


E-cigarettes ~~can~~ be used to
assist smoking cessation

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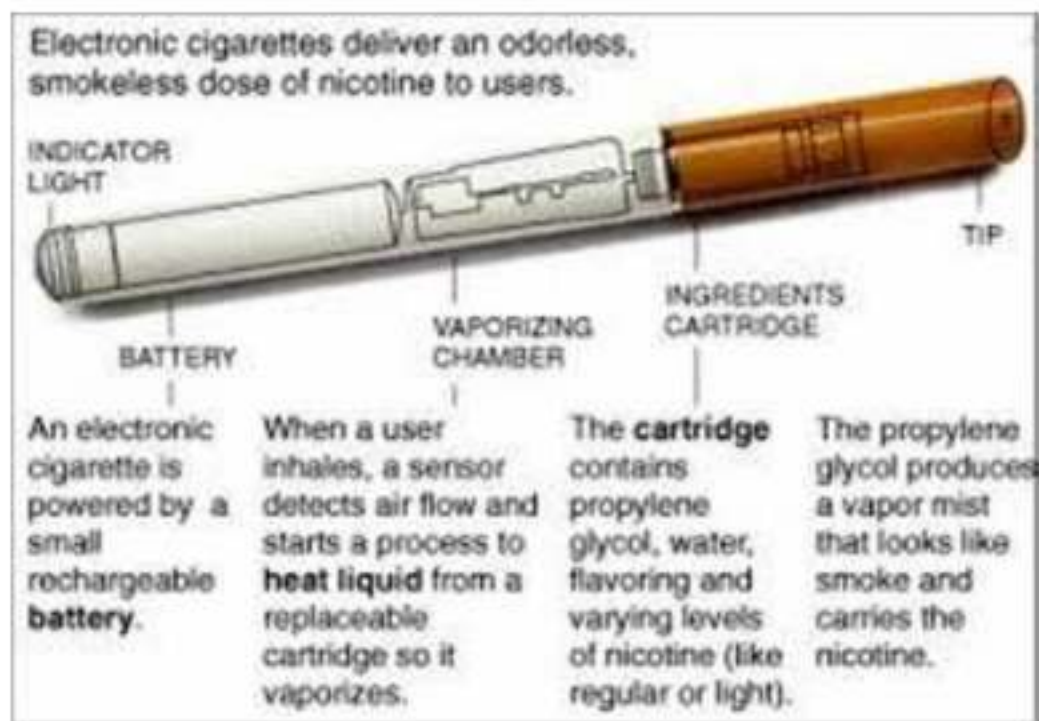
► *Beware*
of e-cigarettes for
smoking cessation



What is an e-cigarette?

- ▶ E-cigarettes are devices that look and feel like a traditional cigarette but do not require tobacco to function
 - ▶ They may or may not contain nicotine
- 


Components of e-cigarette



E-cigarettes

- ▶ Contain less nicotine than regular cigarettes (in fact, in Canada, nicotine containing e-cig are not approved for manufacture)
- ▶ Contain less chemicals than regular cigarettes

...So, what's the problem???



The Downside

- ▶ The e-cigarette market is unregulated
 - Products are easily available on the internet and even in stores in Canada (take a walk down St Laurent sometime)


The Downside

- **Production is unregulated**
- ▶ FDA (2009) ;trace levels of carcinogenic nitrosamines in over half of samples. Other harmful chemicals such as anabasine (found in tree tobacco; used as insecticide), myosmine (alkaloid closely related to nicotine), and beta-nicotyrine also found

The Downside

- ▶ No mandated quality control standards
 - Cartridges contain widely varying amounts of nicotine per puff, even from the same manufacturer

Marketing

- ▶ Market unregulated
 - ▶ Social media is HUGE factor
 - ▶ Celebrity endorsement
- 


Want More?

- ▶ Many e-cigarette companies are owned by big tobacco (not that they make it known!)
 - 2012 Lorillard bought Blu e-cigarettes
 - Altria (parent co of Phillip Morris) launched VUSE
 - British American Tobacco
 - Imperial Tobacco
 - Reynold's American

And What does that mean?

