UNIVERSITY OF MARYLAND EXTENSION

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Get Hooked! Seafood's Role in a Healthy Diet

Health Benefits, Dietary Recommendations, and U.S. Eating Patterns

America is the largest seafood importer and the sixth largest seafood producer (Food and Agriculture Organization of United Nations, 2020). However, based on the recommendations from the 2015-2020 Dietary Guidelines for Americans (i.e., at least eight ounces of seafood a week or 26 pounds annually), the U.S. falls short, consuming only five ounces a week or 16.1 pounds annually (National Marine Fisheries Service, 2020). In comparison, Americans eat an average of 111.9 pounds of red meat (beef and pork) and 112.5 pounds of poultry every year (U.S. Department of Agriculture, 2019). This calls for a drastic shift in the American diet to vary protein sources and include more seafood products to receive the most health benefits.

The following is a general overview of the health benefits, dietary recommendations, and current U.S. eating patterns of seafood products. Other credible sources provide information or guidance pertaining to specific populations. For example, the U.S. Food and Drug Administration and Environmental Protection Agency released, "Advice about Eating Fish: For Women Who Are or Might Become Pregnant, Breastfeeding Mothers, and Young Children" (U.S. Food and Drug Administration and Environmental Protection Agency, 2019). Any gaps in information pertaining to seafood (e.g., safety concerns with microbial and chemical contaminants) will be the focus of future publications.

How Does Seafood Fit into a Healthy Diet?

Seafood, including fish and shellfish, provides an ideal package of nutrients and plays an important part in a healthy diet. Fish and shellfish are not only excellent sources of protein, but they are often low in calories and provide essential vitamins (i.e., A, D, and B-complex) and minerals (i.e., calcium, potassium, iron, zinc, iodine, and selenium) (Delaware Sea Grant, n.d.a). Vitamin A promotes healthy vision and skin. Vitamin D and calcium are important for bone growth. Your nervous system needs B vitamins to develop properly and function. Potassium helps with muscle contractions and maintaining a normal blood pressure. Your body uses iron to form red blood cells. Zinc is involved in cell growth and promoting a healthy immune system. Your thyroid requires iodine to function. Selenium is an antioxidant protecting your cells from damage, including negative effects from mercury. These nutrients may look familiar to you because they exist in many other foods you put on your plate. However, seafood is unique in that some varieties directly provide your body with important healthy fats not commonly found in other foods.

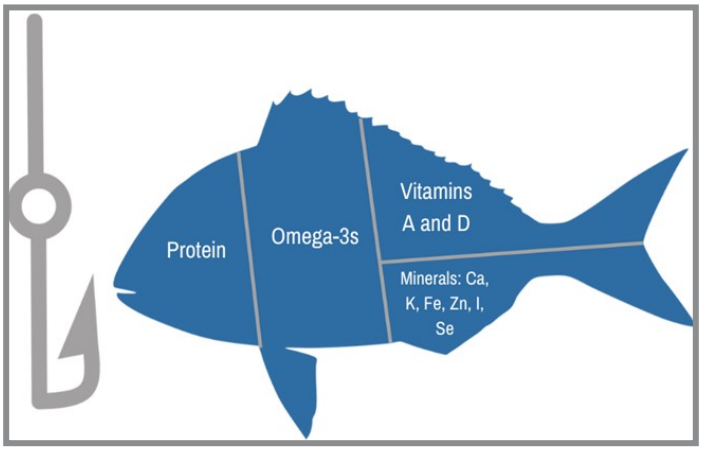

Figure 1. Nutrients found in various seafood products

What Seafood Products Provide Omega-3 Fatty Acids (EPA and DHA)?

