

Dealing with diarrhea . . .

. . . and worse.

Food and water can be more than a source of nutrition.

They can give you diarrhea and worse conditions. Polio, hepatitis A, typhoid, and cholera can spread through contaminated food and water.

How can you deal with these problems? Careful eating, medications, and immunizations can help.

In these pages:

Traveler's diarrhea guide	Page 1
Loperamide (Imodium® A-D)	1
Levofloxacin (Levaquin®)	2
Azithromycin	2
Polio	3
Hepatitis A	3
Typhoid	3
Cholera	4

Traveler's diarrhea guide

What causes travelers' diarrhea? Infection. You get it from contaminated food or beverages. The culprits are bacteria, viruses, and other tiny creatures.

The Centers for Disease Control and Prevention (CDC) has detailed information about travelers' diarrhea. Visit <http://www.cdc.gov/travel> and read about food and water safety

How can you prevent travelers' diarrhea? Follow the rules of careful eating.

What's safe to drink? Bottled carbonated beverages (but the outside of the bottle may be dirty), beer, wine, alcoholic drinks (but watch out for contaminated ice and contaminated mixers), and hot coffee and tea. If you buy bottled water, make sure the seal is intact. If you have a choice between carbonated water ("with gas") or flat water, choose carbonated water. It's hard to fake carbonation, but an unscrupulous vendor might fill a bottle with unpurified tap water and claim it's purified.

How do you purify water? Boiling is the most reliable method. Chemical disinfection and filtering are other methods. The CDC (see above) has a discussion of methods.

What can you do if you get travelers' diarrhea? Keep up your intake of fluids. Don't get dried out.

If you have one or two unformed stools, take loperamide (Imodium® is a common brand). Take two 2 mg pills after the first unformed stool. Take one of those pills after each subsequent unformed stool. But don't take more than 8 pills a day.

If you have three or more unformed stools in 24 hours, take an antibiotic. We usually recommend levofloxacin or azithromycin.

What are the warning signs in travelers' diarrhea?

Get medical evaluation for:

- High fever
- Bloody stools
- Pus in the stools
- Persistent diarrhea (more than a few days)
- Excessive loss of fluid

What should be done for children with travelers' diarrhea?

For children our advice is different. Because they are small, they can get in trouble with diarrhea quickly. Also, there is special concern about kidney damage with certain types of diarrhea when antibiotics are used. Children need prompt medical evaluation. The CDC has information about travelers' diarrhea in children. Check their website.

I want a prescription for antibiotics to take every day on my trip to prevent travelers' diarrhea. The CDC does not recommend this. The reasons are: (1) risk of adverse reactions; (2) risk of infection with resistant organisms. Treatment for travelers' diarrhea usually works very quickly. So why take the risks?

What about taking Pepto Bismol for travelers' diarrhea?

This sometimes does succeed in preventing travelers' diarrhea. There are potential problems. Often it will temporarily turn your stool pitch black and might temporarily turn your tongue black. It contains bismuth subsalicylate. The salicylate can be troublesome for people already taking aspirin. Potentially, this can cause damage to the stomach and gastrointestinal tract, kidney damage, bleeding problems, and ear problems, including ringing in the ears. In young people, it can cause Reye's syndrome. This involves serious problems with the liver and brain. Theoretically Pepto Bismol pills can cause high calcium levels.

Loperamide (Imodium® A-D)

This drug is used for diarrhea. Please read our information about “Using your drugs” and “Travelers’ diarrhea guide.” The National Library of Medicine has more information about this drug:
<http://www.nlm.nih.gov/medlineplus/druginfo/meds/a682280.html>

Levofloxacin (Levaquin®)

This drug is used for diarrhea. Please read our information about “Using your drugs” and “Travelers’ diarrhea guide.” The National Library of Medicine has more information about this drug:
<https://www.nlm.nih.gov/medlineplus/druginfo/meds/a697040.html>

This drug is recommended for severe diarrhea by *The Medical Letter*. *The Medical Letter* is a highly respected newsletter for doctors. As doctors, we pay attention to highly regarded experts in the medical community who recommend levofloxacin for travelers’ diarrhea.