- Tobacco companies use their e-cigarette brands for sponsoring race cars, using cab-top and bus stop displays, and buying TV ad time to tell smokers to take back their freedom
- Because e-cigs are not regulated, big tobacco can advertise them on TV and in magazines, and display on counters in gas stations and convenience stores

But putting profits aside...

- ▶ They are no good studies showing e-cigarettes are beneficial for smoking cessation. Most of the studies to date have been done by the e-cigarette companies
 - ▶ Long term effects are not known
 - ▶ Large RCT's are needed!
- 

Marketing to children and teen

- ▶ Flavored nicotine cartridges (Bubblegum, sweet tarts, snickerdoodles) seem to be geared to children and teens


Psychological factors

- ▶ E-cigarette makes it more difficult to break the habit of smoking
- ▶ E-cig often more expensive than cigarettes, so when novelty wears off, person may return to smoking

Unintended consequences

- ▶ Undermining gains in Tobacco control
- ▶ Renormalize use of tobacco products
- ▶ Appeal to youth as gateway to nicotine addiction

Conclusion

- ▶ Little efficacy data available
 - ▶ Long term effects unknown
 - ▶ Market unregulated so content of products inconsistent
 - ▶ Gateway to nicotine addiction for youth
 - ▶ Opportunity for big tobacco to “get back in the game”
 - ▶ Smokers may return to smoking when novelty wears off
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Pro: E-Cigarettes can assist patients with smoking cessation

Faculty/Presenter Disclosure

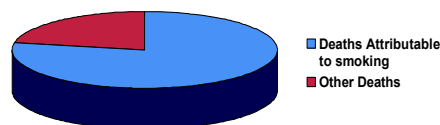
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 - Grants/Research Support: **none**
 - Speakers Bureau/Honoraria: Astra Zeneca, Boehringer Ingelheim, Grifols, **Pfizer**, **Purdue**, **Johnson and Johnson** Merck Frosst, Novartis, Sanofi, Takeda.
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Disclosure of Commercial Support

- This program has received no financial support .
- This program has received no in-kind support.
- **Potential for conflict(s) of interest:**
 - A) there are **no** organizations supporting this program
 - B) **I have NO relationship to companies making tobacco products or companies making electronic cigarettes.**

Mitigating Potential Bias

- My bias is that smoking is BAD and is the major cause of preventable deaths



Tax revenue to our gov't from tobacco: Talk about BIAS???

