CONDITION

Worms in humans

Worms in humans are parasitic infections that can affect the intestines or other organs.

WHAT IT IS
Infection by parasitic worms living in or around the body

BODY SYSTEM
Digestive system, blood, lungs, liver, muscles, or brain

MAIN SYMPTOMS
Abdominal pain, diarrhoea, anal itching, visible worm segments

WHAT CAUSES IT
Parasitic infection from contaminated food, soil, water, or people

HOW IT IS DIAGNOSED
Stool tests, tape test, blood tests, or scans

MAIN TREATMENT
Antiparasitic medicines chosen for the worm type

CAN IT BE CURED?
Yes - medicines clear most infections

IS IT AN EMERGENCY?
Sometimes - severe pain, seizures, confusion, or breathing problems

LONG-TERM OUTLOOK
Usually good with correct treatment and prevention of reinfection

Overview

Worms in humans are infections caused by parasitic worms. A parasite lives in or on another living thing and uses it for food or shelter.

Several different infections are described as "worms." They do not all spread in the same way or need the same treatment. Common examples include pinworm, also called threadworm; roundworm; hookworm; tapeworm; and Strongyloides. Other worms can affect the liver, blood, lungs, muscles, or brain.

Some infections stay mainly in the intestines. Others move through body tissues during part of their life cycle. Symptoms can range from mild itching or stomach discomfort to anaemia, which means too few healthy red blood cells. Many people have no symptoms at first.

Seeing something worm-like in a bowel movement does not always confirm an infection.

Undigested food and mucus can look similar. If possible, take a clear photograph or place the material in a clean, sealed container according to instructions from a healthcare service.

Most worm infections can be treated. Correct identification matters because a medicine that works for one type may not work for another.

Symptoms

Symptoms depend on the worm, the number of worms, and the part of the body affected.

Pinworm commonly causes intense itching around the anus, especially at night. Sleep may be disturbed. Scratching can irritate or infect the skin. Small, thin, white worms may sometimes be seen around the anus or on underwear.

Intestinal roundworm, hookworm, and tapeworm may cause:

Hookworms attach to the intestinal lining and feed on blood. A long-lasting or heavy infection can cause iron-deficiency anaemia. When hookworm larvae enter through skin, they may cause an itchy rash, often on the feet.

Some roundworm larvae travel through the lungs before reaching the intestines. This can cause a temporary cough, wheeze, fever, or chest discomfort. A heavy intestinal roundworm infection can occasionally block the bowel.

Strongyloides often causes no symptoms. When symptoms occur, they may include abdominal discomfort, diarrhoea, an itchy rash, or a rapidly moving red rash. The infection can remain in the body for decades.

Some tapeworm larvae form cysts in body tissues. Cysts in the brain, called neurocysticercosis, may cause seizures, headaches, confusion, or other nervous system symptoms. This is different from having an adult pork tapeworm in the intestine.

- Abdominal pain, bloating, nausea, or diarrhoea
- Reduced appetite or unintended weight loss
- Tiredness, weakness, or pale skin from anaemia
- Worms or flat, moving tapeworm segments in bowel movements

Causes and risk factors

Worm infections spread through different routes.

Pinworm eggs pass easily between people. The microscopic eggs can collect on fingers,

bedding, towels, toys, bathroom surfaces, and other objects. Infection happens when eggs are swallowed. Scratching the itchy area can move eggs onto the hands and under the fingernails.

Roundworm, hookworm, and some other intestinal worms are linked to soil contaminated with human faeces. Roundworm eggs are swallowed through contaminated hands, food, or water. Hookworm larvae usually enter through bare skin touching contaminated soil.

Tapeworm infection can follow eating raw or undercooked beef, pork, or fish containing tapeworm larvae. Swallowing eggs from the pork tapeworm, usually through food, water, or hands contaminated with human faeces, can instead cause cysticercosis in body tissues.

Strongyloides larvae enter through skin exposed to contaminated soil. The worm can reproduce inside the body, allowing infection to continue for many years. It becomes especially important if a person later takes medicines that weaken immune defences, particularly corticosteroids like prednisone or hydrocortisone .