The usual adult dose is 500 mg by mouth. Take one pill daily. Don’t take levofloxacin more than 3 days without getting medical advice.

An important note about taking levofloxacin: Do not take it with calcium or iron supplements. This includes multivitamins that include calcium, iron, or zinc. Do not take it with antacids containing aluminum, calcium, or magnesium (like Maalox® or Mylanta®). Do not take it with sucralfate (Carafate®). Don’t take any of these drugs within 2 hours of taking levofloxacin. They can reduce absorption of levofloxacin.

Some people raise questions about levofloxacin, but we disagree with them.

For example, some pharmacists run computer checks that show a drug interaction between levofloxacin and chloroquine. Chloroquine is a drug used to prevent malaria. However, this is only a theoretical issue. In fact, the CDC’s guide to travel medicine does not list this as an interaction. See:
<http://wwwnc.cdc.gov/travel/yellowbook/2016/the-pre-travel-consultation/interactions-among-travel-vaccines-drugs>

Also, some people are concerned about possible side effects of levofloxacin. One is damage to the tendons and even rupture of the tendons. However, this is very uncommon. So it would not affect the decision of most people to take levofloxacin. People who are concerned about tendon damage say you should watch out for pain, inflammation, or rupture of a tendon. If this happens, they say you should rest and refrain from exercise. How long? Until the diagnosis of tendinitis or tendon rupture has been confidently excluded. This seems like good advice, regardless whether you are taking levofloxacin.

Other people are concerned about a reaction to sun exposure. However, you should wear sunblock, regardless whether you are taking levofloxacin.

Some people say you should drink plenty of fluids when you take levofloxacin. We think it’s important to maintain a good fluid balance, regardless whether you are taking levofloxacin. This is especially important if you have diarrhea.

Some people have special concern about levofloxacin if you have diabetes or are taking a drug that lowers blood sugar, like insulin. Those people say that levofloxacin might cause you to have low blood sugar. If you have low blood sugar, they say you should stop taking levofloxacin and get in touch with a doctor right away. We look at the situation differently for people with diabetes (especially if they are taking drugs that lower blood sugar). If you are having diarrhea, this can affect your absorption of food. This can affect your blood sugar. You need to pay close attention to your blood sugar, regardless whether you are taking levofloxacin.

Azithromycin (Zithromax®)

This drug is used for diarrhea. Please read our information about “Using your drugs” and “Travelers’ diarrhea guide.” The National Library of Medicine has more information about this drug:
<http://www.nlm.nih.gov/medlineplus/druginfo/meds/a697037.html>

This drug is recommended for severe diarrhea by *The Medical Letter*. *The Medical Letter* is a highly respected newsletter for doctors. As doctors, we pay attention to highly regarded experts in the medical community who recommend azithromycin for travelers’ diarrhea.

The usual adult dose is 500 mg by mouth. Take one pill daily. Don't take azithromycin more than 3 days without getting medical advice.

With any vaccine

Have you read our information about “We’re looking forward to seeing you . . . “? This has important general information. It includes a section on “Important information about immunizations.”

Polio

In the 1950s polio vaccine became available in the U.S. It's been years since we've had polio cases in the U.S. We used to have frightening epidemics of polio. A child would be healthy one day. The next day the child would get sick. After a few days, the child would be permanently paralyzed or even wind up in an iron lung because of damage to the nerves that control breathing.

Most countries have eliminated polio. However, cases still occur in some parts of the world. Polio has been a special problem in Pakistan, Afghanistan, and Nigeria. In recent years, polio has been a problem in dozens of other countries, too.

That can be a problem if you travel.

Let's say you visit a country with polio. Let's say an epidemic breaks out while you are there. Let's say it's been years since your last polio immunization as a child. Let's say that so much time has gone by that you no longer have good protection from polio vaccine.

