For Every 50 Smokers – One Non-Smoker Dies from Secondhand Smoke Exposure

Title: “Estimated worldwide mortality related to second hand tobacco smoke exposure, 1990-2016”

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Bottom Line: Roughly 50 lifetime smokers are associated with the death of one non-smoker, according to a large-scale data analysis.

Why this research is interesting: To get a better understanding of the scale of harm inflicted by smokers, researchers used a large-scale data set to develop a “secondhand smoke index” that calculated the number of smokers associated with the death of a non-smoker in different regions of the world. The findings assign responsibility of harm to smokers, with the hope that this analysis will change their habits, and has the potential to change smoking policies to protect non-smokers from secondhand smoke exposure.

How the research was conducted: Researchers from Mount Sinai Heart and VU University Medical Center Amsterdam in the Netherlands analyzed a large-scale dataset on global smoking behavior from “Our World in Data.” This is comprised of several different, high quality datasets from a number of sources including World Health Organization, Global Burden of Disease Reports, and International Mortality and Smoking Statistics. Data included the number of active smokers and secondhand smoke victims (those who died from premature death due to secondhand smoke) from 1990 – 2016. Researchers compared World Bank regions – North America, South Asia, Middle East and North Africa, East Asia and Pacific, Europe and Central Asia, Sub-Saharan Africa, and Latin America and Caribbean.

They tabulated the number of lifetime smokers in each country and the premature deaths related to second hand smoke in that country (average lifetime smoking was set at 24 years based on epidemiological data). The analysis also included the average number of cigarettes smokers used. Researchers calculated the number of pack years associated with death in one non-smoker through second hand smoke, the so-called pack-year index (PYI). They also calculated the number of lifetime smokers associated with the death of one nonsmoker, i.e. the second hand smoke index.

What the results show: Researchers calculated that in 2016, 52 current lifetime smokers were associated with the death of one non-smoker worldwide. This is an increase from 1990, when 31 lifetime smokers were associated with the death of one non-smoker, and reflects the relative effectiveness of anti-tobacco measures like smoking bans in restaurants. The secondhand smoke index was more favorable in North America—around 90 smokers related to one death—where there are more protective laws against smoking in public area. Regions like the Middle East or Southeast Asia had less favorable numbers—around 40 smokers to one death—due to minimum or no protective measures.
**Why this research is important:** These results could help policy makers to better understand the scale of harm inflicted by secondhand smoke and develop new measures that will protect non-smokers. This is especially important considering children exposed to secondhand smoke are at increased risk for sudden infant death syndrome, acute respiratory infections, and asthma. Even a low dose of secondhand smoke can damage the cardiovascular system and long-term exposure can lead to a 20–30 percent increase in risk for heart attack and lung cancer.

**Quotes:**

“This study demonstrates the devastating effect of second-hand smoke. We hope that attributing harm directly to smokers will help influence public opinion against secondhand smoke exposure and enshrine governments to enforce stringent anti-tobacco control. We suggest that the secondhand smoke index may be used as a benchmark for effectiveness of protection against tobacco in countries, and help governments to shape their anti-tobacco policies,” says Jagat Narula, MD, PhD.

“The problem is exaggerated in the rapidly developing economies which are lacking effective protection of non-smokers. But this research demonstrates that even in modern states there is a lot to gain when it comes to strengthening policies to protect nonsmokers, especially children. For example, it should not be allowed for parents to smoke inside their cars with them,” explains lead author Leonard Hofstra, MD, PhD, Professor of Cardiology at VU University Medical Center Amsterdam, Netherlands.

**About the Mount Sinai Health System**

The Mount Sinai Health System is New York City’s largest academic medical system, encompassing eight hospitals, a leading medical school, and a vast network of ambulatory practices throughout the greater New York region. Mount Sinai is a national and international source of unrivaled education, translational research and discovery, and collaborative clinical leadership ensuring that we deliver the highest quality care—from prevention to treatment of the most serious and complex human diseases. The Health System includes more than 7,200 physicians and features a robust and continually expanding network of multispecialty services, including more than 400 ambulatory practice locations throughout the five boroughs of New York City, Westchester, and Long Island. The Mount Sinai Hospital is ranked No. 14 on U.S. News & World Report’s “Honor Roll” of the Top 20 Best Hospitals in the country and the Icahn School of Medicine as one of the Top 20 Best Medical Schools in country. Mount Sinai is a national and international leader ensuring that we deliver the highest quality care—from prevention to treatment of the most serious and complex human diseases. The Health System includes more than 7,200 physicians and features a robust and continually expanding network of multispecialty services, including more than 400 ambulatory practice locations throughout the five boroughs of New York City, Westchester, and Long Island. The Mount Sinai Hospital is ranked No. 14 on U.S. News & World Report’s “Honor Roll” of the Top 20 Best Hospitals in the country and the Icahn School of Medicine as one of the Top 20 Best Medical Schools in country. Mount Sinai Health System hospitals are consistently ranked regionally by specialty by U.S. News & World Report.

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