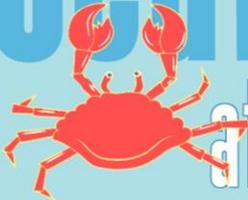




# Seafood



at its best

University of Idaho  
Extension

# SEAFOOD AT ITS BEST

## LESSON 4

### SELECTING, BUYING, HANDLING, STORING, AND COOKING



#### **Selecting, Buying, Handling, Storing, and Cooking Seafood** (slide 2)

Welcome to class 4 of Seafood at Its Best. Today we will discuss the selection of seafood, how much to buy, handling and storage, and cooking. We will also share some recipes with you.

# LESSON 4

## GOALS

To learn how to select, buy, handle, store, and cook seafood.



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### Lesson 4 Goals (slide 3)

The goal of lesson 4 is to learn how to select, store, and cook seafood.

# LESSON 4

## OBJECTIVES

Increase knowledge of the following:

- How to select seafood products
- How much seafood to purchase
- How to properly store seafood
- How to properly cook seafood

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### **Lesson 4 Objectives** (slide 4)

The objectives are to increase your knowledge of the following:

- how to select seafood products;
- how much to buy;
- how to properly handle and store seafood; and
- how to properly cook seafood.

Before we begin—I would like you to take a few minutes to complete this pretest.

*Instructor: Pass out lesson 4 pretest.*

# CUTS OF FINFISH



**Dressed**



**Steak**



**Fillet**

- [www.tocookafish.com](http://www.tocookafish.com)
- [www.fda.gov/Food/GuidanceRegulation](http://www.fda.gov/Food/GuidanceRegulation)

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## **Cuts of Finfish (slide 5)**

Like many other animals we eat, fish also have different cuts.

**Whole or Dressed:** Whole fish are fish of any size as caught which have the appearance of a whole fish. Dressed fish are whole fish of any size which have been scaled, gutted and had the gills and fins removed. Sometimes the head is removed and most often the tail is left intact.

**Steak:** A thick, sometimes boneless piece of fish cut from larger fish such as tuna, salmon, or swordfish.

**Fillet:** Available from any fish, round or flat. Fillets can be boneless or with a pin bone-in and consist of the complete sides of a fish from just below the gills to tail, being cut away from the backbone and removed in one single piece. Fillets from larger fish can be further cut down into single-serving size portions and sometimes called, Supremes.

Many fish are known by different names in different parts of the country. You can look up a list some of the more popular names used for each fish at <http://tocookafish.com/regional-fish-names>. Click on the fish name and it should take you to the most common fish associated with that name. There it will tell you a little about the fish and some easy ways of preparing them.

# BUYING FRESH SEAFOOD



- Buy seafood from reputable dealers
- Check the “sell by” or “use by” date
- Purchase it last at the store
- Use your eyes, hands, and nose

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## Buying Fresh Seafood (slide 6)

When buying fresh seafood, it is important to buy from reputable dealers—those having a known record of safe handling practices—NOT from a roadside stand. Farmer's market stands can be fine if the product is local and refrigerated or well iced.

Be certain to check the “sell by” or “use by” date on all seafood products, or ask your seafood manager how soon to cook your purchase.

Be sure to purchase your seafood last at the grocery store, since it is a highly perishable product. Avoid cross-contamination in your shopping cart by enclosing individual packages of seafood in plastic bags. Be sure the raw juices from the seafood do not drip on other foods, especially those that will be eaten without further cooking.

Use your eyes, hands, and nose. Buy what looks the best and smells good. Fresh fish should have little or no odor. The odor often is described as that of a sea breeze. Owners of fish markets will usually allow you to smell the fish; however, they will not allow you to touch the fish. Ask the service person to touch it and see if it is firm or mushy.

Fresh seafood refers to seafood that has NOT been frozen. Frozen seafood can be superior in quality to fresh seafood, so base your purchase on product quality. Products labeled “fresh frozen” indicate the seafood was frozen while it was fresh, in many instances within hours of harvest. Fishery products frozen and thawed for retail sale should be labeled “previously frozen.”

How can you determine the quality of fresh seafood in the store? First, look at the display. All fresh seafood should be held as near to 32° F as possible, maintained by refrigeration or ice. Freshly packaged seafood should feel cold to the touch, not cool. Raw seafood should not be touching cooked seafood. Price markers should not be stuck in the fish—this could introduce spoilage.

## SELECTING FRESH WHOLE FISH

- Bright, clear, full eyes – often protruding
- Bright red or pink gills
- Firm and elastic flesh that springs back
- Shiny skin color
- No fishy or ammonia smell



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### Selecting Fresh Whole Fish (slide 7)

Whole fish have certain characteristics that indicate freshness. Look for bright, clear, full eyes, often protruding. As the fish loses freshness, the eyes become cloudy, pink, and sunken. Gills should be bright red or pink. Avoid fish with dull-colored gills that are gray, brown, or green.

Ask the counter staff to touch the flesh to be sure it is firm yet elastic, springing back when pressed gently with the finger. Over time, the flesh becomes soft and slips away from the bone.

The skin of a fresh, whole fish should be shiny, having scales that adhere tightly. Characteristic colors and markings start to fade as soon as a fish leaves the water.

