



SEAFOOD AT ITS BEST

LESSON 2

HEALTH BENEFITS

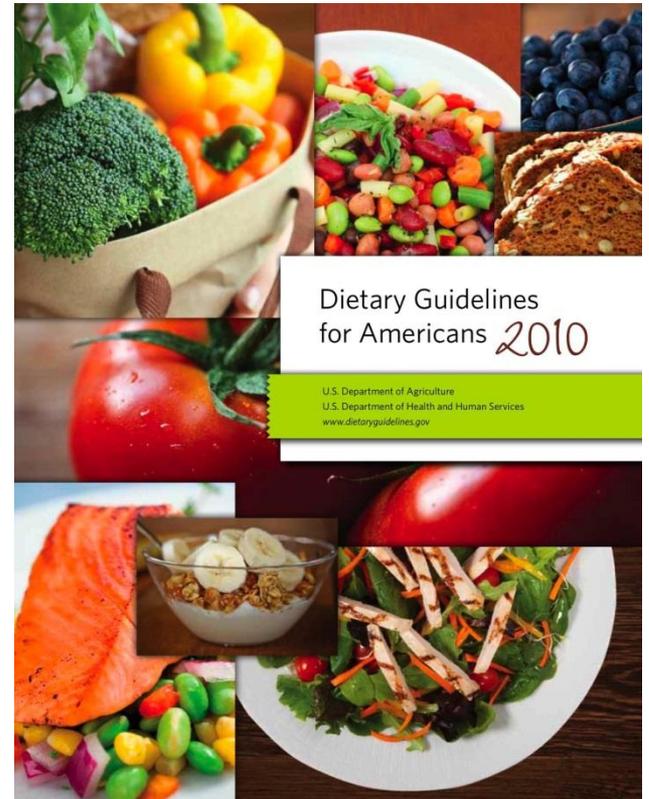


"Seafood Platter" by Tom O'Malley

LESSON 2

GOALS

To learn about the health benefits of eating seafood.



LESSON 2

OBJECTIVES

Increase knowledge of the following:

- 2010 Dietary Guidelines
- Health benefits of seafood
- Seafood serving recommendations

2010 DIETARY GUIDELINES FOR AMERICANS

Key Recommendations

- Increase the amount and variety of seafood consumed by choosing seafood in place of some meat and poultry
- Consume 8 to 12 ounces of seafood per week from a variety of seafood types

SEAFOOD RECOMMENDATIONS

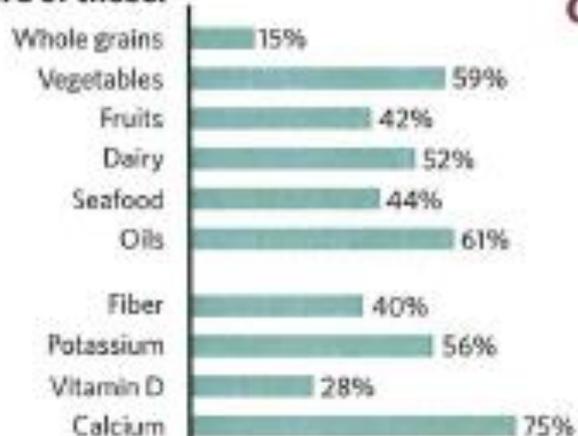
Pregnant and Breast Feeding Women

- Dietary Guidelines emphasizes that pregnant and breastfeeding women should eat seafood
- Eat at least 8 ounces of a variety of seafood and up to 12 ounces per week

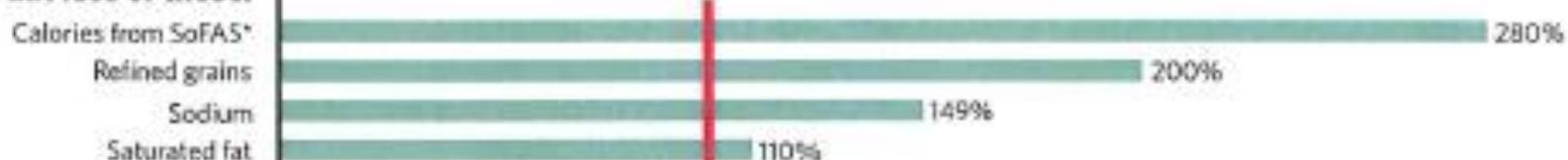
TYPICAL AMERICAN DIET INTAKE

Usual intake as a percent of goal or limit

Eat more of these:



Eat less of these:



0% 50% 100% 150% 200% 250% 300%

Percent of goal or limit.

