Traveling (Food and Drink Risks)

Unclean or not pure (*contaminated*) food and drink are common sources for bringing infection into the body, especially the digestive system (*gastroenteritis*). This can cause nausea, stomach cramping, diarrhea (with or without visible blood) and/or vomiting. Some of the **common infections that travelers can get** are:

- *Escherichia coli* infections (*E. coli*).
- Shigellosis or bacillary dysentery.
- Giardiasis.
- Campylobacter jejuni infections.
- Cryptosporidiosis.
- Hepatitis A.
- Amebiasis.

Other less common infectious disease risks for travelers include:

- Typhoid fever and other salmonelloses.
- Cholera.
- Viral infections caused by rotavirus and noroviruses.
- Various protozoan and helminthic (*worm-like*) parasites.

Many of the infectious diseases transmitted in food and water can also be acquired when solid body wastes, or feces, contaminate food (*fecal-oral route*).

WHAT IS TRAVELERS' DIARRHEA?

The most common travel health problem is travelers' diarrhea. Between 20% and 50% of international travelers develop diarrhea each year. It often occurs in the first week of travel. However, it may occur at any time while traveling, or after returning home. The world is divided into three grades of risk:

- Low-risk: United States, Canada, Australia, New Zealand, Japan, countries in Northern and Western Europe.
- Intermediate-risk: Eastern Europe, South Africa, some of the Caribbean islands.
- High-risk: Most of Asia, Middle East, Africa, Mexico, Central and South America.

In high risk places, often many people do not have access to plumbing or outhouses. The amount of contaminated stool is high and more open to flies. Poor electricity capacity can cause blackouts. This affects refrigeration, which may cause unsafe food storage. Lack of water supplies may mean a lack of sinks for hand washing by restaurant staff.

People at greater risk include young adults, and those with low immune response. This includes people with HIV/AIDS, or those taking medicines to decrease immunity. Also, people with inflammatory-bowel disease or diabetes, and people taking stomach medicines that reduce acid level (H-2 blockers or antacids). The leading cause of infection is consuming food or water contaminated with feces. Poor hygiene practice in local restaurants is thought to be the largest cause of travelers' diarrhea. The bacteria or germ that most often causes this illness is E. coli.

WHAT ARE THE SYMPTOMS OF TRAVELERS' DIARRHEA?

The illness often begins suddenly. It causes an increase in frequency, volume, and weight of stool. An affected person often has 4 to 5 loose, watery bowel movements each day. Other symptoms include nausea, vomiting, diarrhea, stomach cramping, bloating, fever, urgency, and general ill feeling (*malaise*). Most cases are not serious and go away in 1-2 days without treatment. Travelers' diarrhea is rarely life-threatening. (90% of cases resolve in 1 week. 98% resolve in 1 month.)

PREVENTING TRAVELERS' DIARRHEA

Reduce your exposure to potentially not pure water. Water that is chlorinated, using minimum water treatment standards used in the U.S., protects against viral and bacterial (*germs*) diseases. Chlorine treatment alone might not kill some enteric (*gut*) viruses. It may not kill all infection causing parasites.

Where chlorinated tap water is not available, or where hygiene and sanitation are poor, **only the following**

might be safe to drink:

- Beverages made with boiled water (tea, coffee).
- Canned or bottled carbonated drinks (carbonated bottled water, soft drinks).
- Beer.
- Wine.

When buying carbonated drinks or bottled water, always inspect the bottle seal. Make sure it has not been opened. This could mean it was refilled with unclean beverages. If you suspect a bottle seal has been tampered with, return or discard it.

Where water might be contaminated, ice could be, also. Ice should not be used in beverages. If ice comes in contact with containers used for drinking, discard the ice. Thoroughly clean the containers, preferably with soap and hot water.

It is safer to drink a beverage directly from the can or bottle than from a questionable container. However, water on the outside of cans or bottles might not be pure. Dry wet cans or bottles before they are opened. Wipe clean the surfaces where your mouth will have contact. Also, avoid brushing your teeth with tap water.

PREVENTIVE TREATMENT OF WATER

The following methods can be used to treat water. This makes it safe for drinking and other purposes.

- **Boiling**. This is the best method. Bring water to a rolling boil for 1 minute. Then allow it to cool to room temperature. Ice should not be added. Boiling will kill bacterial and parasitic causes of diarrhea at all altitudes. It will kill viruses at low altitudes. To kill viruses at altitudes above 2,000 meters (6,562 feet), water should be boiled for 3 minutes. Or chemical disinfection should be used after the water has boiled for 1 minute. To improve taste, add a pinch of salt to each quart. Or pour the water several times from one clean container to another.
- **Chemical disinfection**. Iodine can be used, when boiling is not possible. However, this method might not kill all parasites, unless the water sits for 15 hours before it is drunk. Two well-tested methods for disinfection with iodine are the use of:
  - Tincture of iodine.
  - Tetraglycine hydroperiodide tablets.

Examples are Globaline®, Potable-Aqua®, or Coghlan's®. You can find these tablets at pharmacies and sporting goods stores. Follow the instructions on the label. If water is cloudy, double the number of tablets used. If water is extremely cold (less than 5° Celsius or 41° Fahrenheit), try to warm it. Increase the advised contact time to achieve reliable disinfection. Cloudy water should be strained through a clean cloth into a container. This should remove floating matter. Then the water should be boiled. Or it can be treated with iodine. Chlorine, in various forms, can also be used for chemical disinfection. But its germ killing activity varies greatly with the acidity (pH), temperature, and content of the water. Chemically treated water is meant for short-term use only. Use iodine disinfected water for only a few weeks.