Ask if you can sniff fresh whole fish. They should have no strong fishy or ammonia smell.

## SELECTING FILLETS



- Firm and elastic flesh
- Fresh-cut, moist appearance
- No browning around edges, no ragged edges or gaping
- Filleted flesh separates if it is old
- No fishy or ammonia smell

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### Selecting Fillets (slide 8)

Fillets should have firm, elastic, translucent flesh and a fresh-cut, moist appearance. There should be no browning around the edges, no ragged edges, and the muscle should not separate (known as gaping). The flesh should adhere to the bones. You can ask to smell fillets, too.

Watch for evidence of bruising or reddening of the flesh from retention of blood. Make sure, too, that prepackaged steaks and fillets contain a minimum of liquid. Fish fillets stored in liquid deteriorate quickly.

# SELECTING SHELLFISH

- Sold live, cooked, or fresh-shucked
- Do not purchase if shells are not closed
- Do not purchase if shells are cracked



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## Selecting Shellfish (slide 9)

Shellfish may be sold live, cooked, or fresh-shucked. Each form and species has different quality signs to examine.

Shells of live clams, oysters, or mussels should look moist and be tightly closed. If the shells gape slightly, have your retailer tap them. If the shells do not close, do not purchase them. Do not purchase live shellfish with cracked shells.

Meats of fresh-shucked clams, oysters, or mussels should be plump and covered with their liquor. Their liquor should be clear or slightly opalescent (slightly milky or light gray). There should be no strong odor.

Scallops die quickly after they are harvested and the adductor muscle is removed at sea. Fresh scallop meats have a firm texture and a distinctly sweet odor. A sour or iodine smell indicates spoilage. Poor-quality scallops also look dry or have yellow or brownish edges.

Live crabs and lobsters show leg movement. The tail of a lobster should curl tightly underneath the body and not hang down when you pick up the lobster. The tail will hang limply if the lobster is dead. Do not purchase dead lobsters. You have no way to know how long they've been dead. Lobsters and crabs will not be very active if they have been refrigerated, but they should move at least a little bit.

Choose raw shrimp meat that is firm and has a mild odor. The shells should not have blackened edges or black spots—this is a sign of quality loss. Black spot formation is a natural process called melanosis, but it is unattractive. It is controlled by sulfites or other treatments such as EverFresh. Presence of sulfites should be noted as some people are sensitive to it. Frozen shrimp, but not raw shrimp, must be labeled if it contains sulfites.

Look for cooked shrimp meat to be firm and for the cooked meat to be displayed and stored separately from raw products. The color of the cooked meat should be white with red and pink tints.

# SELECTING SMOKED FISH



Smoked Salmon Aspet Her by Ryan King

- Bright and glossy
- No unusual odor
- Refrigerate smoked seafood
- Avoid cross-contamination

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## **Selecting Smoked Fish** (slide 10)

Smoked fish must appear bright and glossy and have no signs of mold. There should be no unusual odor.

Smoked fish must be refrigerated. Do not store smoked products directly on ice if they are unpackaged.

Avoid cross-contamination since smoked seafood usually isn't cooked again before it's eaten. It is best to read the instructions on the label.

# SELECTING FROZEN FISH

- Solidly frozen
- No signs of discoloration or drying
- No strong odor
- Wrapped tightly or glazed with thin layer of ice, undamaged package, no signs of thawing, ice crystals



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## Selecting Frozen Fish (slide 11)

Frozen seafood should be frozen solid at temperatures below 0° F.

Commercially frozen fish has been quickly frozen at its peak. You can now find a wide choice of top-quality and wholesome seafood in the freezer case.

Choose seafood that is free of signs of freezer burn, such as discoloration or drying on the surface, and with no objectionable odor.

Choose frozen fish and shellfish packaged in a close-fitting, moisture-proof package. Select packages from below the load line of the freezer case. Look for packages that still have their original shape and the wrapping intact with little or no visible ice.

Do not allow the package to defrost during transportation. Use a cooler or thermally insulated bag. Ask your retailer to provide ice or purchase ice during the warm months of the year if you expect to make other stops or if you live more than 30 minutes away from the store.

At home, wrap seafood in individual leak-proof plastic bags to avoid cross-contamination with other foods.

*For the instructor: As an additional activity, purchase samples of fish from a supermarket and ask your participants to inspect them for freshness. (After inspecting the fish, cook them for sampling or wrap them for freezing. A later slide will explain how to wrap your fish for freezing.)*

# HANDLING FISH CAUGHT FOR RECREATION



- Cooler for fish
- Two pounds of ice per pound of fish
- Eviscerate fish
- When arriving home, immediately refrigerate or freeze

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## Handling Recreationally Caught Fish (slide 12)

Fishing is a wonderful family experience.

When going fishing be sure to have a cooler and about 2 pounds of ice per pound of fish. After catching the fish, you will want to eviscerate them and immediately put them on ice.

The most important considerations in safe handling at home are cleanliness, temperature, and time. Keep your hands, preparation area, and utensils clean. Place the fish in the refrigerator if you are going to use them soon or freeze them immediately for later use. If you have the equipment, vacuum packing is a good technique that will extend frozen shelf life and prevent freezer burn.

