

## Course Outline

1. Health Professional Toolkit Overview (current page)
2. Physical Health & Wellness
  - a. Endocrine Disruption
  - b. Maternal & Child Health
  - c. Oncology
  - d. Respiratory & Cardiovascular
3. Mental Health & Wellness
4. Potential Health Effects Due to Inhalation
5. Survey for Potential Exposure



## Health Professional Toolkit Objectives

The goal of the toolkit is to provide health professionals with up-to-date information and research on the impact of shale gas development on patients' and clients' health. In using the toolkit, you will be able to:

- Understand the existing research that links shale gas development to health impacts.
- Recognize the potential impacts that shale gas development is having on patients' and clients' physical or mental health.
- Provide resources and recommendations for impacted patients and clients.

## Intended Audience

This continuing education is meant to attract physicians, residents, counselors, physicians' assistants, social workers or other health professionals interested in learning about the health impacts of shale gas drilling activities.

## Overview

Welcome to the Environmental Health Project's (EHP) Health Professional Toolkit. This toolkit was developed for health professionals interested in learning about the health harms associated with shale gas development (SGD) and how this heavy industry may impact the physical and mental health of patients and clients.

## Best Practices for Health Professionals

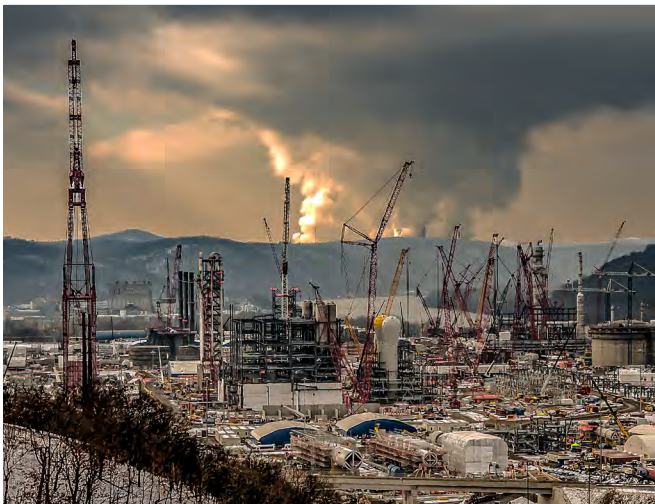
Although most environmental diseases either manifest as common medical problems or have nonspecific symptoms, environmental factors rarely enter into a health professional's diagnosis. As a result, health professionals [may miss the opportunity to make correct diagnoses](#) that might influence the course of disease in some affected individuals (by stopping exposure) and that might prevent disease in others (by avoiding exposure).

Incorporating an exposure history is helpful in recognizing potentially hazardous chemicals and pollutants in the environment. One of the recommendations for health professionals is to incorporate questions about shale gas activities into patient and client evaluations.

Examples of screening questions could include:

- Do you or anyone in your family live, work, or attend school in proximity to an industrial plant, dump site, or shale gas facility?
- Have you experienced any changes in the water quality such as color, taste, or smell?
- Have you ever changed your residence because of a health problem?
- Do you or does anyone in your family work in the shale gas industry?

Included in this toolkit for your use is an [Exposure History form](#) available from the Agency for Toxic Substances and Disease Registry.



Petrochemical/plastics cracker plant in Beaver County, PA. Photo courtesy of Teake Zuidema

## Introduction to the Issue

The last few decades have seen an oil and gas development boom across the U.S., with the addition of more than [1.5 million oil and gas facilities](#)—active production wells, gas compressor stations, and processing plants, not to mention a web of other infrastructure, such as pipelines, storage facilities, injection wells, waste sites, trucking services, and petrochemical plants.

More than [17 million people](#) live within one-half mile of such a facility. Many, especially those in underserved and underrepresented communities, live near multiple sources of emissions. More than [3 million children](#) attend school within a half-mile of these facilities. Against this backdrop of industry, the risk that people are being exposed to toxic chemicals is greatly intensified, a public health crisis that needs to be addressed.

## Health Impacts of Shale Gas Development

The primary driver of new oil and gas expansion is shale gas development (what some call “unconventional gas development” or “hydraulically fractured gas”). Shale gas development (SGD) introduces several health risks and impacts to people living in proximity to these facilities:

- Exposure to toxic chemicals through various exposure pathways, including air emissions and water contamination.
  - Air emissions from SGD can contain levels of particulate matter high enough to create health hazards. Air pollution from SGD is a clear, well-defined pathway of exposure that is produced not only from activities in and around the well, but also from the transportation of water, sand, and chemicals to and from well pads and other ancillary processes. For more information on the impact of SGD on air quality, check out [this page](#).
  - SGD has been linked to surface and groundwater contamination. [Researchers](#) found drinking-water wells near drilling sites contained methane concentrations 17 times higher than drinking-water wells where drilling was not taking place. For more information on the impact of SGD on water quality check out [this page](#).
  - Toxic chemicals are used in SGD and are present in generated wastes and byproducts.
- Exposure to other social and biological stressors associated with related heavy industrial activities, such as noise and light pollution.
- Health symptoms reported by residents in gas producing areas have a psychological basis, given that increased levels of anxiety, tension, irritability, and depression have all been identified in impacted residents.

**ENVIRONMENTAL  
HEALTH PROJECT**  
DEFENDING PUBLIC HEALTH SINCE 2012



724.260.5504

[environmentalhealthproject.org](http://environmentalhealthproject.org) ■ [info@environmentalhealthproject.org](mailto:info@environmentalhealthproject.org)