

Risks to Children at Day Care Centers & Schools Near Shale Gas Development

MOST COMMON SYMPTOMS REPORTED NEAR SHALE GAS DEVELOPMENT

Sleep disruption	Nausea
Headache	Wheezing
Throat irritation	Itchy eyes
Stress/anxiety	Weak/drowsy
Cough	Abdominal pain
Shortness of breath	Irritable/moody
Sinus problems	Painful/dry eyes
Fatigue	Painful joints

If symptoms seem unusual or last longer than you would expect, let your school nurse, principal, day care provider and health care provider know, as symptoms may be from exposures to shale gas development.

Did you know that toxic or dangerous emissions are released into the air at every stage of shale gas development or *fracking*? Emissions are released from well pads, pipelines, condensate tanks, compressor and metering stations, and processing plants. Some are planned emissions, others are leaks, or accidents. These emissions contain dangerous chemicals along with very small airborne particles called particulate matter (PM). Children in day care centers and schools near shale gas development may breathe in these air pollutants.

Contamination of water and soil from toxic shale gas related liquids like frack fluid and flowback are also of concern. Contamination may occur due to leaks, spills or accidents, such as: if there is a contaminated pond or stream on the school grounds, if fracking related fluid reaches soil in a playground or ballfield, or if the facility relies on well water and it gets contaminated.

Children may also be at risk if there is a fire or other accident due to nearby shale gas development. This raises such concerns as: do local first responders have the resources to contain a fire or explosion adequately, and to evacuate the children; and does the town or county have the health care capacity to care for a large number of children suffering from environmental exposures?

WHY ARE CHILDREN MORE VULNERABLE THAN ADULTS?

- **Children accumulate more toxins in their bodies than adults.** Children don't clear toxins from their bodies as efficiently as adults due to reasons related to growth and development.
- **Children have higher breathing rates.** When exposed to air contaminants, children breathe in more toxins per pound of body weight than adults.
- **Children spend more time engaged in vigorous activity outside,** so they breathe in more than they would sitting still.
- **Children's brains are still developing.** Toxic agents used in shale gas development are known to interfere with brain development.



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There are nearly 7 hours in a school day - longer for day care - which is a lot of time for exposure.

Environment America studied **nine of the most heavily drilled states**, including Pennsylvania, Ohio, and West Virginia. Their report, *Dangerous and Close - Fracking Puts the Nation's Most Vulnerable People at Risk*, found that **as of 2016, 1,376 schools and 1,947 day cares were within 1-mile of shale drilling**. Many are also close to other infrastructure like processing plants, compressors, and other fracked wells, compounding exposures.



WHAT PARENTS, SCHOOL OFFICIALS, AND DAY CARE PROVIDERS NEED TO KNOW

- Emissions from shale gas development occur at each stage of the process and include: small particles and liquid droplets as well as vapors or gases that are potentially dangerous to health. For information contact: DEP, EHP, EPA.*
- Controls should be in place to limit and measure emissions for safety and health. For information contact: DOH, EHP.*
- Planned emissions – such as a blowdown at a compressor station – should occur when children will **NOT** be at the school or day care center. For information contact: the gas company, DEP, DOH.*
- Confirm that a warning system is in place to alert the school or day care center of unexpected major emission releases. For information contact: the gas company, DEP.*

INSIDE THE BUILDING

Exposures from nearby shale gas development can enter buildings through open doors, windows and ventilation systems. In addition, pollution can be carried inside on clothing and shoes.

- On unhealthy outdoor air days, keep windows closed to minimize outdoor air pollution inside.
- Limit indoor pollutants, such as molds, chemical pollutants in air fresheners, cleaning supplies and some paints.
- If possible, get a room air filter which will remove some PM and chemicals from the air. Advice on air filters can be found on EHP's website.
- Consider monitoring air quality with a Speck monitor that measures PM in the air. Contact EHP for more information.



Speck Monitor Measures PM2.5

OUTSIDE THE BUILDING

Children may be exposed to contaminants while outside during recess, gym class or commuting to and from school.

- Check the air quality at PA's AirNow site www.airnow.gov, and enter your zip code. AirNow lets you know if the DEP considers the air: good, moderate, unhealthy for sensitive groups (including children), unhealthy for all, or very unhealthy.
- If it's not a good air day, children may be better off staying inside or going outdoors in short intervals.
- If you sense that the air around your center or school is not right even though AirNow indicates it is a good day, keep children inside. There may be localized pollution emitted from a nearby site.

Resource: *Dangerous and Close - Fracking Puts the Nation's Most Vulnerable People at Risk, Fall 2016*
www.environmentamerica.org/sites/environment/files/reports/EA_dangerous_scrn.pdf

*Organizations to contact: DEP – Dept. of Environmental Protection; DOH – Dept. of Health; EPA – Environmental Protection Agency; EHP – Environmental Health Project