2010 DIETARY GUIDELINES FOR AMERICANS

Two Basic Concepts

- Maintain calorie balance over time to achieve and sustain a healthy weight
- Focus on consuming nutrient-dense foods and beverages

www.dietaryguidelines.gov

www.choosemyplate.gov

SEAFOOD IS NUTRIENT-DENSE

- Seafood is nutrient-rich, meaning it packs healthy nutrients including omega-3s into less than a couple of hundred calories per 3-ounce serving
- A healthy eating pattern focuses on nutrient-dense foods such as seafood

CHOOSE A VARIETY OF PROTEIN FOODS

- Choose a variety of protein foods, which include seafood, lean meat and poultry, eggs, beans and peas, soy products and unsalted nuts and seeds
- Bake, broil or grill it



"Colorful Eggs" by Andy Melton



"Nitty Browns" by Nomadic Lass



"Black & White Bean Salad" by Cookbookman12



"Met Scallops" by Ralph Daily



"Roast Chick..." by Jules



"Filet Mignon" by Neeta Lind

NUTRITIONAL BENEFITS

- High-quality protein
- High in omega-3 fatty acids
- Low in saturated fat
- Source of vitamins and minerals



"Sesame Crusted Ahi Tuna..." by Ralph Daily

HIGH-QUALITY PROTEIN

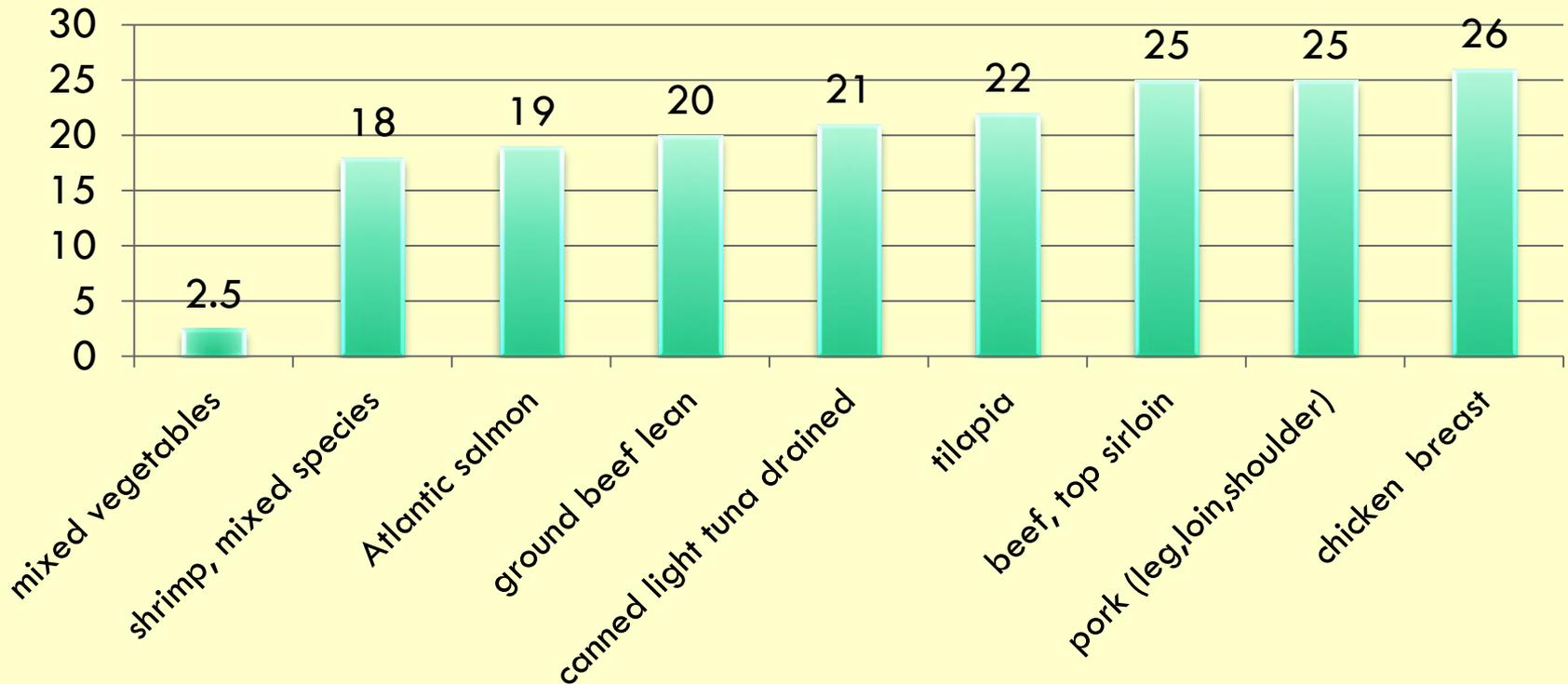


"Cod..." by Anjali Ayer

- Protein needed for growth and maintenance
- Seafood contains all 9 essential amino acids
- Protein is highly digestible
- Fish contain 16-27 grams of protein

PROTEIN IN SEAFOOD AND OTHER FOODS

grams protein per 3 oz. (85g) cooked serving (USDA 2008)



LOW IN TOTAL FAT AND SATURATED FAT

- 3 grams per serving
- Seafood preparation can add fat
 - ◆ Sauces
