

Exposure Response Plan for Laboratory Handling of *Schistosoma mansoni*

Background Information:

Schistosoma mansoni is a human parasite (trematode) and one of the major agents of the disease schistosomiasis. *Schistosoma mansoni* is the most widespread of the human-infecting schistosome species. It is present in a number of tropical countries.

Exposure Incident: Free-swimming larval stage forms (cercariae) penetrate directly through the skin. In research labs, both temperature and light can be used to fuel hatching from snails. Laboratory workers that handle only the eggs are not at risk.

Reporting Exposure Incidents: All exposure incidents must be reported immediately to the supervisor. This agent infrequently causes laboratory acquired infections. Asymptomatic cases have been detected serologically.

Pre-exposure Health Screening:

Workers with concerns about pre-existing medical conditions should schedule an appointment with the Occupational Medicine physician by calling 541-737-7566.

After an Exposure Incident Occurs:

Immediate Action by Route of Exposure:

- **Needle stick or laceration:** Wash the area with soap and running water.
- **Mucous membranes (eye, mouth):** If contaminated material is ingested, rinse mouth out with clean water. If contaminated material is splashed or sprayed into the eyes, flush the eyes for 10-15 minutes.
- **Inhalation:** If contaminated materials are aerosolized outside of a biological safety cabinet and the cloud inhaled, rinse mouth twice and expel; do not swallow.
- **Contact with intact skin and clothing:** Remove contaminated clothing using gloves and place objects in plastic bags. Wash skin with soap and water. Infective free-swimming larval forms (cercariae) penetrate directly through the skin.

Medical Evaluation and Follow-up:

- Following the exposure and immediate actions stated above, faculty and staff should contact the Corvallis Clinic during business hours at 541-753-1785 or 1-866-209-7711 after business hours. Student workers should be evaluated at Student Health Services as soon as possible by the Occupational Health Physician and contact OSU Occupational Medicine at 541-737-7566. Such cases will be handled as a possible laboratory-acquired schistosomiasis.

Signs and Symptoms of Disease:

Most individuals infected with *S. Mansoni* are asymptomatic.

- A few individuals may develop acute symptoms which present within 12-24 hours of exposure. These can include a tingling sensation or light rash due to irritation at the point of entry.
- It is also possible to develop a more serious hypersensitivity reaction at 2-8 weeks after exposure called Katayama Fever. Symptoms of Katayama fever include sudden onset of fever, chills, myalgias, arthralgias, dry cough, diarrhea and headache,
- Although chronic symptoms can occur years after exposure, this is highly unlikely in the laboratory setting since these usually result from exposure to a large number of organisms in areas endemic for this disease.

If *S. mansoni* infection is suspected or identified through laboratory procedures from laboratory workers:

- This will be treated as a potential failure of biosafety measures.
- The PI must be informed **immediately**.
- The PI must inform the Biosafety Officer (BSO) within **72 hours** of diagnosis.
- The BSO will complete a formal re-evaluation of laboratory safety procedures to determine the possible event that may have led to this exposure.

If an individual develops signs/symptoms that are otherwise unexplained that could be consistent with *S. mansoni* infection, in the absence of known exposure:

- Pre-employment *S. mansoni* screening may be instituted for these individuals.
- The worker should be tested for *S. mansoni* if working in a laboratory in which the infective form is used.

Post-exposure Prophylaxis:

The individual may be started on preventative treatment in the case of an exposure event, based on the judgment of the Occupational Health physician. The individual will be instructed to watch for symptoms, and will be followed from the time of the exposure for development of asymptomatic infection.