



## NUTRITION CONNECTION

# REELING IN BETTER HEALTH WITH SEAFOOD

BY CHRISSY CARROLL, MPH, RD

**SEAFOOD IS A PRIZED CATCH ON ANY PLATE** — but its value extends far beyond delicious flavor. From mental wellness to muscular health, fish and shellfish offer an array of health benefits for folks of all ages.

Despite these benefits, seafood is frequently under consumed. The Dietary Guidelines for Americans recommends that adults eat 8 ounces of seafood per week, while children and adolescents should consume 4 to 8 ounces per week (depending on age and caloric needs). Research suggests that less than 20 percent of adults and less than 7 percent of children meet current recommendations. Many consume seafood less than once per month.

Let's dive into why and how to make seafood a bigger part of your menu to help residents, students, or clients meet their nutritional needs.

### HEALTH BENEFITS

Seafood offers unique nutrients and functional benefits that can enhance the wellbeing of those you serve. Here are a few highlights:

#### 1. Provides High-Quality Protein for All

The Recommended Dietary Allowance (RDA) for protein for adults is 0.8 grams of protein per kilogram of body weight per day. However, many experts believe that older adults may need more protein – in the range of 1.2 grams of protein per kilogram of body weight per day, with higher amounts necessary during periods of wound healing.

Many older adults are not meeting these baseline requirements, though. In fact, one study showed as many as 50 percent of older adults may not meet the RDA.

And while older adults may be at the greatest risk of inadequate protein intake, children, adolescents, and middle-aged adults still need to make sure they get enough each day.

Fish is an excellent source of protein that can help any age group meet these needs. For example, just 3 ounces of cooked wild-caught Atlantic salmon or drained canned tuna provide approximately 21 grams of protein. A 4-ounce portion of cooked Pacific cod offers 22 grams of protein.

#### 2. May Improve Muscular Health and Function in Older Adults

Protein plays a key role in muscular health and function. Studies suggest higher protein intake is linked to better physical function and greater muscle strength in older adults.

But what about research on seafood specifically? There have been two recent studies in older adults:

- A study in *Frontiers in Nutrition* tested the impact of eating 150–170 grams of fish (about 5 to 6 ounces) for lunch twice a week over 10 weeks. After the 10 weeks, participants increased muscle mass, improved handgrip strength, and had a faster walking speed.



- Another study noted that fatty fish consumption was the primary dietary factor correlated with better grip strength.

While protein is certainly one driver for these results, the studies also suggest seafood's Vitamin D content or omega-3 fatty acids may also play a role in muscle strength or function.

### 3. Potentially Reduces the Risk of Kidney Disease

Seafood is rich in omega-3 fatty acids, which may reduce the risk of chronic kidney disease (CKD). We need more research, but one recent study in *BMJ* supports this. They found those with the highest levels of fish-derived omega-3 biomarkers (i.e., blood measurements of the omega-3's in fish) had a 13 percent lower risk of CKD. Interestingly, plant-derived omega-3 biomarkers (like those from flaxseed or walnuts, for example) were not associated with this benefit.



**SEAFOOD IS A  
NUTRITIONAL  
POWERHOUSE,**  
supporting brain, muscle,  
and kidney health—yet  
most Americans aren't  
eating enough of it.

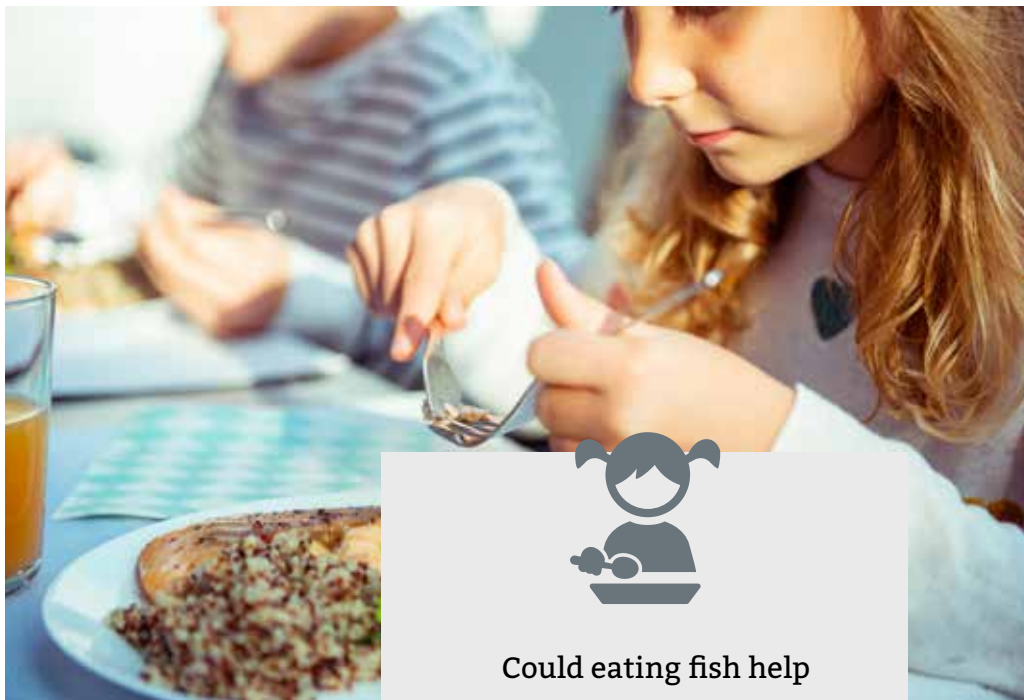
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Scientists think seafood may help through several mechanisms, including reducing inflammation, preserving healthy blood flow throughout the kidneys, or impacting the cells of the kidneys.

