BVTE
Bundesverband der Tabakwirtschaft und neuartiger Erzeugnisse

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FACT CHECK
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Are e-cigarettes as harmful as tobacco cigarettes?

DGP equates e-cigarettes with tobacco cigarettes – BVTE criticises inappropriate statement and study assessment

In an official press release from the German Society of Pneumology and Respiratory Medicine (DGP), Prof. Dr Stefan Andreas, spokesperson for the DGP's 'Tobacco Prevention and Health Care' section, stated that e-cigarettes are 'roughly as dangerous as tobacco cigarettes'. It was also claimed that the simultaneous use of e-cigarettes and tobacco cigarettes ("dual use") is even more harmful to health than smoking cigarettes exclusively[1] .

The press release does not cite any specific scientific source for these statements. In terms of content, however, the statements largely correspond to the conclusions of the study "Population-Based Disease Odds for E-Cigarettes and Dual Use versus Cigarettes" by Glantz, Nguyen and Oliveira da Silva, which was published in *NEJM Evidence* in 2024 and to which Prof. Andreas had already referred in other publications.

The study analysed data from a large US population survey and compared the prevalence of various diseases among non-smokers, smokers, exclusive e-cigarette users and so-called dual users. The authors report that exclusive e-cigarette users have increased health risks compared to non-smokers and, for several of the conditions examined, show risk levels that are of a similar magnitude to those of smokers. On this basis, they conclude that e-cigarettes could be similarly harmful to health as tobacco cigarettes.

The study's conclusions met with widespread and, in some cases, very strong criticism from the scientific community. Numerous scientists from the fields of epidemiology, addiction research and tobacco control pointed out that the study's central claim – that e-cigarettes are similarly harmful to tobacco cigarettes – could not be derived from the available data.

Critics included, among others, epidemiologist Michael Siegel (Boston University), cardiologist and tobacco researcher Konstantinos Farsalinos, addiction researcher Peter Hajek (Queen Mary University of London), evidence researcher Jamie Hartmann-Boyce, and public health scientists Colin Mendelsohn and Brad Rodu.

The criticism focused primarily on the study's methodology. It is not a long-term study, but rather an analysis of a one-off population survey from which **no conclusions regarding cause and effect** can be drawn. Furthermore, most e-

cigarette users were current or former smokers, meaning that many of **the conditions** examined **could be attributed to decades of cigarette consumption**. Furthermore, the study does not adequately consider whether **the conditions** were **already** present **before the switch to e-cigarettes**.

Added to this is the problem of so-called **'reverse causation':**
Smokers often switch to e-cigarettes precisely because of existing health problems and thus appear in surveys as e-cigarette users, even though their conditions developed during the time they were smokers. Critics therefore argue that the available data do not allow for a reliable conclusion regarding the relative harmfulness of e-cigarettes compared to tobacco cigarettes.

The claim that e-cigarettes are similarly harmful to tobacco cigarettes contradicts a large body of scientific literature as well as the assessments of leading health authorities. Numerous review studies conclude that, whilst e-cigarettes are not risk-free, they significantly reduce exposure to toxic and carcinogenic substances compared to smoking. Similar assessments have also been made by the UK health authorities, which classify e-cigarettes as significantly less harmful than tobacco cigarettes in their evidence reports, as does the US FDA, which has explicitly stated in the context of several authorisation procedures that the aerosols from authorised e-cigarettes contain significantly lower levels of harmful and potentially carcinogenic substances than cigarette smoke and can offer health benefits to adult smokers who switch completely.

Nor does the current evidence on cardiovascular risks support equating e-cigarettes with tobacco cigarettes. Whilst various studies show that e-cigarettes have biological effects on cardiovascular functions and cannot be regarded as risk-free, However, systematic reviews and meta-analyses predominantly conclude that increased cardiovascular risks are evident particularly among dual users as well as former or current smokers, whilst for exclusive e-cigarette users, the data to date show no or only slightly increased risks of heart attack, stroke and other cardiovascular diseases (Berlowitz et al., 2022; Chen et al., 2024; Tansawet et al., 2025). The authors also emphasise that the evidence remains uncertain due to the limited long-term data available to date, and that further prospective studies are required. However, the current evidence does not provide a robust basis for the claim that the cardiovascular risks of e-cigarettes are equivalent to those of tobacco cigarettes.

