

FOOD SPECIFIC RATE ATTACK TABLE

Below is the Health Department's Food Specific Attack Rate Table used by investigators to tabulate information from surveys. Investigators use this table to help identify the food source of an illness outbreak. Investigators compare the number of people who become ill after eating a specific food with the number of people who become ill and did not eat that food. For example, of the people who ate corn, 31% became ill. Of those who did not eat corn, 67% also became ill. However, of the people who ate raw clams, 80% became ill; no one became ill who did not eat clams. Public health officials conclude raw clams caused the illness in this incident.

	Number of Persons Who Ate Specific Food				Number of Persons Who Did Not Eat Specific Food				Diff. in %
	Ill	Well	Total	% Ill	Ill	Well	Total	% Ill	
Raw Clams	12	3	15	80	0	17	17	0	80
Steamed Clams	9	13	22	41	3	7	10	30	11
Chowder	6	7	13	46	6	13	19	32	14
Hot Dog	7	14	21	33	5	6	11	45	-12
Sloppy Joe	6	6	12	50	6	14	20	30	20
Sausage/Pepper	7	13	20	35	5	7	12	42	-7
Chicken	6	8	14	43	6	12	18	33	10
Spare Ribs	7	6	13	54	5	14	19	26	28
Steak	7	13	20	35	5	7	12	42	-7
Corn	8	18	26	31	4	2	6	67	-36
White Potato	9	16	25	36	3	4	7	43	-7
Sweet Potato	2	1	3	67	10	19	29	34	33
Ice Cream	9	17	26	35	3	3	6	50	-15
Watermelon	6	13	19	32	6	7	13	46	-14
Suspect Food RAW CLAMS									

How can these shellfish related illnesses be prevented?

Because shellfish can carry viruses and bacteria that make people sick, certain guidelines should be followed:

- Obtain shellfish only from approved, certified sources; do not harvest shellfish from waters contaminated with raw sewage.

- Eat only shellfish that have been thoroughly cooked. Most of the recent outbreaks of hepatitis and gastroenteritis have been linked to consumption of raw shellfish, but some also involved steamed clams. Steamed clams do not always reach a high enough temperature for a long enough period of time to ensure destruction of the viruses.

- If you suffer gastrointestinal problems after consuming shellfish, immediately contact a physician or a local health department for immunoglobulin shots to prevent Hepatitis A from developing.

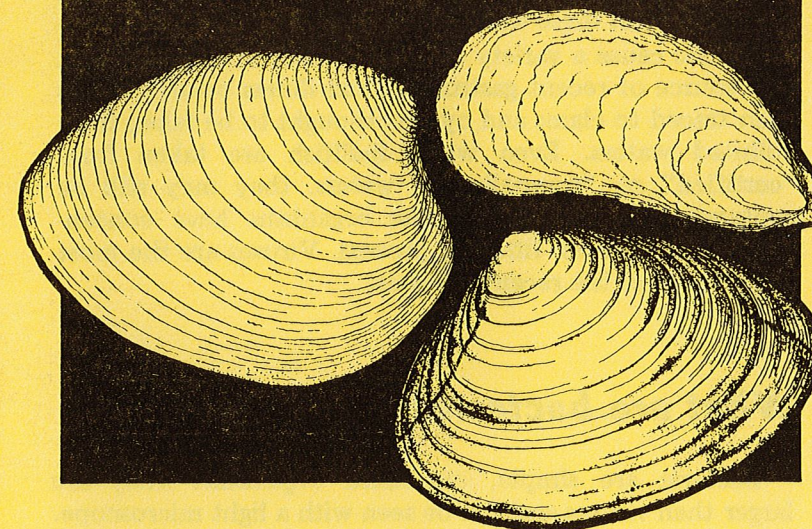
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HEALTH INFORMATION

Shellfish Related Illness



How do clams and oysters become contaminated?

Clams and oysters are filter feeders — they get food and oxygen by pumping water through their systems to filter out what they need. A muscular siphon, the neck, sucks water into the animal and through its digestive system where food and oxygen are removed.

But clams and oysters also filter other material carried in the water such as particles of mud, bacteria and viruses. The bacteria or virus does not necessarily harm the shellfish but may remain within the clam or oyster for a long time — even after harvest.

Mussels and scallops are also filter feeders. But recent disease outbreaks in New York have yet to be traced to mussels. Only the adductor muscle of the scallop is eaten and the virus or bacteria is not accumulated in that muscle.

Clams and oysters can be tested for some of the potentially hazardous bacteria and viruses after they are harvested, but the procedure is time consuming and expensive.

