

# Isosporiasis

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## What is it?

Isosporiasis is a disease caused by the protozoan *Isospora belli*. The organism infects the lining of the small intestine and can cause severe diarrhea and malabsorption (an inability to absorb nutrients).

*Isospora belli* is spread by feces. Food or water contaminated with animal feces may carry this organism; it's also possible that oral-anal sex may spread the infection. On occasion, there are outbreaks of isosporiasis that can be traced to a feces-contaminated water supply. Isosporiasis is quite rare in the United States; it is most common in tropical parts of the world and places where water contamination is a problem. In the U.S., isosporiasis is an initial AIDS-defining illness in approximately 0.2% of patients with AIDS.

People with compromised immune systems—usually people with a T-cell count below 150—may experience prolonged and severe bouts of diarrhea and malabsorption that can be difficult to treat. It's also important to note that not all people exposed to *Isospora belli*, even if their immune systems are suppressed, experience symptoms of the infection.

## What are the symptoms of isosporiasis?

Watery diarrhea is a primary symptom of isosporiasis, along with abdominal pain, weight loss, loss of appetite, dehydration, and passing gas (flatulence).

## How is isosporiasis diagnosed?

Most cases of isosporiasis can be diagnosed using a stool sample. To do so, the stool is stained with a dye and examined under a microscope. Another way to diagnose isosporiasis is by endoscopy or colonoscopy. These procedures

use thin, long cameras inserted down the throat or through the anus to examine the small (and large) intestine. Samples of intestinal tissue are collected and examined in a lab.

## How is isosporiasis treated?

The most effective treatment for isosporiasis is a combination of two drugs: trimethoprim and sulfamethoxazole (TMP-SMX; Bactrim™, Septra®). To treat isosporiasis, two double-strength TMP-SMX pills are taken twice a day. An alternative is one double-strength pill three times a day. TMP-SMX treatment is usually continued for two to four weeks.

Unfortunately, between 25% and 50% of HIV-positive people are allergic to the sulfur in the SMX half of TMP-SMX. Two of the main symptoms seen in people with allergic reactions to SMX are fever and rash. Very often, the allergy can be so severe that people need to stop taking SMX.

For patients who cannot tolerate SMX, the drug pyrimethamine (Daraprim®), combined with folinic acid, can be taken. This combination of drugs is used for a month.

To help control the diarrhea, perhaps in combination with antibiotic therapy, a number of anti-diarrheal drugs can be taken. This includes: octreotide (Sandostatin®), diphenoxylate (Lomotil®), loperamide (Imodium®), paregoric, and Pepto-Bismol®. And because diarrhea is the direct result of intestinal inflammation caused by the infection, some non-steroidal anti-inflammatory drugs (NSAIDs) may be helpful such as ibuprofen (e.g., Advil®). Another drug that has been shown to greatly reduce diarrhea, due to its anti-inflammatory activity, is thalidomide (Thalomid®). Women who take this drug should avoid becoming pregnant; thalidomide can cause severe birth defects.

### Can isosporiasis be prevented?

The most effective way to prevent isosporiasis is to avoid its sources—mainly potentially contaminated foods or human feces. This is particularly true for HIV-positive people with compromised immune systems traveling to tropical and subtropical countries where water and food could be contaminated. Drinking bottled water and making sure that food is cooked properly can help reduce the risk of isosporiasis while traveling to tropical and subtropical areas.

Drugs used to prevent isosporiasis (prophylaxis) are, for the most part, the same as those used to prevent *Pneumocystis carinii* pneumonia (PCP). Trimethoprim-Sulfamethoxazole (TMP-SMX; Bactrim™, Septra®) is the most effective combination of drugs used to prevent PCP and to treat isosporiasis. And because PCP prophylaxis is generally started when a person's T-cell count falls below 200, he or she should be well protected against *Isospora belli* in the event he or she is exposed to this protozoan.

### Are there any experimental treatments in development for isosporiasis?

If you would like to find out if you are eligible for any clinical trials involving new treatments for isosporiasis, there is an interactive web site run by amfAR, the American Foundation for AIDS Research. Another useful service for finding clinical trials is *AIDSinfo.nih.gov*, a site run by the U.S. National Institutes of Health. They have "health information specialists" you can talk to at their toll-free number at 1-800-HIV-0440 (1-800-448-0440).

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