



# Clostridium perfringens (*C. perfringens*)

## What is it?

*Clostridium perfringens* is widely distributed in the environment and foods, and forms part of the normal gut flora in humans and animals. *C. perfringens* form spores. Spore-forming bacteria are able to survive when there is a lack of food or moisture, or when temperatures are too hot or too cold for them to multiply. They do this by forming a protective shell, called a spore. Under optimal growth conditions the organism has a generation time of 10 to 12 minutes, and gastroenteritis often follows ingestion of food containing large numbers of vegetative cells. *Clostridium perfringens* is also a causative agent of gas gangrene.

## Where is it found?

- *C. perfringens* is widely distributed in the environment and frequently occurs in the intestines of humans and animals.
- Spores of the organism persist in soil, sediments and areas subject to human or animal faecal pollution.
- The organism can often contaminate foods where it can multiply to high numbers if the food is cooled down too slowly and/or not sufficiently reheated.
- Meats, meat products and gravy are often implicated in *C. perfringens* food poisoning incidents.

## Why is it a problem?

- Perfringens food poisoning is the term used to describe the common form of the foodborne illness caused by *C. perfringens*.

- The disease is characterised by intense abdominal cramps and diarrhoea. Symptoms typically begin 8-22 hours after consumption of foods containing large numbers of *C. perfringens* bacteria. The illness is usually self-limiting and over within 24 hours.

## Who is at risk?

- All people are at risk of food poisoning by *C. perfringens*, although dehydration and other complications are mostly reported in elderly and very young patients.
- People who frequently eat at restaurants, hospitals and other mass-catering settings, are likely to increase their risk of infection.

## How can the risk be reduced?

- Proper disinfection of critical surfaces in restaurants and in food production industries is the most efficient way of controlling the problem of *C. perfringens* food poisoning.
- Adequate cooking and appropriate holding temperatures are also important controls for minimising the risk of illness:
  - Ideally meat and poultry products should be served at 60°C soon after preparation.
  - Foods prepared in advance of serving should be refrigerated at 4°C or less in small, shallow containers.
  - Hot foods should be re-heated quickly to 74°C prior to serving.