Health Canada - Smokers' Health Canada

Tax Revenues from Tobacco Sales

Provisional 2013 Federal Tobacco Tax Revenues, 1,000,000 to 2013-2012

Table 1: 2013-2012

	2013-2012	2012-2011	2011-2010	2010-2009	2009-2008	2008-2007	2007-2006	2006-2005	2005-2004	2004-2003	2003-2002	2002-2001	2001-2000	2000-1999	1999-1998	1998-1997	1997-1996	1996-1995	1995-1994	1994-1993	1993-1992	1992-1991	1991-1990	1990-1989	1989-1988	1988-1987	1987-1986	1986-1985	1985-1984	1984-1983	1983-1982	1982-1981	1981-1980	1980-1979	1979-1978	1978-1977	1977-1976	1976-1975	1975-1974	1974-1973	1973-1972	1972-1971	1971-1970	1970-1969	1969-1968	1968-1967	1967-1966	1966-1965	1965-1964	1964-1963	1963-1962	1962-1961	1961-1960	1960-1959	1959-1958	1958-1957	1957-1956	1956-1955	1955-1954	1954-1953	1953-1952	1952-1951	1951-1950	1950-1949	1949-1948	1948-1947	1947-1946	1946-1945	1945-1944	1944-1943	1943-1942	1942-1941	1941-1940	1940-1939	1939-1938	1938-1937	1937-1936	1936-1935	1935-1934	1934-1933	1933-1932	1932-1931	1931-1930	1930-1929	1929-1928	1928-1927	1927-1926	1926-1925	1925-1924	1924-1923	1923-1922	1922-1921	1921-1920	1920-1919	1919-1918	1918-1917	1917-1916	1916-1915	1915-1914	1914-1913	1913-1912	1912-1911	1911-1910	1910-1909	1909-1908	1908-1907	1907-1906	1906-1905	1905-1904	1904-1903	1903-1902	1902-1901	1901-1900	1900-1899	1899-1898	1898-1897	1897-1896	1896-1895	1895-1894	1894-1893	1893-1892	1892-1891	1891-1890	1890-1889	1889-1888	1888-1887	1887-1886	1886-1885	1885-1884	1884-1883	1883-1882	1882-1881	1881-1880	1880-1879	1879-1878	1878-1877	1877-1876	1876-1875	1875-1874	1874-1873	1873-1872	1872-1871	1871-1870	1870-1869	1869-1868	1868-1867	1867-1866	1866-1865	1865-1864	1864-1863	1863-1862	1862-1861	1861-1860	1860-1859	1859-1858	1858-1857	1857-1856	1856-1855	1855-1854	1854-1853	1853-1852	1852-1851	1851-1850	1850-1849	1849-1848	1848-1847	1847-1846	1846-1845	1845-1844	1844-1843	1843-1842	1842-1841	1841-1840	1840-1839	1839-1838	1838-1837	1837-1836	1836-1835	1835-1834	1834-1833	1833-1832	1832-1831	1831-1830	1830-1829	1829-1828	1828-1827	1827-1826	1826-1825	1825-1824	1824-1823	1823-1822	1822-1821	1821-1820	1820-1819	1819-1818	1818-1817	1817-1816	1816-1815	1815-1814	1814-1813	1813-1812	1812-1811	1811-1810	1810-1809	1809-1808	1808-1807	1807-1806	1806-1805	1805-1804	1804-1803	1803-1802	1802-1801	1801-1800	1800-1799	1799-1798	1798-1797	1797-1796	1796-1795	1795-1794	1794-1793	1793-1792	1792-1791	1791-1790	1790-1789	1789-1788	1788-1787	1787-1786	1786-1785	1785-1784	1784-1783	1783-1782	1782-1781	1781-1780	1780-1779	1779-1778	1778-1777	1777-1776	1776-1775	1775-1774	1774-1773	1773-1772	1772-1771	1771-1770	1770-1769	1769-1768	1768-1767	1767-1766	1766-1765	1765-1764	1764-1763	1763-1762	1762-1761	1761-1760	1760-1759	1759-1758	1758-1757	1757-1756	1756-1755	1755-1754	1754-1753	1753-1752	1752-1751	1751-1750	1750-1749	1749-1748	1748-1747	1747-1746	1746-1745	1745-1744	1744-1743	1743-1742	1742-1741	1741-1740	1740-1739	1739-1738	1738-1737	1737-1736	1736-1735	1735-1734	1734-1733	1733-1732	1732-1731	1731-1730	1730-1729	1729-1728	1728-1727	1727-1726	1726-1725	1725-1724	1724-1723	1723-1722	1722-1721	1721-1720	1720-1719	1719-1718	1718-1717	1717-1716	1716-1715	1715-1714	1714-1713	1713-1712	1712-1711	1711-1710	1710-1709	1709-1708	1708-1707	1707-1706	1706-1705	1705-1704	1704-1703	1703-1702	1702-1701	1701-1700	1700-1699	1699-1698	1698-1697	1697-1696	1696-1695	1695-1694	1694-1693	1693-1692	1692-1691	1691-1690	1690-1689	1689-1688	1688-1687	1687-1686	1686-1685	1685-1684	1684-1683	1683-1682	1682-1681	1681-1680	1680-1679	1679-1678	1678-1677	1677-1676	1676-1675	1675-1674	1674-1673	1673-1672	1672-1671	1671-1670	1670-1669	1669-1668	1668-1667	1667-1666	1666-1665	1665-1664	1664-1663	1663-1662	1662-1661	1661-1660	1660-1659	1659-1658	1658-1657	1657-1656	1656-1655	1655-1654	1654-1653	1653-1652	1652-1651	1651-1650	1650-1649	1649-1648	1648-1647	1647-1646	1646-1645	1645-1644	1644-1643	1643-1642	1642-1641	1641-1640	1640-1639	1639-1638	1638-1637	1637-1636	1636-1635	1635-1634	1634-1633	1633-1632	1632-1631	1631-1630	1630-1629	1629-1628	1628-1627	1627-1626	1626-1625	1625-1624	1624-1623	1623-1622	1622-1621	1621-1620	1620-1619	1619-1618	1618-1617	1617-1616	1616-1615	1615-1614	1614-1613	1613-1612	1612-1611	1611-1610	1610-1609	1609-1608	1608-1607	1607-1606	1606-1605	1605-1604	1604-1603	1603-1602	1602-1601	1601-1600	1600-1599	1599-1598	1598-1597	1597-1596	1596-1595	1595-1594	1594-1593	1593-1592	1592-1591	1591-1590	1590-1589	1589-1588	1588-1587	1587-1586	1586-1585	1585-1584	1584-1583	1583-1582	1582-1581	1581-1580	1580-1579	1579-1578	1578-1577	1577-1576	1576-1575	1575-1574	1574-1573	1573-1572	1572-1571	1571-1570	1570-1569	1569-1568	1568-1567	1567-1566	1566-1565	1565-1564	1564-1563	1563-1562	1562-1561	1561-1560	1560-1559	1559-1558	1558-1557	1557-1556	1556-1555	1555-1554	1554-1553	1553-1552	1552-1551	1551-1550	1550-1549	1549-1548	1548-1547	1547-1546	1546-1545	1545-1544	1544-1543	1543-1542	1542-1541	1541-1540	1540-1539	1539-1538	1538-1537	1537-1536	1536-1535	1535-1534	1534-1533	1533-1532	1532-1531	1531-1530	1530-1529	1529-1528	1528-1527	1527-1526	1526-1525	1525-1524	1524-1523	1523-1522	1522-1521	1521-1520	1520-1519	1519-1518	1518-1517	1517-1516	1516-1515	1515-1514	1514-1513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Source: 2009-2013, Data Canada; 1999-2008, Statistics Canada. Data are preliminary and subject to change. For more information, visit <http://www150.statcan.gc.ca/n1/pub/26-010-x/2013001/article/11811-eng.htm>.

