Botulism (Clostridium botulinum)

What you can do to reduce the risk of becoming ill due to Clostridium botulinum.

What is Clostridium botulinum?

Clostridium botulinum is a type of bacteria that can produce a very powerful toxin called botulinum toxin, **which causes a rare, but serious illness known as botulism.**

These bacteria are naturally present in the environment, particularly in soil and dust, but can be killed by cooking. However, the bacteria can also develop spores which are not killed by cooking and produce a toxin that can make you ill. This makes them very resilient and difficult to eliminate.

For information on the symptoms of botulism, see:

- NHS page on botulism
- NIDirect page on botulism
- NHS 111 Wales page on botulism
- UKHSA's collection on Botulism: diagnosis, data and analysis

Recent research on Clostridium botulinum is also available on the Advisory Committee on the Microbiological Safety of Food website.

How you can contract botulism

Foodborne botulism is an illness that can occur when someone eats food containing the C. botulinum toxin, often because it has not been properly canned, preserved or cooked.

Cooking, storing and handling foods and using preserving equipment correctly will help reduce the risk. Canning and bottling products such as herbs or garlic in oil can be risky as it is difficult to achieve the level of control needed to destroy or prevent growth of C. botulinum spores at home.

Foods that have been associated with foodborne botulism include home preserved foods, tinned and bottled foods, foods preserved in oil and food packed in airtight containers. Although most cases of foodborne botulism are caused by home preserved foods produced or stored incorrectly, there have been rare incidents involving commercially prepared food.

Information on other types of botulism can be found on the NHS website.

How you can reduce the risk of botulism at home

With the high standards of food hygiene in the UK, the chances of getting food-borne botulism from food bought in this country are low. Preserving your own foods at home is riskier. You can reduce risks by following good hygiene practices and only use recipes or guidance from reputable sources.

Eating foul-smelling preserved foods or foods stored at the incorrect temperature can lead to food poisoning. It is also important to not eat food from bulging, heavily rusted or deeply dented cans, even shop bought.

If you are unsure if food has been properly preserved or packaged, of the use by date, or if it has been stored correctly, then avoid eating it and throw away the product.

Honey is not suitable for babies under the age of 1 as it's been known to contain Clostridium botulinum spores.

In general, you can also help keep your food safe by:

- chilling your food below 5°C - storing foods at this temperature will stop or significantly slow the growth of bacteria
- following storage instructions according to the packet or recipe you are following - check how long to keep products open for before needing to throw away and if they need to be stored in the fridge or cupboard
- using food and drink by the use-by date on the label, even if it looks and smells fine – eating food after this date could put your health at risk as you can't smell or taste bacteria which could make you ill
- cooking food correctly by following the instructions on time and temperature
- avoiding cross-contamination which might lead to bacteria passing from raw foods to foods that are ready to eat via things like reusable shopping bags, knives, dirty surfaces and chopping boards
- making sure that food preparation areas are clean to prevent harmful bacteria from spreading
- washing your hands regularly with soap and water before, during and after meal preparation

FSA Explains

Spores

Some bacteria that cause food poisoning can produce spores as part of their life cycle. These spores are like tiny and very tough shields that help bacteria withstand harsh conditions like heat, dryness, and chemicals. They can stay dormant for a long time until they find the right environment to grow again.

When food is not stored or cooked properly, these spores can become active and turn into bacteria that multiply and produce toxins. These toxins can make you sick if you eat contaminated food.

An example of a spore-forming bacterium is Clostridium botulinum, which causes botulism, a serious foodborne illness. Spores from this bacterium can survive in improperly canned or preserved foods and produce a dangerous toxin when the conditions allow.

To avoid foodborne illnesses, it's essential to follow store, handle and cook food properly.