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Can e-cigarettes help save lives? It's complicated | View

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By Charlotta H. Pisinger

I was so excited the first time I heard about electronic cigarettes back in 2006. Could they save billions of lives from smoking related-death? The idea was so simple and so tempting: to replace a very harmful product with a less harmful one. Unfortunately, reality is much more complex.

The idea of tobacco harm reduction is not new. Since the 1950s filters, low tar and low nicotine products have been introduced by the tobacco industry but none of these “safer” tobacco alternatives have reduced smokers’ risk of tobacco-related diseases.

The tobacco harm reduction strategy (in this case e-cigarette vaping) is based on the following claims by the industry: 1) most smokers cannot/will not do without nicotine, 2) the product is 90-95% less harmful than conventional cigarettes, 3) most smokers will quit smoking and 4) we have failed in tobacco control and have to settle for damage control.

None of these claims is true. Here’s why:

1) Approximately three out of four smokers want to [quit smoking completely](#), and millions have already quit smoking without the use of e-cigarettes, by will power only. One of the major reasons for quitting is that people want to get rid of their nicotine dependency, to regain control of their own life.

2) WHO and a recent [expert panel](#) in the United States, among others, do not find evidence that e-cigarettes should be 95% less harmful than conventional cigarettes. Tobacco is the most harmful legal product so compared with smoking everything seems less dangerous. However, this doesn’t mean that it is harmless. Smokers can smoke for decades before they develop lung cancer or get a heart attack – and so far we have no evidence of long-term use of e-cigarettes. But there is conclusive [evidence](#) that e-cigarettes emit numerous potentially toxic substances, and there is substantial evidence that they cause dependence, promote oxidative stress, induce acute endothelial cell dysfunction, and contain chemicals capable of inducing DNA damage and mutagenesis (this supports the biological plausibility that long-term exposure [could increase](#) the risk of cancer and adverse reproductive outcomes. All animal [studies](#) indicate harm, for example on the lungs).

3) It is wishful thinking that smokers will stop smoking when they start vaping. Even though e-cigarettes are bought in the hope that they will replace smoking mostly they end up as a supplement to smoking. Approximately 60-80% of users have a dual use of e-cigarettes and conventional cigarettes, without a significant reduction in the number of conventional. This is a win-win situation for the tobacco industry (manufacturers) and explains their love of e-cigarettes. Only one randomized smoking cessation study has been published and it showed that e-cigarettes were as effective as a nicotine patch (approximately 7% had quit after six months) – no miracle cure. Even more worrying is that a large meta-analysis of studies following smokers over time showed that those who used e-cigarettes had a 25% lower probability of becoming smoke-free than those who did not use e-cigarettes, indicating that e-cigarettes actually undermine smokers abstinence. Just as light-cigarettes did.

4) We have not failed in tobacco control. Countries with strong tobacco regulations have very low smoking rates, down to 10%, and we know what works. The tobacco industry wants us to give up on smokers but we should intensify our efforts to help them quit instead of offering them another harmful addictive product. Don't underestimate the smokers – they don't need a pacifier.

Another major problem is that the harm reduction strategy focuses on smokers and completely ignores the public health perspective. There is probably a health benefit for the few smokers who do not end with dual use but completely stop smoking but does this outweigh the harm of e-cigarettes on ex-smokers (tempted by this “harmless” product) and never-smokers who take up vaping? For them, there is definitely no health-gain, and there is now substantial evidence that e-cigarette use increases the risk of ever using combustible tobacco cigarettes among youth.

The Tobacco Products Directive lays down rules for electronic cigarettes sold as consumer products in the EU: there are safety and quality requirements, packaging and labelling and monitoring rules. We have little evidence about the impact of this regulation but it is reasonable to assume that price and regulation will have a huge impact on use, as with tobacco or other products. In Korea, where there has been strong regulation for many years, use of e-cigarettes among youth has remained very low while it rose dramatically in the US where there had been minimal regulation in the same period. Recently, after stronger regulation was introduced in the US, a substantial decline in electronic cigarette use among youth was seen, and concurrently, there was a parallel decrease in use of combustible cigarettes in the same age groups. We cannot draw firm conclusions, but it seems crucial that we have strong regulation on e-cigarettes if we want to protect our youth, not only from vaping but also from smoking. Luckily, many European countries regulate e-cigarettes more strictly. Portugal has, for example, regulations on child safety, minimum age, advertising, promotion, sponsorship, health warning labelling, flavors, sale and vape-free areas, and Austria and Belgium have banned sale. Let this be an inspiration for other European countries.

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