

PUBLIC HEALTH REFERENCE SHEET

Schistosomiasis



Name	<i>Schistosomiasis</i> species
Reservoir & Transmission	Humans are main reservoir; also found in dogs, cats, pigs, cattle, water buffalo, and wild rodents Penetration of larvae through skin
Incubation Period	2–6 weeks
Common Symptoms	Urinary schistosomiasis: dysuria, frequency, and hematuria at end of urination Intestinal schistosomiasis: diarrhea, abdominal pain, and hepatosplenomegaly
Gold Standard Diagnostic Test	Microscopic identification of eggs
Risk Groups	Susceptibility is universal. Risk is higher in groups with greatest exposure to water containing infectious cercariae.
Geographic Significance	Most common in Africa, the Middle East, South America, Indonesia, some parts of China, and Southeast Asia

What is schistosomiasis?

Schistosomiasis, also known as bilharzia or snail fever, is a disease caused by parasitic flatworms (trematodes). Infection with *Schistosoma mansoni*, *S. haematobium*, and *S. japonicum* causes illness in humans; less commonly, *S. mekongi* and *S. intercalatum* can cause disease.

What is the occurrence of schistosomiasis?

Although the worms that cause schistosomiasis are not found in the United States, more than 200 million people are infected worldwide. Geographic area include:

- Southern and sub-Saharan Africa: all freshwater in including the great lakes and rivers
- Mahgreb region of North Africa
- Nile River valley in Egypt and Sudan
- South America: Brazil, Suriname, Venezuela
- Caribbean: Dominican Republic, Guadeloupe, Martinique, Saint Lucia (low risk)
- The Middle East: Iran, Iraq, Saudi Arabia, Yemen
- Southern China
- Parts of Southeast Asia, the Philippines, Laos

How is schistosomiasis transmitted?

Infection occurs when the skin comes in contact with freshwater that is inhabited by certain types of snails that carry schistosomes. Freshwater becomes contaminated by *Schistosoma* eggs when infected people urinate or defecate in the water. The eggs hatch, and if certain types of freshwater snails are present in the water, the parasites develop and multiply inside the snails. The parasite leaves the snail and enters the water where it can survive for about 48 hours. *Schistosoma* parasites can penetrate the skin of persons who are wading, swimming, bathing, or washing in contaminated water. Within several weeks, parasites mature into adult worms, residing in the blood vessels of the body where the females produce eggs. Some of the eggs travel to the bladder or intestine and are passed into the urine or stool.

Who is at risk for schistosomiasis?

Individuals at risk are those who live in or travel to areas where schistosomiasis occurs, and the skin contacts freshwater from canals, rivers, streams, ponds, or lakes. Consider in risk

The mention of any non-federal entity and/or its products is for informational purposes only, and is not to be construed or interpreted, in any manner, as federal endorsement of that non-federal entity or its products.

PUBLIC HEALTH REFERENCE SHEET

Schistosomiasis



assessments with military operations involving contact with infested, or potentially infested, freshwater canals, rivers, streams, ponds, or lakes.

What are the signs and symptoms of schistosomiasis?

Within days after becoming infected, the patient may develop a rash or itchy skin. Fever, chills, cough, and muscle aches can begin within 1–2 months of infection. Most people have no symptoms at this early phase of infection. When adult worms are present, the eggs that are produced usually travel to the intestine, liver, or bladder, causing inflammation or scarring. Children who are repeatedly infected can develop anemia, malnutrition, and learning difficulties.

What are potential complications of schistosomiasis?

After years of infection, the parasite can also damage the liver, intestine, lungs, and bladder. Bladder infection with *S. haematobium* is a risk factor for bladder cancer. Rarely, eggs are found in the brain or spinal cord and can cause seizures, paralysis, or spinal cord inflammation. Symptoms of schistosomiasis are caused by the body's reaction to the eggs produced by worms, not by the worms themselves.

How is schistosomiasis diagnosed?

Stool or urine samples can be examined microscopically for parasite eggs (stool for *S. mansoni* or *S. japonicum* eggs and urine for *S. haematobium* eggs). The eggs tend to be passed intermittently and in small amounts and may not be detected, so it may be necessary to perform a serologic test.

How is schistosomiasis treated?

Praziquantel for 1–2 days to treat infections caused by all *Schistosoma* species. In endemic areas, periodic mass treatment with praziquantel is recommended.

How can schistosomiasis be prevented?

- Avoid swimming or wading in freshwater in countries in which schistosomiasis occurs.
- Drink from approved water sources. Although schistosomiasis is not transmitted by swallowing contaminated water, infection could occur if the mouth or lips come in contact with water containing the parasites. Boil water from canals, lakes, rivers, streams, or springs for at least 1 minute to kill parasites, bacteria, or viruses. Iodine treatment alone will not guarantee that water is safe.
- Bath water should be heated to a rolling boil for at least 1 minute. Water held in a storage tank for at least 1–2 days should be safe for bathing.
- Vigorous towel drying after an accidental, very brief water exposure may help to prevent the *Schistosoma* parasite from penetrating the skin.
- When appropriate and feasible, molluscicides can be used to treat snail breeding areas.

What are some public health considerations?

- Specify the clinical form of the disease.
- Document relevant travel and deployment history occurring within the incubation period (2-6 weeks).
- Document the circumstances under which the case patient was exposed, including duty exposure, occupational activities, environmental exposures, or other high-risk activities.

The mention of any non-federal entity and/or its products is for informational purposes only, and is not to be construed or interpreted, in any manner, as federal endorsement of that non-federal entity or its products.

PUBLIC HEALTH REFERENCE SHEET

Schistosomiasis



References:

Defense Health Agency. 2023. *Armed Forces Reportable Medical Events Guidelines and Case Definitions*.

<https://www.health.mil/Reference-Center/Publications/2022/11/01/Armed-Forces-Reportable-Medical-Events-Guidelines>

Heymann, David L. ed. 2022. *Control of Communicable Diseases Manual*. 21st Edition. Washington DC: APHA Press.

“Schistosomiasis,” Centers for Disease Control and Prevention, last reviewed October 28, 2020. https://www.cdc.gov/parasites/schistosomiasis/health_professionals/index.html

The mention of any non-federal entity and/or its products is for informational purposes only, and is not to be construed or interpreted, in any manner, as federal endorsement of that non-federal entity or its products.