strong bones, and healthy gums, muscles and immune system. Fish also offers high-quality protein.

Only 10 percent of Americans are eating the recommended 8 ounces of fish and shellfish per week (for children, 3.5 to 7 ounces per week). Below are the averages of what we are eating in the United States:

### Health Benefits

#### Omega-3 Fatty Acids

Omega-3 fatty Acids are involved in the cellular mechanics of every cell in the human body. We can’t make them in our body, so they are called essential fatty acids. The strongest evidence of their benefit is in resolving the inflammation associated with diabetes, Alzheimer’s disease, cancer, and cardiovascular disease. They also help manage blood pressure, lower triglycerides, increase the healthy HDL cholesterol, reduce the risk of fatal heart attack, improve circulation, and aid the function of statin medications. In maternal health, Omega-3 fatty acids reduce preterm birth and postpartum depression, and are essential for child and adolescent health and vision. The recommendation of Omega-3 fatty acids (EPA + DHA) supported by major health organizations is 250 to 500 milligrams a day. Most Americans consume less than 80 to 100 milligrams a day.

#### Vitamin D

Oily fish is a good source of vitamin D; for example, 3 ounces of salmon supplies 477 IU, while 3 ounces of tuna supplies only 68 IU. The RDA for vitamin D is 600 IU for ages one to 70. Vitamin D is an important nutrient for calcium absorption for strong bones, and healthy gums, muscles and immune system. Fish also offers high-quality protein.

### Omega-3s in Fish (per 3 ounces)

<table>
<thead>
<tr>
<th>Fish</th>
<th>Omega-3s (mg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tuna (Albacore, canned)</td>
<td>2,150 mg</td>
</tr>
<tr>
<td>Anchovies</td>
<td>1,850 mg</td>
</tr>
<tr>
<td>Salmon</td>
<td>717–1,533 mg</td>
</tr>
<tr>
<td>Oysters (Pacific)</td>
<td>1,400 mg</td>
</tr>
<tr>
<td>Trout</td>
<td>1,160 mg</td>
</tr>
<tr>
<td>Cod</td>
<td>253 mg</td>
</tr>
<tr>
<td>Haddock</td>
<td>203 mg</td>
</tr>
<tr>
<td>Catfish and tilapia</td>
<td>64 mg</td>
</tr>
</tbody>
</table>

### Recommended Servings:

- **Men:** 5 ounces per week
- **Women:** 3 to 4 ounces per week
- **Children:** 1 to 2 ounces per week

All are meeting only 33 to 50 percent of recommendations.
**Concerns: Mercury and PCBs**

Mercury is a heavy metal that accumulates in the environment mainly from fossil fuel burning. It accumulates in rivers, streams, lakes, and the oceans. Smaller fish and shellfish have lower levels, while bigger fish have higher levels due to eating many smaller fish. The highest levels of mercury are found in big, long-lived predator fish. Mercury damages major organs and causes irreversible brain damage in developing fetuses and infants. **Avoid king mackerel, marlin, shark, orange roughy, swordfish, tilefish (Gulf of Mexico), and bigeye tuna.**

Polychlorinated biphenyls (PCBs) can also be a contaminant in fish caught from local waters in some areas. If you eat fish caught by family or friends, check for (state) fish advisories. If there are no advisories, limit number of servings to one, and consume no other fish that week.

**Sustainability**

The National Oceanic and Atmospheric Administration, which is responsible for overseeing U.S. aquaculture, reports:
- Aquaculture supplies more than 50 percent of seafood consumed in the United States.
- About 90 percent of U.S. seafood is imported; half of that is produced by aquaculture.

The Marine Stewardship Council (MSC) is an international nonprofit organization established to address the problem of unsustainable fishing. With its blue fish and check logo, the MSC is the largest and most globally recognized eco-label for wild-caught seafood. Its standards meet the United Nations’ eco-labeling guidelines. To obtain the MSC seal of approval, a fishery must demonstrate effective management and maintain healthy populations and ecosystems. To ensure farmed-raised fish meet the standards for best feeding, holding, and health practices, check the Aquaculture Stewardship Council website at [www.asc-aqua.org/certification](http://www.asc-aqua.org/certification). The Environmental Defense Fund ([seafood.edf.org/guide/best](http://seafood.edf.org/guide/best)) also provides good comparisons for wild and farmed fish.

**Preparation**

Deep frying adds the most calories, with extra carbs from breading or batter and oil, so fish prepared this way should be consumed less often. Pan sautéing without breading will have less oil absorbed and more opportunity for adding more flavor, such as with a sauce or herbal seasonings. Eating fish skin is optional; it can be left on while cooking to help hold the fish together. “Air fryers,” which are stove-top convection

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**Purchasing Tips**

**Good quality:**
- Fresh sea smell
- Flesh springs back up when touched
- No ice crystals if frozen
- Shellfish shells closed (still alive)
- Stored below 40°F if fresh
- Stored 0°F if frozen

**Poor quality:**
- Strong fish or ammonia smell
- Indentation left when touched
- Ice crystals indicate temperature abuse
- Shellfish open or cracked (dead)

**Lower-cost choices:**
- Check and compare local ads and online
- Buy bulk frozen plain fillets that are individually wrapped
- Purchase canned/packaged flaked fish and shellfish

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**Examine Your Choices**

<table>
<thead>
<tr>
<th>Food Source</th>
<th>What I buy</th>
<th>What I plan to buy/change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Protein Omega-3</td>
<td>Hamburger</td>
<td>Canned salmon</td>
</tr>
</tbody>
</table>

**My goal:** Offer fish or shellfish twice a week.
ovens, are not recommended since they dry out the fish very quickly. Broiling fish for 3 to 5 minutes is a very quick preparation method, and can add a nice crispy texture without adding fat. Poaching is a good choice for any fish. For example, sauté onions, garlic, shallots, chives, or dill and peppercorns; add a liquid, such as dry white wine, fish stock, or vegetable stock; and simmer (do not boil; it will overcook fish). Most will cook in 10 to 12 minutes.

Soups and stews are a popular choice, especially for shellfish. For a lower-calorie cream base, try evaporated skim milk instead of cream and butter. Vegetable stocks and tomato sauces are also healthy choices. Grilling fish for 3 to 6 minutes is another very quick cooking method. Higher-fat fish is a better choice for grilling since it is less likely to dry out. Lightly spread an acidlike lemon or lime juice, seasoning such as oregano or thyme, and olive oil on the fish. Grill undisturbed for 2 minutes, and give a quarter turn to leave the grill marks. Grill for 2 to 4 more minutes until the fish reaches 145°F.

Baking fish is a good option, especially if you want to save time and make a whole meal, as with packet cooking. Packet cooking includes layering starchy vegetables as a base, then adding fish and tender vegetables and seasonings, wrapping in foil, and baking.

Sources
Academy of Nutrition and Dietetics, www.eatright.org
American Heart Association, www.heart.org
American Psychiatric Association, www.psychiatry.org
National Oceanic and Atmospheric Administration, noaa.gov.