## HOW MUCH TO BUY?

<u>Item</u>	<u>Amount per person</u>
• Whole fish	$\frac{3}{4}$ – 1 pound (12-16 ounces)
• Dressed fish	$\frac{1}{2}$ pound (8 ounces)
• Fillets/steaks	$\frac{1}{4}$ – $\frac{1}{3}$ pound (4-6 ounces)
• Crab meat only	$\frac{1}{4}$ pound
• Crab live	1 – $1\frac{1}{2}$ pounds
• Whole shrimp	1 pound
• Peeled shrimp	$\frac{1}{3}$ pound

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### How Much to Buy? (slide 13)

How much fish should you buy per person? These are estimates of the amount of seafood to buy. The exact amount will depend on whom you are feeding. Also, if the seafood will be in a sauce or mixed with several other ingredients, you will probably need less per person than is indicated here.

For whole fish, figure  $\frac{3}{4}$  to 1 pound (12 to 16 ounces) per person.

Dressed fish has been gutted, scaled, and had the gills removed. A dressed fish is ready to cook. You'll need  $\frac{1}{2}$  pound (8 ounces) per person.

Fillets are boneless sections of flesh cut from either side of the fish. Steaks are crosswise cuts of fish that include a small portion of the backbone. For either fillets or steaks you'll need  $\frac{1}{4}$  to  $\frac{1}{3}$  pound (4 to 6 ounces) per person.

For crab, figure on  $\frac{1}{4}$  pound of cooked meat and 1 to  $1\frac{1}{2}$  pounds of live meat per person.

For cooked lobster meat, you'll need  $\frac{1}{3}$  pound per person; for live lobster figure on 1 to  $1\frac{1}{2}$  pounds per person.

Here are some additional buying guidelines:

- Mussels, in the shell: 1 dozen
- Soft-shelled clams: 6 to 12 per person depending on the size
- Oysters, in the shell: 6 to 12 depending on the size
- Clams in the shell:  $\frac{1}{2}$  dozen
- Oysters, clams, or mussels, shucked:  $\frac{1}{2}$  to  $\frac{1}{3}$  pint
- Scallops:  $\frac{1}{4}$  to  $\frac{1}{3}$  pound
- Whole shrimp: 1 pound
- Headless, unpeeled shrimp:  $\frac{1}{2}$  pound
- Headless, peeled shrimp:  $\frac{1}{3}$  pound
- Whole squid:  $\frac{1}{2}$  pound
- Cleaned squid:  $\frac{1}{4}$  pound

# HANDLING AND STORAGE

- Purchase seafood right before checking out at the supermarket
- If seafood will not be refrigerated within 30 minutes, put it in a cooler
- Use seafood within 36 hours of purchase or freeze immediately
- Use defrosted seafood within 36 hours

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## Handling and Storage (slide 14)

Purchase seafood right before checking out at the supermarket. It is a perishable product. No matter what time of the year it is, if your trip home from the store is more than 30 minutes, pack the seafood in a cooler or thermally insulated bag.

Use seafood within 36 hours of purchase or freeze it immediately.

Use defrosted seafood within 36 hours. Defrost seafood in the refrigerator or in a microwave oven. Do not leave seafood on the counter to thaw. Seafood thawed in a microwave oven should be used immediately.

The storage life of seafood depends on how well you take care of it, whether it is a whole fish or a live lobster. Store molluscan shellfish, such as oysters, clams, and mussels, in the refrigerator in open containers with clean, damp cloths placed atop the shellfish. Cook these products within 1 to 2 days of purchasing. If the mollusk's shell is open, tap it and see if it closes on its own. If it remains open, throw it out. If it closes, it is safe to cook.

Cook live lobsters and crabs the same day as purchased. Leave them in the store bag until ready to cook. Do not put them in water.

Refer to the seafood storage guide in your packet of materials.

# FREEZING FISH

- Use seafood frozen at home within 3 to 6 months
- To freeze your own fish – rinse it, pat dry, wrap in plastic wrap, then place in durable plastic freezer bag and squeeze air out before sealing bag
- Label with contents, amount, and date



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## Freezing Fish (slide 15)

When your seafood arrives at home, store it in the coldest part of your refrigerator at a temperature as close to 32° F as possible. Many home refrigerators operate at 40° F, allowing fish to lose quality faster.

Freezing fish at home should be reserved for those times when you end up with more than you can eat. To freeze your own fish, clean, rinse, and pat dry. Wrap with plastic wrap, excluding as much air as possible. Then wrap again with freezer wrap, a freezer bag, or aluminum foil.

Because seafood has a limited storage life in most home freezers, seal, label, and date all seafood products before you put them in the freezer. Use the older seafood first. Frozen fish and shellfish are of best quality when used within 3 to 6 months of purchase and free of freezer burn or ice crystals.

Rapid freezing is important. Place package in the freezer so air can circulate around it, freezing it quickly. Do not try to freeze too much at one time. Remember larger packages freeze more slowly.

The length of time seafood quality is maintained during refrigeration or frozen storage varies depending on the product's initial quality, its fat content, whether it has been properly packaged, and the operating conditions of the refrigerator or freezer. In general, fatty fish can't be stored for as long as low-fat seafood. Poor-quality products always have a very short storage life. Even freezing can't stop the deterioration of quality.

