

44,000 healthy years lost in Europe, 72,000 years could still be lost in the future

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Because Volkswagen has committed large-scale fraud with the software in diesel engines, nine million fraudulent cars, sold in Europe and the US from 2009 to 2015, have emitted a cumulative amount of 526 kilo tonnes of nitrogen oxides more than was legally allowed. The Volkswagen fraud has had an even larger environmental impact in Europe than in the US: more Volkswagens were sold and the population density is higher. Environmental scientists from Radboud University in the Netherlands have provided an estimate of the public health consequences caused by this fraud in the scientific magazine *Environmental Pollution*.

According to the calculations of Rik Oldenkamp, Rosalie van Zelm and Mark Huijbregts, 45,000 life years were lost due to ill-[health](#) or early death, of which over 44,000 in Europe (and almost 700 in the United

States) are associated with inhalation of fine dust due to the extra [nitrogen oxides](#) emitted by the diesel cars that were tampered with. If Volkswagen does not recall the cars that were tampered with, another 72,000 healthy life years will be lost in Europe due to the abovementioned emissions.

Health costs, Europe and USA

Aside from 'healthy life years', there is another commonly used way to calculate damage, based on the value of statistical life (VSL). This measure of costs reflects the rate at which an individual would trade consumption of other goods and services for small changes in her own mortality risk, given her preferences and budget constraints. Researchers from Nijmegen have calculated these specific health costs due to mortality in Europe and the United States to be at least 39 billion US dollars, which is significantly more than the 7.3 billion US dollars that Volkswagen Group has set aside to cover worldwide costs related to the diesel emissions scandal. Using this method of damage calculation, one should take into account another 62 billion US dollars in damage if Volkswagen does not recall their cars.

Europe suffers most

The paper is the first to specify European health impacts – and confirms two earlier studies focussing on the impact in the United States.

"We find an even more devastating impact in Europe," Rik Oldenkamp says. "Many more fraudulent Volkswagens were sold here, in a more densely populated area. So the European health impact of the fraud is much larger." The authors calculate that more than 95 percent of the health impacts occurred in Europe.

Environmental impact assessment models

The [environmental scientists](#) at Radboud University specialise in models that allow them to calculate environmental impacts of industries and consumption patterns. "When we heard about this scandal, we decided to calculate the [impact](#) thoroughly. Although some estimates have been going around, this is, as far as we know, the first scientific paper showing the effects on European health."

More information: Rik Oldenkamp et al. Valuing the human health damage caused by the fraud of Volkswagen, *Environmental Pollution* (2016). [DOI: 10.1016/j.envpol.2016.01.053](https://doi.org/10.1016/j.envpol.2016.01.053)

Provided by Radboud University

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