Air pollution killing nearly as many people as smoking in Britain

Sarah Knapton, SCIENCE EDITOR, Daily Telegraph, 12 MARCH 2019

Air pollution kills nearly as many people as smoking in Britain each year, new figures have shown.

Although it was previously thought that emissions were responsible for around 40,000 deaths in the UK, new figures suggest it is closer to 64,000, just 18 per cent less than the 78,000 deaths caused by tobacco.

A further 29,000 deaths in Britain were also linked to air pollution which exacerbated other conditions such as cancer, diabetes and chronic lung disease.

Globally, dirty air from vehicle exhausts, factories and power plants causes more deaths than smoking, accounting for 8.8 million deaths a year, compared to the 7.3 million people that die from inhaling smoke.

Co-author Professor Thomas Munzel, from the University Medical Centre Mainz in Germany, said: “Smoking is avoidable but air pollution is not.”

In a new study published in European Heart Journal, scientists used an updated modelling technique to calculate how the atmosphere and weather interacts with industry, traffic and agriculture, and mapped it against population data from the World Health Organisation (WHO).

In Europe alone the death toll was found to be 790,000, twice the previous estimate.

The average lost life expectancy of someone dying in Britain because of air pollution was found to be 1.5 years, while across Europe it was 2.4 years.

In Britain, 98 deaths in every 100,000 can now be attributed to inhaled pollutant chemicals, according to the research, while in Europe the figure was Europe 133 per 100,000 deaths, more than one in 1,000.

Air pollutants | Which should we be worried about?

Pollutant	What is it?	WHO limits
Particulate matter (PM2.5 and PM10)	Comprised of sulfate, nitrates, ammonia, sodium chloride, black carbon, mineral dust and water. Commonly used as a proxy indicator for all pollution and affects more people than any other pollutant	Annual mean of 10 micrograms per cubic metre (10 µg/m3) for PM2.5, and 20 µg/m3 for PM10

Pollutant	What is it?	WHO limits
Nitrogen dioxide (NO2)	In high concentrations it is a toxic gas,and it forms an important fraction of PM2.5. It predominantly comes from vehicles and industry, and has been associated with causing asthma and bronchitis	Annual mean of 40 µg/m3 and one hour mean of 200 µg/m3
Ozone (O3)	Ozone at a ground level is a major component of smog. It is formed when nitrogen oxides react with sunlight	Eight hour mean of 100 µg/m3
Sulphur dioxide (S02)	A colourless which has a sharp smell, SO2 comes from burning fossil fuels. Just 10 minutes of exposure at high levels can cause health problems, particularly respiratory issues	24-hour mean of 20 µg/m3 and 10-minute mean of 500 µg/m3

The number of deaths was worse in Eastern European countries, which researchers said was as a result of poorer healthcare rather than fewer emissions.

Co-author, Professor Jos Lelieveld, of the Max-Plank Institute for Chemistry in Mainz and the Cyprus Institute Nicosia, Cyprus, said: “The high number of extra deaths caused by air pollution in Europe is explained by the combination of poor air quality and dense population, which leads to exposure that is among the highest in the world.

“Although air pollution in eastern Europe is not much worse than in western Europe, the number of excess deaths it caused was higher.

"We think this may be explained by more advanced health care in western Europe, where life expectancy is generally higher.”

Cases of lung and cardiovascular disease were mainly caused by microscopic PM 2.5 particles that become lodged in lungs and enter the bloodstream, said the researchers.

Diesel road vehicles are one of the biggest producers of particulate pollution in developed countries such as the UK. In 2017 the Government announced that it would be banning the sale of new petrol and diesel cars in Britain by 2040.

Other sources of the lethal particles include fossil fuel-burning industrial processes, power plants and domestic heating.

At a glance | UK cities which break WHO air pollution guidelines

The World Health Organisation safety recommendation for small particulate matter (PM10) pollution is a maximum of 20 µg/m3 as an annual mean.

City	Annual mean (µg/m3)
Port Talbot	25
Stanford-le-Hope	24
Glasgow	23
London	22
Scunthorpe	22
Leeds	22
Eastbourne	21
Nottingham	21
Southampton	21
Oxford	21

Source: World Health Organisation

The report authors are calling for more stringent curbs on particulate pollution. Currently the average safety limit for PM2.5 particles in the European Union is 25 micrograms per cubic metre of air even though the WHO recommendation is just 10 micrograms.

Commenting on the findings Dr Holly Shiels, Division of Cardiovascular Sciences, University of Manchester, and member of the Physiological Society, said: “Overall the analysis further highlights the serious association between air pollution and cardiovascular-disease based mortality.

“And although further studies are needed to reduce the large uncertainty associated with the risk, the call for reassessment of current UK and EU air quality regulations seems highly warranted.”