2013-2012: 2,000,000, 2,000

What's in a Cigarette?

- ◆ Tobacco smoke: ≥ 4000 chemicals¹, ≥ 50 carcinogenic²

Chemicals in Tobacco Smoke ¹	Also Found In...
Acetone	Paint stripper
Butane	Lighter fluid
Arsenic	Ant poison
Cadmium	Car batteries
Carbon monoxide	Car exhaust fumes
Toluene	Industrial solvent

- Nicotine is responsible for the addiction, but other chemicals are also involved.²
- Smoking cigarettes with lower tar and nicotine provides no health benefit.²

1. World Health Organization. Tobacco: deadly in any form or disguise, 2008.

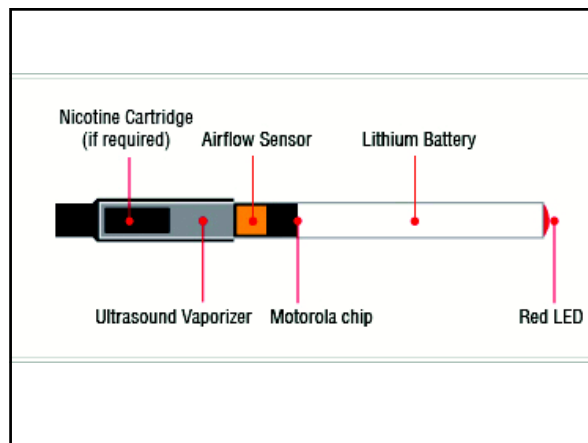
2. Health Canada. What's in Cigarette smoke?, August 2005.

What is an E-Cigarette?

- Designed by Chinese pharmacist Hon Lik in 2003
- Electronic devices that replicate a cigarette, cigar or other smoking pipes are called "e-cigs" or "e-cigarettes".

How does it work?

