CONDITION

Schistosomiasis

Schistosomiasis is a parasitic worm infection acquired through contact with contaminated freshwater.

WHAT IT IS
Freshwater-acquired infection with parasitic blood flukes

BODY SYSTEM
Urinary, digestive, liver, genital, and nervous systems

MAIN SYMPTOMS
Itchy rash, fever, abdominal pain, blood in urine

WHAT CAUSES IT
Infection with Schistosoma parasitic worms

HOW IT IS DIAGNOSED
Parasite eggs in stool, urine, or biopsy samples

MAIN TREATMENT
Antiparasitic medicine, usually praziquantel

CAN IT BE CURED?
Yes - treatment usually clears active infection

IS IT AN EMERGENCY?
Sometimes - seizures, severe bleeding, or breathing trouble

LONG-TERM OUTLOOK
Usually good; established organ damage may remain

Overview

Schistosomiasis is an infection caused by parasitic worms called Schistosoma . It is sometimes called bilharzia. The parasites live in certain freshwater snails before entering water where people swim, wash, fish, or work.

The tiny parasites can pass through unbroken skin. They then mature inside the body, where adult worms live in blood vessels. Their eggs may leave the body in urine or stool. Some eggs become trapped in body tissues and cause inflammation and scarring.

Different Schistosoma species tend to affect different organs. Some mainly affect the bladder and urinary tract. Others are more likely to affect the intestines and liver. The genital organs, lungs, brain, or spinal cord can also be involved.

Many people have no early symptoms. Without treatment, however, infection can last for years. Repeated or heavy infections are more likely to cause long-term organ damage. Treatment can usually kill the adult worms, but it may not reverse scarring that has already developed.

Symptoms

A mildly itchy or tingling rash can appear where the parasites entered the skin. This may happen within hours or days of freshwater contact, although many people have no rash.

Several weeks later, some people develop an immune reaction known as acute schistosomiasis or Katayama syndrome. Possible symptoms include:

Acute symptoms are reported more often in travellers who have not previously been exposed. Similar symptoms can have many other causes, including other travel-related infections.

Long-term symptoms depend on where eggs are trapped. Urinary schistosomiasis can cause blood in the urine, pain when passing urine, or a need to urinate often. Intestinal infection can cause abdominal pain, diarrhoea, or blood in the stool.

Liver involvement may eventually cause an enlarged abdomen or spleen. Genital schistosomiasis may cause pelvic pain, abnormal vaginal bleeding, pain during sex, genital sores, blood in semen, or fertility problems.

Rarely, eggs affect the brain or spinal cord. This can cause seizures, weakness, numbness, loss of bladder control, or difficulty walking.

- Fever, chills, headache, or tiredness
- Muscle aches, cough, or wheezing
- Abdominal pain, diarrhoea, nausea, or poor appetite
- An itchy, raised rash

Causes and risk factors

Schistosomiasis is caused by Schistosoma worms. Infected people release worm eggs into freshwater through urine or stool. The eggs infect particular freshwater snails, which later release microscopic larvae into the water. These larvae can penetrate human skin.

You cannot catch schistosomiasis by touching another person. It is not spread through coughing, sex, shared toilets, or ordinary household contact. Human waste must reach suitable

freshwater snails for the life cycle to continue.

The condition occurs in tropical and subtropical areas. Most infections occur in Africa, but transmission also exists in parts of the Middle East, South America, the Caribbean, and Asia. Local risk can differ between nearby lakes, rivers, or villages.

Risk is higher after skin contact with untreated freshwater in an affected area. This includes swimming, bathing, wading, washing clothes, fishing, and agricultural work. Even brief contact may be enough for infection.

Children in affected communities and people with frequent water exposure can be infected repeatedly. Travellers, military personnel, aid workers, and migrants may also be at risk if they have entered freshwater where transmission occurs.

Diagnosis

Diagnosis starts with your travel, residence, and freshwater exposure history. It is important to mention where you were, when the contact happened, and whether you have previously received treatment.

Finding parasite eggs in stool or urine confirms the infection. Because eggs may not appear in every sample, several samples collected on different days may be needed. The best type and timing of the sample depend on the suspected Schistosoma species.

Blood antibody tests can support the diagnosis, especially in travellers or people with light infections. Antibodies take time to develop, so testing soon after exposure can miss an infection. They may also remain positive after successful treatment, meaning they cannot always show whether an infection is still active.

A blood count may show increased eosinophils, a type of white blood cell often raised during parasitic infections. This finding alone does not confirm schistosomiasis.

Ultrasound, X-rays, or other scans may be used to check for bladder, liver, lung, brain, or spinal damage. Occasionally, eggs are found in a small tissue sample called a biopsy.

Treatment and management

The main treatment is praziquantel, an antiparasitic medicine that kills adult schistosome worms. The amount and schedule differ by parasite species and clinical situation, so treatment needs to be arranged by a healthcare professional.

Praziquantel works less well against very young worms. If exposure was recent or continued

over time, treatment may be timed according to the last possible contact. A further course may sometimes be needed.

Temporary effects such as abdominal discomfort, dizziness, headache, nausea, or tiredness can occur around treatment. Some symptoms may result from the body reacting to dying parasites rather than from the medicine alone.