Refer to the seafood storage guide in your packet of materials.

# FREEZING CLAMS, CRAB, OR LOBSTER

- Clams
  - ♦ Frozen in shell or shucked
- Crab
  - ♦ Select live crab for freezing
  - ♦ Boil 5 minutes and cool, wrap in freezer wrap or paper
- Lobster
  - ♦ Frozen uncooked-freeze whole or clean and freeze only shell portion with edible meat

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## **Freezing Clams** (slide 16)

Clams can be frozen either in the shell or shucked. To freeze the clams in the shell, simply place the live clams in moisture-vapor resistant bags. Press out excess air and freeze. To freeze the clam meat, shuck the clams, then clean and wash the meat thoroughly. Drain and pack in the freezer containers, leaving ½-inch headspace. Seal, label, and freeze.

## **Freezing Crab** (slide 16)

Select only live crab to prepare for freezing. Crab freezes better if not “picked” before freezing. Simply remove the back, legs, entrails and gills either before or after boiling the crab for five minutes. (Be sure to cool the crab quickly after it is cooked.) The claws and body or core of the crab that still contains the meat should then be wrapped or ice-glazed and wrapped in freezer wrap or paper. Seal, label and freeze.

## **Freezing Lobster** (slide 16)

For best quality, lobster should be frozen uncooked. Freeze the lobster whole, or clean it and freeze just the shell portions that contain the edible meat. (Some lobsters have large front claws that contain edible meat, while others have edible meat mainly in the tail section.) Freeze lobster in the shell, to help keep the meat from drying out. Simply wrap the whole lobster or lobster portions in moisture-vapor resistant wrapping and freeze. Lobster can be cooked and then frozen, but the quality will not be as good.

# CANNING FISH

- Pressure canner needed to can fish
- Proper canning practices and processing times for fish
  - ♦ Refer to the National Center for Home Food Preservation at [www.uga.edu/nchfp](http://www.uga.edu/nchfp)



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## Canning Fish (Slide 17)

- Pressure canner needed to can fish
- Proper canning practices and processing times for fish; refer to the National Center for Home Food Preservation at [www.uga.edu/nchfp](http://www.uga.edu/nchfp)

# SAFE HANDLING

- Always wash hands before and after handling seafood
- Use separate knives and cutting boards
- Thaw frozen seafood in the refrigerator
  - ♦ Never at room temperature
- Allow 1 day for seafood to defrost in refrigerator



Washing Hands / Photo by U.S. Department of Agriculture

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## Safe Handling (slide 18)

Always wash your hands with hot, soapy water before and after handling seafood.

Use separate knives and cutting boards for seafood and other foods and for raw and cooked seafood.

Thaw frozen seafood in the refrigerator. It also can be thawed under cold running water or in the microwave oven. If you are thawing it in the microwave oven, cook the product immediately after thawing. Use the lowest power on your microwave when thawing. A pound of fillets defrosts in 5 to 6 minutes. The fish should feel cool, pliable, and slightly icy. Be careful not to overheat it and begin the cooking process.

Never thaw any foods at room temperature or by using hot or warm water. Bacteria on the surface will begin to multiply and cause spoilage. If you forget to take your seafood out of the freezer ahead of time, place it in a sink or bowl under cold water. A 1-pound package will defrost in approximately 1 hour.

You will need to allow 1 day for seafood to defrost in the refrigerator.

# MARINATE



- Don't marinate seafood in a citrus-based marinade for more than 30 minutes, or it will begin to "cook"
- Marinade that has been used for seafood must be boiled before it can be used as a sauce

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## **Marinate** (slide 19)

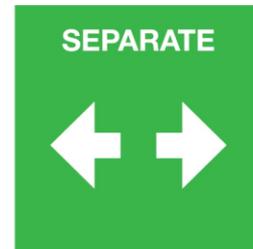
Remember to always marinate your food in the refrigerator.

Do not marinate seafood in a citrus-based marinade for more than 30 minutes, or it will "cook." Citrus-based marinades include those with lemon or orange juice.

Marinades used for raw products must be boiled for 10 minutes before being used as a sauce.

# AVOID CROSS-CONTAMINATION

- Keep raw seafood separate from cooked seafood to avoid cross-contamination
- Never put cooked seafood on the same platter used for the raw seafood
- Discard cooked seafood held at room temperature for more than 2 hours



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## **Avoid Cross-Contamination** (slide 20)

Don't let juices from raw seafood, meat, or poultry come in contact with each other or with other foods, especially cooked or ready-to-eat foods.

Wash the cutting boards, utensils, counters, sink, and your hands with hot, soapy water after preparing raw seafood, meat, and poultry.

Serve cooked seafood on a clean plate, never the same plate you used to hold the raw product. When grilling seafood, don't put cooked items on the same plate you used to carry the raw product out to the grill.

Discard cooked seafood held at room temperature for more than 2 hours. For buffets, maintain hot foods at temperatures above 140° F. Serving dishes for cold foods can be nestled in a bed of ice to keep them at temperatures below 40° F.

Refrigerate any leftovers within 2 hours after serving them or discard.

