



RESEARCH NEWS

Fracking is linked to asthma increase, study finds

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Fracking—a controversial method of extracting gas from the ground—is associated with an increased risk of asthma exacerbation, a study published by *JAMA Internal Medicine* has found.¹

The authors said that this was the first study to look at the links between fracking and asthma. To date, most health concerns have centred on groundwater contamination as a by-product of the procedure, which involves drilling 2000-3000 m down into the ground and then 600-3000 m across. A high pressure water mixture is then directed at the rock.

The study focused on the US state of Pennsylvania, which has enthusiastically embraced the fracking process and has drilled more than 6200 wells from 2000 to 2012. The authors compared asthma patients who had exacerbations with those who had no exacerbations from 2005 to 2012, all of whom were treated at Pennsylvania's Geisinger Clinic. The study included 35 508 patients identified in electronic health records.

The authors looked at the four phases of fracking activity: pad preparation, drilling, stimulation, and production. They also looked at the distance from patients' homes to the wells, the well characteristics, and the duration of the fracking phases.

From 2005 to 2013 some 6253 unconventional natural gas wells were spudded (the start of drilling) on 2710 pads, 4728 wells were stimulated, and 3706 were in production.

The authors identified 20 749 mild asthma exacerbations (new oral corticosteroid medication order), 1870 moderate exacerbations (emergency department visit), and 4782 severe exacerbations (hospitalisation), matching these event dates to control index dates for comparison.

Patients with asthma in areas with the highest fracking activity had a higher risk of the three types of exacerbations than patients

in the lowest group of residential activity, the study results showed.

The paper noted a number of reasons for the increase in asthma exacerbations, including stress caused by living near a fracking site; exposure to air pollution, including from traffic (around 1000 truck trips per well are needed to deliver the fracking mixture); and sleep disruption. The authors said that the possibility that fracking increases the risk of asthma exacerbations required public health attention.

They concluded, "As ours is the first study to our knowledge of [fracking] and objective respiratory outcomes, and several other health outcomes have not been investigated to date, there is an urgent need for more health studies.

"These should include more detailed exposure assessment to better characterize pathways and to identify the phases of development that present the most risk."



[Image: Mike Groll/PA]

1 Rasmussen SG, Ogburn EL, McCormack M. Association between unconventional natural gas development in the Marcellus shale and asthma exacerbations. *JAMA Intern Med* 2016; doi:10.1001/jamainternmed.2016.2436.

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