁴.

Ref:8 Maximum tobacco-specific nitrosamine levels^a in various cigarettes and nicotine-delivery products (ng/g, except for nicotine gum and patch that are ng/patch or ng/gum piece)⁶

Product	NNN	NNK	NAT	NAB	Total
Nicorette gum (4 mg) ¹⁸	2.00	ND	ND	ND	2.00
NicoDerm CQ patch (4 mg) ¹⁸	ND	8.00	ND	ND	8.00
Electronic cigarettes ⁶	3.87	1.46	2.16	0.69	8.18
Swedish snus ¹⁸	980	180	790	60	2010
Winston (full) ¹⁸	2200	580	560	25	3365
Newport (full) ¹⁸	1100	830	1900	55	3885
Marlboro (ultra-light) ¹⁸	2900	750	1100	58	4808
Camel (full) ¹⁸	2500	900	1700	91	5191
Marlboro (full) ¹⁸	2900	960	2300	100	6260
Skoal (long cut straight) ¹⁸	4500	470	4100	220	9290

Fourteen types of harm resulting from nicotine products are all factored into this comparison of different sources of nicotine. ‘E-cigs’ are shown to be 96% less harmful than tobacco smokes²⁷.



Ref:27

Vaping: What the Science Tells Us

Are there risks to the vaper?

Heavy metals have been found in some eliquid and in nicotine inhalers but at far lower levels that could cause harm¹⁷. A typical vaper has about 200 daily puffs on a vaporizer¹. For worst case scenario, this chart shows 880 puffs a day; the levels are still low:

HEAVY METALS IN SMOKE AND NICOTINE VAPORS, MEAN CONCENTRATIONS, AND ESTIMATED DAILY EXPOSURE.

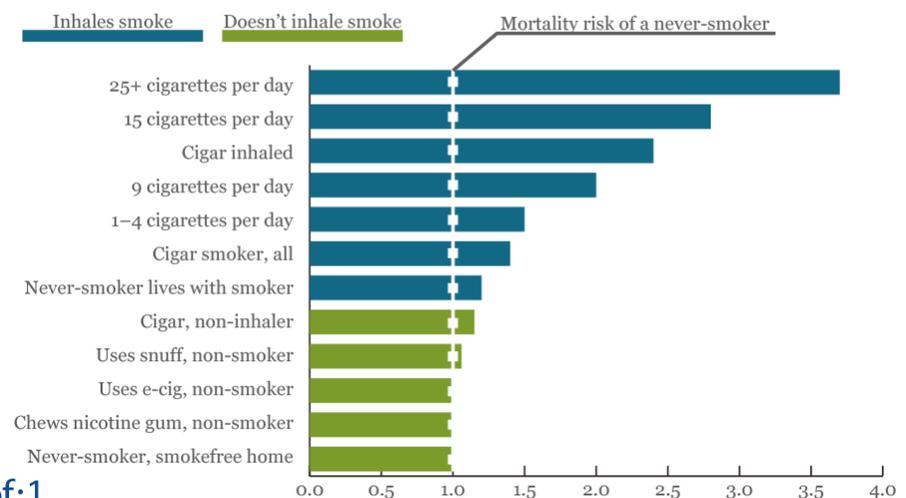
	Cigarette ^{27, 30, 31}	Nicorette nicotine medicinal Inhalator ²⁴	European (12 e-cigarette brands) ²⁴	Unnamed US electronic cigarette brand ²⁸	Daily dose estimate At 880 e-puffs/day	Permitted Daily Exposure ³⁰
	Ng / litre	Ng/litre	Ng/litre	Ng/litre	Ng/day	Ng/day
Cd	160	3	8	NR	400	1500
Chr	0.2-500	NR	NR	14	620	25000
Ni	0, 136, 151	18	18	10	440	1500
Pb	105	4	9	34	1500	5000
Sn	NR	NR	NR	39	1720	NR

NR = not reported. E-cigarette puffs calculated at 50 ml / puff. Sn = tin. Nanogram (ng) =one billionth of a gram.

Ref:1

This chart shows vaping is at the same level of risk of premature death as a non-smoker¹:

CHART 4. THE CONTINUUM OF MORTALITY RISK. RELATIVE RISK OF MORTALITY FROM LIFETIME USE OF VARIOUS TOBACCO AND NICOTINE PRODUCTS, COMPARED TO THE RISK FOR A NEVER SMOKER.



