How sick can you get from contaminated foods?

How sick a person gets from eating pathogens found in food depends on 1) the type of micro-organism ingested, 2) the amount ingested, and 3) the health of the individual. Elderly people, children and those with health problems may get sick after eating even a small amount of contaminated food. Symptoms include upset stomach, vomiting diarrhea, headache and fever. Severe cases can lead to paralysis, coma and death.

BACTERIAL INFECTIONS – Bacteria will multiply in the digestive tract and most often cause diarrhea, stomach cramps and fever. Examples of infectious bacteria are Salmonella, Campylobacter, E. coli and Shigella.

BACTERIAL INTOXICATION – Food poisoning intoxication can occur when the food eaten is contaminated with toxins (poison) or toxin-producing bacteria. Vomiting is the most common symptom in a bacterial intoxication and usually occurs quite quickly after the food is eaten. Examples of bacteria which produce toxins are Bacillus cereus, Staphylococcus aureus and Clostridium botulinum (botulism).

PARASITES are organisms that cause illness by living and feeding off a host organism. Examples of parasites are Giardia lamblia (Beaver Fever) and Cryptosporidium. Washing raw fruits and vegetables with untreated water can spread parasites to food that is not normally considered hazardous. Symptoms, which may develop 3 to 25 days after ingestion, include oily, foul smelling diarrhea, a feeling of weakness and being run down, abdominal cramps, unexplained weight loss and nausea. More severe cases can bring on anorexia, vomiting and fever.

VIRUSES are micro-organisms that multiply inside living cells and cause illness. Examples of viruses are Hepatitis A, Norovirus, Rotavirus and Influenza.

SPOILAGE ORGANISMS, such as moulds and yeasts which are visible and smelly, can cause allergic reactions and foodborne illness.

Since symptoms may take from 1 hour to 25 days to appear, a foodborne illness is not necessarily caused by the last meal eaten.

OTHER RESOURCES

- Ontario Ministry of Health and Long Term Care www.health.gov.on.ca
- Canadian Food Inspection Agency www.inspection.gc.ca
- Consumer Food Safety Education www.canfightbac.org

UNDERSTANDING FOODBORNE ILLNESS

Public health experts estimate that there are 11 to 13 million cases of foodborne illness in Canada every year. Fortunately, most foodborne illnesses can be easily prevented by using proper food handling practices.

WHAT IS FOODBORNE ILLNESS?

Foodborne illness is disease or injury caused by consumption of contaminated foods or drinks. **CHEMICAL CONTAMINATION** comes from such things as household cleaning supplies, pesticides and insecticides. **PHYSICAL CONTAMINATION** occurs when foreign objects like broken glass, hair, earrings, or bandages get into food.

BIOLOGICAL CONTAMINATION is also dangerous and even more difficult to identify and control. It comes from pathogenic micro-organisms which can cause disease in humans. The most common sources of biological contamination are bacteria, viruses, parasites, protozoa, moulds, yeasts and other naturally occurring toxins, such as those found in some mushrooms and shellfish.

Of these, pathogenic bacteria are the most troublesome because they are odourless and tasteless, and they grow and multiply quickly in food. Some pathogenic bacteria even produce poisons, called toxins, as they reproduce. There are many different types of bacteria in the world. Scientists have identified more than 2,000 different types of Salmonella alone!

Northwestern Health Unit
www.nwhu.on.ca
1-800-830-5978

WHAT IS A PATHOGEN?
A pathogen is a harmful, disease-causing organism.

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What Pathogenic Bacteria Need to Grow

Bacteria are one-celled organisms that grow by dividing themselves. In perfect conditions, some bacteria can reproduce every 20 minutes reaching dangerous levels in as little as 2 hours. Bacteria need 6 things to survive and grow:

1. Water (Most potentially hazardous food contains water.)
2. Low acidity and low alkalinity
3. A source of food (especially proteins and carbohydrates)
4. Oxygen – Most micro-organisms need at least some oxygen to grow.
5. Time to grow
6. Warm temperature (Bacteria grow best between 4° and 60°C.)

THE DANGER ZONE (4°C - 60°C)

Keep perishable food out of The Danger Zone. Food left in the Danger Zone for more than 2 hours MUST BE THROWN OUT.

What kinds of foods can cause foodborne illness?

Most foodborne illnesses are caused by temperature abuse involving hazardous foods. Hazardous foods include:

- meat, poultry and eggs
- soups, salads and sandwiches containing hazardous foods
- processed meats (hot dogs, salami, bologna)
- tofu, soy products and meat substitutes
- milk, yogurt, cheese
- custards and puddings
- cooked pasta, rice and other cooked grains or cereals
- gravy, sauces, mayonnaise, butter
- combinations of these food items

WHAT ARE HAZARDOUS FOODS?

Hazardous foods are those able to support the growth of pathogenic microorganisms or the production of toxins which cause foodborne illness. Cereals, dried foods and most fruits and vegetables are considered to be non-hazardous.

How do foodborne illnesses occur?

Foodborne illness occurs through errors made at any stage in the FLOW OF FOOD. Using safe food handling practices at every step will help prevent foodborne illness and ensure food is safe to eat. Most foodborne illnesses are caused by:

1. POOR PERSONAL HYGIENE, especially improper handwashing.
2. CROSS-CONTAMINATION resulting from unsafe food handling or poor cleaning and sanitizing practices in the kitchen.
3. TEMPERATURE / TIME ABUSE – **not** thawing, cooking, cooling, holding, reheating or keeping food at the right temperature for the right amount of time.

F L O W of F O O D

Growing → processing → packaging → transporting → receiving ↓

reheating ← cooling ← cooking ← preparing ← thawing ← storing

↓

hotholding ——————▶ SERVING

If you or someone you know becomes infected with a foodborne pathogen, notify a Public Health Inspector at your local office of the Northwestern Health Unit.

Northwestern Health Unit

PUBLIC INFORMATION PAMPHLETS

These public Information pamphlets on food safety are available at your local office of the Northwestern Health Unit.

- Barbecue Food Safety Tips
- Picnic Food Safety Tips
- Food Safety Tips for the Holidays
- Leftover Safety
- Cleaning and Sanitizing
- Personal Hygiene in the Kitchen
- Pack a Safe Food Lunch
- How to Avoid Temperature and Time Abuse
- How to Protect Food from Contamination
- Ontario's Food Premise Regulation 562
- Special Events and Food Safety
- Understanding Foodborne Illness

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