Few of us need convincing that the air we breathe is vital for our well-being, and may be the cause of ill-health in many places due to the presence of pollutants. How the particles present harm us is now the focus of research worldwide.

While individual pollutants may be fairly well understood by scientists, it is the cocktail of particles that is receiving careful attention. The mixtures are different depending on where they are inhaled or encountered in the environment, from traffic fumes to industrial pollution, and their effects on health and the atmosphere are not as well known as scientists would like.

Research conducted by Renyl Zhang and colleagues at Texas A & M University (College Station, US) has shown that particle quantity varies according to the "cocktail" mixture. Simulations of urban pollution using varying amounts of aromatic acid and sulphuric acid vapors produce aerosol particles in greater or lesser quantity, with particles increasing tenfold in the presence of these acids.

They will of course affect human health in different ways but can also affect weather systems: creating a cooling effect by scattering incoming radiation; changing cloud formation; and by altering chances of rain or snow fall.

The evidence for various effects on human life is ongoing. Nadia Obi-Osius and her colleagues at the University Hospital (Hamburg-Eppendorf, Germany) report that living near toxic waste incinerators increases the chances of having twins! Her team interviewed 639 mothers, half living close to a waste disposal plant and the others living around 20 kilometers away in non-industrial sites. They also scanned 236,000 birth records from the region from 1994-1997, dividing these again to proximity to the incinerator or otherwise. Around 5 per cent of the mothers close to the pollution had twins, nearly double the rate of the women further afield.

While the possibility of having twins might be greeted with joy, the downside in this research showed that as twins are more likely to have low birthweights, be born prematurely or die in infancy, increasing the likelihood of such births was not something to be welcomed lightly. The study also found an increase in thyroid problems in children.
born near incinerators.

Other research published by Harvard Medical School reports increased childhood asthma from transport and industrial emissions, pollen production, spread of particular weeds, and fungal growth.

We need to exercise vigilance in controlling the things that can be controlled in reducing breathing hazards, to do less would leave a nasty smell in the air!

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