# 10-MINUTE RULE



- Seafood is “fast food”
- Stovetop
  - ♦ Fish best cooked quickly over high heat
- Oven
  - ♦ For every inch of thickness, bake fish at 450° F for 10 minutes

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## **Cooking—10-Minute Rule** (slide 21)

Seafood can be called a “fast food” when it comes to preparation. Unlike meat, seafood doesn’t need to be tenderized by cooking. Most products can be cooked in 10 to 20 minutes.

Fish is best cooked quickly over high heat 425–450° F. Just remember the 10-minute rule: For every inch of thickness, bake fish at 450° F for 10 minutes.

Cook fish until it reaches an internal temperature of 140 to 145° F.

# BAKED FISH

- Measure fish at the thickest part to estimate cooking time
- If fish is more or less than an inch thick, add or subtract time from the 10-minute rule
- Double cooking time if fish is frozen



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## **Baked Fish** (slide 22)

Measure fish at the thickest part to estimate cooking time. If ends are thin, fold them under for even cooking. If the fish is stuffed or rolled, measure it after stuffing or rolling.

If fish is more or less than an inch thick, add or subtract time from the 10-minute rule. If fish is half an inch thick, divide 10 minutes in half and cook for 5 minutes. If fish is an inch and a half thick, add 5 minutes and cook for 15 minutes.

Add an extra 5 minutes total to the cooking time if cooking the fish in foil or in a sauce.

Double the cooking time for frozen fish if the fish has not been defrosted.



## **Delicious Fish for Baking** (slide 23)

Many different fish may be substituted in a recipe for baked fish.

Firm, thick, white-fleshed fillets that are mild flavored include grouper, red snapper, monkfish, and cod. Halibut produces tender, mild-flavored white-fleshed steaks.

Light- to dark-fleshed fillets that have a strong flavor come from mackerel, tuna, and bluefish. There is no good substitute for salmon, since it has a unique flavor.

# BROIL OR GRILL

- Remember the 10-minute rule
- Preheat broiler or grill
- Place fish, 1-inch thick or less, 2-4 inches from the heat source
- Turn fish halfway through cooking time; if fish is less than one-half inch thick – don't turn



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## **Broil or Grill** (slide 24)

Ten is when seafood is done. Broiling fish is simple—again, just remember the 10-minute rule. And double the cooking time if your fish is still frozen.

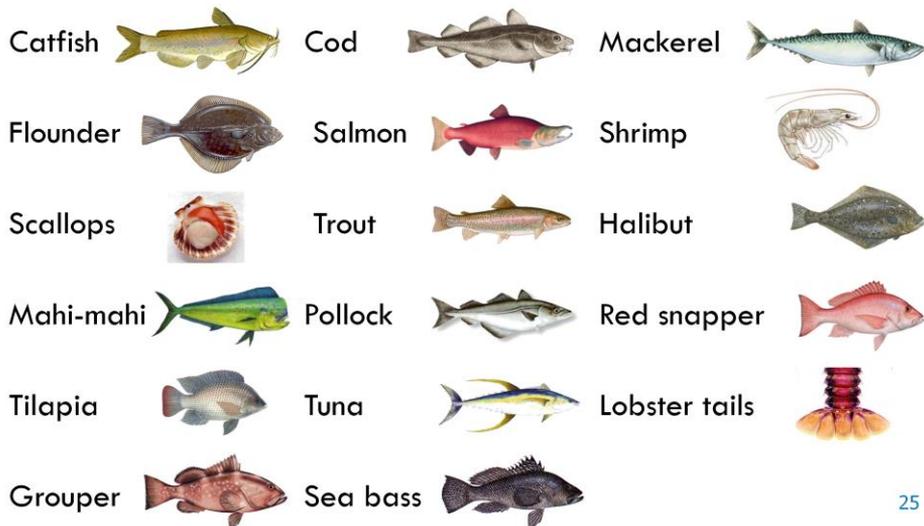
Always preheat the broiler or grill.

Place fish that is 1-inch thick or thinner 2 to 4 inches from the heat source. Place thicker fish 5 to 6 inches away from broiler.

Turn the fish halfway through the cooking time. If fish is less than 1/2-inch thick, however, don't turn it.

Shellfish cook more quickly than finfish, so cook them just until they turn opaque.

## BEST FOR BROILING OR GRILLING



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### Best for Broiling or Grilling (slide 25)

Remember you can substitute many different types of seafood in recipes for broiling or grilling.

# PAN BROIL

## TEN-MINUTE RULE

- Measure fish
- Dredge in flour, cornmeal, bread crumbs
- Allow margarine, butter, oil to become very hot
- Give fish cooking room
- Sear fish over medium-high heat
- Turn fish only once



"Café de Paris Pan Fried Catfish by Ralph Daley"

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### **Pan Broil** (slide 26)

Again the 10-minute rule applies to pan broiled fish.

Measure fish at the thickest part to estimate cooking time. If ends are thin, fold them under for even cooking. If fish is more or less than an inch thick, add or subtract time from the 10-minute rule.

Dredge fillets in seasoned flour, cornmeal, or bread crumbs and shake off the excess. Remember that adding these items adds carbohydrates and possibly fat to your low-fat seafood item.

