

An A to Z of bizarre food poisonings

For those of us who find fascination in the world of food poisoning it is usually the case that particular kinds of food are involved in the transmission of predictable kinds of diseases. As an example, the recent publicity around *Campylobacter* in retail chickens reinforces the stereotyped link between the two such that your GP is even more likely than ever to ask you “Have you eaten chicken in the last week?” next time you present with diarrhoea.

However, when you look at some of the more bizarre food poisoning events that have occurred around the world it is clear that the nature of the foods that can be involved and the hazards which may lurk within them know no bounds. So, the purpose of this A-Z is not to trivialise food poisoning but to reflect the diverse nature of food poisoning events. Unfortunately, in some of the cited cases fatalities occurred and the burden of foodborne disease on the health system remains significant. However, there is a danger that foods considered as being “normally” involved in food poisonings become entrenched as such in people’s thinking, opening the door to unusual or new foods being overlooked as potential sources of disease. Hopefully, the need to think outside the square is illustrated amply by the case histories that follow.

A is for Ackee This national fruit of Jamaica contains natural toxins which can cause “vomiting sickness” and even death if eaten while unripe. In early 2011 there were 21 deaths and 194 cases of ackee poisoning in that Caribbean Island. This was blamed on a cold winter delaying the ripening of the fruit. Ackee is banned in the U.S.

Bat While not yet confirmed, it has been theorised that a serious brain-wasting disease suffered by the native people of Guam is caused by the traditional consumption of bats which have fed on plants (cycads) containing neurotoxins. The incidence of disease peaked after world war two when the bats were almost hunted to extinction.

Crickets A 2005 incident in Thailand saw more than a hundred people hospitalised with diarrhoea, dehydration and low blood pressure after eating crickets. The cause was not given.

Dead things Don’t eat dead things unless you know how they died. In Somaliland 64 people were hospitalised after eating camel meat; the camel had died of a snake bite. The same fate befell 40 people (one death) who ate a cow also killed by a snake (not the same one presumably). Nine people in the Philippines were placed under observation after killing and eating a neighbour’s dog. What they didn’t know is that the dog’s owner had died of rabies after being bitten by it.

Egg Plant Two small outbreaks of botulism in Italy were traced back to the same brand of eggplant slices in oil. While no detections of *Clostridium botulinum* were made in unopened jars, the pH varied (amazingly) from 3.9 to 5.1. Given that a pH of 4.6 is the

lower limit for growth of *C. botulinum*, and that the oil used in preservation would favour anaerobic conditions, this looked like an accident waiting to happen.

Fruit In recent times there seem to have been a spate of reports concerning various fruits, including outbreaks caused by norovirus in frozen strawberries and *Listeria monocytogenes* in melon, apple and stone fruits. Is this a new trend or has the link not been convincingly made in the past?

Giraffe A farmer's giraffe became ill and was put down. Workers employed to dispose of the carcass decided instead to eat the giraffe meat, so they helped themselves and took the meat home for their families. A girl who ate the meat on the same night that it was butchered became ill and died before aid could be administered. Two days later seven other people became ill, but they were luckier and survived after hospital treatment.

Halva Well it's not so much the halva but the tahini that goes into it. Tahini is sesame seed paste and is an essential ingredient in this middle eastern sweet. In 2001, there was an international outbreak of salmonellosis due to consumption of a brand of halva produced in Turkey. Cases occurred in Germany, Sweden, Norway and Australia, and *Salmonella* Typhimurium DT104 was isolated from implicated samples.

Ice In Thailand, a large outbreak involving 906 cases of hepatitis A infection was attributed to the use of contaminated ice. Freezing does not guarantee the inactivation of all biological hazards, and the water from which the ice was made contained coliforms, likely indicating faecal contamination.

Jellyfish A single case of jellyfish-derived food poisoning from Ciguatera toxin was reported in a 12 year old Tongan girl in 1995, and jellyfish has been specifically listed as a food to beware of by Hong Kong health authorities in respect to *Vibrio* infections.

Kelp In fact seaweed in general contains iodine, and you can have too much of a good thing. There are reports of seaweed fortified soy milk causing the disease thyrotoxicosis, and in one incident involving 48 cases in Australia the implicated soy drink had an iodine concentration of 25,000 µg/l while other soy milks analysed contained from 15 µg/l to 281 µg/l.

Lizard One report of suspected lizard poisoning might be a fluke, but two? In the first, 80 Pakistani hostel residents became sick from what doctors described as lizard poisoning, although the cook denied that lizards were present in the kitchen. In India, 30 school children became ill after lunch, and they saw a lizard in the sambar, a vegetable stew.

