

Pollution 'nearly as bad as smoking' during pregnancy

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Scots findings drive call to speed up fumes ban

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Expectant mothers who live in Britain's worst air pollution hotspots risk causing almost as much harm to their unborn child as those who smoke, according to Scottish scientists.

A study by Edinburgh and Aberdeen universities found that Scottish babies exposed to toxic gases and particulates, such as those belched out through car exhausts, were born with smaller heads and shorter bodies.

A similar outcome was observed in babies whose mothers smoked during pregnancy but were exposed to less pollution.

Dr Tom Clemens, who led the study, has called on the World Health Organisation (WHO) and the EU to urgently review their definition of "acceptable" emissions levels amid concern they are still too high.

He said the findings are particularly worrying because the study — the largest of its kind so far conducted — only examined the effects of pollution in the northeast of Scotland, where air quality is relatively good compared with

congested areas such as Glasgow, Edinburgh and London.

“Our findings suggest that there may not be a truly ‘safe’ level of exposure during pregnancy,” said Clemens. “A foetus with a non-smoking mother exposed to high pollution levels is only slightly better off than one with a smoking mother exposed to low levels of pollution. This implies that the effect of exposure to the highest levels of pollution may be almost as bad as smoking.”

Ministers recognise that poor air quality is the biggest environmental risk to public health in the UK and have pledged to ban diesel and petrol cars by 2040.

It has been estimated that 59% of the British population are living in towns and cities where nitrogen dioxide pollution breaches the lawful level of 40 microgrammes per cubic metre of air. The Labour party has described the air pollution crisis as a “national scandal”.

The Scottish study, published in the scientific journal *Environment International*, has prompted calls for the ban to be enforced earlier.

“Since the 2008 Beijing Olympics, outdoor air pollution has been recognised as a problem and the evidence we need to tackle it continues to pile up. It is time to do something about it,” said Steve Turner, a co-author of the study from the University of Aberdeen.

Data on foetal growth was gathered from ultrasound scans and maternity records for almost 14,000 pregnancies in northeast Scotland between 2002 and 2011. Lifestyle factors, such as smoking, were considered. Air quality at postcode level was determined using dispersion models based on UK government data.

Unlike previous air pollution studies, the investigation by Clemens and his team looked at the effect on developing foetuses of PM2.5 particulates – microscopic specks of dust and soot that can enter the lungs and bloodstream.

They detected average concentrations of 7.2 micrograms per metre cubed – well below the annual average of 10 micrograms per metre cubed that is deemed acceptable by WHO.

Nevertheless, they found that particulates were “consistently related” to babies born with heads that were almost 3mm smaller than those exposed to lower levels of pollution. There was strong evidence that PM2.5s stunt a baby’s growth.

Clemens stressed that smoking will always result in poorer pregnancy outcomes “no matter what else is going on”, but Chris Dibben, a co-author of the study, added: “Although most parents will be aware that their smoking may be harming their unborn child, we wonder whether there is an equal awareness that air pollution can have a similar level of impact on the growth of the child in the womb, even in a relatively unpolluted region like northeast Scotland.”

In February, the European Commission admitted that air quality laws had been flouted in more than 130 cities across 23 of the 28 EU member states, including the UK.

Scottish ministers have said that Scotland's air "is among the best in Europe" but admit that hotspots of poor air quality remain.

According to the UK government's Committee on the Medical Effects of Air Pollutants, poor air quality in Scotland reduces average life expectancy by three-four months (compared with six-seven months in England and Wales).

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