### 4. May Improve Cognitive Health

Regardless of the population that you work with, seafood may offer some benefits for brain health thanks to the omega-3 fatty acids. Consider these studies:

- A systematic review in the *International Journal of Preventive Medicine* concluded that diets containing seafood during pregnancy had beneficial effects on the cognitive function of the child.
- A 2025 meta-analysis in *Advances in Nutrition* found that higher seafood intake was linked to improved cognitive development outcomes for children and adolescents.



- A 2024 meta-analysis in *Aging Clinical and Experimental Research* found older adults with the highest fish consumption had an approximately 18-20 percent reduced risk of cognitive impairment, dementia, and Alzheimer's disease.

## 5. May Reduce the Risk of Depression

Seafood may play a role in mental health support because of its omega-3 fatty acids, as well as other key vitamins and minerals like Vitamin D, magnesium, and zinc.

Looking at the bulk of data from the last 10 years, the risk of depression is often around 13 to 18 percent lower in groups with the highest fish consumption or fish-derived omega-3 fatty acids, compared to groups with the lowest levels. Some studies, though, have suggested that moderate levels of seafood intake – rather than the highest levels – may have the biggest benefit on risk of depression.

Either way, the cumulative evidence supports that meeting the Dietary Guidelines may reduce the risk of depression.

## 6. May Promote Social Skills in Children

Could eating fish help children be kinder to each other? Maybe!

A 2025 study in the *European Journal of Nutrition* investigated seafood consumption and prosocial behavior in



Could eating fish help  
children be kinder to  
each other?

**MAYBE!**

children. Prosocial behavior represents a child's ability to act in a way that benefits other people, such as sharing, helping others, or offering emotional support.

In the study, children who ate no seafood each week were 35 percent more likely to have low prosocial behavior scores at age 7, and 43 percent more likely to have low prosocial behavior scores at age 9, compared to those with higher seafood intake.

It's important to note that while this is interesting data, further research is needed to confirm these findings.

## OVERCOMING OBSTACLES TO SEAFOOD IN FOOD SERVICE

Despite its numerous health benefits, seafood often takes a backseat on the menu. Common challenges include perishability, cost, client preferences, sustainability, mercury concerns, and comfort with cooking. Here are some tips for tackling each of these:

**Perishability:** Frozen and canned options offer a much longer shelf life. When ordering fresh seafood, be sure to plan menus surrounding delivery dates to ensure you can cook it promptly.

**Cost:** Canned and frozen options are great for cost savings. You can also explore underutilized species that are available in abundance locally, which may be sold at a lower rate. Another clever way to save? Stretch seafood alongside another inexpensive protein source, like making salmon burgers that incorporate beans, or creating a stir fry that uses both shrimp and tofu.

**Client Preferences:** You've probably heard someone tell you "I don't like seafood." While that may be true, it could also be that someone has only experienced low-quality seafood, poorly cooked seafood, or a limited variety. Exposing people to different types and preparation methods might help overcome this barrier. For example, some people may not like fatty fish such as salmon, but may enjoy leaner fish



like haddock. You can also try using seafood in familiar dishes, like tacos or stir fry, which might be more comfortable for people to try.

**Sustainability:** If your organization prioritizes sustainability, the Monterey Bay Aquarium offers a Seafood Watch list which allows you to search for different varieties of fish and shellfish. Results are categorized in a traffic light system, with green indicating “best choice” options for sustainability, yellow indicating “good alternatives” (if a best choice option is unavailable), and red indicating seafood that should be avoided.