Ref:1

It's not just about what chemicals but how much

The amount of a substance matters when we apply it to health

For decades, scientists have been testing thousands of known substances and have established safe, therapeutic, toxic and lethal doses. Those standards have been applied to analysing vapor and tobacco smoke. We know that the types and amounts of chemicals in tobacco smoke cause disease and death⁸. This is not the case with electronic cigarette vapor⁴⁵.

“Even if there are long-term vapers, this is not a problem, as long as they quit smoking. **The problem is combusted tobacco, not nicotine.** At the dosage used by vapers or users of nicotine gums or patches, nicotine is not toxic. **Long term vaping is not a public health problem; not any more than long term use of nicotine gums.**”

(Dr Jean-François Etter)

“The most important **toxins in cigarette** smoke are missing – those that remain are orders of magnitude lower.”

(Dr Konstantinos Farsalinos)

“Vapers should be more concerned of the air they breathe in **polluted cities** rather than their vaping!”

(Dr Riccardo Polosa)

The Science on Vaping

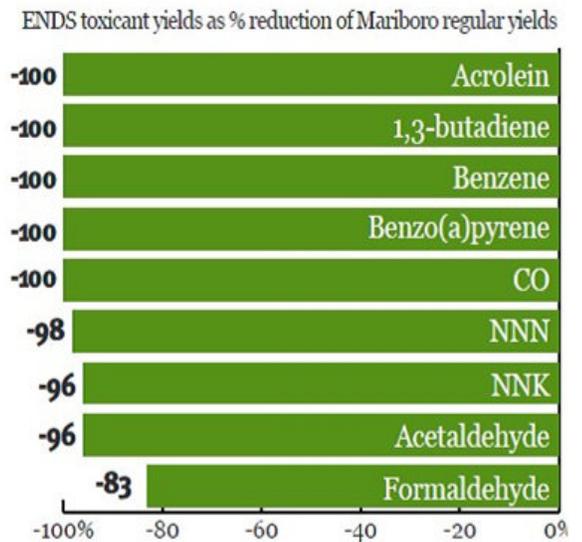
Is there risk to bystanders?

A considerable advantage to vaping is that there is no risk to bystanders¹⁷. Over 9000 observations on the constituents of vapor were compared to workplace exposure standards; and all (except 2 were less than <5%) were *less than 1%* of safety levels⁴⁵. Vapor is 70–90% water (we breathe in water all the time; it's called humidity); some PG and glycerin; and traces of nicotine and flavour²⁵. The toxic chemicals in tobacco smoke either don't exist or are significantly reduced in vapor¹. Considering the lack of risk to the person inhaling directly off the vaporizer, what is exhaled and diluted by room air is negligible¹. Remember, risk

to health is not only what the substance is but how much of it. This is why we are comfortable having lunch on a patio even though vehicle exhaust contains lots of toxic chemicals, heavy metals and compounds that cause cancer⁴². The amount we get in our lungs is diluted by the surrounding air and the amount of toxins is too small to cause harm.⁴²

CHART 8. EXPECTED REDUCTION IN LEADING TOXICANTS INHALED IF THE SMOKER SWITCHED FROM SMOKING TO VAPING

Ref: 1
(for nine toxicants prioritised by World Health Organization's TobReg Committee for reduction;²² nicotine adjusted, comparing the Ruyan Classic e-cigarette with Marlboro king size regular^{24, 27})



The Problem with Public Bans on Vaping

Vaping is not smoking and should not be treated as such

Public bans of *tobacco smoke* are justified to protect bystanders from the toxins from burning tobacco¹. Vaping is *not hazardous* to bystanders and it helps smokers reduce or eliminate their tobacco smoking¹. Banning vaping would *wrongly* make vaping look like it is dangerous and this would make smokers less likely to try vaping and the public less supportive. Forcing those trying to quit smoking to stand outside *amongst people smoking* encourages smoking *relapse*. Vaping regularly, maintains nicotine levels in the blood thereby effectively reduces the craving to smoke²⁶. Of 1615 vapers surveyed, 61% said they would go back to

tobacco if there was a vaping ban⁴³. Spain's vaping ban decreased the number of vape sales by 70% and 60% of the vape shops closed⁴⁸.

Canada is a free country. In public, we allow perfume although it can affect asthma; shellfish, strawberries and peanuts can cause death to those with allergies. Vaping in public is a small social shift like wearing seatbelts, to reduce harm without endangering others. Agencies give out condoms to reduce the risk of contracting disease even though it was met with fear-based resistance in the 80's. Canadians supporting the use of less harmful sources of nicotine can reduce smoking related diseases and the associated public costs²⁷.

"Saying e-cigs are 95% safer is not a medical claim, it's a truth."

