

# FEED YOUR FITNESS<sup>®</sup>

## WITH ALASKA SEAFOOD

Alaska seafood is among the best foods to support an athletic lifestyle, whether you're a competitive runner chasing a new record or an everyday gym hound looking to get the most from your workout. Alaska seafood not only delivers great-tasting nutrition, it also provides one-of-a-kind health benefits.

### WHY SHOULD YOU EAT ALASKA SEAFOOD? BECAUSE YOUR FIRST WEALTH IS HEALTH.

Most Americans fall short of eating the recommended amounts of seafood set by the U.S. Dietary Guidelines for optimal health, which is 8-ounces per week. Here's why Alaska seafood should be on your plate often as a regular part of your training table menu:

- The highest quality protein that repairs and rebuilds muscles
- Lean protein that is loaded with omega-3 fatty acids to reduce inflammation and strengthen heart health
- Alaska canned salmon is a good source of bone-building nutrients, especially calcium and vitamin D
- Low in calories for weight management
- Easy and quick to prepare
- Among the safest seafood: regularly tested by Alaska's Department of Environmental Conservation for water quality, methylmercury, radiation and other possible contaminants – Alaska is consistently found to have among the lowest levels of contaminants of any fish and shellfish

### THE HIGHEST QUALITY PROTEIN

Alaska seafood provides the complete array of essential amino acids needed to build, repair and maintain muscle. Proteins from animal and fish sources are complete, high-quality proteins, while those from plants tend to be incomplete (with the exception of soy beans and quinoa). Alaska seafood contains highly digestible protein, which means the amino acids are readily absorbed by the body. As an active person, your source of protein matters. Getting the most from that source will help keep your muscles strong and healthy.

### HEART HEALTH BENEFITS

Alaska seafood is low in saturated fat, a known dietary risk factor for heart disease, and high in heart protective monounsaturated and polyunsaturated fats. It is also high in essential omega-3 fatty acids, another healthy fat. Studies show the high omega-3 fatty acid content of Alaska fish and seafood decreases blood triglyceride (fat) levels and favorably reduces blood pressure, both risk factors for heart disease. They also protect the heart by reducing blood clotting, help reduce the chance of developing abnormal heart rhythms, and reduce the risk of a major cardiovascular event. Fresh and frozen Alaska seafood is also naturally low in sodium. To control or limit your sodium intake for good heart health, Alaska seafood is a wise protein choice.

### EFFECTIVE WEIGHT MANAGEMENT

Because most Alaska seafood species are low in fat, they are also low in calories (see chart below). Alaska seafood satisfies your hunger with fewer calories, so if you're trying to lose or maintain a certain weight, this protein source will help you get there.

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#### AVG. Calories & Protein Per 6 oz. Serving

Alaska Salmon, all species except King  
**224** calories **37** grams protein

Alaska Pollock, Black Cod, Cod & Halibut  
**183** calories **28** grams protein

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#### AVG. Calories & Protein Per 3.5 oz. Serving

Canned Alaska Salmon  
**150** calories **24** grams protein

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## BEST SOURCE OF OMEGA-3 FATTY ACIDS

Alaska seafood is not only one of the highest sources of naturally occurring omega-3 fatty acids, the type of omega-3 fatty acid it contains make it the best source. The two most important fatty acids are eicosapentaenoic (EPA) and docosahexaenoic (DHA), which are found in their most absorbable forms only in marine sources. The omega-3 fatty acid found in plants (flaxseeds, walnuts and chia seeds) is different and does not provide the same health benefits.

Only one type of omega-3, alpha-linolenic acid (ALA), comes from plants and it is mostly “burned” for energy. It needs to be converted to the long-chain forms to be beneficial, but humans are not good at doing this. **Less than 1% is converted to EPA, and only a trace amount of the EPA is further converted to DHA, the form needed by the brain.**

So when it comes to omega-3s, the most effective are those found in seafood: EPA and DHA. These fatty acids are important for fetal development, neuron and immune function, as well as eye health, and are a major part of all cell membranes. Both EPA and DHA are fatty acids that we need to consume in our diet – our bodies cannot make these essential fatty acids in amounts sufficient to meet our needs. Enjoying Alaska seafood two to four times every week will ensure that you are getting what you need in the form your body can use.

## OMEGA-3 FATTY ACIDS SUPPORT BRAIN FUNCTION & EYE HEALTH

Omega-3 fatty acids have been shown to support brain function and health by improving cell repair and regeneration, which may help reduce cognitive decline. They are also a key component for healthy visual and retinal function in our eyes, which may help lower the risk of age-related macular degeneration and other visual disorders.

## OMEGA-3 FATTY ACIDS: A NATURAL ANTI-INFLAMMATORY

Grueling workouts can take a toll on the body. If you are just becoming more active, you too will experience the inflammatory effects of exercise. Food not only fuels physical activity and training, but certain foods can also help us to recover, heal and prepare for the next practice, game or workout. Alaska seafood may help decrease the inflammation caused by intense exercise, reducing the muscle soreness that occurs one or two days after a workout. The omega-3 content may also help reduce symptoms like swelling, joint pain and fatigue.

## B VITAMINS: THE ENERGY TEAM

Several different B vitamins assist with metabolizing our food into energy. Many Alaska seafood species contain niacin, B6 and B12, which aid that process.