 - ◆ Deep-fat frying



HARVARD SCHOOL OF PUBLIC HEALTH STUDY

- Research group looked at baked or broiled fish versus fried varieties and the risk of death from various types of heart disease.
- Fried was associated with trends toward higher risk of heart disease
 - ◆ Fried fish – 2.8 grams of saturated fat and 195 calories
 - ◆ Baked fish – 1.5 grams of saturated fat and 129 calories

FAT CONTENT

Seafood and Other Protein Foods

3-ounce edible portions, cooked	Total fat (grams)	Saturated fat (grams)
Tuna, light, canned in water, drained,	1	0
Pollock, broiled, skinless	1	0
Shrimp, boiled	1	0
Trout	3.4	0.6
Chicken, light meat, w/out skin, roasted	4	1
Salmon, Atlantic/Coho, baked, skinless	10	2
Chicken, dark meat, w/out skin, roasted	8	2
Eggs, boiled	9	3
Salmon, King	11	3
Pork loin, lean, roasted	11	4
Mackerel, Atlantic/Pacific	13	3.7
Ground beef, extra lean	14	5
Hot dog, beef	25	10
Peanut butter	44	7

LOW-FAT SEAFOODS

Less than 3 grams total fat per 3-ounce serving

Clams	Northern lobster	Orange roughy	Sole
Cod	Mackerel (King)	Rockfish	Squid
Blue crab	Mahi-mahi	Scallops	Striped bass
Dungeness crab	Monkfish	Shrimp	Tuna (skipjack)
Flounder	Perch (freshwater)	Red Snapper	Tuna (yellowfin)
Grouper	Ocean perch	Snow crab	
Haddock	Pike (Northern)	Smelt	
Halibut	Walleye		
	Pollock (Atlantic)		

MAIN SOURCE OF OMEGA-3 FATTY ACIDS

- Fat in seafood is polyunsaturated, including omega-3 fatty acids
- Have added health benefits such as healthy brain and eye development in children and reduce the risk of heart disease in adults.