- User inhales on the mouthpiece, triggering the liquid to be heated by a lithium battery with a microchip, and the atomizer turns the e-liquid into a vapor
- The vapor is inhaled by the user, which gives the effect of smoking a real cigarette
- Users are "vaping," not smoking



Benefits of e-cigarettes

- No tar, tobacco, carbon monoxide, or ash
 - Each cartridge costs less than \$2 and is equivalent to an entire pack of cigarettes (possible savings of over \$1000 a year)
 - More economical (user can take as many "hits" as desired and need not smoke the entire thing in one sitting)
 - Don't get the same "smoke" smell because there's no smoke
 - No secondhand smoke
- In e cig with nicotine:
- Delivers nicotine effectively,
 - Significantly reduces cigarette craving and number of cigarettes smoked at a level similar to that of nicotine-replacement products

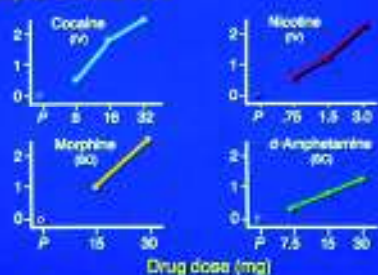


It takes 14-20 seconds for heroin to reach the addiction centers when injected intravenously

It takes nicotine, approximately 4-7 seconds to reach addiction centers when smoked!!

NICOTINE AS A EUPHORIANT

Euphoriant scale score



From Henningfield JE, Henningfield JE, Henningfield JE. *Psychopharmacol.* 1988.

Evidence:



Electronic Cigarettes & Smoking Cessation

Polosa, BMC Public Health, 2011

Electronic Cigarettes & Smoking Cessation

Polosa, BMC Public Health, 2011

- Methods:
 - 5 visits: baseline and four follow up visits at week 4, 8, 12, and 24
 - Baseline Measurements:
 - Demographics and detailed smoking history
 - Level of carbon monoxide in exhaled breath (eCO)
 - 4 week supply of 7.4 mg nicotine cartridges given
 - Max use of 4 cartridges/day

Electronic Cigarettes & Smoking Cessation

Reducers	Heavy Reducers	Quitters	Smoking Failure
50% reduction in number of cig/day compared to baseline	80% reduction in number of cig/day compared to baseline	Smoking abstinence at 24 weeks	< 50% reduction in number of cig/day compared to baseline

Polosa, BMC Public Health, 2011

Electronic Cigarettes & Smoking Cessation

Polosa, BMC Public Health, 2011

- Results:
 - 50% reduction shown in 13/40 subjects
 - Combined sustained 50% reduction and smoking abstinence in 22/40 ($p \leq 0.001$)
- Conclusions:
 - Reduction in cigarette smoking with e-cigarettes may increase motivation to quit
 - Gradual reductions in cigarette smoking can increase cessation

Case Series on Smoking Cessation Utilizing E-cigs

Caponnetto, Journal of Medical Case Reports, 2011

Case Series on Smoking Cessation Utilizing E-cigs

- Three chronic smokers (two male, one female)
- Severe dependence to nicotine
 - Fagerstrom Test of Nicotine Dependence (FTND)
 - Exhaled Breath Carbon Monoxide Concentration (eCO)
- Previous cessation efforts (patches & group counseling)

Caponnetto, Journal of Medical Case Reports, 2011.

Case Series on Smoking Cessation Utilizing E-cigs

- Results:
 - Cessation status following the usage of E-cigs
 - No relapse 6 months following study
 - Reduction in eCO
- Limitation – Small sample size!
- But: is that not what we want, individualize our treatments??

Caponnetto, Journal of Medical Case Reports, 2011.

Electronic Cigarettes for Smoking Cessation: A Randomized Controlled Trial

- Purpose:
 - To assess whether E-cigarettes containing nicotine were more effective for smoking cessation than nicotine patches
- Methods:
 - 657 subjects were selected for the study
 - Randomized by computerized block randomization
 - 4:4:1 ratio

Bullen, Nat Inst Health Innov, 2013

Electronic Cigarettes for Smoking Cessation: A Randomized Controlled Trial

- Procedures:
 - Subjects used respective smoking cessation products for 12 weeks before a specific “quitting day”
 - The primary outcome measured was smoking abstinence six months after “quitting day”
 - Verified by self-report and carbon monoxide measurement

Bullen, Nat Inst Health Innov, 2013



Electronic Cigarettes for Smoking Cessation: A Randomized Controlled Trial



- Results:
 - Abstinence rates after six months
 - Nicotine E-cigarette 7.3%
 - Nicotine Patches 5.8%
 - Placebo E-cigarette 4.1%
 - Study was underpowered due to low abstinence rates and **could not conclude** if E-cigarettes were superior to nicotine patches or placebo

Bullen, Nat Inst Health Innov, 2013

Public Health reviewing this



CPHA support...but...