Severe acute schistosomiasis, brain or spinal involvement, and major organ complications require specialist care. Other medicines, including corticosteroids like prednisone or hydrocortisone to reduce inflammation, may be used in selected serious cases.

Follow-up may include repeat stool or urine testing if eggs were found before treatment. Tests and scans may also monitor existing liver, bladder, kidney, or lung damage. Killing the worms prevents them from producing more eggs, but established scar tissue may need separate long-term management.

Complications

Complications are more likely with untreated, repeated, or heavy infection. They result mainly from long-lasting inflammation around trapped eggs.

Intestinal and liver schistosomiasis can scar blood vessels in the liver. This may increase pressure in nearby veins, known as portal hypertension. Enlarged veins in the food pipe or stomach can then bleed. An enlarged spleen and abdominal fluid can also develop.

Urinary schistosomiasis may scar or block the tubes carrying urine from the kidneys. This can damage the bladder and kidneys. Long-standing urinary infection also raises the risk of a particular type of bladder cancer.

Genital involvement may cause chronic pain, bleeding, sexual difficulties, or fertility problems. Female genital schistosomiasis can damage the cervix or vagina and may increase vulnerability to some sexually transmitted infections.

Less common complications include high pressure in the lung circulation, seizures, spinal cord damage, and persistent weakness. Treating the infection early reduces the chance of further egg-related injury.

Prevention

There is no widely available vaccine against schistosomiasis. The main way to prevent it is to avoid swimming, wading, bathing, or washing in untreated freshwater where transmission

occurs.

The sea and adequately chlorinated swimming pools do not transmit schistosomiasis. Looking at water cannot tell you whether it is safe, and quickly drying the skin after contact is not reliable protection.

If safe water is unavailable, official travel advice can explain how water may be filtered or treated before bathing. Drinking contaminated water is not the usual route of infection, but contact between the water and the lips or mouth could still expose tissue.

In affected communities, prevention also depends on access to safe water, sanitation, snail control, health education, and treatment programmes. Previous infection does not provide dependable immunity, so reinfection is possible.

Living with it and what to expect

Most people treated before major organ damage develops can expect the active infection to clear. Symptoms caused by inflammation may improve gradually over weeks or months rather than disappearing immediately.

Adult worms can live in the body for years without treatment. Symptoms may also appear long after the original freshwater contact. This is why an exposure from years earlier can still matter when urinary, bowel, liver, or neurological symptoms are being assessed.

Treatment kills the worms but does not always reverse scarring. People with established liver, bladder, kidney, lung, genital, brain, or spinal complications may need ongoing specialist follow-up. Their outlook is shaped more by the degree of organ damage than by the parasite after successful treatment.

A positive antibody test may remain positive and does not necessarily mean treatment failed. Follow-up is usually based on symptoms, prior egg testing, exposure history, and any organ findings.

Future contact with contaminated freshwater can cause a new infection. If you live in or regularly visit an affected area, repeat testing or community treatment may be advised according to local public health programmes.

When to get medical help

Arrange a routine medical appointment if you have had skin contact with freshwater in an area where schistosomiasis occurs. This is worthwhile even if you feel well, particularly after

swimming or wading in lakes, rivers, canals, or streams.

Seek prompt medical advice if you develop visible blood in your urine or stool, ongoing abdominal pain, painful urination, unexplained diarrhoea, or genital symptoms. Mention all previous countries of residence and travel, including exposures from years ago.

Fever after international travel needs prompt assessment because malaria and other infections may need to be ruled out quickly. Do not assume fever is caused by schistosomiasis.

Get urgent or emergency help for:

These symptoms are uncommon, but they can indicate serious bleeding, urinary blockage, or nervous system involvement.

- A seizure, confusion, sudden weakness, numbness, or difficulty walking
- Severe shortness of breath or chest pain
- Vomiting blood, black tar-like stool, fainting, or heavy bleeding
- Inability to pass urine, especially with blood clots
- Rapidly increasing abdominal swelling with severe illness

Common questions

Can schistosomiasis be cured?

Yes. Praziquantel usually kills the adult worms and clears the active infection. A repeat course is sometimes needed. Treatment may not undo permanent organ scarring caused by a long-standing infection.

Is schistosomiasis contagious?

Not through normal contact. The parasite must pass from human urine or stool into freshwater, develop inside a suitable snail, and then re-enter a person through the skin.

Can I get schistosomiasis from a swimming pool or the sea?

Adequately chlorinated pools and seawater do not support the parasite's life cycle. Risk comes from untreated freshwater in places where infected snails are present.

How long can schistosomiasis stay in the body?

Adult worms can survive for years. Some people have few or no symptoms while eggs gradually cause inflammation. A past freshwater exposure remains relevant even if it happened long ago.

Does blood in the urine always mean schistosomiasis?

No. Blood in the urine has several possible causes, including urinary infections, kidney stones, and other bladder or kidney conditions. It should be medically assessed rather than assumed to be schistosomiasis.

Can schistosomiasis come back after treatment?

A person can be reinfected through another exposure to contaminated freshwater. In other cases, an early infection may not respond fully because young worms are less affected by treatment. Follow-up testing helps decide whether further treatment is needed.

Sources

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