OMEGA-3 FATTY ACIDS

Long Chain Polyunsaturated Fatty Acids (LC-PUFAs)

- Eicosapentaenoic acid (EPA)
 - ♦ Fatty fish and fish oils
- Docosahexaenoic acid (DHA)
 - ♦ Fatty fish, fish oils and algal oil
- Alpha-linolenic acid (ALA)
 - ♦ Walnuts, flaxseed oil, soybean oil, and canola oil

OMEGA-3s AND RECOMMENDED SERVINGS

- Daily intake of 496 mg EPA and DHA is equivalent to about 3.5 grams per week
- This is equivalent to the amount of EPA and DHA in two 4-ounce servings of high omega-3 fish per week
- Based on an average EPA and DHA content of high omega-3 fish of 1.6 grams per serving
- Rationale for 2 servings of high omega-3 fish per week

OMEGA-3 FAT CONTENT

Higher level (more than 1.0 gram per cooked serving)			
Herring	Mackerel (Spanish)	Salmon (king)	Tuna (bluefin)
Mackerel (Pacific and jack)	Salmon (Atlantic)	Salmon (pink)	Rainbow trout
Medium level (between 0.5 and 1.0 gram per cooked serving)			
Fish			
Bass (freshwater)	Bluefish	Mackerel (Atlantic)	Salmon (sockeye)
Salmon (chum)	Salmon (coho)	Smelt	Striped bass
Swordfish	Whiting		
Shellfish			
Blue mussels		Oysters	

OMEGA-3 FAT CONTENT

Lower level (0.5 grams and less per serving)

Fish		Shellfish
Cod (Atlantic)	Ocean perch	Clams
Flounder	Pike (Northern)	Blue crab
Grouper	Pollock (Atlantic)	Dungeness crab
Haddock	Rockfish (Pacific)	Snow crab
Halibut	Red snapper	Northern Lobster
Mahi-mahi	Sea trout	Spiny lobster
Tilapia	Tuna (skipjack)	Scallops
Freshwater perch	Tuna (yellowfin)	Shrimp

Note: All fish and shellfish were cooked by dry (baking, broiling, or microwaving) or moist (boiling, poaching, or steaming) cooking methods.

CHOLESTEROL CONTENT

- Most fish and shellfish contain fewer than 100 milligrams of cholesterol per 3-ounce cooked serving
- Many leaner types of fish have fewer than 50 milligrams per serving



"Lobster Dish" by Dhi

CHOLESTEROL CONTENT

Seafood and Other Protein Foods

Seafood *3-ounce edible portions, cooked	Cholesterol (mg)
Peanut butter	0
Orange roughy	20
Halibut	35
Cod	45
Tuna, light, canned in water drained	45
Salmon, Atlantic, baked, skinless	50
Trout	58
Chicken, dark and light meat, w/out skin, roasted	64
Ground beef, extra lean	70
Pork loin, lean, roasted	77
Pollock, broiled, skinless	80
Hot dog, beef	86
Shrimp, boiled	165
Eggs, boiled	362

OMEGA-3S AND THE HEART

Three processes influence development and progression of heart disease

- **Atherosclerosis**
 - ◆ Omega-3s lower triglyceride levels
- **Clot Formation**
 - ◆ Omega-3s reduce the stickiness of platelets
- **Blood Vessel Spasms**
 - ◆ Omega-3s help relax blood vessel walls

OMEGA-3S AND THE HEART

- Omega-3s stabilize each individual heart muscle cell so during a heart attack arrhythmia is less likely
- Omega-3s reduce the risk of dying from heart disease
- Consistent evidence supporting risk reduction of CVD due to fish consumption

OTHER BENEFITS OF OMEGA-3 FATTY ACIDS

- **Joints** Fewer tender joints and decreased stiffness
- **Mood** Higher levels of EPA and DHA protective against depression
- **Mind** Inflammation in the center of the brain may play a role in Alzheimer's disease
- **Lungs** May decrease severity of asthma