The most important healthy fats in seafood are the long chain omega-3 fatty acids eicosapentaenoic acid (EPA) and docosahexaenoic acid (DHA). On average, Americans consume very little EPA and DHA (30 mg for children and teens and 90 mg for adults) compared to the daily recommended 250-500 mg of omega-3 fatty acids (U.S. Department of Agriculture and Agricultural Research Service, 2020). Land-based plant or animal products lack direct sources of these fatty acids. For example, plant oils such as flaxseed, soybean, and canola contain another omega-3 fatty acid called alpha-linolenic acid (ALA). While ALA can be converted into EPA and DHA, this conversion is limited (≤ 15%). Some brand of eggs, yogurt, juices, milk, and soy beverages are fortified with DHA, but these amounts are fractional compared to seafood products (National Institutes of Health Office of Dietary Supplements, 2019). Therefore, eating fish and shellfish containing EPA and DHA provides a more direct means of increasing these essential healthy fats in your body.

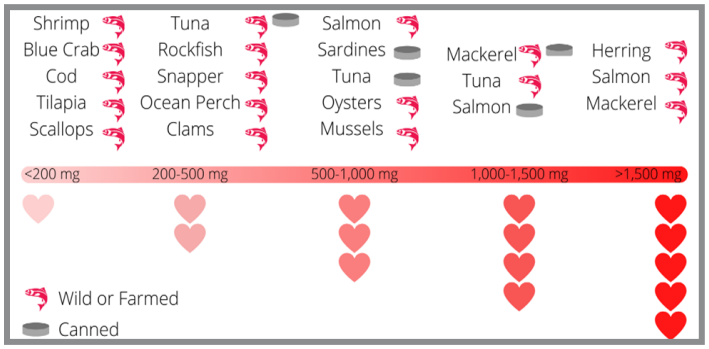

Figure 2. Omega-3 fatty acid (EPA and DHA) content of commonly eaten seafood products[1]

[1]Data from U.S. Department of Agriculture's National Nutrient Database for Standard Reference (U.S. Department of Agriculture and Agricultural Research Service, 2019)

Visit Delaware Sea Grant's website "Seafood Health Facts: Making Smart Choices" to find out which specific varieties and other seafood products are higher in EPA and DHA (Delaware Sea Grant, n.d.b).

What Are the Health Benefits of Omega-3 Fatty Acids in Seafood?

Scientists have studied the health benefits of omega-3 fatty acids found naturally in many seafood products. Studies suggest these healthy fats play an important role in heart, brain, and eye health (Rimm, et al., 2018; Hibbeln, et al., 2019; Mun, Legette, Ikonte, & Mitmesser, 2019; Seafood Nutrition Partnership, n.d.a; Academy of Nutrition and Dietetics, 2019).

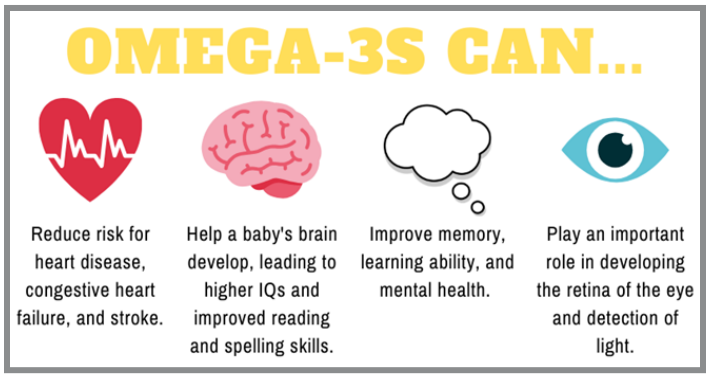

Figure 3. Health benefits of omega-3 fatty acids found in seafood

How Much Seafood Is Recommended?

To take advantage of these numerous health benefits, the 2015-2020 Dietary Guidelines for Americans advise eating **eight or more ounces** of a variety of cooked seafood every week (U.S. Department of Health and Human Services and U.S. Department of Agriculture, 2015). It is especially critical for women who are pregnant or breastfeeding to consume eight to twelve ounces a week to provide EPA, DHA, vitamins, and minerals to her growing baby (U.S. Food and Drug Administration and Environmental Protection Agency, 2019).

How Do You Measure a Serving?