- Portable filters provide various degrees of protection. Reverse-osmosis filters protect against viruses, bacteria (*germs*), and protozoa. However, they are expensive and large. The small pores on this type of filter get quickly plugged by muddy or cloudy water. The membranes in some filters can be damaged by chlorine. Microstrainer filters (0.1- to 0.3-micrometers), can remove bacteria and protozoa. But they do not remove viruses. To kill viruses, travelers should disinfect the water with iodine or chlorine after filtration. Filters with iodine-impregnated resins work best against bacteria. The iodine will kill some viruses. But the contact time with the iodine in the filter is too short to kill some parasites. To produce safe water, proper selection, operation, care, and maintenance of water filters is needed. Follow the instructions on the label.
- As a last resort, if safe drinking water is not available, very hot tap water might be safer than cold tap water. But proper disinfection, filtering, or boiling is still advised.

REDUCING RISK FROM FOOD

Reduce your exposure to potentially contaminated food. To avoid illness, travelers should select food with care. All raw food could be contaminated. Especially where hygiene and sanitation are poor, avoid:

- Salads.
- Uncooked vegetables.
- Unpeeled fruits or vegetables.
- Unpasteurized milk and milk products, such as cheese.
- Undercooked and raw meat, fish, and shellfish.
- Eat only food that has been cooked and is still hot.
- Eat fruit that has been prepared by a food service provider who routinely caters to foreign travelers.
- Cooked food that stands for hours at room temperature can have bacterial growth. It should be thoroughly reheated before serving. Avoid foods that may have been sitting for some time in the kitchen or in a buffet.
- Do not eat food purchased from street vendors. Consuming food and beverages purchased from street vendors has been linked to increased risk of illness.
- Eat at restaurants that often cater to foreign travelers (leading hotels, hotel chains).
- To guarantee safe food for an infant younger than 6 months of age, breastfeed. If the infant has already been weaned from the breast, formula prepared from commercial powder and boiled water is the safest food.
- Carry small containers of hand-sanitizing solutions or gels (with at least 60% alcohol). This makes it easier to clean your hands before eating.
- Some fish and shellfish contain poisonous biotoxins (such as ciguatoxin), even when cooked. Barracuda is the most toxin filled. It should always be avoided. Red snapper, grouper, amber jack, sea bass, and other tropical reef fish contain the toxin at various times. Poisoning potential exists in all areas where those fish are eaten. Especially in subtropical and tropical island areas of the West Indies, Pacific, and Indian Oceans. Symptoms of this poisoning include gastroenteritis. That is followed by:
  - Neurologic problems, such as dysesthesias (*impaired senses, especially touch*).
  - Temperature reversal.
  - Weakness.
  - Hypotension (*low blood pressure*) (rarely).

- Scombroid is another common fish poisoning. It occurs worldwide in tropical and temperate regions. Fish of the Scombridae family (bluefin, yellow fin tuna, mackerel, bonito), and some non-scombroid fish (mahi mahi, herring, amber jack, bluefish) may contain high levels of histidine. With poor refrigeration or preservation, histidine turns into histamine. This can cause:
  - Flushing (*becoming red faced*).
  - Headache.
  - Feeling sick to your stomach (*nausea*).
  - Vomiting.
  - Diarrhea.
  - Hives (*urticaria*).

Cholera has occurred in people who ate crab brought back from Latin America. Travelers should not bring perishable seafood with them when they return to the U.S.

TREATMENT OF TRAVELERS' DIARRHEA

This illness often goes away without treatment. Oral rehydration (*giving the body safe water and added packets of salt and sugar mixtures*) can replace lost fluids and chemicals in the blood (*electrolytes*). This is especially important in children and people with longstanding (*chronic*) diseases. For severe fluid loss, the best replacement is with oral rehydration solutions (ORS), such as the WHO ORS solutions. These are widely available at stores and pharmacies in most developing countries.

When symptoms first occur, stop eating, and only drink clear liquids (only for adults) to help quiet the stomach. Travelers who develop 3 or more loose stools in an 8-hour period may benefit from antibiotic medicine. Especially if you also have nausea, vomiting, stomach cramps, fever, or blood in stools. Antibiotics are often given for 3-5 days. Some caregivers will prescribe antibiotics for people who are traveling to high risk places, to be used if and when symptoms begin. If diarrhea continues despite treatment, travelers should be evaluated by a caregiver and treated for possible parasitic infection.

Control of frequent diarrhea is possible with over-the-counter medicines called anti-motility agents. These drugs

reduce the amount of diarrhea by slowing transit time in the stomach. This allows more time for food and water to be absorbed. It is thought that diarrhea may be a defense mechanism the body uses, to reduce the contact time between infection causing germs and the stomach. Anti-motility drugs decrease the duration of diarrhea. But they should never be used by travelers with fever or bloody diarrhea. Such drugs can increase the severity of disease by slowing the removal of germs from the body. If excessively or not properly taken, anti-motility agents can cause serious illness on their own.

Studies have found that people who follow the above eating rules still get ill sometimes. Antibiotic prevention before infection occurs is not advised for most travelers. Exceptions include those who have a high risk of serious health problems if treated after infection. However, studies have shown that the active ingredient in Pepto-Bismol (bismuth subsalicylate, BSS), taken regularly while traveling, can offer some protection against travelers' diarrhea. Ask your caregiver about this option before traveling, if desired. Do not use in children.

This Information Courtesy of CDC.

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