## Fracking sites may increase heart failure hospitalisations across large regions

Patients with heart failure who live in communities affected by fracking are at increased risk of hospitalisation, according to a study published in the *Journal of the American College of Cardiology*. The study looked at the environmental exposure risk of thousands of heart failure patients across Pennsylvania in the United States. Unconventional natural gas development (UNGD), more commonly known as "fracking" (the hydraulic fracturing phase), has several environmental and community impacts, including noise and air pollution, and heavy truck traffic. Previous reports have found UNGD can cause adverse respiratory effects in local communities, but there has been limited research on its impact on cardiovascular health. Researchers from the Johns Hopkins Bloomberg School of Public Health used electronic health record data obtained from an integrated health system in Pennsylvania. They used residential addresses to identify 12 330 heart failure patients who resided in 37 Pennsylvania counties from 2008 to 2015. Of these patients, 5839 were hospitalised for heart failure. The researchers studied the first hospitalisation identified for each patient. "We observed exposure-effect relations for three of the four UNGD activity metrics and heart failure hospitalizations. The largest magnitude associations were observed for the well pad preparation, stimulation and production metrics," the authors wrote. "Our findings suggest that individuals living with heart failure, when exposed to greater UNGD activity, are more likely to be hospitalized, particularly in those with more severe heart failure at baseline." The researchers observed stronger associations with UNGD activity in both reduced ejection fraction and preserved ejection fraction patients, suggesting both sets of heart failure phenotypes are equally susceptible to exposures related to UNGD. These associations can be attributed to the environmental impacts of fracking, including air pollution, water contamination, and noise, traffic and community impacts. The study had some limitations, including using a less specific method to identify heart failure cases, as well as a lack of information on dietary intake and physical activity. Finally, the study did not include information on patient occupation.

https://www.sciencedirect.com/science/article/abs/pii/S0735109720375392

## More years of obesity means higher risk of disease

Longer obesity duration is associated with worse values for all cardiometabolic disease factors, according to research published in *PLOS Medicine*. People with obesity do not all share the same risk for the development of cardiometabolic disease risk factors. The duration spent with obesity over an individual's lifetime has been hypothesised to affect this variation. Researchers used data from three British birth cohort studies that collected information on body mass index from 10 to 40 years of age as well as cardiometabolic disease risk factors—blood pressure, cholesterol and glycated hemoglobin (blood sugar) measurements—in 20 746 participants. More years of obesity was associated with worse values for all measured cardiometabolic risk factors. The association was particularly strong for glycated hemoglobin ($HbA_{1c}$); those with less than 5 years of obesity had a 5% higher $HbA_{1c}$ level compared with people with no years of obesity, while those with 20 to 30 years of obesity had a 20% higher $HbA_{1c}$ level compared with people with no obesity. Importantly, this increased risk persisted when adjustment was made for a robust measure of life course obesity severity. Other measures of cardiometabolic disease risk (systolic and diastolic blood pressure, high density lipoprotein cholesterol) were also associated with obesity duration, although these were largely attenuated when adjusting for obesity severity. "Our findings suggest that health policy recommendations aimed at preventing early obesity onset, and therefore reducing lifetime exposure, may help reduce risk of diabetes, independently of obesity severity," the authors wrote.

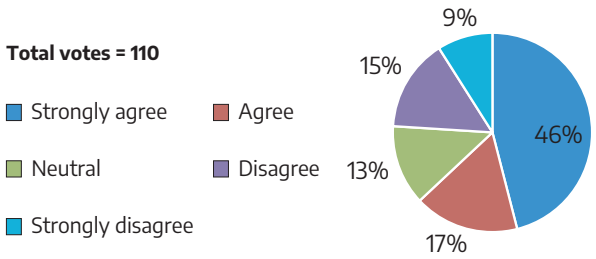
https://journals.plos.org/plosmedicine/article?id=10.1371/journal.pmed.1003387

doi: 10.5694/mja2.50904

## InSight+ Poll

Empowered by AMPCo

Active surveillance should be presented more strongly as an option for men with prostate cancer

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Swannell; https://insightplus.mja.com.au/2020/25/aged-care-system-perfectly-designed-for-poor-results/

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