Food-Borne Infections Evade Common Defenses

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The researchers found that when the chicken was frozen for 1 week, about 10% of the C. jejuni population survived, and when it was frozen for 2 weeks, 3% survived.

An investigation of a large salmonellosis outbreak demonstrated that Salmonella enterica can be transferred from hands and grow rapidly in tomatoes.

Researchers from the Centers for Disease Control and Prevention, who are studying facilius anthrax because of its potential use as a bioterrorism agent, investigated whether boiling water contaminated with the organisms would sterilize the water. They found that when the water was covered and then boiled for either 3 minutes or 5 minutes, all the organisms were killed.

However, when the water was boiled uncovered, high numbers of the organisms survived (Emerg. Infect. Dis. 2004;10: 1887-8). Some organisms can encompass into spores and survive intense temperatures. Derlet said.

Clostridia, for example, form temperature-resistant spores that break down when they cool, which is why there are instances of people becoming sick after eating soup that has cooled.

Researchers at Kansas State University collected flies from a cattle farm in that state to see if the insects could be contributing to dissemination of E. coli 0157:H7, which may be present in up to 40% of beef that comes from a feedlot or passes through a stockyard.

They found that 6% of the flies collected harbored the organism, which can cause hemolytic-uremic syndrome (Appl. Environ. Microbiol. 2004;70: 7575-80).

The reality of the world is that someone can be in the Caribbean one day and in an emergency room in Minnesota with ciguatera the next,” Elijah W. Stommel, M.D., said at the annual meeting of the American Academy of Neurology. “We all need to be prepared to deal with these illnesses.”

Most of the world’s vacation hot spots boast their own unique seafood toxins, said Dr. Stommel, a neurologist at Dartmouth-Hitchcock Medical Center, Lebanon, N.H.

Caribbean reef fish carry ciguatera, and shellfish from picturesque islands of eastern Canada can pack an algal toxin wallop.

Scombroid poisoning can be found wherever fresh tuna and other game fish are consumed.

A trip to Japan (or an expensive sushi bar) can increase the risk of puffer fish poisoning, which kills about 800 people a year in Japan.

Even the quiet coasts of New England can be dangerous for shellfish lovers—saxitoxin is 1,000 times more potent than sarin.

Paralytic shellfish poisoning causes severe, almost immediate symptoms, including tingling, numbness, vertigo, dysarthria, dysphagia, weakness, ataxia, and even blindness. There are no GI symptoms. The lack of diarrhea and vomiting may contribute to the high rate of mortality because more of the toxin is absorbed rather than expelled from the body. Death is usually the result of respiratory failure.

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Freezing food restaurant chain in 1999 demonstrated that Salmonella enterica can be transferred from hands and grow rapidly in tomatoes.

A recent study has now shown that C. jejuni can survive on vegetables for 200 days, at least under experimental conditions (Appl. Environ. Microbiol. 2004;70: 2497-102).

It’s Summertime: Be on the lookout for seafood poisoning.

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Saxitoxin blocks sodium channels in nerve and muscle, which arrests impulse conduction and can suppress atrioventricular node conduction.

There is no antidote; treatment is supportive. The toxin binds well to charcoal. Acidity enhances the toxin’s effects, so serum alkalization might be helpful.

Tetrodotoxin occurs in the organs of the puffer fish (Fugu rubripes), a delicacy in Japan, where fugu poisoning affects about 150 people yearly with 50% mortality.

Symptoms develop within 20 minutes to 3 hours of consumption, and include oral and extraintestinal paresthesias, GI disturbance, hypersalivation, aphoresis, cranial nerve dysfunction, refractory hypotension, and cardiovascular collapse. Partial or complete paralysis may occur, although the patient can remain lucid. Death usually occurs within 4-6 hours.

“Again, there is no known antidote,” Dr. Stommel said. Gastric lavage and activated charcoal can be useful early in the course of poisoning. Anticholinesterase agents, atropine, and α-agonists have been effective for cardiovascular instability.

Scombroid, the world’s most common seafood poisoning, results from toxins that build up in improperly stored fish. It’s most common in members of the tuna family but can occur in other game fish. Scombroid isn’t fatal; the symptoms of headache, nausea, vomiting, diarrhea, abdominal cramps, and burning of the mouth and esophagus usually subside within hours.

Treatment usually consists of charcoal and histamine blockers (cimetidine or famotidine). It’s advisable to block both H2 and H3 receptors.