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HOME & GARDEN INFORMATION CENTER

# Safe Handling of Seafood

## Selecting the Best

Federal regulations require that all parts of the seafood industry implement safe handling practices to keep seafood safe. The regulations require that those handling seafood have a Hazard Analysis and Critical Control Points, or HACCP plan in place in their operation. HACCP is a science-based system that examines each step in processing food, isolates possible hazards and sets limits, or critical control points, within which the food is safe. These regulations help consumers to select safe, quality seafood. In addition, state law mandates the inspection of oyster and clam beds and other waters where seafood is harvested. The bacterial levels of these waters are inspected and are closed to the harvesting of shellfish if the levels are considered too high.

Seafood poisoning can occur from eating seafood that has not been handled properly, raw or improperly cooked seafood or fish from tropical water that harbors a toxin. Consumers can protect themselves by purchasing seafood only from certified processors and dealers and by following the suggestions given here for safe handling. For specific information on seafood illnesses request HGIC 3660, *Foodborne Illnesses Related to Seafood*.

**Spotting a Safe Seafood Seller:** ALWAYS purchase fish from a certified dealer that maintains high quality. Based on FDA's Food Code, here are some ways of spotting a safe fish dealer:

- Employees should be in clean clothing and wearing hair coverings.
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- They should not be smoking, eating or playing with their hair.
- They should not be sick or have any open wounds.
- Employees should be wearing disposable gloves when handling food and change gloves after doing nonfood tasks and after handling raw fish.
- Fish should be displayed on a thick bed of fresh — not melting — ice, preferably in a case or under some type of cover. Fish should be arranged with the bellies down so that the melting ice drains away from the fish, thus reducing the chances of spoilage.

**Shrimp:** Fresh shrimp have a mild odor and firm-textured meat. The shell or meat is not slippery, and there are no black spots, or patches on the shell or meat. The shell of raw shrimp may be grayish-green, pinkish-tan, or light pink. When cooked, the shell turns red and the meat takes on a reddish tint. Cooked shrimp have firm meat and a mild smell.

**Crabs, Lobsters & Crayfish:** Live crabs, lobsters, spiny lobsters and crayfish move their legs. The "tail" of a live lobster curls under the body and does not hang down when you pick it up. Frozen spiny or rock lobster tails have clear white meat, no odor and are hard-frozen. Cooked crabs, lobsters and crayfish have bright orange to red shells and are free of any disagreeable odor.

**Clams, Oysters & Mussels:** Purchase raw shellfish carefully. Buy raw clams, oysters and mussels only from reputable markets. If in doubt, ask the seafood market personnel to show you the certified shipper's tag that accompanies "shell on" products or check the shipper number on shucked oyster containers. Clams, oysters and mussels in the shell are alive, and the shells close tightly when tapped. Gaping shells indicate that the shellfish are dead

and not edible. Shucked oysters are plump, and have a mild odor, a natural creamy color, and clear liquid or nectar.

**Scallops:** Fresh scallops have a sweetish odor and are free of excess liquid when packaged. The meat of the large sea scallop is white, orange or pink. Smaller bay and calico scallops are white, light tan or pinkish.

**Frozen Seafood:** Flesh is solid, and there is no discoloration or drying (freezer burn) on the surface. Odor is not evident or is fresh and mild. Wrapping material is moisture- and vapor-proof, fits closely around the product and is undamaged. Packaging materials do not contain ice crystals or have water stains or other indications that the product had thawed at any point. Packaged breaded and unbreaded products have a clean and uniform appearance. Individual pieces separate easily. Breading is intact. Packaged frozen seafood may have an expiration date stamped on the label. Use the seafood before the expiration date.

## Storage

**Safe Handling after Purchase:** Whether you've purchased seafood that is fresh or frozen, always keep it cold. Never leave perishable items in a hot car unless packed in ice or in a cooler; seafood products must be kept cold to ensure peak quality. It's always a good idea to keep your refrigerator temperature between 32 and 38 °F, and your freezer at 0 °F or colder. Plan to use your seafood purchases within one to two days, or freeze them.

