

# Ohio First Responder Assessment of Chemical Exposures (ACE)

## Investigation Results

Information about the February 3, 2023, train derailment in East Palestine, Ohio

The Agency for Toxic Substances and Disease Registry (ATSDR) is a federal public health agency that supports communities affected by environmental incidents through its Assessment of Chemical Exposures (ACE) investigations.

As requested by the Ohio Department of Health, ATSDR conducted an ACE investigation to better understand first responders' experiences from the East Palestine train derailment. ATSDR collaborated with Columbiana County Health District, Ohio Department of Health, Pennsylvania Department of Health, National Institute for Occupational Safety and Health (NIOSH), and other responder agencies. Responders reported health effects, including physical symptoms from exposure to released chemicals, and answered questions about preparedness and training. The survey was open from March 5 until March 31, 2023.

### 198 Ohio responders completed the ACE survey

Occupation	Number*
Firefighters	125 (63%), including <ul style="list-style-type: none"><li>91 (73%) volunteers</li><li>33 (27%) career firefighters or both</li><li>1 (&lt;1%) not reported</li></ul>
Police Officers	33 (17%)
Government Workers	14 (7%)
Contractors	15 (8%)
Hazmat	13 (7%)
EMS Responders	23 (12%)
Military	14 (7%)
Other	11 (6%)

\*Does not add to 198 because a person can be counted in more than one category



Photo Credit: Getty Images

## Main Findings

Ohio responders reported working a median of 22 hours from 2/03/2023 until taking survey, spending most time working at

- Derailment site 48%
- Residential areas 17%
- Did not answer 2%
- Incident Command 23%
- Other locations in incident area 10%

### Chemical Exposures Reported by First Responders

#### Direct contact to potentially harmful chemicals/substances through

- inhaling 86%
- touching 26%
- swallowing 8%

#### Smelling an odor

- chemical 75%
- smoke 28%
- paint or paint thinner 28%
- sweet 24%
- other 11%

#### Coming into direct contact with

- smoke 72%
- vapor/gas 49%
- dust 37%

#### Decontaminating clothes after shift

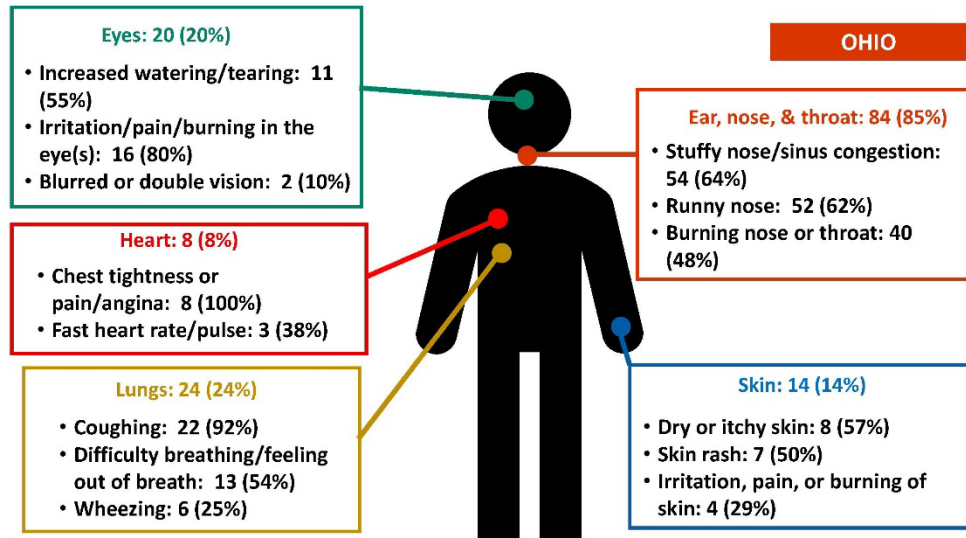
- always 30%
- sometimes 15%
- never 46%
- prefer not to answer 4%
- unsure 5%

Occupation	Reported not wearing a face mask respirator
Firefighters	66%
Hazmat	62%
Police	91%
Government Workers	79%
Other	91%
Contractor	93%
EMS	77%
Military	21%

## Health Effects Reported by First Responders

51% reported new or worsening symptoms in at least one health system. (see figure below)

- Of those who reported a symptom, 32% experienced returning or worsening symptoms when on-site.
- Most reported concerns in an open-ended question about potential long term health effects, cancer risk, chemical exposures, persistent cough or respiratory issues, and unknown exposures.



