

# What Cows Can Tell Us About The Dangers Of Fracking

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Evidence on the way fracking affects the health of humans is scarce, in large part because drilling companies go to great lengths to keep that information hidden. That's why two Cornell University researchers turned to cows to find out just how toxic fracking pollution is. The results were alarming, if not exactly surprising.

The study, by Michelle Bamberger and Robert E. Oswald, found that consequences ranged from near-immediate death to stillbirths and genetic defects in offspring that persisted for years after exposure to fracking wastewater.

While the authors noted that theirs was not a controlled experiment, which wouldn't be feasible, two cases provided naturally-occurring control groups. On one farm, 60 head of cattle drank from an allegedly wastewater-polluted creek while 36 drank clean water. Of the 60, "21 died and 16 failed to produce calves the following spring. Of the 36 that were not exposed, no health problems were observed, and only one cow failed to breed."

But Bamberger and Oswald didn't just look at livestock. They also include cases of humans and their "companion animals" suffering the effects of pollution. In one case, two homeowners "located within two miles of approximately 25 shale gas wells" saw multiple instances of wastewater dumping and spillage.

A child was hospitalized for arsenic poisoning and missed a year of school, and family members tested positive for phenol, a sign of benzene poisoning, and complained of "extreme fatigue, headaches, nosebleeds, rashes, and sensory deficits." In addition, a horse died of suspected heavy metal poisoning, and a dog and goat experienced spontaneous abortion and stillbirths.

Drillers frequently spread wastewater on roads near these homes, a practice that in many states is legal, even considered a "beneficial use" — for deicing and dust suppression," Bamberger and Oswald explained to Climate Progress in an email. "The example in [this case] was likely legal."

They argued in the email that exposure could be more limited with greater regulation, but not solved. The authors said:

this remains a dangerous operation and there have been well blowouts, for example, for as long as there has been drilling. Flaring, venting, pollution from processing plants, etc. will go on regardless of improved regulation.

Bamberger and Oswald also raised the question of food safety. They document several cases where animals were slaughtered after exposure to chemical contaminants without

any testing, and entire contaminated farms that continue producing dairy and meat products without testing. And it is the large scale of today's hydraulic fracturing that is making it so harmful, placing "the handling of huge volumes of toxic chemicals and waste products, as well as compressor stations and processing plants, near homes and farms," Bamberger and Oswald said in an email.

Since drilling companies refuse to reveal the exact chemicals in fracking solutions, and typically settle and impose nondisclosure agreements on any individuals harmed by the practice, there is nearly no record of how it impacts people's health to live near a drilling operation. Doctors in Pennsylvania are even barred from revealing to their patients what chemicals they may be poisoned by.

Although property owners often file suit claiming symptoms like breathing problems and burning eyes and skin, they are typically forced to drop those claims before the driller will agree to settle. That way, there's never confirmation that fracking harms people's health. This study constitutes an important step towards that confirmation.