

PROCEDURE MANUAL

19-05



MICHIGAN STATE POLICE

Lead Exposure Program

Purpose: The department is committed to reducing the occupational exposure to lead at any level in accordance with [the Michigan Occupational Safety and Health Administration's \(MIOSHA\) Health Standard, Part 310, Lead](#) (as amended February 24, 2015). This manual provides guidance and procedures to minimize risk of exposure to members.

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Definitions:

None

Section 1: Lead Exposure Program

1.1 Member Information

- a. Any members exposed to lead due to their handling of firearms or ordnance are covered by this program, including enlisted members, motor carrier officers, state property security officers, pistol team members, and Forensic Science Division (FSD), Firearms and Tool Marks Unit forensic technicians.

- b. Member Responsibilities

All members covered under this program are responsible for:

- i. Completing all lead exposure training.
- ii. Demonstrating an understanding of the tasks involving potential exposure to lead.
- iii. Conducting all operations in accordance with established work practice controls.

1.2 Exposure

- a. Members are most commonly exposed to lead when handling and discharging firearms. Lead can enter the body when absorbed, ingested, or inhaled. Lead adversely affects numerous body systems and causes forms of health impairment and disease which arise after periods of exposure as short as days or as long as several years. Overexposure to lead may result in severe damage to blood forming, nervous, urinary, and reproductive systems. Some common symptoms of chronic overexposure include loss of appetite, metallic taste in the mouth, anxiety, constipation, nausea, pallor, excessive tiredness, weakness, insomnia, headache, nervous irritability, muscle and joint pain or soreness, fine tremors, numbness, dizziness, hyperactivity,

and colic. Members who are routinely exposed to lead and have any of these symptoms should consult with their physician and obtain a blood lead level test.

b. Personal Hygiene Practices

- i. Members shall wash their hands with a waterless hand cleaner or with soap and water.
- ii. Members should wash their face, arms, and hands with soap and water:
 1. When work is completed.
 2. Before leaving a firearm range.
 3. Before eating, drinking, smoking, applying makeup, changing contact lenses, or using the bathroom.

c. Other Safety Practices

- i. The storage, preparation, and consumption of food, chewing gum, smokeless/chewing tobacco, and drinks are prohibited in work areas where there is the potential for exposure to lead.
- ii. Applying cosmetics or lip balm and the handling of contact lenses is prohibited in work areas where there is a potential for exposure to lead.
- iii. Gloves are recommended while picking up brass. Do not collect fired brass cartridges in hats.
- iv. Members who shoot, compete, or utilize other indoor firearms ranges, sportsmen's clubs or other non-departmental indoor firearms facilities should be aware of potential poor ventilation or lack of proper air filtration which may occur at these facilities. They should take precautions to prevent the ingestion of lead by utilizing proper prevention equipment such as a respirator, limiting their exposure, or abstaining from exposing themselves to these conditions.
- v. Members who cast their own lead projectiles or reload their own ammunition are recommended to take measures to prevent exposure to lead. Inhalation measures should be utilized while casting projectiles or separating brass cartridges from tumbling media. Absorption measures recommended include wearing gloves while handling lead bullets, cartridge cases or other equipment routinely exposed to lead projectiles.

1.3 Lead Level Monitoring

a. Members to Be Monitored:

i. Firearms Instructors Permanently Assigned to the Training Division

1. Firearms instructors permanently assigned to the Training Division, Ordnance and Marksmanship Unit shall have their blood lead level tested twice a year when there is no recruit school. When there is a recruit school, instructors will be tested three times (prior to each recruit school beginning, midway through, and after the school ends) at no cost to the member. The Human Resources Division, Disability Management Unit, is to be contacted by the Training Division to schedule the lead level tests with the department's medical provider.

- ii. Firearms Instructors Temporarily Assigned to Training Division
 - 1. Firearms instructors temporarily assigned to the Training Division, Ordnance and Marksmanship Unit, shall have their blood lead level tested at the beginning, midway through, and after the school ends at no cost to the member. The Human Resources Division, Disability Management Unit, is to be contacted by the Training Division to schedule the lead level tests with the department's medical provider.
- iii. Certified Firearms Instructors Assigned to Various District/Division Locations
 - 1. Field personnel designated by districts and divisions who are trained/certified as firearms instructors during the initial firearms instructor schools by the Ordnance Unit and are responsible for district/division and worksite personnel firearms instruction shall have their blood lead level tested at the annual certification training at no cost to the member. The Human Resources Division, Disability Management Unit, is to be contacted by the Training Division to schedule the lead level tests with the department's medical provider. Blood lead level testing is required. The member shall not perform firearms instructor duties until the annual test has been performed and comes back satisfactorily.
- iv. Pistol Team Members
 - 1. Members selected to represent the department in specific pistol competitions shall be tested in the fall, after the outdoor competition season is completed (normally in September).
- v. Firearms Examiners Permanently Assigned to the Forensic Science Division (FSD)
 - 1. Firearms examiners permanently assigned to the various laboratories in the FSD shall have their blood lead level tested once a year at no cost to the member. The FSD shall schedule the lead level tests to coordinate with their annual training.
- b. Blood Lead Levels
 - i. MIOSHA regulations state when a blood lead level is at or above 30 micrograms, an individual should be removed from the task or duty causing the raised level.
 - ii. According to Sparrow Hospital Laboratory and other laboratories used throughout the state for determining blood lead levels, an individual's exposure should be decreased if their blood lead level is greater than 20 micrograms, which shall serve as the department standard.
 - iii. Once blood lead level results are received, a copy shall be maintained in the member's personnel file and a copy shall be sent via U.S. Mail to their home address on record.
- c. Procedures for Elevated Levels
 - i. Members who have been tested and their supervisor shall be contacted via telephone and advised that the member's levels are elevated greater than 20 micrograms and they shall immediately be relieved of their instructor duties.

