

Living by oil and gas drilling linked to lower birthweights

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A new study from Oregon State University found that infants born within 3 kilometers of oil and natural gas drilling facilities in Texas had slightly lower birthweights than those born before drilling began in their vicinity.

The study, published today in the journal *Environmental Health Perspectives*, found that the type of drilling or resource being extracted did not change the result.

"Most studies to date focus exclusively on unconventional natural gas drilling, or fracking. That particular process is a small subset of the oil and natural gas industry. We find it doesn't matter—where people are extracting oil and gas resources, we're still seeing an impact on infant [health](#)," said study author Mary Willis, a postdoctoral researcher in OSU's College of Public Health and Human Sciences. "A lot of policy is exclusively focusing on fracking, but our study shows that's a really limited view of how this industry may impact local populations."

Developing fetuses are highly sensitive to

[environmental pollution](#) and contaminants, so to measure potential impact, this study examined birthweight and location data for 2,598,025 mother-infant pairs in Texas between 1996 and 2009 in which the mother was pregnant while living within 10 kilometers of a current or future oil or gas drilling site.

Prior research estimates that 4.5 million Texans live within 1.6 kilometers (one mile) of at least one oil or gas drilling site. However, little work to date has focused on the population health impacts of living near an oil or gas drilling site in Texas, the state that produces the most oil and gas in the U.S.

The potential exposures related to drilling are numerous: air pollution from drilling activities, flaring and increased traffic going to and from the drilling site; [water contamination](#) from hydraulic fracturing chemicals; noise pollution from [industrial activity](#) and increased traffic; and light pollution from new drilling facilities.

After accounting for other potential factors influencing birthweight, Willis and the research team found that living within 3 kilometers of an active drilling site was associated with a birthweight 7 to 9 grams lower than the birthweight of babies born before drilling began.

It's a relatively small impact, Willis said, but a lot of women live near oil and gas wells and the impact at a population level could be significant.

"So it's concerning, but this magnitude of effect is smaller than similar papers because we take into account the economic benefits of drilling," she said. The industrial boom of a new drilling site, particularly in [rural areas](#), can bring new jobs, higher wages and better access to quality health care alongside the increased environmental pollution.

There is also a lot of data that isn't represented on

birth certificates alone, Willis said: Researchers hypothesize that there may be more early-pregnancy losses and difficulty conceiving among families in the areas around drilling sites.

With this study, Willis said the team hoped to give policymakers a standard safe distance for drilling, but they found the health impact doesn't totally dissipate at 3 kilometers (nearly 2 miles).

"In the U.S., 17.6 million Americans live within 1.6 kilometers of at least one active oil or gas drilling [site](#). That's a lot of people residing really close to fossil fuel extraction," Willis said.

Ongoing and future studies Willis is involved in are examining the potential impact of oil and gas [drilling](#) sites on the rate of birth defects, preterm birth and maternal health, as well as specific exposures that may be responsible for potential health effects.

More information: Mary D. Willis et al, Associations between Residential Proximity to Oil and Gas Drilling and Term Birth Weight and Small-for-Gestational-Age Infants in Texas: A Difference-in-Differences Analysis, *Environmental Health Perspectives* (2021). [DOI: 10.1289/EHP7678](https://doi.org/10.1289/EHP7678)

Provided by Oregon State University

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