

FOOD TALK



SANITATION TIPS FOR FOOD WORKERS

SPRING 2012

Chillin' Out with Seafood



Does your establishment serve seafood? Perhaps you don't serve raw seafood dishes such as sushi or oysters, but your menu includes cooked shrimp and fish. Seafood presents special food safety challenges and not just because it is sometimes consumed raw. It is also sensitive to what the experts call "time/temperature abuse."

Did you see the recent news reports about the multi-state outbreak of foodborne illness linked to *Salmonella* in raw tuna? The investigators believe this outbreak was caused by a frozen product that came all the way from India. The product, which looks like raw ground tuna, is scraped from the bones of the fish and is used in sushi and similar dishes. The investigators don't know how the contamination came to be in the product. But it is possible that it happened during the processing stage and then the *Salmonella* got a chance to grow in numbers because of time/temperature abuse during storage or handling.

Roberta Hammond, a leading outbreak investigator who moved from Florida's Department of Health two years ago to join the U.S. Food and Drug Administration, was the coordinator for FDA's investigation team for this outbreak.

"The source appears to be a company in India that supplies mostly restaurants with this product," she said, in an interview on FDA's new online blog, FDA Voice.

The investigators began by looking at the places where people who become ill had eaten. Then they used invoices and other records to trace the suspected food back to suppliers and to where it was produced.

What You Can do to Keep Seafood Safe

The list of possible contaminants of seafood is a long one. It includes bacteria, viruses, natural toxins, and toxic chemicals such as mercury, numerous pesticides, and polychlorinated biphenyls (PCBs). Regulators have known the added risks associated with seafood for many years and they require special preventive measures such as Hazard Analysis and Critical Control Point (HACCP) systems in seafood processing facilities. But you can do a lot at the foodservice stage to help keep seafood safe.

As a food handler, you can't control what happens to a food product before it reaches your establishment, but you can take extra care to protect your customers. One step is to reject seafood that shows signs of spoilage, such as fish with off odors, sunken eyes or gray or greensih gills. Frozen fish that has thawed and has been refrozen can sometimes smell sour and can have an off color.

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Cleaning and sanitizing work surfaces and utensils will help to keep raw seafood as safe as possible. For fish that will be served cooked, making sure it reaches a temperature of 63 degrees C (145 degrees F) should kill any bad bugs in the food.

Proper preparation can also help reduce levels of toxic chemicals that build up in the tissue. For example, you can boil or bake fish on an elevated rack so that melted fat drips off. Then you can discard the drippings so they are not used in sauces or gravy.

Unfortunately, mercury builds up in the muscle rather than in the fat, so sourcing products from a reliable supplier is the way to deal with this hazard. Predators such as shark, swordfish and king mackerel tend to have the highest levels because they consume other fish that contain mercury. And the contamination accumulates over time, so older fish tend to have the highest levels.



Parasites

Fish may also be contaminated with parasites. For fish that is consumed raw, the secret for success in dealing with parasites is to use time as well as temperature controls. This can get complicated because there are exceptions depending on the type of seafood and where it comes from. In general, freezing and storing at -20 degrees C (-4 degrees F) or below for seven days will do the trick. But there are other time/temperature combinations that will also work.

Scombroid Fish Poisoning

Scombroid fish poisoning is caused by bacterial spoilage of fish such as tuna, mackerel, bonito, and, less often, other fish. As bacteria break down fish proteins, histamines build up in the fish. Eating spoiled fish that have high levels of these histamines can cause an illness that is like an allergic reaction. The symptoms begin within two minutes to two hours after eating the fish. The most common symptoms are a rash, diarrhea, flushing, sweating, headache, and vomiting. Burning or swelling of the mouth, abdominal pain, or a metallic taste may also occur. Usually, the symptoms are mild and go away within a few hours. But sometimes treatment with antihistamines or epinephrine may be needed.

To avoid scombroid poisoning, fish should be properly refrigerated from when they are caught to when they are cooked. If fish smells bad or has a "honey combed" appearance, it should be rejected.

Freezing and Thawing

Frozen seafood should never be thawed at room temperature. It's best to thaw seafood in the refrigerator, either overnight or for as long as necessary. It is acceptable to thaw whole shellfish such as shrimp in a colander under cold running water, but not under warm or hot water. Seafood such as fillets can be placed in a tightly closed plastic bag, then in a deep pan filled with cold water.



Cooked seafood should be refrigerated within two hours of cooking. It can be refrigerated or frozen in covered shallow pans. If you use deep containers, the product may take too long to cool and may cause the food to be unsafe to eat. It's a good idea to leave space around the containers, to allow cold air to circulate, which helps cool the food quickly.

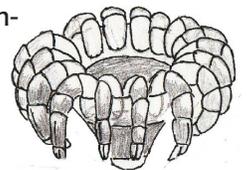
And remember to:

- Wash your hands before and after handling raw seafood; and
- Clean and sanitize utensils, plates, cutting boards and other surfaces touched by raw seafood to prevent cross-contamination.