- ii. The Training Division and Forensic Science Division shall be advised that the member shall immediately be relieved of their duties involving contact with exposure to lead (i.e., instructor duties, firearms test firing, etc).
- iii. Once the member has been removed from any lead exposure, they will be given two weeks to expel lead from their system and shall be sent for a second blood draw/test as soon as practical.
- iv. If the results of the second blood test show a level of less than 20 micrograms, the member shall be allowed to return to their firearms instructor or firearms examiner duties, but shall be sent for a third blood test one month after the second blood test.
 - 1. If the third test results are less than 20 micrograms, the member may continue to perform these firearm duties.
 - 2. If the third blood test results reveal a level greater than 20 micrograms:
 - a) The firearms instructor shall be prohibited from performing firearms instructor duties until the Ordnance Unit can determine the cause of the high exposure and steps are taken to prevent further unnecessary exposure.
 - b) The firearms examiner shall be removed from contact with exposure to lead until the FSD health and safety officer can determine the cause of the high exposure.
- v. If the second blood test results reveal a level greater than 20 micrograms:
 - 1. The firearms instructor shall continue to be prohibited from returning to firearms instructor duties until the Ordnance Unit can determine the cause of the high exposure and steps are taken to prevent further unnecessary exposure.
 - 2. The firearms examiner shall be relieved of duties involving exposure to lead until the FSD health and safety officer can determine the cause for the high exposure.
- vi. Members shall be allowed to continue to participate in the quarterly firearms qualification shoots due to the limited time frame of the exposure.

1.4 Air Monitoring

- a. Training Academy Indoor Firearms Range

MIOSHA prohibits employee lead exposure from exceeding the permissible exposure limit (PEL) of 50 ug/m³ averaged over an 8-hour time period.

MIOSHA also stipulates that employers continue to monitor employee exposures if an Action Level (AL) of 30 ug/m³ is exceeded. In order to ensure the safety of our members, air monitoring shall be conducted approximately semi-annually. This shall depend on range usage/availability and following the more extensive range cleaning, which is contractually conducted every six months.

- i. Equipment (pump and sampling media) is borrowed from MIOSHA-CET.

- ii. The samples shall be processed at the MIOSHA Laboratory and provided to the department and members involved during the sampling.
 - b. Forensic Science Division Indoor Ranges
- The FSD health and safety officer shall conduct periodic air monitoring tests based upon results of annual blood lead level and periodic surface wipe sample tests.

1.5 Lead Level Surface Wipe Sample Testing

- a. Training Academy Indoor Firearms Range
- Surface wipe sample testing shall be coordinated and conducted with the department industrial hygienist located at FSD. Testing shall be completed periodically throughout the Firearms Range area. The schedule of testing shall be determined by the amount of firing being conducted on the range, or if the results are high and need to be monitored.
- b. Forensic Science Division Indoor Ranges
- Conduct surface wipe sample testing periodically at each of the FSD indoor firearm ranges located throughout the state.

1.6 Housekeeping

- a. Training Academy's Indoor Firearms Range
 - i. Lead Clean-up
 - 1. The Department of Technology, Management, and Budget (DTMB) and the Ordnance Unit shall be responsible for lead clean up.
 - 2. DTMB will be responsible for monitoring any contract that is established to clean the range if the Ordnance Unit is no longer responsible. The Ordnance Unit will coordinate with DTMB for scheduling and monitoring purposes.
 - 3. The Ordnance Unit is responsible for daily lead clean up, all permanent staff or designees shall participate in the Lead Supervisor training coordinated through the Michigan Department of Health and Human Services, Healthy Homes Section which meets the Michigan Lead Abatement Act's requirements.
 - 4. The Ordnance Unit will clean the range based on frequency of use, wipe testing, and air monitoring.
 - ii. Security at the Training Academy
 - 1. The department authorizes access to the firearms range.
 - 2. The DTMB sets up codes for access.
 - 3. The department runs background checks for clearance to the firearms range.
 - iii. Ventilation at the Training Academy
 - 1. The green light over the control panel indicates if shooting can take place on the range. If the light turns red, shooting shall stop until the ventilation system renders the air safe enough for shooting to continue.