(Professor Hajek)

"None of the toxicological testing conducted in E-cigs has shown that users or bystanders are exposed to harmful levels of toxins or carcinogens. E-cigs eliminate exposure to the smoke toxicants responsible for nearly all smoking-related diseases."

(A fresh look at tobacco harm reduction: The case for the electronic cigarette. (2013) Polosa, Rodu, Caponnetto, Maglia, & Raciti)

"Bans of e-cigarettes based on harms that are minor compared to smoking are likely to perversely protect tobacco sales from competition."

(Nicotine and Health. (2013) Lauges)

Smoking Reduction and Cessation

Does vaping help to reduce smoking?

"Surveys document that **most smokers would like to quit**, and many have **made repeated efforts** to do so. However, conventional smoking cessation approaches require nicotine addicted smokers to **abstain from tobacco and nicotine entirely**. Many **smokers are unable** - or at least unwilling - to achieve this goal, and so they **continue smoking** in the face of impending adverse health consequences. In effect, the status quo in smoking cessation presents smokers with just two unpleasant alternatives: **quit or suffer the harmful effects** of continuing smoking. But there is a **third choice** for smokers: **tobacco harm reduction**. It involves the use of **alternative sources of nicotine**, including modern smokeless replacement for smoking. **E-cigs might be the most promising product for tobacco harm reduction** to date because delivering nicotine vapour **without** the combustion products that are responsible for nearly all of **smoking's damaging effect**, they also **replace** some of the **rituals** associated with **smoking behaviour**."

(A fresh look at tobacco harm reduction: The case for the electronic cigarette. (2013) Polosa, Rodu, Caponnetto,

52% of smokers try to quit every year²². They have a 4% success rate cold turkey; 8% success with nicotine replacement therapy (NRT) such as patches or gum²²; if you add intense counselling, success can reach 16%²³. Smoking cessation methods currently approved by HC have an *84% failure rate* at best! Of those successful 'quitters' 80% relapse in the first month and only 5% achieve long term cessation²⁴.

Hundreds of thousands of smokers all over the world have quit smoking by switching to vaping⁶. In controlled clinical trials smokers **not** intending on quitting were given vape pens and eliquid. *Six months later 21% had quit smoking* compared to 7% "success" with cig-a-likes and 6% "success" with nicotine patches¹³. Some became 'dual users' (smoke and vape) which reduced the number of cigarettes smoked. These clinical trial groups had a

total reduction of **60–80%** (from an average of 25 tobacco smokes a day to just 5 smokes a day¹⁶). The lower the number of cigarettes smoked in a day, the lower the chances of getting lung cancer².

27% of attempts to quit smoking in the UK utilize vapes²⁹. This method of smoking reduction has been completely consumer driven²¹. In 2012, the UK had 700,000 vapers; this has tripled to 2.1 million in 2014¹⁷. Vaping appeals to the smoker because it offers the smoker very similar physical sensations to get nicotine but without the health compromising chemicals found in tobacco smoke⁶. Socially, they no longer are embarrassed by smelling of smoke¹⁵ and they no longer feel guilty about harming bystanders with second-hand smoke². Financially, vaping is about 80% cheaper. The hundreds of styles of 'hardware' and accessories offer a hobby interest.

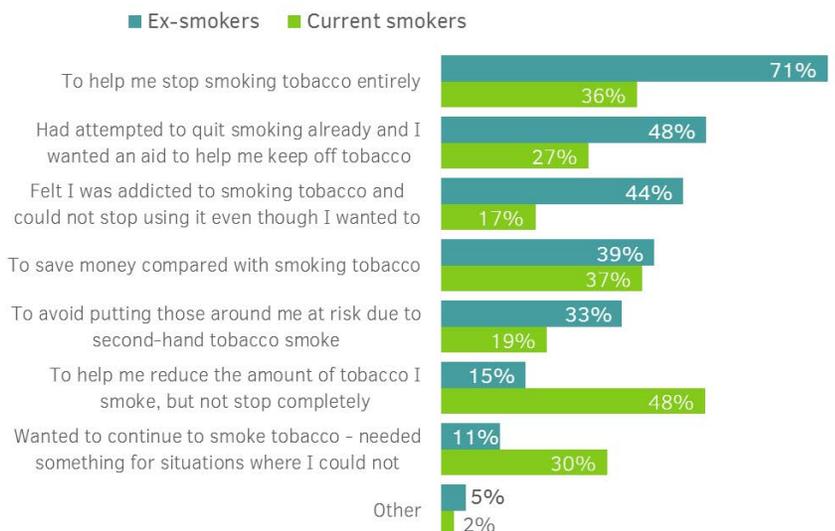
Who are using vaporizers/ecigarettes?