Mascarpone Toxin with your tiramisu? Eight young people in Italy succumbed to botulism after eating Mascarpone cheese either on its own or as part of a tiramisu.

Nuggets (chicken) A Canadian study found a link between *Salmonella* infections and eating raw or undercooked chicken nuggets. This was because people believed the nuggets to be pre-cooked while, in fact, they were raw.

Onions, sautéed Botulism again. This time onions which harboured spores of the organism were cooked in margarine and kept warm in the margarine. The theory was that the combination of temperature abuse and oxygen being excluded by the margarine allowed the anaerobe to grow and produce toxin. Twenty-eight people became ill, one died.

Potato chips/Paprika In 1993 an outbreak of salmonellosis in Germany was traced back to paprika flavoured potato chips and ultimately to the spice itself. It was a remarkable outbreak as judged by these statistics; there were an estimated 1000 cases, concentrations of between 0.04 and 0.45 organism per gram were found in the chips, the dose causing infection was estimated at 4 to 45 organisms, and the attack rate was 1 in 10,000 exposed people.

Quargel A very serious outbreak of listeriosis, with four deaths, resulted after people ate Quargel, a ripened cheese produced in Austria.

Raw pork, minced While this may not seem like an attractive menu item for Brits, raw pork is eaten in other parts of Europe. The practice has been associated with cases of salmonellosis in Germany, and in 2012 a report on the epidemiology of yersiniosis in Germany concluded that 30% of the cases could be explained by its consumption.

Sugar cane juice In Brazil 45 people became sick after drinking sugar cane juice. The disease, diagnosed as Chagas disease, is normally spread by insect bites. However, in this case the infection route seemed to be foodborne, and the potential for the disease to be foodborne has been shown in mice.

Toad A Cambodian man died and his daughters became ill after eating poisonous toads and their eggs. The man died because he was very hungry and ate most of the bounty he had collected while returning home from work. He died an agonising death over the course of several hours.

Unpasteurised dairy products There have been many reports of outbreaks of gastrointestinal disease following the consumption of contaminated raw milk and raw milk cheeses. An interesting dodge used in some states of the USA, which circumvents bans on the sale of raw milk in some states, has people buying shares in a cow—they don't buy the milk directly, just the rights to a share of the milk produced. In Australia raw milk sold for "cosmetic" purposes (think Cleopatra) has caused disease.

Victoria sponge Well, someone *could* have been making this cake when they became involved in a 2008 outbreak of salmonellosis in New Zealand. This was pinned on contaminated flour that people ate as cake batter, or possibly as home-made play dough.

Warfare Twelve people died after eating cattle killed in action following a Ugandan army “bombing raid”. It was claimed that chemicals in the bombs caused the deaths of the people, but the army countered with “The bombs we use are ordinary bombs. They are neither poisonous nor contain chemicals”. Possibly free range too.

X In this case X is a celebrity victim, not the food. X (AKA “DMX”-OK I’d never heard of him either) “had the plane ride from Hell last night -- throwing up all the way from Miami to Charlotte”. He had some “bad shrimp” in Miami and then spent most of the flight “tossing his cookies” in the lavatory. Even celebs get the squits.

Yoghurt This seemingly innocuous dairy product with its high lactic acid content, and hence low pH, would seem to be an unlikely entry into this list. However, hazelnut flavoured yoghurt was behind an outbreak of botulism in the UK as a result of the contaminated hazelnut conserve used as an ingredient.

Zucchini Zucchini (also known as courgette) can rarely contain a group of natural toxins known as cucurbitacins which make zucchini taste bitter. Bitter zucchinis are best avoided as they can cause vomiting, diarrhoea and stomach cramps. In 1982, an outbreak of 22 cases of zucchini poisoning was reported in Queensland.

Of course, not all food incidents are real; some involve mass hysteria. Take the 1999 “contamination of Coca-Cola” which made Belgian schoolchildren revising for their exams sick and resulted in the withdrawal of the product in three EU countries. When tested, there was nothing wrong with the Coke apart from a faint off odour. The problem largely lay with the jittery school children who were over-stressed by exams and the poor handling of communication around the incident. And that was five years before the advent of Facebook! However, unlikely as an association between a soft drink and foodborne disease might be, a degree of open-mindedness is required. As a final example, until quite recently listeriosis was joined at the hip with pâté and soft cheese, but in recent times we have seen the involvement of melons, caramel apples and stone fruit in transmitting this disease. Who’d have thought?