You could get polio. You could be paralyzed, stop breathing, or die.

That's why experts have a clear recommendation:

Are you going to a place with polio? Then you need, as an adult, to have a booster shot of polio vaccine. The polio situation is changing, and expert advice on polio vaccine is changing, too.

The CDC has more information about polio vaccine:
<http://www.cdc.gov/vaccines/vpd-vac/polio/default.htm>

Hepatitis A

In many parts of the world, sanitation is poor. Food is often contaminated. The hepatitis A virus spreads through contaminated food.

Hepatitis A damages your liver. Some people don't get very sick and recover completely. Others have more serious illness. Sometimes they feel weak and turn yellow. Sometimes they get so sick that they could die without a liver transplant.

Hepatitis A virus spreads very easily. Experts advise vaccination for travelers to countries with increased risk of hepatitis A.

Usually we give one shot of hepatitis A vaccine, followed by another shot 6 months later. The first shot usually provides protection for the trip. The second shot boosts protection so that it lasts 20 years or longer.

Are you over 40 *and* you are traveling in less than 2 weeks? If so, experts recommend that you get immune globulin with your first shot of vaccine. This will help you get protection right away.

Immune globulin has been used for hepatitis A protection for over 50 years. It is made from blood donations, but it has never spread any infections, even HIV or hepatitis C.

For children under 1 year of age, we can't use regular hepatitis A vaccine. Instead, we need to give immune globulin. The timing needs to be coordinated with other childhood vaccines.

Typhoid

Like hepatitis A, typhoid spreads through contaminated food and water. Typhoid fever is not as common as hepatitis A.

Typhoid fever can make you feel bad and fevery for weeks. Some people get permanent damage to the gall bladder and may need surgery. Some people become typhoid carriers (like Typhoid Mary), and they can't prepare food for other people because of the risk of spreading typhoid. Uncommonly, some people die.

Typhoid is developing resistance to antibiotics. It's getting harder to treat.

Experts advise typhoid vaccine especially for travelers with risky plans. This includes visiting friends and relatives. This includes visits to smaller cities, villages, and rural areas.

Did you get the old typhoid vaccine years ago? It really hurt. People felt awful for a few days after getting it. We don't use that vaccine any more.

You have a choice of two vaccines for typhoid. One works as well as the other. What's the difference? One is a pill. The other is a shot.

Some people prefer the pill form of vaccine. Usually, it costs less than the shot, sometimes about \$15 less. But this depends on your insurance. Getting the pill form avoids the need for getting a shot. Also, it lasts longer than the shot. It lasts 5 years, but the shot only lasts 2 years.

Other people prefer the shot form of vaccine. It's simple. You just get a shot. You're done with it. With the pills, you need to follow a complicated directions card. You get four pills. You take one pill every other day about the same time. You need to take each pill on an empty stomach, at least 2 hours after a meal and at least 1 hour before a meal. You need to swallow each pill whole—don't chew it. Take each pill with a cold or lukewarm liquid. Don't take it with alcohol. Keep the pills in the refrigerator when you're not using them.

Then we will put a stamp in your International Certificate of Vaccination. It will say that cholera vaccine was not given for medical reasons. The medical reasons are that there's no cholera vaccine approved in the U.S.

How can you prevent cholera? Eat carefully. Wash your hands, especially before you eat.

The CDC has more information about cholera: <http://www.cdc.gov/cholera/general/>

Cholera

Cholera is a very serious form of diarrhea. It can be very severe. The diarrhea can be so bad that someone will lose an enormous amount of fluid and die in a few hours.

With good sanitation, cholera is very, very rare. It's very unusual for travelers from the U.S. to get cholera. Most places in the world don't have cholera.

Cholera vaccine is not available in the U.S. any more. Do you want it? We don't have it.

Cholera vaccine is no longer officially required anywhere in the world. Are you worried about a border guard who will insist that you have it? Let us know.