The equation of e-cigarettes with tobacco cigarettes is, however, supported neither by the body of available evidence nor by the assessments of leading health authorities.

Responsible risk communication should therefore accurately reflect both the existing uncertainties and the significant differences between combustion and non-combustion products.

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Footnote [1] : https://pneumologie.de/aktuelles-service/presse/pressemitteilungen/influencer-e-zigaretten-und-die-sprache-der-nikotinindustrie-lungenmediziner-fordern-politik-zu-konsequentem-jugendschutz-auf-untersuchungen-zeigen-luecken-verharmlosung-und-falschinformationen

References:

Glantz SA, Nguyen N, Oliveira da Silva AL (2024)
Population-Based Disease Odds for E-Cigarettes and Dual Use versus Cigarettes.
NEJM Evidence 2024;3(3):EVIDoa2300229.
DOI: 10.1056/EVIDoa2300229.

Glantz SA, Nguyen N, Oliveira da Silva AL (2024)
An Exchange on "Population-Based Disease Odds for E-Cigarettes and Dual Use versus Cigarettes". NEJM Evidence, Correspondence/Exchange.
Discussion of the criticism of the original publication.

Expert critique of Glantz *et al.*, 2024

Rodu B, Plurphanswat N, Phillips CV (2025)
Inaccurate and misleading meta-analysis of e-cigarettes and disease outcomes.
Internal and Emergency Medicine, 2025.
The authors describe "serious deficiencies" in the Glantz analysis and re-examine the underlying studies.

Lee PN et al. (2025)
Comparing smoking-related disease rates from e-cigarette use and smoking: a reanalysis of Glantz et al.
Harm Reduction Journal, 2025.
Reanalysis of the data used by Glantz on COPD, stroke and heart attack.

Critcher CR, Siegel M (2021)
Re-examining the Association Between E-Cigarette Use and Myocardial Infarction.
American Journal of Preventive Medicine.
A seminal work by Michael Siegel on the issue of reverse causation and misattribution in cross-sectional data.

Statements on the lower risks of e-cigarettes:

Office for Health Improvement and Disparities (2022).
Nicotine vaping in England: 2022 evidence update.
Government evidence report by the UK health authorities. Assesses e-cigarettes as significantly less harmful than tobacco cigarettes. OHID Evidence Update 2022

U.S. Food and Drug Administration (FDA).
Marketing Authorisation Orders for Vuse, NJOY and other ENDS products.
During the approval process, the FDA found that the aerosols contain significantly lower levels of harmful substances than cigarette smoke and that a complete switch can benefit adult smokers.
FDA-Authorised ENDS Products

See also for the classification of risks

Murkett R, Rugh M, Ding B (2022)
Nicotine Products Relative Risk Assessment: An Updated Systematic Review and Meta-analysis. F1000Research, 9:1225.

Abrams DB et al. (2018). Harm Minimisation and Tobacco Control: Reframing Societal Views of Nicotine Use to Rapidly Save Lives. Annual Review of Public Health, 39:193–213.

Studies on the cardiovascular risks of exclusive vapers:

Berlowitz JB, Xie W, Harlow AF, et al. (2022)
E-Cigarette Use and Risk of Cardiovascular Disease: A Longitudinal Analysis of the PATH Study (2013–2019).
Circulation, 145(20):1557–1559.
→ The longitudinal analysis found no significant association between exclusive e-cigarette use and new-onset cardiovascular disease; increased risks were observed primarily among those who used both cigarettes and e-cigarettes.

Chen C, et al. (2024)
A meta-analysis of exclusive and dual use of combustible cigarettes and cardiovascular disease.
Addictive Behaviors, 156:108069.
→ Exclusive e-cigarette use showed no statistically significant association with cardiovascular disease, whereas dual use was associated with significantly increased risks.

Tansawet A, et al. (2025)
Electronic cigarettes and cardiovascular diseases: An updated systematic review and network meta-analysis.
Tobacco Induced Diseases, 23.
→ The authors conclude that the evidence for exclusive e-cigarette users remains

inconsistent and uncertain, whilst the strongest risk signals are observed among smokers and dual users.