

# LEAD SAFETY FOR SCUBA DIVERS



## DIVERS AND LEAD

Lead is a soft bluish-gray metal. The primary source of exposure to lead for divers who use self-contained underwater breathing apparatus (scuba) is lead-containing weights. Weights may contain a solid piece of lead, lead beads or shot.

Personal exposure to lead can be hazardous to health. It is important for divers to understand the potential hazards of lead in order to protect themselves. Divers can work safely with lead by having good work practices, good hygiene, and following regulations.

## LEAD HAZARDS

The toxic effects of lead are well documented in both children and adults. Over-exposure to lead fumes or dust can cause adverse health effects including:

- Muscle weakness
- Difficulty with memory and concentration
- Kidney damage
- Interference with normal brain function
- Stomach problems
- Increased risk of high blood pressure
- Reproductive problems including miscarriage in women, and sterility or infertility in men

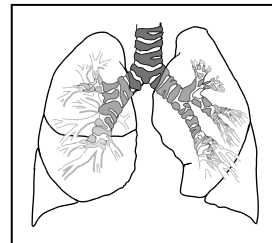
Some of these health effects are reversible when the body rids itself of lead over time, but some effects are permanent. It is best to prevent lead from ever entering the body.

## HOW DOES LEAD ENTER THE BODY?

Lead in the form of dust or fumes can enter the body by two methods: ingestion or Inhalation. Handling uncoated lead weights or touching lead dust can contaminate your hands. When lead is exposed to the air, it can oxidize. This is the white film you may have noticed on uncoated weights or lead shot. Lead oxide has a greater potential for becoming airborne and contaminating surfaces. The lead on your hands and clothes can be passed to food and drinks, and be **ingested** unknowingly.



**Inhalation** of lead can occur when small



particles get into the air through activities such as melting, cutting, dusting, sweeping, vacuuming, or sanding lead-containing materials. Once in the air, the lead may be inhaled and absorbed into the body. Melting and forming lead for weights creates a high potential for overexposure to lead.

## DO NOT TAKE HOME LEAD

Divers and others who work with lead-containing materials may be over-exposed to lead if it gets in the air, or if surface contamination results in lead ingestion. Lead dust on skin, clothes, and in vehicles could be taken home, and unknowingly expose family members. Young children are especially susceptible to the toxic effects of lead and are affected at lower exposure levels than adults. Since lead can readily pass through the placenta, it poses a threat to a developing fetus.

### PREVENT "TAKE-HOME" LEAD

Clean lead dust from surfaces with damp wipes. Do not contaminate clothes, shoes, and skin that can carry lead into your car and home, and accidentally expose family members. Children are especially susceptible.

## PREVENT LEAD EXPOSURE

- Have a **written work plan** or protocol that outlines how lead-containing materials can be safely handled and the required personal protective equipment to be used.
- **Wear disposable gloves** when handling lead that is not encapsulated.
- **Wash hands** and skin after handling lead-containing materials.
- Use weights that are fully **encapsulated** with an impermeable membrane (i.e. rubber or plastic coated) to prevent oxidation of lead (see [Metallic Lead focus sheet](#)). Lead weights in permeable materials such as nylon can release lead dust. If lead shot is used, the rubbing of the shot together has an even higher potential for lead release.



- Store lead weights in **designated, sealed containers**, and separate from other dive gear and equipment. Label storage area/ container with sign indicating hazards.

- **Rinse weights separately** from other equipment. Do not collect rinse water.

- **Clean surfaces** contaminated with lead by wet wiping or by using a vacuum equipped with a high efficiency particulate air (HEPA) filter.
- **Do not dry sweep lead dust.**
- Promptly **dispose of any unused lead** or lead-containing equipment according to local hazardous waste regulations.
- **Do not melt lead** to form your own weights. This activity has a high potential for over exposure and contamination of work areas.



## LEAD RESOURCES

[Occupational Safety and Health Administration \(OSHA\)](#)

[Washington State Department of Labor and Industries \(L&I\)](#)

[National Institute for Occupational Safety and Health \(NIOSH\)](#)

[Environmental Protection Agency \(EPA\)](#)

Please contact EH&S at 206.543.7388 or [ehsdept@uw.edu](mailto:ehsdept@uw.edu) for more information about lead safety.