

## Making Healthy Fish Choices – WIC Curriculum (GC-30 Nutrition)

### WHO:

For WIC participants who have children age one to five years' old and for participants who might be interested in the subject. This class can be offered in Spanish, English, Vietnamese and possibly other languages by contacting the Office of Environmental Health and Hazard Assessment, Environmental Health Investigations Branch and requesting fish consumption advisories in those languages. The class will be taught by trained WNA's, RD's or DN's, and will have 10-15 slots open. The times and dates may vary depending on the master calendar.

### WHY:

The consumption of fish is an important part of a healthy and balanced diet. Fish contain polyunsaturated omega-3 fatty acids that may help reduce chronic diseases and aid brain development. However, some fish may be contaminated with chemicals such as mercury and PCBs. These chemicals can be present in fish due to industrial pollution and mining activities from the California Gold Rush.

Populations who depend on fish for economic and cultural reasons can be more at risk, such as those served by the WIC clinics. Unfortunately, mercury can be found in some fish bought from stores and restaurants. Mercury and PCBs may be found in certain fish caught in local waterbodies,.

This class will provide educational material to educate and inform participants about mercury and PCBs in fish. Local and statewide fish consumption advisories and fish sampling will need to be gathered and included where indicated. By having the appropriate knowledge and context, participants will be able to make healthier and safer choices when consuming fish.

### SO THAT:

WIC participants can better understand the importance of and be able to take action in following local and national fish advisories. Participants should leave better prepared to make educated and informed decisions when buying fish or fishing in local waterbodies.

### WHEN:

This class will be 30-45 minutes; times and dates may vary per agency. This class will substitute a secondary education contact like a GA contact.

### WHERE:

The class will be offered in a WIC setting.

## WHAT:

This class will present educational material, allowing participants to identify fish low in chemicals versus fish high in chemicals. In addition, this class will present healthier alternatives, including the types of fish high in omega-3s, local and statewide fish advisories, recommend portion sizes for adults and children, and provide cooking and preparation recommendations.

## WHAT FOR:

By the end of this class, participants will have created, practiced and applied new information to already known information about mercury/PCBs in fish. Participants will leave with relevant information, allowing them to make healthier choices, thus avoiding fish high in mercury/PCBs and increasing their consumption of fish high in omega-3s.

## HOW:

### ANCHOR:

Turn to your partner and share; do you eat fish? What kind of fish do you normally eat? Where does this fish come from (grocery store or local waterbody)?

### APPLY 1:

Explain health benefits of fish consumption and define Omega-3 fatty acids. Show participants chart with health benefits at different life stages-unborn babies, children, adults. Discuss USDA recommendations for adults of 8 oz. or more ounces per week of a variety of lower mercury seafood. Using models/other visual aids, demonstrate 6 oz. cooked adult portion size and adjustments for young children, starting with 1.5 oz. cooked portion.

Materials Used: Omega-3 benefits chart, CDPH fish portion models

### APPLY 2:

Define mercury and PCBs. With the help of posters, show participants sources of mercury and PCBs in the environment and how they bioaccumulate up the food chain. Discuss how these chemicals can be harmful to individuals' health and to children's health.

Materials Used: USGS Mine Map of CA, Bioaccumulation Poster

### APPLY 3:

Commercial: With the help of Eating Fish Safely brochure, and/or generic OEHHA brochure show participants the types of fish that are highest in Omega-3s and lowest in mercury and highlight WIC CAN BUY foods. Note that clients can use WIC vouchers for

canned salmon and sardines instead of canned tuna. Present EPA/FDA joint advisory information fish that women of childbearing age and young children should never eat, shark, swordfish, king mackerel, and tilefish. Present brochures that show images with safe fish to eat and those to avoid.

With the help of OEHHA advisories show participants the types of fish caught in local waterbodies that are high in mercury and PCBs. Present brochures that show images of fish that are safe to eat and those that should be avoided from local waterbodies. Point out that the advisories are more restrictive for women 18-45 and children (compared to men and older women) because they are sensitive to harm from the chemicals. Also, note that for the fish that are safe to eat, there still are limits on the number of serving per week. Also note that if a person eats from the yellow restricted section they will have eaten their total of seafood for that week and cannot also eat from the green less restrictive section.