Risk is higher with poor sanitation, unsafe water, barefoot contact with contaminated soil, or raw and undercooked meat or fish. Travel or residence in places where a particular worm is common may also increase exposure.

Pets can carry some worms, but common human pinworm is not caught from dogs or cats. Animal worm infections and human worm infections are not automatically treated in the same way.

Diagnosis

Diagnosis starts with your symptoms, travel and food history, living conditions, and any worm or segments you have noticed.

A stool test can look for worm eggs, larvae, or parts. Because eggs may not appear in every bowel movement, samples collected on different days may be needed. A laboratory may also identify a worm or segment that has been passed.

Pinworm is usually checked with a tape test. Clear adhesive tape is pressed against the skin around the anus first thing in the morning, before washing or using the toilet. Testing may be repeated over several mornings.

Blood tests may show anaemia or an increased number of eosinophils, a type of white blood cell that can rise with some parasites. These findings can support an assessment but do not identify every worm infection.

Blood antibody tests, ultrasound, X-rays, CT scans, or MRI scans may be used when infection outside the intestine is suspected. Tissue infection such as cysticercosis needs specialist

assessment.

Treatment and management

Treatment depends on the worm species, where it is in the body, and whether complications are present. Antiparasitic medicines include albendazole, mebendazole, pyrantel, praziquantel, and ivermectin, but they are not interchangeable.

Some intestinal infections need a short course of medicine. A repeat treatment or follow-up stool test may be needed because certain medicines kill worms more reliably than eggs, or because reinfection is common.

For pinworm, treatment may be offered to household members at the same time. Handwashing, short fingernails, morning washing, and regular laundering of sleepwear and bedding help remove eggs. Cleaning should support treatment rather than involve harsh chemicals or excessive scrubbing.

Strongyloides needs particular attention before immune-suppressing treatment. Someone with current or previous exposure may need testing even if they feel well. Severe Strongyloides infection often requires hospital care.

Worm cysts in the brain or other organs are not managed like a simple intestinal infection. Killing larvae can trigger inflammation. Treatment may therefore involve specialist monitoring, anti-inflammatory medicine, seizure treatment, or surgery as well as antiparasitic medicine.

Do not take veterinary worm medicine. "Parasite cleanses," laxatives, herbs, and dietary regimens have not been shown to replace correct diagnosis and treatment, and some can cause harm.

Complications

Most treated intestinal worm infections do not cause lasting problems. Complications are more likely with a heavy infection, delayed treatment, poor nutrition, pregnancy, or weakened immune defences.

Possible complications include:

Strongyloides can spread widely when immune defences are suppressed. This is called hyperinfection or disseminated strongyloidiasis and can be life-threatening.

Neurocysticercosis may cause repeated seizures or increased pressure around the brain. The outlook depends on the number, location, and stage of the cysts and the body's inflammatory

response.

- Iron-deficiency anaemia from hookworm
- Poor growth or nutrition in children with long-lasting heavy infection
- Bowel blockage from a large number of roundworms
- Inflammation or blockage of the bile ducts or pancreas
- Skin infection caused by repeated scratching
- Organ or nervous system damage from tissue-dwelling larvae

Prevention

Many worm infections can be prevented, but avoiding every exposure is not always possible.

Wash your hands with soap and water after using the toilet, changing nappies, working with soil, and before preparing or eating food. Keep fingernails short if pinworm is present, and avoid biting nails.

Wash produce with safe water. Cook meat and fish thoroughly, particularly in places where food-borne tapeworms are common. Follow local advice about drinking water and freshwater exposure when travelling.

Wear shoes where soil may be contaminated with human waste. Safe sanitation and proper disposal of faeces are central to preventing soil-transmitted worms.

For pinworm, wash sleepwear, towels, and bedding regularly during treatment. Avoid shaking laundry because this can spread eggs onto nearby surfaces.

Have pets checked and treated by a veterinarian as advised. Picking up animal faeces and washing your hands afterward can reduce exposure to animal parasites. Human medicines should not be given to pets, and pet products should not be used on people.