And why?

Less than 1% of never smokers try vaping and virtually none continue²⁸. Over 25,000 vapers have been surveyed: typically, they are long term smokers, 35-45 in age; had tried to quit an average of *9 times* and 2 out of 3 had tried NRTs to quit²⁴. Over 3/4 of them had not had a tobacco smoke in the last month; 19% were dual users and had reduced their daily smokes by

40%²⁴. 9 out of 10 stated that their health improved with vaping and 65% said they continue to have a smoking experience but with reduced health risks²⁴. 93% felt vaping was less addictive than smoking³.

Reasons for E-cigarette use



Tobacco Harm Reduction

It just makes sense in a country with universal healthcare

'Harm reduction' is intended to lessen the related diseases to healthcare in 2002 was negative health, social and financial \$4.4 billion¹⁸. It has been estimated that the consequences caused from high risk cost of smoking to healthcare in 2012 was behaviours³¹. Examples of harm reduction are impaired driving check-stops⁴⁰, condom use¹⁹, and needle exchanges. Giving an IV drug user 5 clean needles a day would cost 50¢ each day or \$186 a year. If that person uses a dirty needle just once and contracts HIV, the cost to healthcare to treat that person starts at \$14,453 a year and increases to \$22,000 as the disease progresses¹⁹. Our taxes ensure every citizen has access



\$14billion³⁹. This cost is 100% preventable!

"Refusing to provide truthful information about and access to safer alternative sources of nicotine dissuades smokers from quitting the most harmful method of obtaining nicotine - inhaling smoke²⁴." Vaping is a tobacco harm reduction approach for those addicted to tobacco smoking. It satisfies the

provide disability benefits. The cost of to healthcare. Reducing harmful outcomes smokingnicotine addiction and physical habit means lesser costs to the taxpayer. Smokers without the toxic chemicals. Smokers with are hooked on nicotine¹⁷. Nicotine is just one chronic diseases that switched to vaping showed improvements: 40% with diabetes; of 4000 chemicals⁴⁷ formed when burning to- 50% with high blood pressure; 42% day's tobacco cigarette. In fact, 69 of those with high cholesterol; 65% with asthma; chemicals definitely cause cancer³⁷. Smoking is 54% with heart disease; and 76% with COPD⁶. responsible for 36% of respiratory diseases, 18% of those with lung disease lowered 29% of cancers, 14% of cardiovascular 18% of those with lung disease lowered their medication and 18% stopped taking diseases and 87% of COPD¹². These are chronic their medication⁶. Asthmatic smokers showed an diseases requiring drugs, doctor's visits and actual reversal of lung damage when they hospital stays over many years. Eventually the long term smoker can become so sick that stopped or reduced smoking by vaping¹¹. they are unable to work and our taxes will

"Harm reduction" aims to keep people safe and minimize death, disease, and injury from high risk behaviour.

(BC Center for Disease Control)

"Once these products are more common and the purpose of them is known, seeing people use them should normalize quitting behaviour, something the children were very supportive of."

(Looks like smoking, is it smoking?: Children's perceptions of cigarette-like nicotine delivery systems, smoking and cessation.(2013) Glover, Nosa, & Pienaar)

"Harm reduction is one of the four pillars of Canada's Drug Strategy. This health-centred approach, with the goal of reducing the health and social harms related to substance use and abuse."

(Substance Abuse Issues and Public Policy in Canada)

"Now that research shows that e-cigarettes increase smoking cessation, it proves also that e-cigarettes denormalize being a smoker."

(Nicotine and Health. (2013) American Council on Science and Health)

'Normalizing' Smoking

Will vaping undo all the progress we have made?

Vaping doesn't make the distinctive stench and toxins of smoke that is so annoying to others¹. No more smelling like smoke, yellowed teeth and dulled sense of taste. There are no ashes, no side-stream, and no butts. Vaporizers look nothing like a smoke. The only similarity is a visible exhale like when you breathe outside on a cold day. But for the smoker, the sensations within the body feel much like smoking, making it an appealing alternative³. How can something that doesn't smell, look, operate, pollute nor harm like smoking, normalize smoking? If anything, it normalizes quitting smoking¹.

Youth and Vaping

Is banning flavours the solution to reducing future tobacco smokers?