Materials Used: CDPH low-literacy poster, CDPH low-literacy brochure local OEHHA fish consumption advisory and statewide advisory.

#### APPLY 4:

Identify the fish that clients already eat and compare these fish to national and local fish advisories. Explain and practice proper way of cleaning and preparing fish that will reduce some chemicals like PCBs. Have participants practice on fish model if available

Materials Used: Cloth Fish Model if available

#### AWAY:

Discuss national and local fish advisories and, if participants feel comfortable, have them share as a group how this information will help them improve their eating habits, subsequently avoiding fish high in mercury/PCB's and choosing fish high in omega-3s. Review "Making Health Fish Choices Pledge" and have participants sign.

Materials Used: "Making Healthy Fish Choices Pledge"

## **Making Healthy Fish Choices**

### Who

WIC participants who have children age one to five years old. This class can be offered in Spanish, English, Vietnamese and possibly other languages, per agency.

WIC facilitator – The class will be taught by trained WNA's, RD's or DN's about mercury and PCBs in fish bought from stores and restaurants and fish caught in local waterbodies and will have 10-15 slots open. The times and dates may vary depending on the master calendar.

### Why

The consumption of fish is an important part of a healthy and balanced diet. Fish contains polyunsaturated omega-3 fatty acids that may help reduce chronic diseases and aid brain development. However, some fish may be contaminated with chemicals such as mercury and PCBs.

Populations who depend on fish for economic and cultural reasons can be more at risk, such as those served by the WIC clinics. Unfortunately, mercury can be found in some fish bought from stores and restaurants. Mercury and PCBs can be found in local waterbodies.

This class will provide the necessary educational material to educate and inform participants about mercury and PCBs in fish. By having the appropriate knowledge and context, participants will be able to make healthier and safer choices when consuming fish.

### Time

This class will be 30-45 minutes; times and dates may vary per agency. This class will substitute a secondary education contact like a GA contact.

### Set-Up

Chairs set up in a circle or semi-circle. WIC facilitator will sit in the circle with participants after presenting educational material.

### Objectives

By the end of this session, participants will have:

- Learned about the health benefits of consuming fish
- Learned what mercury and PCBs are, where they come from, and how they might harm you and your children.
- Identified fish that should be eaten because they are high in omega-3 fatty acids
- Identified fish that should be avoided because they are high in mercury/PCBs
- Learned about recommended serving sizes for women and children.
- Learned about local and national advisories for fish bought in stores and restaurants, and fish caught in local waterbodies.
- Learned how to clean, prepare, and cook fish properly to reduce amount of chemicals in the fish
- Used the Shopping Guide to learn about CAN BUY fish (if applicable)
- Practiced shopping for fish using WIC checks (if applicable)

## Lesson Overview

### 1. Welcome, Introduction and Warm Up

3 minutes

### 2. Explain health benefits of fish consumption, recommended serving sizes for women and children, and define Omega-3 fatty acids.

7 minutes

### 3. Define mercury and PCBs and identify sources of environmental contamination. Explain bioaccumulation up food chain with use of educational materials. Discuss how these chemicals can be harmful to individuals' health and to children's health.

5 minutes

### 4. Present information, including posters and brochures, about commercial fish advisories. Review types of fish, focusing information on high Omega-3/low in

mercury options, WIC CAN BUY options, identifying “do not eat” fish for women and children, and recommended serving sizes for women and children.

Present information, including posters and brochures, about local fish advisories. Review types of fish that are healthy options because they are lower in chemicals and those that are high in mercury and PCBs and should be avoided.

7 minutes

5. Have participants identify fish they consume from stores and restaurants. Compare these fish to the national advisory and/or CIEA “Eating Fish Safely” brochure or GotMercury.org materials. Review health benefits and risks, and reasons for following the advisory. Discuss options for choosing healthier alternatives (fish low in chemicals and high in omega 3s).

Have participants identify fish they already consume from local waterbody. Compare these fish to the Local Fish advisory. Review health risks and benefits for following the advisory. Discuss options for choosing healthier alternatives (fish low in chemicals and high in omega 3s).