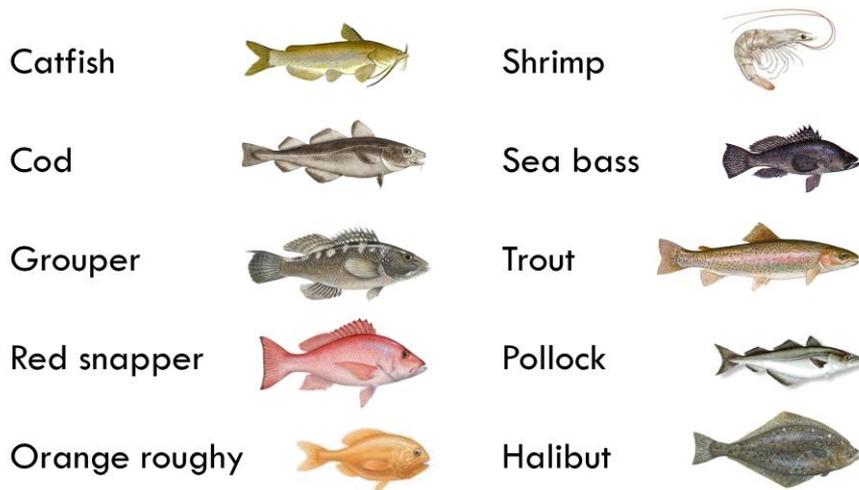
Allow the margarine, butter, or oil to become very hot but not smoking before adding fillets. Use only half the amount of margarine, butter, or oil if using a nonstick pan.

Give fish plenty of cooking room. Don't crowd fillets.

Sear the fish over medium-high heat. Turn them only once, halfway through the cooking time. The fish is ready to turn when the edges start turning crisp and the flesh begins to become opaque.

Once you have seared the fish on both sides, reduce the heat to medium until the fish is opaque all the way through.

## PERFECT FISH FOR PAN BROILING



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### Perfect Fish for Pan Broiling (slide 27)

Firm, thin, mild-flavored fillets perfect for pan broiling include catfish, red snapper, and scup (porgy).

Medium to large whole fish with firm white flesh that are mild- to medium-flavored include grouper, sea bass, and red snapper. These are also perfect for pan broiling.

# KEEP AN EYE ON IT



- When seafood is done
  - Turns opaque
  - Flakes easily with a fork
- Insert fork into the thickest part of the fish to test for doneness

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## **Keep an Eye on It** (slide 28)

It is easy to tell when seafood is done by the way it looks. Seafood is done when it turns opaque and flakes easily with a fork. Insert the fork into the thickest part of the fish to test for doneness.

# POPULAR RAW FISH



- Sushi
- Sashimi
- Uncooked marinated dishes: ceviche
- Purchase fish from reputable establishments

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## Popular Raw Fish (slide 29)

Raw fish dishes such as sushi and sashimi and uncooked marinated dishes like ceviche have become popular in the United States. Disease-causing bacteria and viruses don't normally occur in the muscle of a whole fish, the part usually eaten. However, fish fillets and steaks can be contaminated by improper handling. Raw fish dishes aren't heated to a temperature that would normally kill bacteria, so use only high-quality or sushi grade products. Tell your retailer if you are planning to make sushi; that way you should be getting the best (freshest) cut. If you choose to eat raw or uncooked fish, purchase the fish from reputable establishments having high quality and sanitation standards.

Parasites—tapeworms, flatworms, and roundworms—that occur naturally in some fish are potential safety concerns when eating raw fish. While sushi chefs are trained to detect and remove parasites, the only way for the average consumer to effectively eliminate potential health risks from parasites is by proper cooking or freezing.

Cooking fish to an internal temperature of at least 145° F for at least 5 minutes will kill parasites. If you are preparing raw dishes at home (which is not encouraged), use frozen fish. The FDA recommends that fish be frozen to an internal temperature of -4° F for 7 days. It is best to use commercially frozen fish because many home freezers are not able to reach and maintain that temperature.

Anytime you eat raw foods of animal origin you run some risk, but sushi in a restaurant is generally safe. It is almost always previously frozen, often right on the boat after it's caught, which can kill most parasites. The dangers increase when inexperienced people make their own sushi.

## FISH TACOS WITH MANGO SALSA

- Trout, tilapia or catfish fillets, 3-4 oz. each
- 1 teaspoon olive oil
- Juice of small lime
- Salt and pepper
- 2 small whole wheat tortillas or 4 corn tortillas
- Mango salsa and toppings



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### **Fish Tacos with Mango Salsa** (slide 30)

*Instructor: Now would be a good time to make fish tacos with mango salsa.*

Fish Tacos with Mango Salsa (See activities for complete recipe.)

