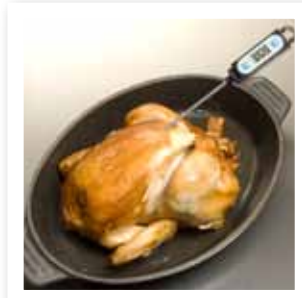
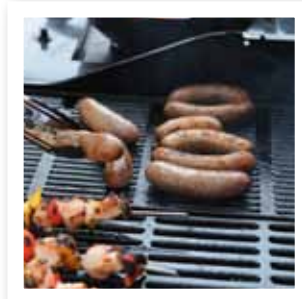




For more information on
food safety issues:
www.mpi.govt.nz



- Defrost frozen foods thoroughly before cooking.
- Use a meat thermometer to check temperatures – minced meat and sausages should be cooked right through, and pork and poultry juices should run clear.



- Pre-cook minced meat, sausages and poultry before barbecuing.
- Never leave hot food to cool for more than two hours before putting it in the fridge.



- Ensure your fridge is between 2 and 4°C.
- keep all perishable foods in the fridge until you are ready to use them.
- When picnicking, keep food cool by using a frozen chilly pad.
- Marinate food in the fridge, not on the bench.

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DISCLAIMER

Every effort has been made to ensure the information in this guide is accurate. The Ministry for Primary Industries does not accept any responsibility or liability whatsoever for any error of fact, omission, interpretation or opinion that may be present, however it may have occurred.



Micro-organisms or bugs that cause illness are called pathogens. This pamphlet looks at some of the common pathogens that cause foodborne illness in New Zealand and gives advice on how you can avoid them.

- Wash knives and utensils and scrub chopping boards between preparing raw and cooked food.
- Keep your fridge clean.
- Clean your hands by washing them with soap and drying with a clean towel.
- Always wash your hands before handling any food and after touching raw meat and poultry, going to the toilet, changing nappies, touching pets and gardening.



- Stored food should always be covered – even in the fridge or cupboard.
- Keep raw meat and poultry covered in the bottom of the fridge and away from ready-to-eat food, fruit and vegetables to avoid meat juice drip.
- When cooking outdoors, ensure that all food remains covered and cool until ready to cook or eat.



More information about pathogens that cause **foodborne illnesses** in New Zealand

How to keep yourself and your food safe

A wide variety of microorganisms – bacteria, fungi, parasites, viruses and other organisms – can cause illness in people. Many of these can contaminate food. Knowing what to watch out for and how to ensure you don't contaminate food that you, your family or others are going to eat is an important part of knowing how to avoid foodborne illness. People who are ill should avoid preparing food for others.

It can take from as little as 20 minutes to several weeks to become sick from food that's been contaminated by pathogens (and your illness may not be caused by the last thing you ate). Foodborne illness can be mild but sometimes (especially if you have low immunity) it can be life-threatening or cause death.

If you think you have an illness caused by food, contact your doctor right away. Your doctor will be able to request samples for laboratory testing. Tests will identify if you have a potentially foodborne illness. This will be notified to your public health unit which will investigate the source of the disease to manage the risk of it spreading.