Review cleaning/trimming/preparation methods that will reduce the amount of chemicals (remove skin and guts, eat only the skin fillet, steam or grill fish so that the cooking juices drain away). Practice preparation methods as a group with cloth fish model.

12 minutes

6. Using the Shopping Guide: cover CAN BUY fish (if appropriate)

3 Minutes

7. Closing and invitation to take a “Making Healthier Fish Choices Pledge”

3 minutes

## Activities

### 1. Welcome and warm up

3 minutes

Introduction: / Example:

“Good morning/afternoon, my name is \_\_\_\_\_.

“Today we will be talking about making healthier fish choices and the health benefits of consuming fish. We will also talk about two chemicals called mercury and PCBs that are found in some fish.”

“You might be asking yourself, what are mercury and PCBs? Today you will learn that mercury and PCBs are chemicals found in some fish. You will also learn about the health benefits of consuming fish.”

Refer to the overview of the class.

Warm-Up:

“Please turn to your partner and share: do you eat fish? What kind of fish do you normally eat? Where does this fish come from (grocery store, local waterbody or other waterbodies)”

Invite participants to share as a group their responses, if they feel comfortable sharing.

### 2. Benefits of eating fish

7 minutes

### 3. Present educational material about Mercury and PCB's

5 minutes

Fish is an important and healthy part of our diet. The purpose of this class is to educate and present you with healthy fish options. Fish contains omega 3 fatty acids, vitamins (D and B2), and minerals.

Omega-3 fatty acids are “essential.” This means that the body needs them to function properly, but does not produce them. Therefore, you must consume through food sources. Omega-3s are found in fish, some plant sources and nut oils and can:

- Help maintain a healthy heart by lowering blood pressure and reducing the risk of sudden death, heart attack, abnormal heart rhythms, and strokes.
- Aid healthy brain function and development of vision and nerves in your baby during pregnancy, including higher maternal fish intake during pregnancy linked to higher test scores in children
- May decrease the risk of depression, ADHD, Alzheimer’s disease, dementia, and diabetes
- May prevent inflammation and reduce the risk of arthritis
- “Most people don’t eat enough seafood. It is especially important for pregnant and breastfeeding women to eat fish high in omega-3 fatty acids and low in mercury. The health benefits are much greater when we consume fish high in omega-3 fatty acids and low in mercury.” Women of childbearing age should eat 8 to 12 oz of fish per week. Young children should eat smaller servings of 4 to 6 oz. per week.

Materials Used: Optional omega-3 benefits chart, fish portion models

“Let’s start by defining some terms:

By a show of hands, Does anyone know what mercury or PCBs are?

Wait a few seconds, if no hands proceed. If someone raises their hand ask “would anyone like to share what you know about mercury or PCBs?” Acknowledge participant’s answer if they share.

Thank you for sharing (if anyone shares). Mercury is a naturally-occurring element which is released into the environment by natural sources like rock, soil, air and volcanoes, as well as manmade processes like mining and burning coal for energy, among others. Mercury can build up in large, long-lived, predatory-type fish like sharks and swordfish (and also include tilefish and king mackerel). These fish have high mercury anywhere they are caught including fish you buy in stores and restaurants. In California, mercury was used to extract gold in Sierra Nevada. This substance was released in many lakes and rivers during the California Gold Rush. These waterbodies are connected to our local watershed so some fish in all these areas are contaminated with mercury.

Please refer to the poster representing Gold Mines and Mercury Mines to demonstrate where mercury is found.

Pause for a few seconds; ask if participants have any further questions about mercury. If no questions, please proceed.



“Let’s now define PCBs, PCB stands for Polychlorinated biphenyls. PCBs are manmade chemicals, used widely in many industrial applications, like electrical transformers, capacitors among others. They were banned in 1976 because they are harmful to your health. They also don’t break down easily and stay in the environment for a long time. This substance entered in the environment through improper disposal, spills and leaks. PCBs enter the soil and water, contaminating fatty parts of fish. Some PCB-containing equipment still is used today.”

These chemicals accumulate as you move up the food chain. Refer to Bioaccumulation graphic and explain bioaccumulation process. Larger, predatory fish that are at the top of the food chain, like shark and swordfish are high mercury.