Eliquid flavour variety was rated 4 out of 5 (very important) to vapers⁷. If flavours were restricted, 49% said they would have an increased smoking craving and 40% said they would have been less likely to quit or reduce smoking⁷. Two thirds, switched flavours daily (average of 3 flavours) because a flavour will get 'blunt'⁷. Tobacco flavours are more common when starting vaping and



smoking (91% had quit smoking of the 4,618 surveyed⁷). Its evident that flavours of eLiquid are a very important aspect of attracting smokers to vaping.

An online survey of 11-19 year olds found that there was no difference in the desire to try an electronic cigarette with flavour than without flavour⁴⁶. However, 74% of those youth that smoked were willing to try vaping compared those that were nonsmokers (18%)⁴⁶. Keep in mind that 43% of Canadian grade 12 students have tried smoking⁴⁹. Interest

in dual users⁷. Most vapers used fruit (70%) and sweet (61%) flavours if they stopped non-smokers as well¹.

The Gateway Theory

Is vaping leading to smoking?

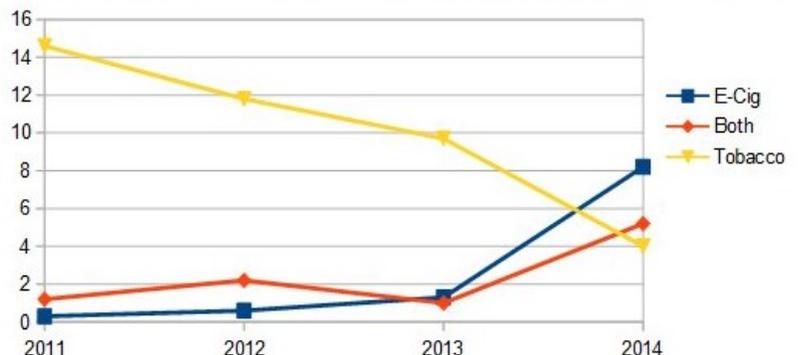
Where vaping is increasing, smoking rates of adults and youth are decreasing at higher rates than ever seen before. In England, the national smoking survey recorded decreasing rates in quitting smoking from 2007-2011 (6.7% down to 4.6%). But in 2012, 700,000 smokers started vaping and the quit rate jumped to 6.2%. In 2014 (2.1 million vapers) the quit rate rose to 7.5%⁵⁰.

99% of youth who first exposure to nicotine was vaping, did not become tobacco smokers³⁰. Of those that tried tobacco smoking first, 10% to 21% became daily smokers³⁰.

A child's strongest influences for future behaviours are parents¹⁰. Children have a twice the chance of becoming a smoker if just one person smokes in the home⁴⁴. Therefore, if the parents quit smoking it reduces the chances of their children becoming smokers. Gateway from vaping to smoking would mean switching from wonderful flavours to revolting toxic smoke; to something that makes you stink

and is more addictive. Smoking is 100- fold worse for your health¹⁴, costs 10 times as much and casts you out in the cold. How likely is that switch? The gateway theory is simply nonsense!

Current E-Cigarette & Cigarette Use Among High School Students in the U.S.



2011-2014 NYTS: <http://goo.gl/beMJUJ>

“Nonsmoking teens’ interest in e-cigarettes was very low (mean 0.41 on a 0-10 scale)...Past 30- day adult e-cigarette users had the greatest interest in e-cigarettes, and their interest was most affected by flavor...**flavors tested appealed more to adult smokers than to nonsmoking teen, but interest in flavours was low for both groups.**”

(The impact of flavor descriptors on nonsmoking teens' and adult smokers' interest in electronic cigarettes. (2015) Shiffman, Sembower, Pillitteri, Gerlach, & Gitchell)

“...only one student who initiated with an [ecig] (1.7%) was a daily user of any tobacco product, compared to the **10% to 21% of current daily tobacco users who first tried conventional cigarettes...**”

(Which nicotine products are gateways to regular use? (2015) Meier, Tackett, Miller, Grant, & Wagener)

“Nearly 1 in 5 (18%) participants [teens] were willing to try either a plain or flavored ecigarette, but **willingness to try plain versus flavored varieties did not differ.** Smokers were more willing to try any ecigarette than nonsmokers (74% vs 13%).”

(Which nicotine products are gateways to regular use? (2015) Meier, Tackett, Miller, Grant, & Wagener, 2015)

Summing it up

Did you learn anything new?

"Beliefs don't change facts. **Facts**, if you are reasonable **should change your beliefs**"

(Ricky Gervais)

"What do you think science is? There's nothing magical about science. It is simply a **systematic way for carefully and thoroughly observing nature and using consistent logic to evaluate results**. Which part of that exactly do you disagree with? Do you disagree with being thorough? Using careful observation? Being systematic? Or using consistent logic?"

