



# Seafood Health Facts: Making Smart choices

## Balancing the Benefits and Risks of Seafood Consumption

### *Resources for Healthcare Providers and Consumers*

## **Microbes and Foodborne Illness [1]**

### **Microorganisms and Foodborne Illness**

This section describes food safety issues associated with microbial pathogens like bacteria and viruses that could be associated with certain types of seafood products. Information on how to select and handle seafood products to avoid foodborne illness is included.

### **Microorganisms and Foodborne Illness**

Living organisms too small to be viewed with the naked eye are called *microorganisms*. Microorganisms live everywhere: air, dirt, fresh and salt water, skin, hair, animal fur and plants. Although there are thousands of different types of these tiny microorganisms, only a few are likely to be harmful to humans. The harmful bacteria that cause illness are known as **pathogens**. The illness caused by some pathogens in food can be severe and even life-threatening, especially in vulnerable consumers (e.g., young children, older adults, and people with weakened immune systems). Some foodborne pathogens can also endanger unborn babies in pregnant women. Some pathogens can produce toxins which are not destroyed during cooking. It is important to keep food cold to prevent pathogens from growing and forming toxins in food.

Foodborne illness can be caused by any food. According to the Centers for Disease Control and Prevention (CDC), raw foods of animal origin (raw meat and poultry, raw eggs, unpasteurized milk, and raw shellfish) are the most likely to be contaminated. Because shellfish like oysters, clams, mussels, scallops can filter and accumulate any microbes that are present in the waters in which they live, they are more likely to contain pathogens that could cause foodborne illness.

### **Preventing Foodborne Illness**

Keeping seafood cold at temperatures below 40°F will help prevent the growth of pathogenic bacteria, and adequate cooking will destroy any pathogens that may be present. Proper sanitation and hygiene are also key elements of food safety. Bad food handling and sanitation practices may lead to cross contamination during food preparation causing foodborne illness. Cross contamination involves transferring harmful bacteria from one food to another, or to a food from cutting boards, utensils, or your hands. To prevent cross contamination when storing or cooking seafood, keep raw seafood and their juices away from already cooked or ready-to-eat foods. It is also essential to wash your hands after touching raw food or non-food surfaces or other dirty objects, and after using the toilet.

The U.S. Food and Drug Administration believes that **prevention** is the best way to avoid foodborne illness. Consumers can prevent foodborne illnesses at home by using safe food handling practices including:

- washing hands, utensils, and cooking surfaces often,
- cooking seafood to a minimum of 145°F for 15 seconds,
- keeping raw and cooked seafood separate to avoid cross-contamination, and
- storing seafood in the refrigerator below 40°F or in the freezer below 0°F.

### **Higher Risk Consumers**

Some consumers have an increased chance of getting a type of foodborne illness called **listeriosis**. High risk individuals include those who may have a compromised or weak immune system because of health conditions such as liver disease, cancer or chemotherapy patients, HIV infection, and stomach or intestinal problems,

and certain groups such as the elderly, pregnant women and young children. If you are in one of these groups, you should avoid certain types of seafood and other foods to reduce your chance of getting listeriosis. High risk consumers should avoid refrigerated types of smoked seafood such as salmon, trout, whitefish, cod, tuna, or mackerel. These items can be labeled as “nova-style,” “lox,” “kippered,” “smoked,” or “jerky”, and are found in the refrigerated section of grocery stores and delicatessens. You need not worry about getting listeriosis if these products are cooked in a dish such as a casserole or if they are canned or shelf-stable (do not require refrigeration).

Furthermore, to reduce risks of illness from bacteria in food, the US Department of Agriculture advises that persons at risk do not eat the following foods:

Raw fin fish and shellfish, including oysters, clams, mussels, and scallops.

Raw or unpasteurized milk or cheese.

Soft cheeses such as feta, Brie, Camembert, blue-veined, and Mexican-style cheese. (Hard cheeses, processed cheeses, cream cheese, cottage cheese, or yogurt need not be avoided.)

Raw or lightly cooked egg or egg products including salad dressings, cookie or cake batter, sauces, and beverages such as egg nog. (Foods made from commercially pasteurized eggs are safe to eat.)

Raw meat or poultry.

Raw sprouts (alfalfa, clover and radish.)

Unpasteurized or untreated fruit or vegetable juice (These juices will carry a warning label.)

## Resources for More Information

**Foodborne Illness-Causing Organisms in the U.S. - What You Need to Know - FDA.** This resource describes foodborne illness in the U.S. and provides a chart that summarizes common pathogens, symptoms of illness and food sources.

[To view this resource in English click here](#) [2].

[To view this resource in Spanish click here](#) [3].

**Foodborne Illness Causes and Symptoms - Partnership for Food Safety Education.** Describes the most common pathogens and the foodborne illness that they cause. [To view this resource click here](#) [4].

**Foodborne Illness Frequently Asked Questions - Centers for Disease Control.** Provides an excellent introduction for consumers on foodborne illness, how food is contaminated, prevention, the role of public health departments and more. [To view this resource click here](#) [5].

**Fight BAC!™ Food-borne Illness Patient Handout - American Medical Association.** This resource is designed to be a handout that physicians can provide to their patients that describes how to select, handle and prepare food safely to avoid foodborne illness. [To view this resource click here](#) [6].

**Ask the Experts: FoodSafety.gov** Provides information from the US Food and Drug Administration, US Department of Agriculture, and Centers for Disease Control and Prevention. This handy resource is a web page with email and phone numbers for consumers to use in obtaining information and to speak with a federal food safety experts. [To go to this Website click here](#) [7].

**Bacteria and Viruses at Food Safety.gov** lists common bacteria and viruses that can cause foodborne illness. Included are foodborne illness charts that have been created by federal food safety agencies that identify and summarize the organisms, onset of illness, symptoms, duration, and food source for key pathogenic bacteria. [To view this resource click here](#) [8].

## Foodborne Illness Prevention Sites

**FightBAC.org** is administered by the Partnership for Food Safety Education (PFSE), a not-for-profit organization that unites industry associations, professional societies in food science, nutrition and health, consumer groups, and the U.S. government to educate the public about safe food handling. [To view the educational materials at this site click here](#) [9].

**Keep Food Safe Blog** - Provides practical information and tips from the experts to help you and your family

stay food safe. [To view this blog click here](#) [10].

**Food Safety Fact Sheets - U.S. Department of Agriculture.** USDA has developed a variety of fact sheets on food safety and a variety of different foods. [To view a list of these factsheets click here](#) [11].

**The Basics: Clean, Separate, Cook and Chill - FoodSafety.gov** General information from Federal agencies on food safety including podcasts available to consumers. [To view this information click here](#) [12].

**Don't Cross-contaminate Fact Sheet - USDA.** Fact sheet that describe why cross contamination can cause foodborne illness and how to prevent it. [To view this information click here](#) [13].

**University of Georgia Marine Extension Service and California Sea Grant Extension Program - [SafeOysters.org](#)** [14], a gateway to *Vibrio vulnificus* information.

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#### Source URL:

<https://www.seafoodhealthfacts.org/seafood-safety/general-information-patients-and-consumers/seafood-safety-topics/microbes-and>

#### Links

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- [14] <http://safeoysters.org/>