Materials Used: USGS Mine Map of CA, Bioaccumulation Poster TBD

#### 4. Present Information

5 minutes

Provide CDPH low-literacy Fish Advisory brochure to all the participants.

“I am going pass out some brochures, these brochures are for you to take home to share with your family. Please open the brochure; we will go over this brochure as a group.” Refer to poster version of CDPH low-literacy brochure.

National Advisories for fish from stores and restaurants  
(review key messages):

- It’s good that you’re eating fish. Fish is good for your health and your baby, and it’s a good alternative to other kinds of meat.
- Some fish you buy can have mercury. Too much of this chemical in your body could harm your health and your children’s health.
- You and your children should NEVER EAT shark, swordfish, tilefish, or king mackerel. These fish are always high in mercury.
- For fish that you buy, try to eat it 2 times a week. Some good choices are salmon, sardines, anchovies, and trout. These fish are low in mercury and high in omega 3s.
- A serving is about the size and thickness of your hand. Children should be given smaller servings.

“Does anyone have any questions about fish that you buy from the store?”

Provide Local Advisory Brochure to all the participants.

“Next we are going to talk about fish that you can catch from local waterbody. Due the exposure of mercury and PCBs in this local waterbody, there are advisories to help you and your family make healthier choices when eating fish. Fish is an important and healthy part of our diet that’s why it is important to make the right choice.”

Local Advisory for Local Waterbody

[review key messages:]

- There is[/or is not] a health advisory for fish caught from your local waterbody.
- There are statewide advisories for rivers, streams and coastal waters, and for lakes and reservoirs. Some fish have mercury and PCBs.
- The safest fish to eat from your local waterbody are [insert from local advisories]. Eat up to 2 meals a week of these fish.
- Women of childbearing age (18-45) and children 1-17 should NOT EAT any [insert from local advisories] from the waterbody These fish have high levels of mercury and PCBs

Local advisories for other places

“If you catch and eat fish from other local lakes and rivers, make sure to find the appropriate advisory. Here are some places where these advisories are listed: [refer to OEHHA website or DFG fishing regulations booklet].” “Now that you guys are familiar with the brochures and have a better understanding of local and national advisories, let’s do an activity to get comfortable with this information:”

Materials Used: National fish advisories, local advisories, two statewide advisories and the CIEA “Eating Fish Safely” Brochure or Gotmercury.org information.

## 5. Group activity and preparation demo

10-15 minutes

Activity:

“Please look very closely at the brochure (individually) compare an already consumed fish to local and national fish advisories. By looking at the brochure how would you make a healthier choice? If you don’t already consume the type of fish in the advisory, that’s okay, try selecting a healthier fish that you might want to try.”

Give them a few seconds to look over the brochure individually.

“Now please turn to your partner and share your answers.” Allow them a few minutes to share with their partner. Ask if anyone would like to share their answer, make them feel safe and comfortable by sitting with them in the circle.

“Having the tools that you now have, selecting the healthier type of fish for you and your family can be much easier. WIC recommends eating fish; it’s an important part of a healthy diet. However, we want you to make a healthy choice, obviously by selecting what’s most accessible to your family. “

“Let’s now practice how to properly clean, trim and prepare fish. Preparing and cooking method can lower some chemicals in fish, that’s why it is important to follow appropriate recommendations. ” Using fish model, demonstrate the proper preparation methods. If they are comfortable, have the participants practice using the model too.

While you are practicing ask participants to share, “Which recipe might you make at home?”

Materials Used: Fish Model

## 6. Using WIC shopping Guide

3 minutes

If appropriate; using the WIC shopping guide: cover CAN BUY fish, page #20. ONLY breastfeeding participants receive canned fish. Their options are chunk light tuna, pink salmon and sardines. Please encourage participants to buy pink salmon and sardines, since these fish are the healthiest; low in chemicals and high in omega 3s.

Materials Used: WIC Shopping Guide and Examples of Canned Fish

## 7. Closing

3 minutes

“Today we looked at mercury/PCBs in fish and advisories. But, most importantly the health benefits of consuming fish high in omega-3 and low in mercury. We hope that this information will help you and your families make healthier choices.”