

Welder's Anthrax

The Centers for Disease Control and Prevention has recognized a rare and [new form of pneumonia in welders](#), welder's anthrax. Current evidence suggests that inhalation of ferrous and other metal fumes may predispose metalworkers to this lung infection caused by anthrax toxins produced by *Bacillus* group bacteria that are found naturally in soils in and near subtropical locations.

Between 1994 and 2020, seven metalworkers from Texas and Louisiana were diagnosed with welder's anthrax (Figure 1).

Long-term exposure to welding and metalworking fumes is an occupational hazard resulting in lung injury and increased susceptibility to pneumonia, which may be caused by a variety of exposures. Welders and metalworkers that develop pneumonia should discuss any potential exposures that may cause lung injury with their providers. In addition, providers should consider infection by anthrax bacteria in cases of severe, rapidly progressive, or anthrax-like lung disease.

Limiting Worker Exposure

Welding and metalworking employers should conduct a [job hazard analysis](#) to identify hazards before they occur and implement controls to reduce the risk of occupationally associated illnesses including, but not

limited to, pneumonia. OSHA does not have a standard that applies to welder's anthrax. However, OSHA's Respiratory Protection standard ([29 CFR 1910.134](#)) may apply to some workers whose jobs require respirators.

Employers who oversee welding operations should consider implementing the following recommendations to prevent the potential for exposure to anthrax bacteria:

- Reduce exposure to environmental dust, as well as welding fumes and gases:
 - Use directional airflow from local exhaust ventilation (or wind if outdoors) to keep environmental dust and welding fumes away from the welders' breathing zone.
 - Add disinfectants to metalworking fluids to inhibit microbial contamination.
- Educate at-risk welders and other metalworkers about the symptoms of pneumonia, including

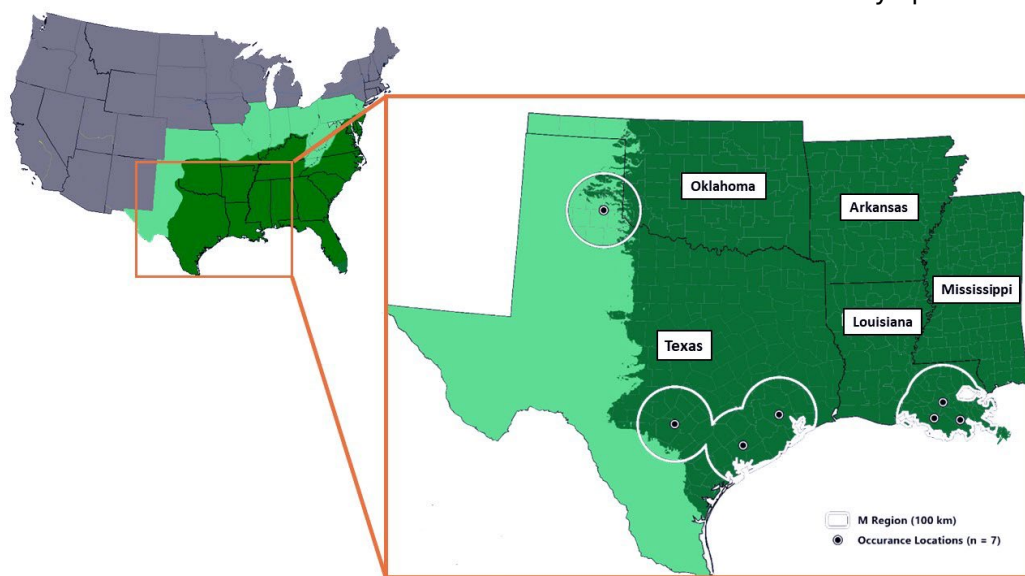


Figure 1. Upper Left. Regions of the United States which are predicted to be suitable for growth of anthrax bacteria (dark green) and surrounding climatic regions (light green). Lower Right, Inset of region with locations of recorded cases of acquired welders anthrax (black-white dots) from [Deka MA, et al Pathogens 2022, 11\(4\), 470 \(Creative Commons\)](#)

welder's anthrax, which may involve symptoms that include, but are not limited to, fever or chills, cough, shortness of breath, and coughing up blood. Encourage workers to report symptoms to their employers and physicians for prompt medical evaluation.

- Maintain and clean the workplace to reduce exposure to dust and soils that may be contaminated with harmful bacteria:
 - Ensure that welding surfaces are free of any coatings, dirt, and dust.
 - Clean work areas with vacuums equipped with High-Efficiency Particulate Air (HEPA) filters and wet mop, to minimize the creation of dust. Do not dry sweep.
 - Prior to beginning welding and metalwork, use tarps, water, or commercial soil stabilization products outdoors to suppress dust.
 - Change metalworking fluids frequently or on a consistent schedule to prevent contamination.
- Provide personal protective equipment (PPE):
 - Provide coveralls and work boots to prevent contamination of clothing.
 - Provide NIOSH-approved respirators as needed to prevent inhalation of fine metal shavings and soil or dust that may be contaminated with harmful bacteria.
 - Train workers who wear respiratory protection as part of a written respiratory protection program to include procedures for donning, doffing, and appropriate use of the respirator provided.

Workers' Rights

Workers have the right to:

- Working conditions that do not pose a risk of serious harm.
- Receive information and training (in a language and vocabulary the worker understands) about workplace hazards, methods to prevent them, and the OSHA standards that apply to their workplace.
- Review records of work-related injuries and illnesses.
- File a complaint asking OSHA to inspect their workplace if they believe there is a serious hazard or that their employer is not following OSHA's rules. OSHA will keep all identities confidential.
- Exercise their rights under the law without retaliation, including reporting an injury or raising health and safety concerns with their employer or OSHA. If a worker has been retaliated against for using their rights, they must file a complaint with OSHA as soon as possible, but no later than 30 days.

For additional information, see [OSHA's Workers page \(www.osha.gov/workers\)](https://www.osha.gov/workers).

How to Contact OSHA

Under the Occupational Safety and Health Act of 1970, employers are responsible for providing safe and healthful workplaces for their employees. OSHA's role is to help ensure these conditions for America's workers by setting and enforcing standards, and providing training, education and assistance. For more information, visit www.osha.gov or call OSHA at 1-800-321-OSHA (6742), TTY 1-877-889-5627.

For more safety information on this topic, see [CDC's Fatal Anthrax Pneumonia in Welders and Other Metalworkers](#), [OSHA's Controlling Hazardous Fume and Gases during Welding](#), and [OSHA's Welding, Cutting, and Brazing Safety and Health Topics Page](#). [OSHA's On-Site Consultation Program](#) provides no-cost and confidential occupational safety and health compliance assistance to small- and medium-sized businesses. Consultation services are separate from enforcement. The OSHA [Training Institute Education Centers](#) at www.osha.gov/otiec offer courses for workers, employers, and managers on hazard recognition and abatement at convenient locations nationwide.

This hazard alert is not a standard or regulation, and it creates no new legal obligations. It contains recommendations as well as descriptions of mandatory safety and health standards. The recommendations are advisory in nature, informational in content, and are intended to assist employers in providing a safe and healthful workplace. The Occupational Safety and Health Act requires employers to comply with safety and health standards and regulations promulgated by OSHA or by a state with an OSHA-approved state plan. In addition, the Act's General Duty Clause, Section 5(a)(1), requires employers to provide their employees with a workplace free from recognized hazards likely to cause death or serious physical harm.