**Refrigeration:** Place seafood immediately in the refrigerator when you get home from the seafood market. Wrap fresh seafood in cling wrap or store in airtight containers. Store fresh, pasteurized or smoked seafood products at 32 to 38 °F. Refrigerate live clams, oysters, mussels, crabs, lobsters and crayfish in well-ventilated containers. Cover the container with a damp cloth or paper towel. Do not store live shellfish in airtight bags or containers. Storing live shellfish in salt water shortens their shelf life. Storing them in fresh water kills them. Keep live shellfish alive.

Do not cook or eat shellfish that have died during storage. Live clams, oysters and mussels have tightly closed shells, or the shells will close when tapped. Live crabs, lobsters and crayfish move their legs. Dead shellfish spoil rapidly and develop off-flavor and off-odors. For a more detailed summary of cold storage times for seafood, refer to the table at the end of this fact sheet.

**Freezing:** Store frozen seafood products immediately in the freezer when you get home from the seafood market. Store them in their original moisture- and vapor-proof packages. Frozen seafood packaged in overwrapped trays should be repackaged in moisture- and vapor-proof plastic freezer wrap, freezer paper or foil before you store them in the freezer. Keep frozen seafood products at 0 °F or below until ready to use.

## Preparation

**Cleanliness:** Always wash hands thoroughly with hot, soapy water before preparing foods and after handling raw seafood. Don't let raw meat or juices touch ready-to-eat foods either in the refrigerator or during preparation. Don't put cooked foods on the same plate that held raw seafood. Always wash utensils that have touched raw seafood with hot, soapy water before using them for cooked seafood. Wash counters, cutting boards and all surfaces raw seafood has touched.

**Thawing:** While freezing seafood quickly keeps more cell walls intact, the opposite is true for thawing. Defrost gradually so cells are disturbed less and fewer juices leak out. The best way to thaw is overnight in the refrigerator. Avoid thawing at room temperature. If you must thaw seafood quickly, here are safe options: seal seafood in a plastic bag and immerse in cold water for about an hour OR microwave on the "defrost" setting, stopping when seafood is still icy but pliable.

**Marinating:** Marinate seafood in the refrigerator, not on the counter. Discard the marinade after use because it contains raw juices, which may harbor bacteria. If you want to use the marinade as a dip or sauce, reserve a portion before adding raw food.

## Cooking

**Basic Cooking Tips for Shellfish:** Shrimp, crabs, scallops, clams, mussels, oysters or lobster become tough and dry when overcooked. To cook raw shellfish, shucked or in the shell, follow these basic guidelines:

- Raw shrimp turn pink and firm when cooked. Depending on the size, it takes from 3 to 5 minutes to boil or steam 1 pound of medium-sized shrimp in the shell.
- Shucked shellfish (clams, mussels and oysters without shells) become plump and opaque when cooked thoroughly and the edges of the oysters start to curl. The Food and Drug Administration (FDA) suggests boiling shucked oysters for 3 minutes, frying them in oil at 375 °F for 10 minutes or baking them for 10 minutes at 450 °F.
- Clams, mussels and oysters in the shell will open when cooked. The FDA suggests steaming oysters for 4 to 9 minutes or boiling them for 3 to 5 minutes after they open.
- Scallops turn milky white or opaque and firm. Depending on size, scallops take 3 to 4 minutes to cook thoroughly.
- Place lobster in a pan of boiling water to cover, and return water to boil. Boil a 1-pound lobster for 10 minutes, and allow an extra 3 minutes for each additional pound. If steaming, allow 15 to 18 minutes for a 1½- to 2-pound lobster.

**Guidelines for Cooking Fish:** Cooked to perfection, fish is at its flavorful best and will be moist, tender and have a delicate flavor. In general, fish is cooked when its meat just begins to flake easily when tested with a fork and it loses its translucent or raw appearance. Like most foods, fish should be thoroughly cooked. The (FDA) suggests cooking fish until it reaches an internal temperature of 145 °F.

