

Air pollution means pregnant women can't breathe easy

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Pregnant women receive a lot of instructions to ensure the healthiest

possible baby: what to eat and drink, what to avoid, which vitamins to take, which activities to avoid and more.

But what about breathing?

Researchers have long been concerned about air [pollution](#)'s effects on pregnancy, with possible consequences ranging from premature births and [low birth weight](#) to elevated blood pressure later in the child's life.

"We have just scratched the surface on this research," said Dr. Beate Ritz, professor of epidemiology at the UCLA Fielding School of Public Health.

Ritz, who is president of the International Society of Environmental Epidemiology, has conducted studies since the 1990s linking [air pollution levels](#) in Southern California to mothers delivering babies before full term at below-average birth weight.

"When we started, some people said the fetus doesn't breathe air, so how would it be affected?" she said. "It has become clear that whatever is happening to the mother is happening to the baby, and what happens in pregnancy can affect the rest of its life."

Recent studies in the United States and elsewhere have shown correlations between particulate matter in the air and [high blood pressure](#) in mothers and babies, gestational diabetes (an increase in blood sugar that affects pregnant women), and high blood pressure in children who were exposed to pollution in the womb.

The possible dangers for babies who develop in a polluted environment extend to an increased risk of autism, asthma and the ultimate risk: miscarriage.

"It's very hard to measure, because some women might lose the fetus so early they didn't even know they were pregnant," Ritz said. "But once you damage a fetus enough, it doesn't survive."

Pollution "seems to particularly affect [vulnerable populations](#), such as those who are elderly or predisposed to disease," said Dr. Sanjay Rajagopalan, chief of cardiology at the Herrington Heart and Vascular Institute of University Hospital in Cleveland. "And pregnancy is a vulnerable state. The fetus is in an environment where it is growing and vulnerable."

However, Rajagopalan, who co-authored an American Heart Association scientific statement about air pollution and [cardiovascular disease](#), said most studies so far have established only correlations between polluted air and disease rather than a direct cause-and-effect.

One obstacle, Rajagopalan said, is "it's difficult to persuade pregnant women to partake in research. But this is becoming widely recognized as a field to explore. It's just a matter of time."

Meanwhile, [pregnant women](#) shouldn't breathe easy. For [expectant mothers](#) and everyone else, Ritz said, the dangers of pollution should fuel campaigns for better air quality everywhere in the world.

But that's unlikely to change much in nine months, bringing simple precautions and common sense to the forefront.

Indoor air purifiers are a good idea, Ritz said, as is keeping windows closed that face roadways and heeding health warnings on high-pollution days.

Rajagopalan stresses all the healthy behaviors for pregnancy – eating well, physical activity, prenatal care, avoiding alcohol and tobacco,

monitoring [blood pressure](#) and other health indicators – as well as reducing exposure to bad air.

"Try to visit [green spaces](#) and areas that will probably have low levels of air pollution," he said. "And if you don't have to make that crazy car ride to downtown Los Angeles in your convertible, don't do it."

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