



Life & Health Trend Spotlight

Lifting the e-cigarette smokescreen

E-cigarettes have been hailed as a healthier alternative to traditional cigarettes and a pathway to kick the habit. But there's a darker side to this revolution. Among teens, vaping e-cigarettes has exploded in popularity and is creating the very real prospect of a new generation even more addicted to nicotine. What does this mean for life insurers? Does it give rise to a whole new risk group, and how do we underwrite and price for it?



New developments

We've been monitoring the potential health risks of e-cigarettes since they arrived on the scene as another nicotine replacement product in the early 2000s. From the start, e-cigarettes created new challenges for underwriting and pricing and today we need to factor in two new developments: their propensity to create more nicotine addicts and the underlying, unknown long-term health risks.



Gateway to nicotine addiction

When 1 in 5 deaths in the US are linked to smoking, the e-cigarette's position as a safer cigarette alternative is a significant win. Thanks to the growing availability of e-cigarettes, smoking cessation programs and higher taxes on cigarettes, many adult smokers have cut back or quit. The decline in smoking rates is a leading driver of improved mortality trends, so this is positive. However, we also see a large cohort of younger non-smokers picking up e-cigarettes at an alarming rate, and this presents a host of issues for re/insurers and society. The Centers for Disease Control notes that e-cigarettes are a potential gateway to nicotine addiction, a view also endorsed by the World Health Organization which termed this a possible "youth epidemic".

The most popular e-cigarette is Juul, a trendy USB-powered device that comes in kid-friendly flavours like Cool Cucumber and Creme Brûlée. The average cartridge contains 40mg of nicotine, intended to be about the same as what's in a combustible cigarette. The product has become so popular it's earned its place as a verb among teens as in, "He was Juuling in the parking lot".



Long-term health implications unclear

Nicotine is addictive but not necessarily harmful in and of itself. E-cigarette vapor is considered less harmful than tobacco smoke from cigars and cigarettes, which is linked to heart disease, respiratory disease and cancer.

While it's worth considering what effect the switch to an e-cigarette has on mortality, the research is not yet reliable, and we lack a clear picture of the long-term health outcomes. The products vary greatly and most existing research is funded by big tobacco companies. Some studies suggest that even after reducing the levels of some 4,000 chemicals found in combustible cigarettes, e-cigarettes still contain known carcinogens like formaldehyde. It's still unclear if vaping is healthier than traditional smoking, and the broader social impacts are largely unknown. We need better, independent research to compare the risks and determine if cancer and respiratory disease should be considered as risk factors.

Key Facts

- About 20% of all US high schoolers are using e-cigarettes – a 75% increase in the last year.
- For decades smoking rates have continuously declined among teens. Today more teens use e-cigarettes than combustible ones.
- E-cigarette sales were around USD 1 billion in 2013. Various projections show sales up to USD 48 billion in the next five years.
- 1 in 5 US deaths are linked to smoking.
- Developing brains are more susceptible to addiction and therefore the e-cigarette poses dangerous addiction risk for youth.
- The chemicals in e-cigarettes present unknown long-term health risks for all users – young and old.

The Juul in the crown

Juul is valued at USD 15 billion, and it now controls over three-quarters of the e-cigarette market.¹ As the leader in the US, Juul also has its eye on international markets including new ventures into the UK and Canada. A 2018 launch in Israel was quashed a few months later by a government ban due to public health concerns. The company itself admits the product is addictive and for this reason warns non-

smokers to stay away. Despite this, e-cigarette use among high schoolers has increased 900 percent since 2011 according to the US Surgeon General. Of more concern is the fact that developing brains may be more prone to addiction, even at lower levels of nicotine. The Food and Drug Administration (FDA) has recently stepped in with an order for Juul to turn over its market research, and the company recently withdrew its trendy, teen-savvy

social media advertising.² Juul is not the only player or technology in the market. For example, Philip Morris is selling IQOS – its own pen-shaped device said to be different because it heats tobacco instead of burning it. The IQOS is available in many markets around the world including a strong push in Japan where new upgrades are being introduced. Yet this product is not immune from similar concerns about its potential to attract the wrong audience.

¹ <https://www.vox.com/science-and-health/2018/11/14/18088468/juul-e-cigarette-menthol-fda-ban>
² <https://www.fda.gov/TobaccoProducts/NewsEvents/ucm605278.htm>

An overview of the issues for insurers

Underwriting

For now, most agree that vaping is probably less harmful than smoking, but worse than not smoking at all. Swiss Re's position is to classify individuals who vape as much closer to smokers than non-smokers. Both vapers and smokers test positive for cotinine (the nicotine metabolite).

Pricing

Some insurers prefer to consider the vaping-only population as non-smoking. If this is the case, Swiss Re will work with clients on appropriate costing strategies.

Regulatory

Governments and health officials around the world continue to grapple with this vexing public policy issue that pits the positives of a safer adult smoking alternative against the huge risk of creating a new generation of young smokers. It's a complex issue with an equally complex mix of responses that range from outright bans to strict restrictions or licensing.

Hong Kong recently joined 27 countries including Brazil, Singapore and Argentina that have enacted a ban. In countries where, e-cigarettes are allowed, they enjoy far greater marketing and distribution freedom than those for traditional cigarettes. The FDA recently announced it is taking steps to address an epidemic of youth e-cigarette use, including an historic action against retailers and manufacturers for their roles perpetuating youth access. Some argue that's not enough. Cities such as San Francisco have banned e-cigarette sales, partly in response to the fact that the FDA has pushed its e-cigarette compliance deadlines to 2022. Regulations for age limits and sales vary among US States and enforcement is irregular at best.

What's next?

We are still several years away from having evidence that conclusively compares the health effects of combustible cigarettes and e-cigarettes. What's more, the evidence may point to unique health risks that compel re/insurers to create a vaping-only classification. Swiss Re first published on this issue in 2014 and our medical doctors, underwriters and actuarial experts continue to monitor the latest research and loss experience as it develops in order to provide the most current, evidence-based view. We will use this insight and experience to support our clients in efforts to price and underwrite these new risks.

This trend spotlight was produced as part of Swiss Re's Early Warning System designed to identify and track emerging trends in health and medical risks and provide our clients with the most current information and informed assessment.

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Adverse effects of vaping

Eyes

- Irritation
- Blurry vision
- Wounds and burns in case of e-cigarette explosion

Heart and circulation

- Increased heart rate
- Increased blood pressure
- Chest pain

Brain

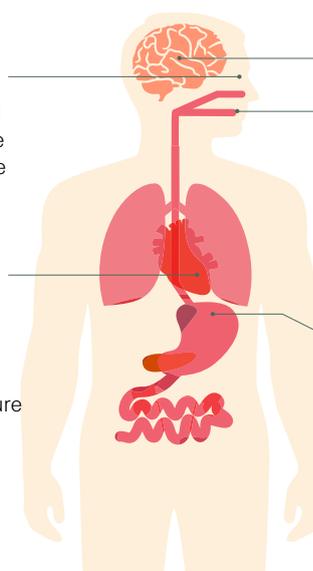
- Addiction

Mouth and airways

- Irritation
- Cough
- Increased airway resistance

Stomach

- Vomiting
- Nausea
- Pain



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