- Two trout, tilapia, or catfish fillets, 3 to 4 ounces each
- 1 teaspoon olive oil
- Juice of small lime
- Salt and pepper
- Two small whole wheat tortillas or four corn tortillas
- Other toppings: 1 cup green cabbage, thinly sliced; 1/2 cup avocado, sliced;  
1 red bell pepper, thinly sliced

# FOILED FISH IN A FLASH



"Cooked in Foil," by thebittenword.com

- 1 fish fillet (trout, salmon, or tuna)
- 1 tablespoon of lemon juice
- Fresh or dried herbs
- Rosemary, oregano or dill
- 1 teaspoon olive oil

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## **Foiled Fish in a Flash** (slide 31)

*Instructor: Now would be a good time to make foiled fish in a flash.*

Preheat a barbecue grill or frying pan to hot. Place a fish fillet on each piece of foil and drizzle with olive oil. Sprinkle the fillet with lemon juice and herbs. Fold the foil to seal completely. Place the foil package on the barbecue or frying pan and cook for approximately 8 minutes, turning after 4 minutes. Test the fish by flaking the thickest part of the fillet with a fork. If the flesh is white (or light pink in the case of salmon) the fish is cooked. Serve the fish with steamed vegetables or salad on a bed of your favorite rice.

Approximate preparation time: 10 minutes

Approximate cooking time: 8 minutes

Recipe from: Healthy Eating Club, [www.healthyeatingclub.org](http://www.healthyeatingclub.org)

# EVALUATE YOUR SEAFOOD RECIPE

- Ask yourself
  - ♦ Suggests cooking with oil or other fats
  - ♦ Calls for a sauce that contains ingredients high in fat such as cream, butter, mayonnaise or cheese
  - ♦ Calls for the addition of salt or seasonings high in salt
- If answer is YES, consider modifying the recipe

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## **Evaluate Your Seafood Recipe** (slide 32)

Seafood is naturally low in fat. The way you prepare seafood can significantly affect the nutrient composition of the product you eat. Many traditional recipes involve frying or using rich sauces made with high-fat products, which add calories, fat, saturated fat, and sodium.

Select recipes and cooking methods that limit the amount of added fat. Simple recipes you create yourself, using ingredients like lemon juice and your favorite herbs and spices, are easy, low-fat alternatives.

To evaluate a seafood recipe ask yourself these questions. Does the recipe suggest cooking with oil or other fats? Does the recipe call for a sauce that contains ingredients high in fat such as cream, butter, mayonnaise, or cheese? Does the recipe call for adding salt or seasonings high in salt?

If the answer is YES, modify the recipe by identifying the high-fat and high-sodium ingredients and substituting lower-fat and lower-sodium alternatives.

Some ingredients and their substitutions:

- Butter, lard, shortening: substitute vegetable oil (canola, olive), low-fat margarine (works well for baking but not frying)
- Whole milk, cream: substitute low-fat milk, fat-free cream
- Cream: substitute evaporated skim milk
- Cheese: substitute fat-free, low-fat, or reduced-fat cheese
- Whole eggs: substitute egg substitutes (sometimes higher in sodium), egg whites
- Mayonnaise: substitute fat-free or low-fat mayonnaise
- Salt: substitute herbs, spices, salt substitutes
- High-sodium ingredients: substitute low-sodium broths, soy sauce
- Butter, cream-based sauces: substitute wine, water, or vegetable-based sauces

# EASY WAYS TO ENJOY FISH AND SHELLFISH

- Substitute fish or shellfish for meat or poultry
- Serve “meatier” types of fish
- Gradually add more seafood meals per week
- “Doctor” up seafood
- Buy a low-fat seafood cookbook

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## **Easy Ways to Enjoy Fish and Shellfish** (slide 33)

Substitute fish or shellfish for meat and poultry in your favorite casseroles, stir-fries, Mexican dishes, salads, soups, and pasta recipes.

Win meat-lovers over to fish by serving them “meatier” types like fresh tuna, halibut, shark, or swordfish. These types of fish are great marinated or with barbecue sauce, then grilled.

Make the switch to more seafood gradual, starting by substituting one fish or shellfish meal per week for a meat entrée. Work your way up to several seafood meals a week.

Doctor seafood with lemon and lime juice, herbs (dill and basil), onions and garlic, catsup, tartar sauce, and low-fat sauces.

Buy a low-fat seafood cookbook and learn several easy fish or shellfish recipes that become part of your repertoire of family favorites.

# EASY WAYS TO ENJOY FISH AND SHELLFISH

- Cook it right
- Save money
  - ♦ Take advantage of canned, frozen, or seafood specials
- Make lunch count
- Introduce your family to fish burgers
- Be adventurous with seafood cooking methods

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## **Easy Ways to Enjoy Fish and Shellfish** (slide 34)

Cook it right: high temperature, short time, and watch it—so it is not overcooked.

Save money by taking advantage of canned and frozen fish and shellfish, as well as seafood specials at the supermarket. Less-familiar types of fish often are less expensive as well; ask for cooking ideas at the seafood counter.

Make lunch count by having fish or shellfish at least once or twice a week. Try tuna or salmon salad with low-fat mayonnaise or a broiled fish sandwich.

Introduce your family to fish burgers or “fish loaf” by using canned salmon, tuna, or mackerel in place of meat in your favorite meat loaf recipe. Bake the mixture in a loaf pan or shape it into burgers and brown them in a nonstick skillet.

Be adventurous with seafood cooking methods. Instead of traditional baking and broiling, try poaching in wine and herb-seasoned broth, grilling with barbecue sauce, and stir-frying or steaming with a potpourri of vegetables.

