



“Young people are experimenting with e-cigarettes”

Dr. Elke Pieper assesses the health risk of e-cigarette ingredients at the BfR and supervises related research work. In an interview, the chemist talks about passive smoking, the fascination of technology and the cases of poisoning in the USA.

Ms. Pieper, according to what we currently know, there are fewer harmful substances in e-cigarette vapour than in cigarette smoke. Is passive smoking harmless?

The liquid, meaning the fluid that is vaporised by e-cigarettes, contains nebulising agents, flavouring substances and often nicotine. The latter is notoriously harmful to health. If the substances are vaporised, aldehydes, including the carcinogenic formaldehyde, arise. The health risks of these substances can also affect passive smokers. We recommend using e-cigarettes in an open environment only and not in public buildings or non-smoking areas. Even if the exposure is reduced in comparison to tobacco cigarettes and an e-cigarette cannot glow, the vapour emitted contains significantly more problematic substances than the normal ambient air.

Do e-cigarettes have any benefits for people who want to quit smoking?

Switching to e-cigarettes is not quitting, of course. However, e-cigarettes may be an alternative for people who find it hard to quit smoking – even if they are not approved for smoking cessation. E-cigarettes do not force people to change their usual smoking behaviour. At the same time, these consumers inhale fewer problematic substances than before, although still significantly more than non-smokers.

E-cigarettes are advertised as a lifestyle product. This has led to criticism that young people are tempted to vape and that they later switch to tobacco cigarettes because they are addicted to nicotine. Is this a realistic assumption?

There are no studies supporting this scenario for Germany. Most vapers used to smoke cigarettes. The number of non-smokers who start using electronic cigarettes is very small. There is also no evidence that they eventually switch to tobacco cigarettes. One thing is certain: young people experiment with e-cigarettes; they test them as a technical device. They try out what it is like to vape. And most of the time they leave it at that. The number of young vapers has increased in the last few years. The increase in Germany is much lower than in the USA.

A team in the Product Research and Nanotechnology Unit at the BfR is researching the health risks of smoking alternatives such as e-cigarettes, heat-not-burn tobacco products and e-shishas. Elke Pieper is one of them.

In the United States, there is already talk of a “vaping epidemic” in schools and of a new generation of nicotine addicts. What is going on there?

An e-cigarette manufacturer in the USA ran an advertising campaign that was very much aimed at young people. Competitions ran on social media, for example. As a result, around a quarter of high school students regularly vape – half of them use the brand that was specifically advertised. This product is easy to use and contains comparatively high levels of nicotine.

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Which aspects of e-cigarettes are currently being researched at the BfR?

One core research area deals with e-cigarette models that are popular with young people, especially the “pod” devices. We are investigating how much nicotine the liquids contain and how much of it is found in the vapour. The latter is crucial. We also looked at “sub ohm” devices, where power and temperature can be regulated. These investigations will determine the concentration of potentially harmful substances at specific settings.

What will the BfR be investigating in the near future?

An analysis of how the individual components of liquids affect lung cells is planned. Liquids often contain food flavourings that were never intended to be used in e-cigarettes. Little is known about how flavouring substances can influence our health when they are inhaled. We also want to investigate the impact of vitamin E acetate on lung cells. This substance is supposed to be responsible for numerous cases of poisoning in the USA. ■