Society issues

- Yes, there are issues.
- Suzanne will go through them in detail
- ‘Harm Reduction’ is what we as physicians do all day
- Patients make choices



Downsides

- Nitrosamine (carcinogen) present (but at levels 100-1000 x less than cigarettes!)
- Propylene glycol (also in MDIs!)
- Quality Control (nicotine levels)
- Short term physiologic effects on airways controversial; Yes (1) No (2, 3)
- Recreational use/gateway drug to smoking
- Nicotine toxicity (4)
- **Sold by tobacco companies!!**

1. Vardavas CI, Anagnostopoulos N, Kougias M, Evangelopoulos V, Connolly GN, Behrekeas PK. "Short-term pulmonary effects of using an electronic cigarette: impact on respiratory flow resistance, impedances, and exhaled nitric oxide." *Chest*. 2012 Jun;141(6):1400-6. doi: 10.1378/chest.11.2443. Epub 2011 Dec 22.
 2. Hollander, Catherine. "Is Nicotine Really Any Different Than Caffeine?" *National Journal*. 26 June 2013. Available at: http://www.nationaljournal.com/nicotine-is-nicotine-really-any-different-than-caffeine-20130627/middlearticle_search
 3. Floris AD, Chorki MS, Poulantou KP, Jamurtas AZ, Kostikas K, Tzatzarakis MN, Hayes AW, Tsatsakis AM, and Koutelidakis Y. "Acute impact of active and passive electronic cigarette smoking on serum cotinine and lung function." *Int J Toxicol*. 2013; 25(2): 91-101.
 4. Robert A Bissett DO. E-cigs, too, harmful for little kids. *Medscape* May 27, 2014.

This is NOT a recreational product for our youth!

- Dozens of flavors appealing to youth e.g. cotton candy
- Mall kiosks as sales outlets
- Positioning as not so harmful
- Vaping lounges



Where we should go

- Nicotine free E Cigarettes (that is what is 'legal' currently in Canada)
- No flavoured E cigarettes; this is not a social recreational product, but a smoking cessation product
- When it is a smoking replacement product, I am not thrilled, but the alternative??
- NO sales to minors!
- Government control?

Do not make it too easy!!

Retail Licensing

Incorporate Electronic Cigarettes

- Definitions
- Licensing requirements
 - Background checks
 - Fees
- Prohibited sales
 - Self service
- Other illegal acts
 - Sampling
- Compliance checks
- Violations and penalties



Besides, you read it in the newspaper!



Rebuttal



Suzanne is my friend and a respected colleague, but even really smart people can be WRONG!!

Smoking cessation issues for patients

- Nicotine addiction
 - Habit
 - Stress relief
 - Lifestyle
- So what are our other options, do they work?

TABLE 4 Answers to "Why do you smoke?"	
	All smokers
→	Smoking gives me more energy.
→	I smoke to keep from slowing down.
→	I reach for a cigarette when I need a lift.
→	When I'm tired, smoking perks me up.
→	I like to touch and handle cigarettes.
→	I feel more comfortable with a cigarette in my hand.
→	I enjoy getting a cigarette out of the pack and lighting up.
→	I like to watch the smoke when I exhale.
→	Smoking is a pleasure.
→	Smoking makes the good times better.
→	I want a cigarette most when I'm comfortable and relaxed.
→	Smoking helps me relax when I'm tense or upset.
→	I light up when something makes me angry.
→	When I'm depressed I reach for a cigarette to feel better.
→	I crave cigarettes—I can't quit.
→	When I run out of cigarettes it's almost unbearable until I can get more.
→	I am very aware of not smoking when I don't have a cigarette in my hand.
→	When I haven't smoked for a while, I get a gnawing hunger for a cigarette.
→	Smoking is a habit.
→	I smoke cigarettes automatically without being aware of it.
→	I light up a cigarette without realizing I have one burning in an ashtray.
→	I find a cigarette in my mouth and don't remember putting it there.

Comparing Medications: Huge failure rates: we have not found the golden snitch!

