



Welding and Manganese Poisoning

Exposure to metal fumes from welding, cutting and brazing—especially in confined spaces—can cause brain damage. A major culprit is manganese, a component of all steel and major welding materials. Manganese has been known to cause the degenerative brain disorder known as Parkinsonism since 1837. A recent study found 40 percent of welders showed signs of the disorder. Many physicians are unaware of manganese poisoning or the risks of exposures in steel making and welding as stated on Material Safety Data Sheets (MSDS).

Symptoms of manganese poisoning include tremors, shakes, loss of balance, slowed movement, walking problems, impotency, slurred speech, extreme drowsiness or nighttime leg cramps. Because the symptoms are similar, welders may be mistakenly diagnosed with Parkinson's disease, ALS (Lou Gehrig's disease) or MS (multiple sclerosis).

If you have any of these symptoms, go to your doctor as soon as possible. Bring a copy of the MSDS for welding rods and other related materials you commonly use.

If you do not have any of these symptoms:

1. OSHA requires employers to use engineering controls such as local exhaust ventilation to control health hazards. Personal protective equipment like respirators may be necessary to supplement other measures. Ask your employer to verify these air-monitoring controls are suitably protective by showing exposures below the threshold limit value for manganese (respirable fraction of 0.03 mg/m³). Ventilation, especially in enclosed work spaces, may not be adequate. Powered air purifying respirators worn with a welding hood are available.
2. Obtain a copy of the MSDS for the welding rods you use. Ask your union steward or occupational health provider to ensure your supervisor is aware of manganese fumes and that measures are in place to provide protection. Your employer has an obligation under OSHA to show you a current MSDS for any product you work with.
3. Consider welding only where effective exhaust ventilation is in use. Supplement your protection with a National Institute for Occupational Safety and Health-approved respirator. Employers must provide respirators as part of a comprehensive respiratory protection program.

Workers in the trades are often exposed to occupational health risks. Tell your doctor about your job and request a personal health risk evaluation.

