

Pinworms

What is a pinworm?

A pinworm (“threadworm”) is a small, thin, white roundworm (nematode) called *Enterobius vermicularis* that sometimes lives in the colon and rectum of humans. Pinworms are about the length of a staple. While an infected person sleeps, female pinworms leave the intestine through the anus and deposit their eggs on the surrounding skin.

What are the symptoms of a pinworm infection?

Pinworm infection (called enterobiasis or oxyuriasis) causes itching around the anus which can lead to difficulty sleeping and restlessness. Symptoms are caused by the female pinworm laying her eggs. Symptoms of pinworm infection usually are mild and some infected people have no symptoms.

Who is at risk for pinworm infection?

Pinworm infection occurs worldwide and affects persons of all ages and socioeconomic levels. It is the most common worm infection in the United States.

Pinworm infection occurs most commonly among

school-aged and preschool-aged children,

institutionalized persons, and

household members and caretakers of persons with pinworm infection.

Pinworm infection often occurs in more than one person in household and institutional settings. Child care centers often are the site of cases of pinworm infection.

How is pinworm infection spread?

Pinworm infection is spread by the fecal-oral route, that is by the transfer of infective pinworm eggs from the anus to someone’s mouth, either directly by hand or indirectly through contaminated clothing, bedding, food, or other articles.

Pinworm eggs become infective within a few hours after being deposited on the skin around the anus and can survive for 2 to 3 weeks on clothing, bedding, or other objects. People become infected, usually unknowingly, by swallowing (ingesting) infective pinworm eggs that are on fingers, under fingernails, or on clothing, bedding, and other contaminated objects and surfaces. Because of their small size, pinworm eggs sometimes can become airborne and ingested while breathing.

Can my family become infected with pinworms from swimming pools?

Pinworm infections are rarely spread through the use of swimming pools. Pinworm infections occur when a person swallows pinworm eggs picked up from contaminated surfaces or fingers. Although chlorine levels found in pools are not high enough to kill pinworm eggs, the presence of a small number of pinworm eggs in thousands of gallons of water (the amount typically found in pools) makes the chance of infection unlikely.

My little kids like to co-bathe – could this be how they are becoming infected?

During this treatment time and two weeks after final treatment, it is a good idea to avoid co-bathing and the reuse or sharing of washcloths. Showering may be preferred to avoid possible contamination of bath water. Careful handling and frequent changing of underclothing, night clothes, towels, and bedding can help reduce infection, reinfection, and environmental contamination with pinworm eggs. These items should be laundered in hot water, especially after each treatment of the infected person and after each usage of washcloths until infection is cleared.

Did my pets give me pinworms / can I give pinworms to my pets?

No. Humans are considered to be the only hosts of *E. vermicularis* which is also known as the human pinworm.

How is pinworm infection diagnosed?

Itching during the night in a child's perianal area strongly suggests pinworm infection. Diagnosis is made by identifying the worm or its eggs. Worms can sometimes be seen on the skin near the anus or on underclothing, pyjamas, or sheets about 2 to 3 hours after falling asleep.

Pinworm eggs can be collected and examined using the "tape test" as soon as the person wakes up. This "test" is done by firmly pressing the adhesive side of clear, transparent cellophane tape to the skin around the anus. The eggs stick to the tape and the tape can be placed on a slide and looked at under a microscope. Because washing/bathing or having a bowel movement can remove eggs from the skin, this test should be done as soon as the person wakes up in the morning before they wash, bathe, go to the toilet, or get dressed. The "tape test" should be done on three consecutive mornings to increase the chance of finding pinworm eggs.

Because itching and scratching of the anal area is common in pinworm infection, samples taken from under the fingernails may also contain eggs. Pinworm eggs rarely are found in routine stool or urine samples.

How is pinworm infection treated?

Pinworm can be treated with either prescription or over-the-counter medications. A health care provider should be consulted before treating a suspected case of pinworm infection.

Treatment involves two doses of medication with the second dose being given 2 weeks after the first dose. All household contacts and caretakers of the infected person should be treated at the same time. Reinfection can occur easily so strict observance of good hand hygiene is essential (e.g. proper handwashing, maintaining clean short fingernails, avoiding nail biting, avoiding scratching the perianal area).

Daily morning bathing and daily changing of underwear helps remove a large proportion of eggs. Showering may be preferred to avoid possible contamination of bath water. Careful handling and frequent changing of underclothing, night clothes, towels, and bedding can help reduce infection, reinfection, and environmental contamination with pinworm eggs. These items should be laundered in hot water, especially after each treatment of the infected person and after each usage of washcloths until infection is cleared.

Should family and other close contacts of someone with pinworm also be treated for pinworm?

Yes. The infected person and all household contacts and caretakers of the infected person should be treated at the same time.

What should be done if the pinworm infection occurs again?

Reinfection occurs easily. Prevention always should be discussed at the time of treatment. Good hand hygiene is the most effective means of prevention. If pinworm infection occurs again, the infected person should be retreated with the same two-dose treatment. The infected person's household contacts and caretakers also should be treated. If pinworm infection continues to occur, the source of the infection should be sought and treated. Playmates, schoolmates, close contacts outside the home, and household members should be considered possible sources of infection. Each infected person should receive the recommended two-dose treatment.

How can pinworm infection and reinfection be prevented?

Strict observance of good hand hygiene is the most effective means of preventing pinworm infection. This includes washing hands with soap and warm water after using the toilet, changing diapers, and before handling food. Keep fingernails clean and short, avoid fingernail-biting, and avoid scratching the skin in the perianal area. Teach children the importance of washing hands to prevent infection.

Daily morning bathing and changing of underclothes helps remove a large proportion of pinworm eggs and can help prevent infection and reinfection. Showering may be preferred to avoid possible contamination of bath water. Careful handling (avoid shaking) and frequent laundering of underclothes, night clothes, towels, and bed sheets using hot water also helps reduce the chance of infection and reinfection by reducing environmental contamination with eggs.

Control can be difficult in child care centers and schools because the rate of reinfection is high. In institutions, mass and simultaneous treatment, repeated in 2 weeks, can be effective. Hand hygiene is the most effective method of prevention. Trimming and scrubbing the fingernails and bathing after treatment is important to help prevent reinfection and spread of pinworms.