(Dr. Steven Novella)

"**Nurses** to the extent possible, **provide** persons in their care with the **information** they need to make **informed decisions related** to their **health** and well-being. They also work to make sure that health **information** is **given** to individuals, families, groups, **populations and communities** in their care in an open, **accurate and transparent manner.**"

(Code of Ethics for Registered Nurses. (2008) Canadian Nurses Association)

Tobacco smoking is killing people, destroying lives and costing Canadians *a lot of money*. Chemicals are added to tobacco cigarettes to make them more addictive. Not only are smokers addicted to nicotine, but the physical habit of smoking is a *huge* part of the reason smokers can't quit or stay quit. Vaporizers are simple electronic devices that heat 4 ingredients into a *non-toxic* water-based vapor to be inhaled. They don't smell, look, operate, addict, pollute, nor harm like smoking but it feels like smoking to a smoker; and this is what makes them appealing to a smoker. Vaping is growing in popularity and technology because of

would also inhibit the vaper from maintaining nicotine levels in their bodies to effectively reduce their cravings to smoke.

Banning flavours will make vaping less appealing and therefore less effective for smokers trying to quit. Evidence shows that youth and adults that are smokers are almost *four times* more interested in vaping than non-smokers and flavours are *not* a reason to try vaping. The gateway theory is simply non-sense!

We have an ethical obligation to support



the freedom and right of all Canadians, including smokers, to have access to accurate information and resources to have control over their

smokers' demand for it. Vaping *substantially exceeds* the quit rates of patches and gums or it helps smokers cut way back on their smoking. The *amount* of a chemical entering the body is as important as *what* that chemical is to determine if it will be harmful. Harm reduction has been successful at keeping Canadians healthier which in turn, has lowered human suffering and tax expense. Vapor is not hazardous to the user or bystanders. Banning vaping in public is *unjustified* and will give a *false impression* that vaping is harmful; it

health! Evidence shows that quitting or reducing smoking by vaping *improves chronic diseases*.

This paper is just scratching the surface on the variety and depth of information available from the on-going investigations into vaping as a tobacco harm reduction strategy. If you have any questions or would like more information, please visit VAEPworld.com.

