

# 'Suggestive evidence' for link between air pollution and heightened stillbirth risk

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Pregnancy test. Credit: public domain

There is 'suggestive evidence' for a link between air pollution and a heightened risk of stillbirth, indicates a summary of the available data, published online in *Occupational & Environmental Medicine*.

An estimated 2.6 million children worldwide were stillborn at 28 weeks or more in 2015, with the wide geographical variation in prevalence suggesting that most of these deaths were preventable, say the study authors.

To date, two reviews of the available [evidence](#) have pointed to a link

between [air pollution](#) and [stillbirth](#). But the strength of the association found was weak, and further evidence has since emerged, prompting the authors to carry out a systematic review of research published up to 2015.

Thirteen studies were eligible for inclusion in the summary, which found an association between exposure to air pollution—particularly during the third term of pregnancy—and a heightened risk of stillbirth.

Specifically, a 4 ug/m<sup>3</sup> increase in exposure to small particulate matter of less than 2.5 in diameter (PM2.5) was associated with a 2% increased risk of stillbirth, while exposure to nitrogen dioxide, carbon monoxide, PM10 and ozone were also linked to a heightened risk.

The researchers say that differences in study design and the type of pollutant assessed, made it impossible to include all 13 studies in the final analysis, leaving three register based studies from the US and Asia.

And as a linked editorial by Dr Marie Pedersen, of the Centre for Epidemiology and Screening, University of Copenhagen, highlights, most of these previous studies were unable to take account of potentially influential factors, such as obesity, infections, alcohol, and occupation and stress, all of which have been associated with an increased risk of stillbirth.

Furthermore, most of the existing evidence relies on air monitoring data, which doesn't adequately capture variations in levels within the same city.

Despite these caveats, the study authors conclude: "However, the existing evidence is suggestive of causality for air pollution and stillbirth without precise identification of the timing of exposure."

But they add that further research is needed to strengthen the body of evidence available: "With the limited studies on the relevant topic, our review suggests strong priorities for future research," they write.

"Stillbirth is one of the most neglected tragedies in global health today, and the existing evidence summarised by [the authors] deserves additional investigation," writes Dr Pedersen.

"If the evidence of an association between ambient air pollution and stillbirth is confirmed in future studies, it would be of major public health importance," she adds.

And she goes on to say that even though the size of the effect seems relatively small, the ubiquitous nature of ambient air pollution exposure suggests that exposure to it might have considerable impact on stillbirth risk at the population level.

**More information:** Prenatal ambient air pollution exposure and the risk of stillbirth: systematic review and meta-analysis of the empirical evidence, *Occupational & Environmental Medicine*, [DOI: 10.1136/oemed-2015-103086](https://doi.org/10.1136/oemed-2015-103086)

Editorial: Is it still important to study if ambient air pollution triggers stillbirth? *Occupational & Environmental Medicine*, [DOI: 10.1136/oemed-2016-103625](https://doi.org/10.1136/oemed-2016-103625)

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