2. All supply vents (diffusers) along the back wall shall be maintained free of obstructions. Nothing shall be stored in front of the vents.
 3. Visual filter checks and differential pressure drop readings shown in the ventilation system's DDC Visual Control Graphics, will be used to indicate when the ventilation system's filters need to be changed.
 4. The ventilation system's filters are changed by the Ordnance Unit Lead certified staff or contractor based on the differential pressure drop readings shown in the DDC Visual Control Graphics. These readings are documented weekly (every Friday), and readings shall not exceed:
 - a) Mid/Bag filter pressure reading is not to exceed 4.0
 - b) Overall reading (combination of Mid and HEPA filters) is not to exceed 6.0
- iv. Lighting
- The DTMB is responsible for changing burnt-out lights.
- v. Scheduling
1. The department shall provide schedules for the range.
 2. The DTMB oversees the contractors' schedules.
- vi. Janitorial Cleaning in the Firearms Range area
1. The DTMB provides staff for cleaning offices.
 2. The DTMB provides staff for cleaning restrooms.
 3. The DTMB provides all equipment used for cleaning. This equipment shall not be removed from the range area.
- vii. Lead/Brass Removal
- The Ordnance Unit is responsible for recycling the lead and brass shell casings from the range.
1. The Ordnance Unit will be responsible for maintaining documentation showing where the lead/brass was recycled.
 2. All funds obtained from recycling will be used for range maintenance or upgrades.

1.7 Training and Information

a. Members

Training and information for members who shall have occupational exposure to lead shall include Appendices A and B (pages 12 through 18) of the current MIOSHA Occupational Health Standard, Part 310, Lead.

- i. Additional training shall be provided whenever tasks or procedures are modified or newly assigned such that there is a significant change in the exposure or exposure potential.
- ii. Opportunities for members to ask questions shall be provided.

1.8 Recordkeeping

- a. Records associated with a member's exposure to lead shall be maintained for not less than 40 years, or for at least 20 years after a member's termination of employment, whichever is longer, per [MIOSHA Occupational Health Standard, Part 310, Lead](#).
- b. Records associated with member medical information shall be maintained for not less than the duration of employment plus 30 years, per MIOSHA Part 70, Employee Medical Records and Trade Secrets.
- c. The Human Resources Division, Disability Management Unit, is responsible for the maintenance of all required medical records. These confidential records are kept by the Human Resources Division.
- d. Member medical records are provided within 15 working days upon the request of the member or to anyone having written consent of the member. Such requests shall be sent to the Human Resources Division, Disability Management Unit.
- e. Training Records
 - i. An Annual Training Recertification Record, UD-034, shall be completed at the conclusion of training and retained at the work site for a period of the current year plus one. Records for individual members shall be forwarded to the Human Resources Division at the end of this period for retention in the member's personnel file.
 - ii. Information on the Training Record form, UD-034, shall include:
 - 1. Date of the training session.
 - 2. Content or summary of the training session.
 - 3. Name(s) and qualifications of the person(s) conducting the training.

1.9 General Program Management

- a. Responsibility
 - i. The Human Resources Division shall be responsible for the implementation of the Lead Exposure Program, and its Disability Management Unit shall:
 - 1. Maintain, review, and update the Lead Exposure Program at least annually, and whenever necessary to include new or modified tasks and procedures.
 - 2. Ensure that all medical actions required are performed, and that appropriate department members' health and MIOSHA records are maintained.
 - 3. Be responsible for making the plan available to MIOSHA.
 - ii. The Training Division shall be responsible for the initial training of recruits, as well as enforcement members during annual first aid training.

1. The material presented shall include instruction in locating the written Lead Exposure Program plan on the department's Intranet.
 2. The Training Division shall document all Lead Exposure Program training presented.
- iii. The FSD health and safety officer shall be responsible for the initial training of new hires and the annual training of Firearms and Tool Marks Unit forensic technicians, documentation of training, and making these members aware that the written plan is available on the department's Intranet. NOTE: Enlisted FSD members shall continue to receive their annual training through the Training Division.
- b. Review and Update of Program

The Lead Exposure Program shall be reviewed and updated:

- i. Annually, on or before December 31 each year.
- ii. When new or modified tasks and procedures are implemented which affect occupational exposure of department members.
- iii. When new functional positions are established that may involve exposure to lead.
- iv. To reflect changes in technology that eliminates or reduces exposure to lead.