OMEGA-3S AND DIABETES

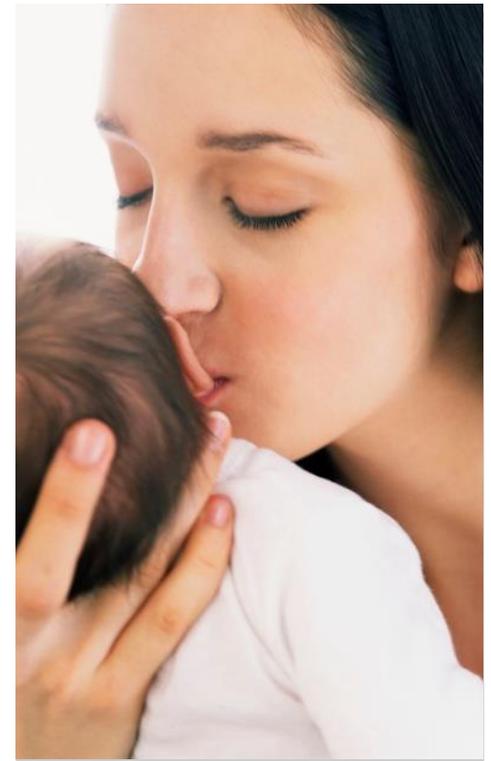
- Onset of diabetes
 - ◆ May keep the immune system in check
- Control of symptoms
 - ◆ Low level of DHA associated with increased insulin resistance
- Complications of diabetes
 - ◆ Influence development of cardiovascular disease
 - ◆ May delay onset of kidney and nerve complications

OMEGA-3S AND CANCER

- Onset
 - ◆ May help healthy cells resist damage
- Multiplication
 - ◆ May interfere with tumor growth
- Spread
 - ◆ May inhibit tumor spread in the body

OMEGA-3S IN PREGNANCY AND INFANCY

- Omega-3s and the last trimester of pregnancy
 - ◆ Rapid synthesis of brain tissue
 - ◆ Omega-3s and premature infants
 - Risk factor for preterm delivery and low birth weight
- Omega-3s and the newborn
 - ◆ DHA is influenced by the mother's diet



SODIUM CONTENT



"Grilled Trout at Avo" by Ralph Daily

- Fish low in sodium
- Fewer than 110 milligrams per 3-ounce cooked portion
- Shellfish usually contain more sodium

VITAMIN CONTENT

- Source of B complex vitamins
 - ◆ Niacin, B12 and B6, thiamin
- Vitamin D in fattier fish



"Clam Chowder" by Jen

MINERALS



"Fish Steaks" by Jill Siegrist

- Calcium
- Iron
- Zinc
- Copper
- Potassium
- Iodine
- Phosphorus
- Selenium
- Magnesium

FISH OR FISH OIL SUPPLEMENTS?

- Seafood preferred to fish oil supplements
- Raise concerns for people with diabetes
 - ◆ Bleeding disorders
 - ◆ Cancer treatments
- Always consult your physician



"Fish Oil Supplements" by Hit Thatswitch

THE DIETARY GUIDELINES FOR AMERICANS 2010...

- Includes a new quantitative recommendation for seafood intake
- Intake of two servings per week



SUMMARY

- The 2010 Dietary Guidelines for Americans recommends all adults eat fish twice a week
- Most fish and shellfish contain under 100 mg of cholesterol per 3-ounce serving
- Seafood is considered the best dietary source of omega-3 fatty acids

SUMMARY

- Many species of seafood contain fewer than 3 grams of fat per serving
- Seafood is low in sodium
- Fish is a good source of vitamins B6 and B12
- Seafood is an excellent source of minerals

WHY AREN'T YOU EATING FISH?



"Salmon Salad" by Jeremy Keith

Moderate evidence shows that the health benefits from consuming a variety of seafood in the amounts recommended outweigh the health risks associated with methyl mercury

SEAFOOD – AT ITS BEST

“Do Your Health a Favor – Eat Seafood”



"Fish Market Mahi Mahi Sandwich by Mr. T in DC"



"Blackened Teriyaki Salmon..." by Blue Moon in Her Eyes"



"Chili Lime Shrimp" by Mike McCune"



"Harissa Salmon..." by Blue Moon in Her Eyes"



"Shellfish Risotto" by Sarah Braun"



"Yummy Oysters..." by Free Range Jace"

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