One helpful guideline is the 10-minute rule for cooking fish. Apply it when baking, broiling, grilling, steaming, and poaching fillets, steaks or whole fish. (Do not apply the 10-minute rule to microwave cooking or deep-frying.) Practice makes perfect and cooking fish properly is all in the timing. Here's how to use the 10-minute rule:

- Measure the seafood product at its thickest point. If the fish is stuffed or rolled, measure it after stuffing or rolling.
- At 450 °F, cook it 10 minutes per inch thickness of the fish, turning the fish halfway through the cooking time. For example, a 1-inch fish steak should be cooked 5 minutes on each side for a total of 10 minutes. Pieces of fish less than half an inch thick do not have to be turned over.
- Add 5 minutes to the total cooking time if you are cooking the fish in foil or if the fish is cooked in a sauce.
- Double the cooking time (20 minutes per inch) for frozen fish that has not been defrosted.

Fish is the original "fast food." It cooks quickly, within minutes, because it lacks the connective tissue of red meats and poultry. Some of the best cooking methods for fish include poaching, broiling, grilling, baking and microwaving because they bring out flavor without adding fat. For more information on cooking fish, request the HGIC 3508, *Safe Handling of Fish*.

## Serving

**Basic Tips:** Wash hands with soap and water before serving or eating food. Serve cooked products on clean plates with clean utensils and clean hands. Never put cooked foods on a dish that has held raw products unless the dish is washed with soap and hot water. Hold hot foods above 140 °F and cold foods below 40 °F. Never leave foods, raw or cooked, at room temperature longer than two hours. On a hot day with temperatures at 90 °F or warmer, this decreases to one hour.

## Leftovers

**Basic Tips:** Always use clean utensils and storage containers for safe storage. Divide large amounts of leftovers into small, shallow containers for quick cooling in the refrigerator. For frozen storage, wrap seafood in heavy foil, freezer wrap or place in freezer container. For optimum taste, use seafood within a month. When reheating leftovers, make sure that they have been cooked to 165 °F. If you may have kept the food refrigerated for too long, throw it out. Never taste food that looks or smells strange to see if you can still use it.

**Recommended Times for Refrigerator & Freezer Food Storage**

| Food | Refrigerator | Freezer |
|---|---|---|
| **Fresh Seafood** | | |
| Fresh lean fish: cod, flounder, trout, haddock, pollack, perch | 1-2 days | 4-6 months |
| Fresh fatty fish: mullet, smelt, salmon, mackerel, bluefish, tuna, and swordfish | 1-2 days | 2-3 months |
| Live crabs and lobster | Same day purchased | * |
| Live mussels and clams | 2-3 days | * |
| Live oysters | 7-10 days | * |
| Shucked mussels and clams | 1-2 days | 3-4 months |
| Shucked oysters | 5-7 days | 3-4 months |
| Shrimp, crabmeat | 2-3 days | 4 months |
| Scallops | 2-3 days | 3 months |
| **Cooked Seafood** | | |
| Crab | 1-2 days | 3 months |
| Shrimp | 3-4 days | 2 months |
| Fish sticks, commercial | * | 18 months |
| Breaded shrimp, commercial | * | 1 year |
| Cooked fish pieces | 3-4 days | 3 months |
| * Storage by this method is not recommended due to safety or quality issues. | | |

**Sources:**

1. FDA Consumer Publication *Critical Steps Toward Safer Seafood*. November-December 1997.
2. *The National Food Safety Database Consumer Tips for Handling Seafood Safely*. And *Consumer Tips for Purchasing High Quality Seafood*. Prepared by Robert Price, August 1990.
3. *National Fisheries Institute Seafood Storage Guidelines for Consumers*. And *Mastering Fish and Shellfish Cookery*: Practice Makes Perfect. 1998.

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