



Protecting and improving the nation's health

Underpinning evidence for the estimate that e-cigarette use is around 95% safer than smoking: authors' note

The estimate that e-cigarette use is around 95% safer than smoking is based on the facts that:

- the constituents of cigarette smoke that harm health – including carcinogens – are either absent in e-cigarette vapour or, if present, they are mostly at levels much below 5% of smoking doses (mostly below 1% and far below safety limits for occupational exposure)
- the main chemicals present in e-cigarettes only have not been associated with any serious risk

Our review¹ aimed to assess whether studies that have recently been widely reported as raising new alarming concerns on the risks of e-cigarettes changed the conclusions of the previous independent review ([Britton and Bogdanovica, 2014](#)) and other reassuring reviews.

We concluded that these new studies do not in fact demonstrate substantial new risks and that the previous estimate by an international expert panel ([Nutt et al, 2014](#)) endorsed in an expert review ([West et al, 2014](#)) that e-cigarette use is around 95% safer than smoking, remains valid as the current best estimate based on the peer-reviewed literature.

Some flavourings and constituents in e-cigarettes may pose risks over the long term. We consider the 5% residual risk to be a cautious estimate allowing for this uncertainty.

Ongoing monitoring is needed to ensure that if any new risks emerge, recommendations to smokers and regulatory requirements are revised accordingly.

On current evidence, there is no doubt that smokers who switch to vaping reduce the risks to their health dramatically.

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ⁱ McNeill et al, [E-cigarettes: an evidence update – A report commissioned by Public Health England](#), Public Health England, August 2015