

Facts on Fracking:

What you need to know



This overview was created by the Alliance of Nurses for Healthy Environments (enviRN.org) and was generously supported by the Coming Clean Collaborative. For detailed information on the health effects of fracking go to:

www.frackingandhealth.org

What is fracking?

High Volume Hydraulic Fracturing, or “Fracking” is a way to drill for natural gas in rock found deep below the earth’s surface. A well is drilled down deep into rock, and then the drilling turns sideways (horizontally) drilling as long as one to two miles underground. Then, millions of gallons of water mixed with sand and 80-300 tons of chemicals are pumped into the well to create breaks in the rock to release the gas.

Possible Health Problems Related to Fracking

Fracking is happening in many places in the United States and other countries. In the US, the fracking industry does not have to follow federal laws that keep pollution out of the air and water. Some people who live near drilling sites have reported health problems. This fact sheet will help you learn about these health problems and what you can do if there is fracking in your community.

Water Quality and Use

Sometimes chemicals and gas from fracking may get into drinking water. This is usually seen in water from private drinking wells. Methane gas leaks are the most common problem. High levels of methane in drinking water can create risks for household explosions and asphyxiation (not being able to breathe). High levels of methane are not always noticed without water testing.

Fracking liquids in water: Fracking liquids are made up of very high levels of salts, chemicals and radioactive gas. Well water can become polluted with fracking liquids. Land, streams, and rivers, can also become polluted by fracking liquid spills and leaks. These chemicals have been linked to health

problems such as cancer, neurological problems, and problems with pregnancy. There have also been reports of nosebleeds, headaches, and skin rashes in people drinking well water or living near fracking sites.

Water use: Up to 5 million gallons of water may be used in fracking each well. This may decrease local water supplies. After the water has been used for fracking, it is polluted by salts, chemicals, and radiation. Much of the water is then put into deep wells or huge wastewater holding pits for disposal. There is no good solution for wastewater contaminated with salts, chemicals, and radioactive substances. Sewage treatment plants are not able to make fracking wastewater safe. It cannot be used for drinking water again. At a time when much of the U.S. is in a drought, this is a tragic waste of our most valuable natural resource.

Air Quality

Air pollution may occur near fracking sites when gases escape at the drilling site. An increase in diesel exhaust comes from the trucks used to haul water, gas, and other supplies. Please see the table on the next page for some of the common pollutants found in the air near fracking sites and how they may affect your health.



Table 1. Select pollutants associated with fracking and health effects

Pollutant	What is it?	Health Effect
Methane	Natural gas, can leak out of wells into the air and water, has no odor	When trapped in a house, can cause explosion & asphyxiation.
Hydrogen Sulfide	May be found in natural gas and can leak out during fracking process, has a rotten egg odor at low levels in the air	Low levels= lung irritation - coughing, tears from the eyes, skin irritation, dizziness, headache. High levels= odor goes away, difficulty breathing, unconsciousness, and even death.
Volatile Organic Compounds (VOC's)	Are found in the fluids used for fracking and can leak out during fracking process. These include chemicals such as benzene, ethylbenzene, toluene, & mixed xylenes.	Respiratory issues, eye and skin irritation, nausea, vomiting, dizziness. VOC's can mix with diesel fumes to make ozone (see below).
Particulate matter (PM 2.5)	PM 2.5 are small pieces of pollution in the air that can be found near roads, dusty areas, or in smoke.	When these are breathed in, they can get stuck in the lungs and cause problems. These include asthma, heart disease, chronic obstructive pulmonary disease (COPD), premature death and cancer. It can also increase the chance of babies being born too early or too small.
Ground level ozone (smog)	Ozone is made when VOCs mix with nitrogen oxide (a chemical found near fracking operations and in diesel exhaust).	When ozone is breathed in, it can cause problems breathing and worsen asthma and emphysema. Children and pregnant women are at greatest risk for having problems.