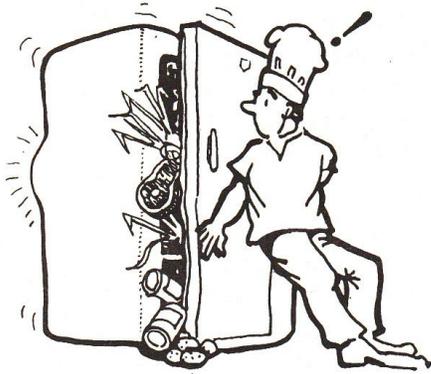
Cooking

Cooking seafood can be tricky because it's easy to overcook and your customers won't like that. In general, the FDA 2009 model Food Code calls for a cooked temperature of 63 degrees C (145 degrees F) for 15 seconds. But again, there are exceptions. For example, the recommended internal temperature for comminuted fish (that's fish that has been reduced in size or reformulated by various methods such as chopping, flaking, grinding, or mincing) is 68 degrees C (155 degrees F) for 15 seconds.



Besides checking the internal temperature of cooked seafood, you should cook shrimp, lobster and crabs until the flesh is pearly and opaque, and cook clams, oysters and mussels until the shells open.

**Remember to
Wash Your Hands!**



How You Can Help Your Cooler Stay Cool

Inadequate cold holding of foods is one of the key risk factors identified as contributing to foodborne illness. So it is a very good idea to check reach-in and walk-in coolers regularly to make sure they are doing what they are designed to do—hold food and ingredients at safe temperatures. A properly functioning cooling unit helps prevent foodborne diseases and also saves money because it lasts longer and needs fewer repairs.

Here's a quick checklist for keeping your cooling equipment in good working order:

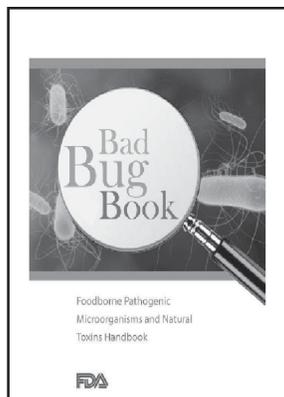
- Is the temperature correct? Food in the cooler should be at or below 5 degrees C (41 degrees F), according to FDA's 2009 model Food Code.
- Does the cooler need defrosting? Excessive ice on the cooling coils will prevent proper air circulation, resulting in higher air temperatures and warmer food products. The higher temperatures will also cause the unit to run overtime and lead to additional wear and tear that can cause frequent breakdowns and a shorter life.
- Do the door seals actually seal? Worn, torn, loose or missing seals will let cold air out and warm air in. If the cost of the equipment doesn't bother you, think of all the wasted electricity.
- Is the internal circulation fan working? Most commercial units have electric fans for circulating the air inside the cooler. Occasionally a fan will stop working. More often a bit of plastic or foil will stick to the fan guard, stopping proper air circulation and causing the unit to run excessively.
- Is there too much food in the unit to cool properly? One of the most common causes of inadequate cooling is overcrowding and poor placement of product. When foods are crowded against one another and stacked on top of one another, the cold air cannot circulate around the food. The free circulation of air around the product is necessary to cool it quickly. Sometimes entire sections of a refrigerator are blocked off from circulation resulting in "warm spots" where bacteria can grow and foods can spoil.
- Avoid double stacking of foods. And leave space between containers for air to pass through.

Bigger, Better Bad Bug Book

If you want to learn more about the foodborne pathogens you read about here in *Food Talk*, you can take a look at the Bad Bug Book. The Food and Drug Administration has just issued a new edition of this excellent resource, which gives lots of information about the pathogens and toxins that cause foodborne illness.

Each chapter in the new edition includes a section written in everyday language for non-scientists, with a focus

on food safety and tips for how to reduce the risk of illness.



One section identifies the food sources and the nature of the foodborne illnesses caused by each pathogen or toxin. The new edition also includes a section on each bad bug's characteristics and the factors that affect its survival.

The handbook includes information about foodborne bacteria, viruses, parasites, prions, and naturally occurring toxins. It is easy to find and read online. Just visit www.fda.gov and search for the "Bad Bug Book 2nd Edition."

Test Yourself on Seafood Safety

Try this quick test of your seafood safety knowledge. Select the best answer if more than one seems correct.

1. The best way to thaw frozen seafood is:

- a. Under cold running water.
- b. In the refrigerator.
- c. At room temperature.
- d. None of the above.

2. It is possible to tell if fresh fish is not really fresh by:

- a. Touching the raw flesh.
- b. Smelling a bad odor.
- c. Checking for grey or greenish gills.
- d. All of the above.

3. Fish may be contaminated with:

- a. Bacteria.
- b. Parasites.

- c. Toxins.
- d. All of the above.

4. Generally, according to the FDA 2009 model Food Code, seafood should be cooked to:

- a. 74 degrees C (165 degrees F)
- b. 68 degrees C (155 degrees F)
- c. 63 degrees C (145 degrees F)
- d. None of the above.

5. Fish that are usually associated with mercury contamination include:

- a. Tilapia.
- b. Cod.
- c. Shark and swordfish.
- d. All of the above.

Answers: 1(b), 2(d), 3(d), 4(c), 5(c)

(Sources for this issue include the Centers for Disease Control and Prevention and the Food and Drug Administration.)