14% reported seeking healthcare to treat symptoms. (see table below)

Type of Care (not mutually exclusive)	Count (%)
Hospitalized or seen in the emergency department, urgent care, outpatient, occupational health or by an in-house doctor	7 (25)
In-person care at another health facility	11 (39)
Phone/video conference with a healthcare provider	7 (26)
Peer support specialist	3 (11)

## Training Reported by First Responders

53% reported having taken no chemical safety training in past year.

58% reported having never previously been part of a chemical spill or emergency response.

Responders reported needing trainings and resources for the following:

- Hazardous Waste (HAZWOPER) annual training, <https://clu.in.response.epa.gov/offeringslist.cfm?courseid=1793>
- Communication for hazardous events
  - Preparedness training
  - Other chemical safety trainings
  - Personal protective equipment (PPE)
  - Equipment (i.e., communication radios)

# ACE Recommendations

## For First Responders

**Visit a healthcare provider if you are having any symptoms and for annual preventative care.**

- The East Palestine Clinic (operated by East Liverpool City Hospital, in collaboration with Ohio Department of Health) is providing comprehensive primary care (treatment, prescriptions, lab testing, consultation with specialists, and referrals if needed). It is free for those without insurance coverage and available to any residents with concerns. Location: 139 North Walnut St., East Palestine, OH, 44413. Hours: Monday through Friday, 9 AM to 5PM (ET). For appointments, call 330-362-4920.

**Mental health resources are also available.**

- SAMHSA – disaster distress helpline, <https://www.samhsa.gov/>
- 988 Lifeline Chat and Text, <https://988lifeline.org/chat/>

**Consider enrolling in voluntary national registries to help researchers better understand health outcomes among firefighters and ways to improve health and safety.**

- Federal Emergency Management Agency (FEMA) Fire Department Registry, <https://apps.usfa.fema.gov/registry/summary>
- NIOSH Firefighter Cancer Registry, <https://www.cdc.gov/niosh/firefighters/registry.html>

## For Public Health and Safety Officials

**Promote responder health and safety during responses.**

- Establish Emergency Responder Health Monitoring and Surveillance™ (ERHMS™) framework, <https://www.cdc.gov/niosh/erhms/>
- Provide appropriate PPE and equipment.
- Develop and continuously update site safety plans to reflect changing circumstances.
- Conduct daily safety briefings during an event.

**Provide and maintain training with state, local, and federal agencies and volunteer responders. Responders should prepare through exercises at local, state and/or federal levels.**

- FEMA DREAM course, <https://cdp.dhs.gov/training/course/MGT%20908>
- FEMA IS-0005.a: An Introduction to Hazardous Materials, [https://emilms.fema.gov/is\\_0005a/curriculum/1.html](https://emilms.fema.gov/is_0005a/curriculum/1.html)
- EPA CERCLA Education Center (free HAZWOPER training), <https://clu.in.response.epa.gov/>
- Ohio State Fire Marshal Hazardous Materials Training Resources for First Responders, <https://com.ohio.gov/divisions-and-programs/state-fire-marshal/about-state-fire-marshal/hazardous-materials-training-resources-for-first-responders>
- Ohio Emergency Management Agency Training and Exercises, <https://ema.ohio.gov/prepare-respond/training-and-exercises>

**Develop a plan for effective communication.**

- Set up a Joint Information Center (JIC) early.
- Create a trusted space to consolidate information.
- Extend communication to more platforms

*ATSDR is congressionally mandated to perform public health assessments of toxic substance releases into the environment; develop toxicological profiles of harmful substances; conduct epidemiological studies; and maintain health registries and conduct medical surveillance.*



**National Center  
for Environmental Health  
Agency for Toxic Substances  
and Disease Registry**