References

- Laugesen, M. (2013). *Nicotine and health*. New York, NY: American Council on Science and Health.
- Law, M. R., Morris, J. K., & Watt, H. C. (1997). The dose-response relationship between cigarette consumption, biochemical markers and risk of lung cancer. *British Journal of Cancer*, 75(11), 1690-1693.
- Goniewicz, M. L., Lingas, E. O., & Hajel, P. (2013). Patterns of electronic cigarette use and user beliefs about their safety and benefits: An internet survey. *Drug and Alcohol Review*, 32(2), 133-140.
- Schripp, T., Markewitz D., Uhde, E., & Salthammer, T. (2013). Does e-cigarette consumption cause passive vaping? *Indoor Air*, 23, 25–31.
- McAuley, T. R., Hopke, P. K., Zhao, J., & Babaian, S. (2012). Comparison of the effects of ecigarette vapor and cigarette smoke on indoor air quality. *Inhalation Toxicology*, 24(12), 850-857.
- Farsalinos, K. E., Romagna, G., Tsiapras, D., Kyrzopoulos, S., & Voudris, V. (2014). Characteristics, perceived side effects and benefits of electronic cigarette use: A worldwide survey of more than 19,000 consumers. *International Journal of Environmental Research and Public Health*, 11, 4356-4373.
- Farsalinos, K. E., Romagna, G., Tsiapras, D., Kyrzopoulos, S., Spyrou, A., & Voudris, V. (2013). Impact of flavour variability on electronic cigarette use experience: An internet survey. *International Journal of Environmental Research and Public Health*, 10, 7272-7282.
- Cahn, A., & Seigel, M. (2010). Electronic cigarettes as a harm reduction strategy for tobacco control: a step forward or past mistakes? *Journal of Public Health Policy*, 32(1), 1631
- McRobbie, H. (2014). Electronic cigarettes for smoking cessation and reduction. *Cochrane Database of Systematic Reviews*, (12), doi:10.1002/14651858.CD010216.pub2
- Glover, M., Nosa, V., & Pienaar, F. (2013). Looks like smoking, is it smoking?: Children's perceptions of cigarette-like nicotine delivery systems, smoking and cessation. *Harm Reduction Journal* 10(30).
- Polosa, R., Morjaria, J., Caponnetto, P., Caruso, M., Strano, S., Battaglia, E., & Russo, C. (2014). Effect of smoking abstinence and reduction in asthmatic smokers switching to electronic cigarettes: evidence for harm reversal. *International Journal of Environmental Research and Public Health*, 11, 4965-4977.
- Dawkins, L. (2013) Why is it so hard to quit smoking? *The Psychologist* 26(5), 332-335.
- Adriaens, K., Van Gucht, D., Declerck, P., & Baeyens, F. (2014). Effectiveness of the electronic cigarette: An eight-week Flemish study with six-month follow-up on smoking reduction, craving and experienced benefits and complaints. *International Journal of Environmental Research and Public Health*. 11(11), 11220-11248.
- Misra, M., Levetre, R. D., Cooper, B. T., Bennett, M. B., & Brown, S. E. (2014). Comparative in vitro toxicity profile of electronic and tobacco cigarettes, smokeless tobacco and nicotine replacement therapy products: e-liquids, extracts and collected aerosols. *International Journal Of Environmental Research And Public Health*, 11(11), 1132511347.
- Pepper, J. K., Ribisl, K. M., Emery, S. L., & Brewer, N. T. (2014). Reasons for starting and stopping electronic cigarette use. *International Journal Of Environmental Research And Public Health*, 11(10), 10345-10361.
- Polosa, R., Caponnetto, P., Maglia, M., Morjaria, J. B., & Russo, C. (2014). Success rates with nicotine personal vaporizers: a prospective 6-month pilot study of smokers not intending to quit. *BMC Public Health*, 14(1), 1159.
- Action on Smoking and Health (ASH). (2014). *ASH Briefing: Electronic Cigarettes*. Published 2/11/2014
- Rehm, J., Baliunas, D., Brochu, S., Fischer, B., Gnam, W., Patra, J., Popova, S., Samocinska-Hart, A., & Taylor, B. (2006). *The costs of substance abuse in Canada 2002*. Ottawa ON: Canadian Centre on Substance Abuse (CCSA).
- Canadian Aids Society. (2011). *The economic cost of HIV/AIDS in Canada*. Edmonton, AB: Canadian Aids Society.
- Andersson, C., Wennstrom, P., & Gry, J. (2003) *Nicotine alkaloids in Solanaceous food plants*. Sweden: National Food Administration.
- Snowdon, C. (2013). *Free market solutions in health: The case for nicotine*. England: Institute of Economic Affairs
- Nides, M., Leischow, S.J., Bhattar, M., & Simmons, M. (2014). Nicotine blood levels and short-term smoking reduction with an electronic nicotine delivery system. *American Journal of Health and Behaviour*. 38(2), 265-274.
- Shahab, L., Brose, L.S., & West R. (2013). Novel delivery systems for nicotine replacement therapy as an aid to smoking cessation and for harm reduction: Rationale, and evidence for advantages over existing systems. *CNS Drugs*. 27(12), 1007-1019.
- Polosa, R., Rodu, B., Caponnetto, P., Maglia, M., & Raciti, C. (2013). A fresh look at tobacco harm reduction: the case for the electronic cigarette. *Harm Reduction Journal*, 10(19).
- Zhang, Y., Sumner, W., & Chen, D. (2013). In vitro particle size distributions in electronic and conventional cigarette aerosols suggest comparable deposition patterns. *Nicotine and Tobacco Research*, 15(2), 501-508.
- Dawkins, L., & Corcoran, O. (2014). Acute electronic cigarette use: nicotine delivery and subjective effects in regular users. *Psychopharmacology*, 231(2), 401-407.