Living with it and what to expect

Most intestinal worm infections clear after the correct treatment. Itching, abdominal symptoms, or tiredness may take days or weeks to settle, particularly if irritated skin or anaemia also needs time to recover.

You may be asked to provide another stool sample or repeat treatment. This does not always mean the first treatment failed. Some worms release eggs unevenly, and exposure within a household or community can lead to reinfection.

Untreated infections can last for months or years. Strongyloides can remain for decades because it can complete part of its life cycle inside the body. Tell a healthcare professional about past residence or long stays in affected areas before starting immune-suppressing treatment, even if the exposure was many years ago.

People with uncomplicated infections usually return to normal activities without long-term limits. More complex infections involving the brain, liver, lungs, or other tissues may require months of follow-up. Some complications, such as seizures or severe anaemia, can continue after the worm itself has been treated.

Ongoing symptoms after treatment need reassessment rather than repeated self-treatment. The original diagnosis may need confirmation, reinfection may have occurred, or another condition may be causing the symptoms.

When to get medical help

Arrange a routine medical appointment if you see a worm or repeated worm-like segments in a bowel movement, have persistent anal itching, or develop ongoing abdominal symptoms after travel or possible exposure. Also seek advice for unexplained anaemia, weight loss, or symptoms that return after treatment.

Contact a healthcare service promptly if you have blood in your bowel movements, black stools, worsening weakness, fever with abdominal symptoms, or persistent vomiting.

Get medical advice before taking worm treatment if you are pregnant, breastfeeding, treating a young child, taking several medicines, or have liver disease. Product suitability differs by medicine and location.

Tell a healthcare professional promptly about possible past Strongyloides exposure if you are due to start corticosteroids, chemotherapy, transplant medicines, or other treatment that suppresses immune defences.

Seek emergency care for:

These symptoms have several possible causes and do not prove that worms are responsible.

- Severe or rapidly worsening abdominal pain with swelling or repeated vomiting
- Inability to pass stool or gas with abdominal swelling
- A first seizure, repeated seizures, fainting, or new confusion
- Sudden weakness, difficulty speaking, or loss of coordination
- Serious breathing difficulty

Common questions

How do I know if I have worms?

Symptoms alone cannot reliably identify a worm. Anal itching at night suggests pinworm, while visible segments may suggest tapeworm, but testing or laboratory identification may still be needed.

Can worms go away without treatment?

Some infections may eventually clear, but others can remain for years. Strongyloides can persist for decades, and tapeworms may survive for long periods. Suspected infection is better assessed than left to chance.

Are worms contagious?

Some are. Pinworm spreads easily between people through microscopic eggs on hands and surfaces. Other worms are acquired from soil, food, water, insects, or freshwater rather than ordinary person-to-person contact.

Does everyone in my home need treatment?

For pinworm, treating household members together is often considered because symptom-free infection and reinfection are common. This is not necessary for every worm species, so advice should be based on the likely infection.

Can I get worms from my dog or cat?

Some animal parasites can infect people, but human pinworm does not come from dogs or cats. Regular veterinary care, safe disposal of animal faeces, and handwashing reduce the risk from animal parasites.

Do home remedies or parasite cleanses work?

There is no reliable evidence that cleanses, extreme diets, herbs, or laxatives remove worm infections. They may delay effective care or cause side effects. Treatment should match the identified or strongly suspected worm.

Sources

- World Health Organization. Soil-transmitted helminth infections. Fact sheet, 18 January 2023.
- US Centers for Disease Control and Prevention. About Pinworm Infection.
- US Centers for Disease Control and Prevention. Clinical Overview of Strongyloides.



- US Centers for Disease Control and Prevention. Clinical Care of Soil-transmitted Helminths.
- US Centers for Disease Control and Prevention. DPDx: Taeniasis.
- White AC Jr, Coyle CM, Rajshekhar V, et al. Diagnosis and Treatment of Neurocysticercosis: 2017 Clinical Practice Guidelines by the IDSA and ASTMH. Clinical Infectious Diseases. 2018;66(8):e49-e75.