NAME	POSSIBLE SYMPTOMS (FROM MOST TO LEAST COMMON)	FOODS AND CAUSES LINKED TO OUTBREAKS	HOW SOON IT TYPICALLY STRIKES
Bacillus cereus (bacteria)	Two different forms of foodborne illness: Vomiting, nausea, occasional diarrhoea Diarrhoea, abdominal pain, occasional nausea	Rice, spices and foods containing starch-based products e.g. gravies, casseroles and sauces.	1 to 6 hours (vomiting) 10 to 12 hours (diarrhoea)
Campylobacter (bacteria)	Muscle pain, headache, fever, followed by diarrhoea (can be bloody), abdominal pain, nausea	Undercooked chicken, unpasteurised milk, undercooked liver, untreated drinking water.	2 to 5 days but can range from 1 to 10 days
Ciguatera (toxin)	Nausea, vomiting, diarrhoea, muscle pain followed by neurological symptoms including headache, temperature reversal (hot things feel cold and cold things feel hot), dizziness, tingling, muscular weakness, irregular heartbeat	Ciguatera poisoning is generally associated with private imports of imported reef fish from the tropics. It is not known from New Zealand caught fish, although there may have been cases from fish caught in the Kermadec Islands.	Within 6 hours
Clostridium botulinum (bacteria)	Nausea and vomiting followed by neurological symptoms including weakness, dizziness, double vision, difficulty speaking, swallowing and breathing, abdominal distension	Canned or bottled foods that haven't received adequate heat treatment.	12 to 36 hours
Clostridium perfringens (bacteria)	Severe abdominal pain, watery diarrhoea, occasional vomiting and nausea	Meat dishes especially rolled roasts, stuffed meat, soups, stews, gravies, rice and pies that have been cooled too slowly allowing bacteria to grow.	10 to 12 hours, but can range from 6 to 24 hours
Cryptosporidium parvum (parasite)	Watery diarrhoea, vomiting, stomach cramps, weight loss	Contact with farm animals, untreated drinking water, recreational water contact and contaminated fresh produce, contact with sick animals and contact with sick people.	3 to 11 days
Cyclospora (parasite)	Watery diarrhoea, loss of appetite, weight loss, cramps, nausea, vomiting, muscle aches, low grade fever, extreme fatigue	Contaminated fresh produce.	1 week
Verotoxin- or Shiga toxin-producing E. coli (VTEC/STEC)	Severe abdominal pain, watery (then bloody) diarrhoea, occasional vomiting	Untreated drinking water, unpasteurised milk, contaminated fresh produce.	2 to 8 days
Giardia intestinalis (parasite)	Diarrhoea, flatulence, stomach cramps	Contaminated fresh produce.	1 to 3 weeks

NAME	POSSIBLE SYMPTOMS (FROM MOST TO LEAST COMMON)	FOODS AND CAUSES LINKED TO OUTBREAKS	HOW SOON IT TYPICALLY STRIKES
Hepatitis A (virus)	Fever, malaise, nausea, vomiting, loss of appetite, abdominal pain, jaundice	Contact with a case, shellfish, infected food handlers.	10 to 50 days
Listeria (bacteria)	Non-invasive: diarrhoea, fever, muscle pain, headache, occasional abdominal cramps and vomiting Invasive: fever, headache, diarrhoea, vomiting, septicaemia, encephalitis, meningitis, spontaneous abortion or stillbirth	Ready-to-eat products, such as deli meats and salads, cooked poultry products, smoked seafoods, soft cheeses and foods with a long refrigerated shelf life are often linked to outbreaks of Listeria. Once food is contaminated with Listeria the bacteria multiply quickly, even at the recommended refrigeration temperatures of 2-4°C.	Non-invasive: 11 hours to 7 days Invasive: 1 day to 3 weeks
Norovirus (virus)	Nausea, vomiting, diarrhoea, abdominal pain, headache, low-grade fever	Shellfish, contaminated water, infected food handlers.	24 hours but can range from 10 to 50 hours
Salmonella (bacteria)	Nausea, vomiting, abdominal cramps, diarrhoea, fever, headache	Tahini, raw meats, untreated water, infectious food handlers.	6 hours to 2 days
Scombrototoxin (toxin)	Tingling or burning sensation in the mouth, upper body rash, reduced blood pressure, headache, itching, nausea, vomiting, diarrhoea	Many generally darker-fleshed fish species can cause histamine poisoning if not kept chilled after capture. Species often implicated in New Zealand outbreaks are kahawai, trevally and kingfish.	A few minutes to a few hours
Staphylococcus aureus (bacteria)	Nausea, vomiting, abdominal cramps, occasional diarrhoea	Poor hygiene management of ham, cooked meats, yoghurt, chicken salad, pasta dishes, bakery products (especially cream filled), cheese.	2 to 4 hours but can range from 30 minutes to 7 hours
Vibrio parahaemolyticus (bacteria)	Diarrhoea, abdominal pain, nausea, vomiting, headache, fever, chills	Recreationally gathered raw oysters and clams, crabs, shrimps.	4 hours to 4 days
Vibrio vulnificus (bacteria)	Diarrhoea (in healthy people), bloodstream infection (in people with liver disease, diabetes, or weak immune systems)	Recreationally gathered and imported raw oysters and clams, crabs, shrimps.	Within 16 hours (diarrhoea)
Yersinia enterocolitica (bacteria)	Adults: abdominal pain, headache, fever, diarrhoea, nausea, vomiting Children: watery, mucoid diarrhoea	Pork and pork products, dairy products, fruit, vegetables.	7 days but can range from 1 to 11 days