- Nutt, D. J., Phillips, L. D., Balfour, D., Curran, H. V., Dockrell, M., Foulds, J., Fagerstrom, K., Letlape, K., Milton, A., Polosa, R., Ramsey, J., & Smeaton, D. (2014). Estimating the harms of nicotine-containing products using the MCDA approach. *European Addiction Research*, 20(5), 218-225.
- Brown, J., Beard, E., Kotz, D., Michie, S., & West, R. (2014). Real-world effectiveness of cigarettes when used to aid smoking cessation: a cross-sectional population study. *Addiction*, 109(9), 1531–1540.
- Connolly, J. (2014). E-cigarette awareness and use to quit smoking. National Institute for Health and Care Excellence, 60. Retrieved from <https://www.evidence.nhs.uk/eyes-on-evidence-april-2014.pdf>
- Meier, E. M., Tackett, A. P., Miller, M. B., Grant, D. M., & Wagener, T. L. (2015). Which nicotine products are gateways to regular use? *American Journal of Preventive Medicine*. 48(1), S86-S93.
- International Harm Reduction Association (2014). *What is harm reduction?* Retrieved from <http://www.ihra.net/what-is-harm-reduction>
- Health Canada. (2014). Strong foundation, renewed focus - an overview of Canada's federal tobacco control strategy 2012-17. Retrieved from <http://www.hc-sc.gc.ca/hcps/pubs/tobac-tabac/fs-sf/index-eng.php>
- Statistics Canada. (2014). Population of census metropolitan areas. Ottawa, ON: Government of Canada.
- Physicians for a Smoke-Free Canada. (2013). Tax revenues from tobacco sales. Retrieved from http://www.smoke-free.ca/pdf_1/totaltax.pdf
- Centres for Disease Control and Prevention. (2014). Fast facts: Diseases and death. Atlanta, GA: Office on Smoking and Health.
- Health Canada. (2014). *Health concerns: Notice of proposed order to amend the schedule to the Tobacco Act*. Retrieved from http://www.hc-sc.gc.ca/hcps/consult/_2014/tobacco-act-loi-tabac/index-eng.php
- American Lung Association. (2015). What's in a cigarette? Retrieved from <http://www.lung.org/stop-smoking/about-smoking/facts-figures/whats-in-a-cigarette.html>
- Europa. (2010). Public Health: Tobacco additives. Retrieved from http://ec.europa.eu/health/scientific_committees/opinions_layman/tobacco/en/1-3/5.htm
- Norouzi, M. (2014). *Estimated smoking attributable health care costs using the Canadian Community Health Survey (2012)*. Ottawa, ON: University of Ottawa.
- Alberta Alcohol and Drug Abuse Commission. (2005). *Impaired driving*. Retrieved from <http://www.albertahealthservices.ca/Researchers/if-res-policy-impaired-drivingbackground.pdf>.
- Canadian Centre for Occupational Health and Safety. (2014). *Cheminfo record number 501: 1,2-propylene glycol*.
- Wargo, J., Wargo, L., & Alderman, N. (2006). *The harmful effects of vehicle exhaust*. North Haven, CT: Environment and Human Health Inc.
- Ashtray Blog. (2014). *How an EU ecig ban could send one million people back to smoking*. Retrieved from <http://www.ecigarettedirect.co.uk/ashtray-blog/2014/02/eu-ecigban-return-smoking.html#sthash.JWVmd3WE.dpuf>
- The Lung Association. (2013). *Help your kids avoid taking that first puff*. Retrieved from <http://www.quitnow.ca/about-us/news.php>
- Burstyn, I. (2014). Peering through the mist: Systematic review of what the chemistry of contaminants in electronic cigarettes tells us about health risks. *BMC Public Health*, 14(18).
- Pepper, J., Reiter, P., McRee, A., Cameron, L., Gilkey, M.B., & Brewer, N.T. (2012). Adolescent Males' Awareness of and Willingness to Try Electronic Cigarettes. *Journal of Adolescent Health*. 52(2), 144-150
- The Canadian Lung Association. (2013). Smoking and tobacco: Facts about smoking. Retrieved from https://www.lung.ca/protect-protegez/tobacco-tabagisme/factsfaits/index_e.php?print=1
- ThinkSpain News. (2014). E-cigarette sales in Spain drop by 70 per cent. Retrieved from <http://www.thinkspain.com/news-spain/24345/e-cigarette-sales-in-spain-drop-by-70-per-cent>
- Health Canada. (2014). Youth Smoking Survey 2012-2013. Waterloo, ON: Propel Centre for Population Health Impact
- West, R., Brown, J., & Beard, E. (2014). Trends in electronic cigarette use in England. London, England: University College London
- YouGov/ASH Survey. (2014). There is no evidence that non-smokers are turning to Ecigarettes in Britain and smokers are increasingly using them as a quitting smoking aid. Retrieved from http://d25d2506sfb94s.cloudfront.net/cumulus_uploads/document/54rk5hf95x/YG-Archive-140314-ASH-.pdf
- Statistics Canada. (2014). Smokers, by age group and sex. (Catalogue no. 82-221-X). Ottawa, ON: Government of Canada.

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Vision, Mission and Objectives

Vision

Make the truth about vaping common knowledge throughout the general population.

Mission

Through advocacy and education, disseminate to the general population accurate and comprehensive information about vaping. Ensure smokers can make an informed decision about vaping as a smoking alternative.

Objectives

Unify the growing numbers of knowledgeable vapers and their passion for vaping by engaging them in the development and implementation of a population education campaign.

Create support for the effective utilization of vaping within non-vaping populations such as government, non-profit organizations and healthcare agencies by providing access to vaping information and facilitating informed decision making within those groups.