

Food Hygiene & Safety

Case study: A cautionary tale: answer sheet

What happened

The date is 1st October 2008, the place is Brussels in Belgium. A 20 year old man became ill and died after eating leftovers, a spaghetti meal with tomato sauce that had been left unrefrigerated at room temperature for 5 days and reheated in the microwave before consumption.

The man experienced symptoms within 30 minutes including headache, abdominal pain, and nausea. He proceeded to vomit for several hours and experienced bouts of watery diarrhoea, consuming only water to rehydrate.

The man then later died in his sleep, his death occurred at approximately 4:00 AM, providing a timeline of 10 hours between consumption of the spaghetti meal and death.

The culprit: *Bacillus cereus*

Bacillus cereus is a type of bacteria that is able to form 'spores' that can survive heat and cooking. Spores are often activated during cooking and grow best at temperatures above 10°C. If kept at warm conditions for a length of time, the bacteria can produce a toxin that is able to survive high temperatures of cooking.

Foods that can commonly be contaminated with *B.cereus* include rice, spices, and cereals including pasta, and have also been associated with meat, vegetables, dairy, soups and sauces, as it originates from soil.

Questions:

1. Explain how the handling of leftovers in this case study led to the sudden death of a young person

When cooking and slowly cooling the meal, *B.cereus* spores in the pasta were given the right conditions to activate. Leaving the pasta at room temperature (above 10°C) for 5 days then allowed the bacteria to continue growing and eventually produce a toxin. When the food was reheated, the toxin was not affected and was in the food when it was eaten, this toxin killed the young person.

2. What can you do to prevent *B. cereus* infection?

- Before cooking Wash fruit and vegetables to remove soil, which could contain harmful spores.
- Put leftovers in the fridge or freezer within 2 hours of cooking to prevent the growth of bacteria. Leftovers should be reheated thoroughly to ensure bacteria in the food are killed.
- Do not reheat rice or pasta more than once and only keep leftovers for a maximum of one day.