Medication	Nicotine gum	Nicotine patch	Nicotine inhaler	Bupropion	Varenicline
Treatment length	1-3 months	8-12 weeks	12-24 weeks	7-12 weeks	12 weeks
Main side effects	<ul style="list-style-type: none"> Upset stomach Hiccups 	<ul style="list-style-type: none"> Headache Disturbed sleep Site rash 	<ul style="list-style-type: none"> Irritation of throat and nasal passages Sneezing Coughing 	<ul style="list-style-type: none"> Insomnia 	<ul style="list-style-type: none"> Nausea
Dosage	2 mg, 4 mg	7 mg, 14 mg, 21 mg	6-12 cartridges per day	150-300 mg/day	0.5 mg qd to 1 mg bid
Effectiveness at six months or longer (OR [CI])	1.66 (1.52-1.81)	1.81 (1.63-2.02)	2.14 (1.44-3.18)	2.06 (1.77-2.40)	2.83* (1.91-4.19)

*Represents results from Weeks nine through 24 follow-up

Hughes JR et al. *Cochrane Database Syst Rev* 2004; 4:CD000031. Jorenby DE et al. *JAMA* 2006; 296(1):56-63. Silagy C et al. *Cochrane Database Syst Rev* 2004; 3:CD000146.

Do these products have side effects?

- Bupropion: Seizure, mania, insomnia
- NRT: insomnia, suicidality, nightmares
- Varenicline: suicidality, nightmares, nausea, CV safety (I don't think so)
- Again, we are talking about relative safeties and harm reduction....vs smoking!!

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Counselling is safe, but efficacy?

smokershelpline

CONNECT TO QUIT
smokershelpline.ca
1 877 513-5333

By phone 1 877 513-5333

- Get Coaches help others with:
 - Making a quit plan
 - Coping with cravings
 - Quitting methods
 - Withdrawal symptoms
 - Managing stress
 - Finding available services and resources

• Hours of operation:
Monday to Thursday: 9 am - 8 pm EST
Friday: 9 am - 6 pm EST
Saturdays: 9 am - 3 pm EST

Don't throw the baby out with the bath water!

- Smoking is a horrific public health epidemic
- Smoking cessation is the key
- E cigarettes have a place in assisting patients to stop smoking, with our recommendation
- Do not sell it to kids!
- If we, and our government, use it properly, we can assist many patients to stop smoking cigarettes.

Quitting Smoking: Let's HELP A Long and Difficult Journey!

- The majority of smokers are motivated to quit²

- 87%** of current smokers have tried to quit smoking at least once before⁴

The Stages of Change Model¹



Adapted from Prochaska et al.¹

- Most smokers make **5-7** attempts before succeeding²
- Only ~5% succeed without help⁵

1. Prochaska JO et al. *Am Psychol* 1992;47:1102-1114.
2. Hughes JR. *CA Cancer J Clin* 2000;50:143-151.
3.
4. O'Donnell DE et al. *Can Respir J* 2004;11(SupplB):38-59B.

Balance

- This paper argues that, while more research is needed on the cost-benefit equation of these products and the appropriate level and type of regulation for them, the **harms have tended thus far to be overstated** relative to the potential benefits. In particular: **concern over repeated inhalation of propylene glycol is not borne out by toxicity studies** with this compound; risk of accidental poisoning is no different from many household devices and chemicals available in supermarkets; concern that e-cigarettes may promote continued smoking by allowing smokers to cope with no-smoking environments is countered by the observation that **most smokers use these products to try to quit and their use appears to enhance quitting motivation**; concerns over low nicotine delivery are countered by evidence that the products provide significant craving reduction despite this in some cases; and e-cigarettes may help reduce toxin exposure to non-smokers.

Wagner TL, Siegel M, Borrelli B. Electronic cigarettes: achieving a balanced perspective. *Addiction* 2012. DOI: 10.1111/j.1360-0443.2012.03826.x.

In perspective

- "If we could get all of those people [who smoke] to completely switch all of their cigarettes to noncombustible cigarettes, it would be good for public health,"
- Mitch Zeller, director of the Food and Drug Administration's Center for Tobacco Products



New Initiative

- College of Family Physicians Section on Respiratory Medicine
- Special interest group at CFPC
- Goals:
 - Increase level of care for patients with respiratory diseases
 - Support family physicians in giving this care
 - GPSI as per UK
 - CME/Curriculum

