

## Episodic Exposures to Unconventional Oil and Gas Development Air Pollution

### *Do you experience health symptoms that come and go?*

*Residents near unconventional oil and gas development (UOGD) often report that health symptoms come and go. The most common of these as reported to the SWPA Environmental Health Project (EHP) are respiratory problems, headaches, skin rashes and nausea. This pattern makes sense when you consider how exposure to UOGD pollutants often varies over time.*

**Air exposures at your home may be different on an hourly or daily basis because:**

#### **Air emissions are variable and sometimes extreme**

UOGD is a complex industry with many stages and processes. Each stage and process can emit different mixtures of pollutants at varied

levels of intensity. Even during well development, chemicals used at each well pad may vary and the gas produced from each well may have different chemical mixes.

#### **Weather causes patterns of variability**

In general, when you are downwind from a pollution source, if there is:

- Low wind speed on sunny days – pollutants tend to rise quickly and disperse
- Low wind speed on cloudy days – pollutants stay close to the ground as they travel downwind to nearby homes
- Low wind and high humidity – pollutants stay close to the ground
- High wind on sunny or cloudy days – pollutants move quickly away

#### **Time of day**

*Nighttime* tends to keep pollutants from rising quickly away– the cool air traps emissions close to the ground.

#### **Homes may be close to multiple sources**

The distance and direction of different sources within a few miles of a residence will affect the variability of exposures on any given day or night.

#### **Local geography affects exposures**

Pollutants tend to collect in valleys. Wind, cloud cover and time of day will affect how pollutants travel in valleys or over hills. Under certain conditions in valleys, air pollution can travel close to the ground for several miles.

#### **You can anticipate when episodic exposures will occur by:**

- Locating UOGD sources near your home, including well pads, compressors and tanks, and processing plants
- Learning which weather conditions will bring pollutants toward your home
- Watching the weather forecast for your area

## What else can you do?

- Monitor levels of Particulate Matter (PM) in your home. A rise in PM levels can indicate air pollutants in the home. See the EHP “PM fact sheet” available at [www.environmentalhealthproject.org](http://www.environmentalhealthproject.org)
- Use air filters in your home to keep indoor air clean. EHP strongly recommends using air filters at night, particularly in sleeping areas and for vulnerable individuals (sick, elderly, or children) in the household.
- Keep your health care provider informed about your symptoms and concerns.
- For more information about your health and UOGD contact our office or check our website: [www.environmentalhealthproject.org](http://www.environmentalhealthproject.org)
- Talk to your healthcare provider if you are concerned about episodic exposures affecting you or your family’s health. Potential symptoms include respiratory problems, skin rashes and headaches.
- Keep a health symptom diary.



- The Speck, developed by the Carnegie-Mellon University CREATE Lab, is a low-cost, indoor fine particulate (PM<sub>2.5</sub>) monitor. This unit costs \$200.00 and can be purchased at <http://store.specksensor.com/products/speck>.

### Recommended air filter

There are many types of air filters for use in the home. We recommend the Austin Air HealthMate HM 400 because it has been shown to remove PM and chemicals as well as odors and dust from inside air. This filter is designed to clean rooms rather than an entire house and can be moved easily from room to room. It works best in homes that are well insulated. Contact EHP for more information.

### Recommended PM monitors

- The Dylos particle monitor is easy to use in the home. It provides continuous readings of both small (PM<sub>1.0</sub> and larger) and large (PM<sub>5.0</sub>) particles and displays particle counts as they occur. This unit costs about \$200.00. Here is a link to a website that offers this product: <http://www.iallergy.com/product1887>.



*To talk to our environmental health educator, to schedule an appointment with our nurse practitioner or for additional information, please contact the*

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