For adults, a typical serving of seafood is **four ounces**. An easy way to measure one serving is to use your hand. The size and thickness of an adult's palm is about the same size as four ounces of fish fillet. For shellfish (e.g., oysters or shrimp), a four-ounce serving will depend on the species, size, and amount of meat. Each of the following portions is approximately four ounces. Eating two to three of these options will help you reach your eight to twelve ounces for the week.

Figure 4: Using your hand to measure four-ounce portions of seafood. Different products may alter portion size.

Note: Some images adapted from the original sources.

Are You Consuming Enough?

On average, Americans' seafood intake is below recommendations for all age-sex groups (U.S. Department of Health and Human Services and U.S. Department of Agriculture, 2015). Eating a recommended eight ounces of seafood per week would mean eating 26 pounds a year. In 2018, the U.S. only consumed 16.1 pounds of seafood annually, which is approximately five ounces a week (National Marine Fisheries Service, 2020).

What Happens if You Eat Less Than Eight Ounces of Seafood a Week?

If you do not eat enough seafood, you could miss out on the high-quality protein, healthy fats, vitamins, and minerals present in fish and shellfish that are beneficial to your overall health. Therefore, you will get the most benefit by eating a variety of seafood and trying to meet the recommendations.

How Can You Increase Your Seafood Consumption?

An easy way to increase how much you eat is to add seafood to foods you already enjoy such as pastas, salads, tacos, and more. Try a variety of seafood to get the most nutritional benefits. The top 10 species of seafood Americans consume are shrimp, salmon, canned tuna, tilapia, Alaska Pollock, Pangasius, cod, catfish, crab, and clams ((National Marine Fisheries Service, 2020; Seafood Nutrition Partnership, n.d.b).

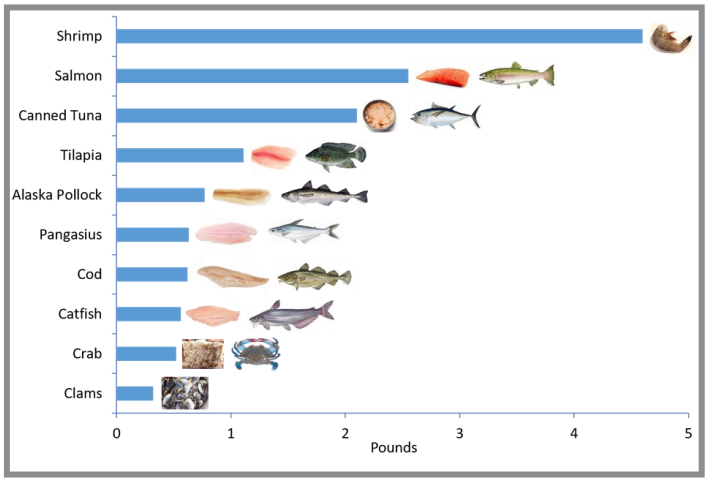

Figure 5. America's top 10 seafood consumed by species[1]

[1]Images adapted from Seafood Nutrition Partnership, NOAA Fisheries, and Maryland Department of Natural Resources.

Consider trying other fish and shellfish containing healthy fats (see Figure 2.), or search FDA's extensive database "The Seafood List" to discover more varieties (U.S. Food and Drug Administration, 2020). For coastal communities, explore locally harvested seafood products. The top six fish and shellfish commercially harvested in Maryland are blue crab, striped bass (rockfish), blue catfish, Eastern oyster, black sea bass, and soft-shell clams (National Marine Fisheries Service, 2020). Other local varieties include bluefish, Atlantic croaker, perch, spot, and snakehead.

Are You Hooked?

In summary, seafood provides an ideal package of nutrients. Finfish and shellfish contain high quality protein and are rich in vitamins and minerals. More importantly, several varieties are major sources of healthful long-chain omega-3 fatty acids (EPA and DHA) non-existent or significantly lacking in land-based plant or animal products.

Like any kind of food, finfish and shellfish may have potential risks associated with microbial and chemical contaminants. Future publications will seek to address these safety concerns. Remember, Americans are at risk for under-consuming seafood. Therefore, take advantage of the health benefits and enjoy the deliciousness of making seafood a regular part of your diet.

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