Social Issues

When fracking comes to communities, it brings many new workers and families. This can be very stressful for residents. Towns have seen more traffic, more motor vehicle accidents, as well as greater need for road maintenance. There may also be increased air and noise pollution. Communities may see more people having a hard time finding affordable housing and more use of health and social services, such as the health department. There have also been higher rates of sexually transmitted infections (STIs), drug and alcohol use, and violent crime.

Noise and Light Pollution

Fracking wells are often working 24 hours a day, 7 days a week. They can be next to homes, schools, and other places that are normally located away from industrial businesses. Noise from diesel trucks and machinery remains constant. Well sites are lit by high-powered lights through the night. The continuous noise and light can cause problems for those living nearby, such as trouble sleeping and increased stress.

Worker Safety

Working at a fracking site can be a dangerous type of work. Exposure to fracking chemicals can cause

health problems. Breathing in silica dust found in "frac sand" is associated with silicosis, a lung disease, and lung cancer. Long hours at the work site can increase the chance of accidents. A high rate of accidents with drilling equipment, chemicals, and vehicles have been noted at fracking sites. Deaths, especially due to vehicle accidents, have also been reported. Gas field workers have a higher than usual rate of applying for worker's compensation because of injuries. Some gas companies also discourage employees from filing for worker's compensation after an injury on the job.



Ways to Help Protect Your Health

Looking at dangers around your home:

Fracking can affect air and water quality. If you use well water you should test your water before fracking begins if possible. Anytime the gas well is drilled, re-test your water. Check water-testing guidelines specific to fracking for your area.

Be aware of the air quality in your area. If you notice smoke, smog, or a different smell in the outside air, you should limit outside activities. See your healthcare provider if you are short of breath or easily tired. If you are asthmatic, monitor your asthma using a peak flow meter and keep records of your testing.

Document the health status of all family members before drilling and fracking begins in your community and include in the medical files of your healthcare provider. If you experience health symptoms or change in air and water quality, keep records and report them. Do not assume that your water is okay because your well is located far from a fracking operation. Your drinking water could also come from a surface water source that has become contaminated.

Health problems reported around fracking sites

Health problems can come from breathing in pollution, contact with chemicals, and excessive noise and light. Mixtures of fracking chemicals are kept secret by the oil and gas company so it may be difficult for you or your healthcare provider to get the names of chemicals used near you. The website www.FracFocus.com lists some fracking wells and the chemicals used. Federal law does not require the gas companies to tell you what chemicals they are using. Some states, such as Pennsylvania, have a 'gag rule' in effect for health care providers. Providers can ask for a list of chemicals used at a gas operation near a patient, but can't share the information. **See the box to the right for specific symptoms that may be felt by those living or working near fracking sites.**

Addressing dangers in your community

Residents have an important role to play in the health of their communities. If fracking is coming to your community, you should ask for water and air testing before any fracking is done. If fracking is already taking place in your community, you can get involved by pushing for air and water quality monitoring. If you experience symptoms or

exposures, these should be reported to your healthcare provider.

Take action

The community's voice is very important as debates around fracking occur in many states. There are many community groups working on this issue. You can become involved by writing and visiting with legislators. You can also provide testimony at local hearings. You can participate in activities such as rallies supporting clean air and water policies related to fracking. You can become a part of the state or local fracking commissions. Or, you can support public access to information about fracking chemicals.

Health studies

Research into the health effects of fracking is very important. You can encourage legislators to require health studies be completed before fracking is allowed in your area. Once drilling has begun, you and your neighbors should watch for exposure symptoms such as those listed below. Report symptoms to your local health care provider. If you are contacted, you can participate in community-based research to identify health impacts.

Symptoms

Depending on how you are exposed, you may have symptoms such as eye and throat irritation, more asthma symptoms from higher ozone levels, dizziness, headaches, tiredness, numbness in your arms or legs, coordination issues, tremors (shaking of the hands) and at higher exposures fainting. Noise related symptoms include hearing loss, problems sleeping, increased blood pressure, problems finishing tasks, annoyance and irritability. Gas field workers may also experience these symptoms.

Resources

For a list of resources including online databases of fracking chemicals, assessment tools, references, and more go to: www.frackingandhealth.org