

# HOW SHALE GAS DEVELOPMENT (FRACKING) AFFECTS PUBLIC HEALTH

Multiple risks to our health and environment



## ISSUES

### Process of fracking:

- Disrupts natural environment such as land and publicly accessible water
- Creates extensive infrastructure in multiple stages and sites
- Produces large amounts of liquid and solid waste

### Health concerns:

- Chemical release associated with resource extraction such as endocrine disrupting chemicals
- Release of technically enhanced naturally occurring radioactive material (TENORMs) and naturally occurring radioactive material (NORMs)

### Inequality:

- Environmental justice
- Eminent domain



## ENVIRONMENTAL PATHWAY(S) OF EXPOSURE

### CHEMICAL AND PHYSICAL POLLUTANTS



- Particulate matter (PM)
- Volatile organic compounds (VOCs)
- Heavy metals
- Liquid/solid waste

## EXPOSURE PATHWAY(S) DISRUPTING HEALTH



Inhalation



Ingestion



Skin contact

## WHO IS IMPACTED



Individual  
Community  
Population



### Magnitude of exposure such as:

- Duration
- Frequency
- Toxicity
- Distance/proximity to sources
- Source of emission and stage of production
- Aggregate/combination of emissions

### Vulnerability of the individual

Occupational hazard

## SHORT TERM HEALTH EFFECTS

- Stress
- Eye, nose, throat irritation
- Skin irritation
- Headache
- Dizziness
- Nausea
- Asthma attacks
- Chest pains
- Acute bronchitis
- Short term memory impairment
- Decreased exercise tolerance
- Adverse effects on developing fetus



## LONG TERM HEALTH EFFECTS

- Worsening pulmonary or heart disease
- Asthma
- Chronic bronchitis
- Cancer such as nasal, throat, and lung
- Adverse effects on developing fetus
- Leukemia
- Aplastic anemia