**Mercury Concerns:** Mercury is a heavy metal that can lead to detrimental effects in the body with high levels of exposure over time. However, the benefits of fish intake generally outweigh the risks, as long as smart choices are made. It’s best to avoid large, predatory fish like shark, swordfish, and king mackerel, which accumulate more mercury. Vulnerable groups like pregnant women and children should be served low-mercury options like cod, pollock, haddock, skate, shrimp, or clams.

**Comfort Level:** Your kitchen staff may not feel confident preparing seafood, but this can be overcome with training

in basic cooking methods. Chefs should ensure fish fillets are cooked to a minimum internal temperature of 145°F. Avoid overcooking as it can result in a dry or rubbery product. Also, train staff on how to handle deliveries; you want to ensure seafood has a clean sea-like scent – it should not smell fishy.

### CULINARY STRATEGIES FOR ADDING MORE SEAFOOD TO YOUR MENU

Including more seafood doesn’t require revamping the whole menu. A few small tweaks are all it takes. Here are some ideas that are easy to implement:



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- Promote seafood with special days or themes. A summer celebration could include monkfish rolls, while a soup tasting party might feature a seafood chowder.
- Leverage global flavors to get creative with your seafood meals. Seafood paella, miso-glazed salmon, fish tacos, Nigerian fish stew, or Moroccan fish tagine bring exciting flavors and textures to the menu.
- Think about done-for-you or build-your-own bowls. These are especially popular in university foodservice settings but can be served in any setting. Mix and match different grains or potatoes, vegetables, sauces, and proteins (including seafood). For example, you might consider...
  - o Rice, taco-seasoned haddock, lettuce, tomatoes, avocado, beans, and salsa.
  - o Quinoa, shrimp, parsley, cucumbers, chickpeas, feta, and lemon vinaigrette.
  - o Potatoes, canned tuna, cherry tomatoes, cooked spinach, red onion, and honey mustard vinaigrette.
  - o Sweet potatoes, bluefish, roasted asparagus, golden raisins, and herbed yogurt sauce.
- Swap seafood for another protein in existing dishes. Tacos, pasta, wraps, and casseroles are all great options for mixing in seafood.
- Don't forget about breakfast! Smoked salmon could be added to bagels or omelets. Canned tuna or salmon can be used to make patties that are served on an English muffin with avocado. Fish can be served over grits with other seasonings and accompaniments.

### THE BOTTOM LINE

The evidence is clear: seafood is a nutritional powerhouse, offering high-quality protein and omega-3 fatty acids along with essential vitamins and minerals. A little culinary creativity can help you include more seafood on the menu, potentially improving the health of those you serve. **E**



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Reading *Reeling in Better Health with Seafood* and successfully completing these questions online in the ANFP Marketplace has been approved for 1 hour of continuing education for CDM, CFPPs. To earn 1 CE hour, visit [www.ANFPonline.org/market](http://www.ANFPonline.org/market) and select **Edge CE Articles** within the Publications section. Purchase the article and complete the quiz.

1. How much seafood is recommended per week for adults in the Dietary Guidelines?
  - A. 4 ounces
  - B. 6 ounces
  - C. 8 ounces
2. Which of the following is true regarding research on fish consumption and muscular health in older adults?
  - A. Fish consumption increased muscle mass and improved handgrip strength
  - B. Fish consumption increased muscle mass but had no impact on physical function
  - C. Fish consumption increased handgrip strength but had no impact on muscle mass
3. Which of the following is *not* a potential benefit of seafood intake for children?
  - A. Cognitive development outcomes
  - B. Mercury consumption
  - C. Meeting protein needs
4. Research has found that seafood consumption is linked to an approximately \_\_\_\_\_ lower risk of depression.
  - A. 4 to 6 percent
  - B. 13 to 18 percent
  - C. 35 to 40 percent
5. You want to incorporate more seafood but are on a tight budget. Which menu items will likely be the best choice from a financial standpoint?
  - A. Burgers made with canned salmon and white beans
  - B. Lobster rolls
  - C. Pan-seared Chilean sea bass with lemon sauce
6. You are a foodservice director for an elementary school. Which fish would be the best choice to serve, given mercury concerns?
  - A. Swordfish
  - B. Shark
  - C. Cod
7. What is the minimum internal temperature for cooking a fish fillet for food safety?
  - A. 145°F
  - B. 155°F
  - C. 165°F
8. Which of the following strategies is most useful if your organization is concerned with seafood sustainability?
  - A. Serve any seafood options; they are all sustainable
  - B. Only choose farmed fish for menu items
  - C. Use the Seafood Watch list to help procure sustainable choices



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