What are viruses?

Viruses are tiny particles that invade and live off cells of people, animals, plants and bacteria and are too small to be seen under an ordinary microscope. Viruses can survive in waters contaminated with raw sewage and in shellfish harvested from these waters.

Viruses cause a variety of infectious diseases in humans. The source of recent gastrointestinal illness outbreaks has been traced to clams and oysters thought to be taken from polluted waters. Even when shellfish are taken from "certified" or "nonpolluted" waters, they may still be contaminated with viruses the organisms have concentrated during their filtering process. Viruses are the most likely cause of the recent illnesses.

What are bacteria?

Bacteria are simple, one-celled organisms. They are larger than viruses and can be seen with a light microscope. A number of diseases linked to tainted shellfish are bacterial. Since the beginning of the twentieth century, shellfish have been identified as vehicles for foodborne bacterial illnesses like cholera and typhoid fever. However, bacteria account for only a small number of recent illness outbreaks linked to shellfish consumption.

What is hepatitis?

Hepatitis is a disease of the liver. There are three major types, all caused by a virus. Infectious hepatitis, Hepatitis A, generally enters the body through the mouth; serum hepatitis, Hepatitis B, generally enters the body via the blood stream. A third group includes those viruses classified as other than the specific A and B viruses.

One way the Hepatitis A virus gets into the body is by eating raw and possibly steamed shellfish harvested from polluted waters. Hepatitis B virus may also be present in these clams and oysters, but is not generally contracted by humans through food consumption. Non A - Non B virus particles may also be present in shellfish from polluted waters.

Symptoms of infectious hepatitis can occur from 15 to 50 days (usually 28–30 days) after eating the contaminated food. The symptoms include fever, nausea, vomiting and abdominal discomfort, followed by enlargement of the liver. Jaundice, or a yellowing of the skin, occurs in many cases and is due to the way the virus affects the liver. Transmission of the illness usually occurs during the incubation period and early onset of the disease. In most cases, the illness is transmitted via the excreta from an infected person's contaminated hands. Unless the ill persons carefully observe hygienic measures including the washing of contaminated hands with soap and water, the virus can be transmitted to others, usually through contamination of food or drink.

What is gastroenteritis?

Gastroenteritis is an inflammation of the lining of the stomach and the intestines. It is caused by a virus or bacteria and like hepatitis can be contracted by eating contaminated shellfish.

Symptoms of viral gastroenteritis occur 24–48 hours after eating contaminated foods and generally last for up to 48 hours. The symptoms include nausea, vomiting, diarrhea, chills, weakness, low fever and headache. Gastroenteritis can be contagious. Scientists have recognized a close association between the onset of gastroenteritis during some of the recent outbreaks and subsequent appearance of Hepatitis A.

The source of viral gastroenteritis is difficult to determine because those stricken are often unable to associate a specific food, eaten up to two days earlier with the start of illness. And, more often than not, such an illness will never be brought to the attention of a physician or public health official.

How is an illness linked to shellfish?

New York State law requires that any case of food poisoning be reported to health officials. After investigation, the New York State Department of Health will

issue an advisory if it appears there is a threat to the health and safety of New York State residents.

For example, in the summer of 1982 raw clams were served at a party in upstate New York. The next day several guests reported to the hostess that they had stomach illnesses. The hostess, fearing food poisoning, reported the illnesses to the county health department. The health officials:

- obtained a list of party guests and a complete menu;
- contacted all guests and took a detailed history including what was eaten, what if any illness symptoms appeared, the onset and duration of symptoms;
- tabulated results to determine the extent of the outbreak and the possible source of illness. (In this case the probable source was determined to be raw clams served at the party — from survey data, investigators linked the illness of 18 guests to raw clam consumption.);
- sent food sanitarians to investigate food preparation to determine whether such an outbreak of illness linked to clams could spread further;
- determined that food preparation practices were not the problem;
- investigated purchase place of clams (local seafood market) and found more contaminated clams;
- issued a press release warning against consumption of raw clams obtained from the local market;
- using the existing tagging system, tracked the clams and their harvest source;
- discovered that tagging was not always complete, readable or accurate, making difficult the identification of a harvest site.

In another incident in the winter of 1982, clams causing illness at a downstate party were traced from a local seafood market to a Long Island shipper. Bags containing the contaminated clams stated the original harvest site as Great South Bay.

Other government agencies become involved in these investigations, including: the New York State departments of Environmental Conservation and Agriculture and Markets, the federal Food and Drug Administration and comparable agencies in other states.