## “BARGAIN” SEAFOOD

- Watch for the weekly specials
- Purchase a whole fish – cut it up yourself
- Stretch seafood into pastas, salads, soups, stir-fries, and casseroles
- Have convenient canned seafood on hand

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### “Bargain” Seafood (slide 35)

There are many ways to enjoy seafood twice a week without breaking your food dollar budget. Watch the papers for weekly specials. Usually, some fish or shellfish is on special because it is in season, or there might be a plentiful supply of it.

Purchase a whole fish, crab, or lobster. You can learn how to cut it up yourself. A whole salmon can be made into salmon steaks, fillets, and a roast for future dinners. You can shake crab meat out of a shell and save money. A little labor can save you dollars.

Stretch your seafood purchase. A pound of seafood can easily feed four to six people when it is stretched with vegetables and starches, as in a vegetable-based soup or chowder.

Have convenient canned seafood on hand, such as canned salmon, tuna, shrimp, crab, and sardines chilled and ready for a salad or sandwich.

## SUMMARY

- When selecting whole fresh fish – bright clear full eyes, shiny skin, and bright pink or red gills
- Frozen seafood should be kept at temperatures below 0° F
- Frozen seafood can be thawed in the refrigerator, under cold running water, or in the microwave oven. If thawed in the microwave, it must be cooked immediately

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### **Summary** (slide 36)

When selecting fresh whole fish, look for bright, clear, full eyes; shiny skin with tight scales; and bright pink or red gills.

Frozen seafood should be kept at temperatures below 0° F.

Frozen seafood can be thawed in the refrigerator, under cold running water, or in the microwave oven. If thawed in the microwave, it must be cooked immediately.

## SUMMARY

- Cook fish 10 minutes for every inch of thickness over high heat – 425° F to 450° F
- Seafood should be used within 36 hours of purchase
- Seafood that has been cooked should not be held at room temperature for longer than two hours

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### **Summary** (slide 37)

Cook fish 10 minutes for every inch of thickness over high heat— 425° F to 450° F.

Seafood should be used within 36 hours of purchase.

Seafood that has been cooked should not be held at room temperature for longer than 2 hours.

# SEAFOOD – AT ITS BEST

- Seafood is naturally nutritious
- Seafood is low in calories
- Seafood is low in fat
- Add SEAFOOD to your diet today – and look forward to a healthier future!



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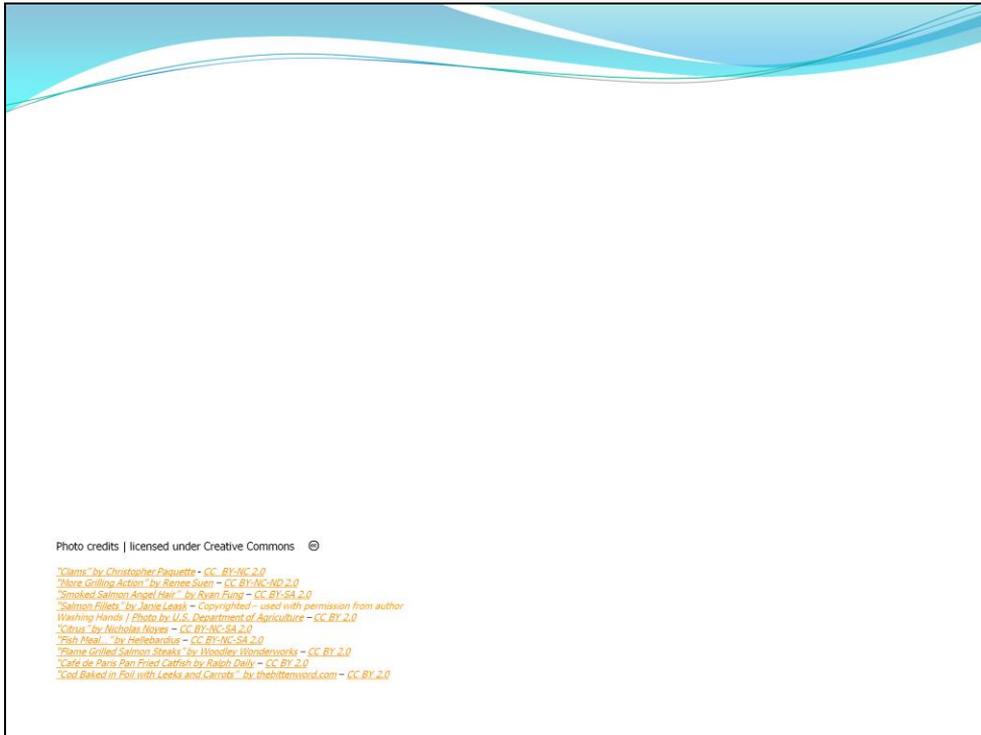
## **Seafood—at Its Best** (slide 38)

Seafood is a smart choice. It is naturally nutritious, low in calories, and low in fat. Seafood can go a long way toward helping consumers achieve U.S. dietary goals and maintain healthy lifestyles. Add seafood to your diet today and look forward to a healthier future!

Now, I would like you to complete the posttest.

*Instructor: Pass out posttest.*

*Instructor: At this time, you might prepare the fish tacos or some other fish dish for sampling.*



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