- B6 is essential for the production of white blood cells that support proper immune function, the synthesis of neurotransmitters and amino acids, and the conversion of muscle glycogen for energy.
- B12, found only in animal products, is important in red blood cell production. It also supports aerobic energy metabolism by maintaining hemoglobin to help with oxygen transport.

As an athlete or active person, optimizing the aerobic capacity in your blood will help maximize your fitness level and performance.

## VITAMIN D AND CALCIUM: BONE-AND MUSCLE-BUILDING NUTRIENTS

Did you know that 41% of adults in the United States are deficient in Vitamin D? Wild Alaska salmon is one of the few foods that contain Vitamin D, which helps keep membranes healthy, supports immune function and keeps muscles and bones strong. Because it's a fat-soluble vitamin, it needs fat to be absorbed – exactly what comes naturally in salmon! Just one serving of sockeye or pink salmon provides an entire day's Vitamin D needs, as recommended by the Institute of Medicine (600 IU's per day). People low in Vitamin D may not have optimal calcium absorption to keep bones healthy and strong, so eating enough is essential for bone health.

Vitamin D also acts as an antioxidant, removing the damaging free radicals that are produced in our cells from vigorous exercise and activity.

Alaska seafood contains other nutrients that help to build and maintain strong bones and muscles, too, like calcium, phosphorus and magnesium. Alaska canned salmon is high in calcium because of its soft, edible bones. Ready to eat from the can, it is as natural and delicious as it gets. Nothing is added but a pinch of salt for flavor, and the edible skin and soft bones are literally cooked under pressure, making them so soft they can be easily blended into the salmon with a fork, adding extra nutrients and flavor.

Alaska canned pink salmon has **4x** the omega-3s EPA and DHA, and **12x** the Vitamin D as many popular canned meats and fish. It also has **25 percent of adult RDA** for calcium, and nearly the **daily reference** amount for selenium.



PER 100g	Calories	Total Fat	EPA + DHA	Calcium	Vitamin D
<b>Alaska Canned Sockeye Salmon, drained solids</b>	<b>167</b>	<b>7.39g</b>	<b>1267mg</b>	<b>232mg</b>	<b>841 IU</b>
<b>Alaska Canned pink Salmon, drained solids</b>	<b>138</b>	<b>5.02g</b>	<b>1077mg</b>	<b>283mg</b>	<b>580 IU</b>
Canned white tuna, drained solids	128	2.97g	862mg	14mg	80 IU
Canned shrimp, mixed species	100	1.36g	545mg	145mg	0 IU
Canned chunk light tuna, drained solids	86	0.96g	224mg	17mg	47 IU
Canned blue crab	83	0.74g	168mg	91mg	0 IU
Canned Chicken, drained	162	5.72g	46mg	12mg	0 IU
Canned turkey, meat only with broth	169	6.86g	30mg	12mg	11 IU
Canned luncheon meat, pork & ham (SPAM)	315	26.6g	0mg	0mg	26 IU
Canned luncheon meat, pork & chicken (Spam Lite)	196	13.9g	0mg	39mg	24 IU
Pacific sardine, canned in tomato sauce, drained	185	10.45g	1396mg	240mg	193 IU
Canned jack mackerel, drained solids	156	6.3g	1230mg	241mg	292 IU
Atlantic sardine, canned in oil, drained with bone	208	11.45g	982mg	382mg	193 IU

Source: USDA National Nutrient Database, accessible at <https://ndb.nal.usda.gov>. Accessed on 11/1/2013.

## POTASSIUM: AN IMPORTANT ELECTROLYTE

Potassium, like sodium, is an important electrolyte that's necessary for proper muscle contraction, transmitting nerve impulses and maintaining fluid balance in the body. It protects against heart disease by lowering blood pressure, as well. Potassium regulates sodium losses to help prevent dehydration and also plays an active role in the metabolization of carbohydrate and protein. Most Americans consume levels far below the daily recommendation of 4700mg/day.

Competitive athletes who train strenuously require even more potassium. Training or competing in high temperatures and excessive sweat losses may require an increase in dietary potassium as well as sodium to avoid muscle cramps, nausea, fatigue, weakness and loss of appetite.

Many Alaska seafood species are good sources of potassium. Leafy greens, bananas, potatoes, sweet potatoes, tomatoes and carrots are other potassium-rich foods to include in your diet.

## FITNESS & NUTRITION TIPS

As an athlete in training, you know how important a role diet plays in optimizing your performance. Use nutrition to your advantage by choosing foods, like Alaska seafood, that supply the nutrients needed to fuel strenuous workouts and maximize recovery to enhance performance. Eating Alaska seafood at least 2 to 3 times per week will help reduce inflammation while keeping nutrition high and muscles repaired.

Eating protein throughout the day – not just at dinner – is the best way to help your muscles repair, recover and rebuild from intense training and practice. Add Alaska salmon – canned, smoked, fresh or frozen – to your breakfast to feed your muscles at the beginning of the day. The amino acids will continue to help build and repair damaged muscles all day long. Protein needs for the competitive athlete vary from 1.2 to 1.8 grams per kilogram of body weight per day. For a 72kg (160 lb.) man, this translates to about 109 grams of protein per day – roughly 3 servings of protein in 3 to 4 oz. portions per day. Satisfying those protein needs is essential because protein also plays a role in supporting immune system function and bone health.

Many athletes in heavy training periods and in competitive seasons may become at risk for nutrient deficiencies. Vitamin, mineral and electrolyte deficiencies in athletes have a major impact on training, health, recovery and performance. The following are important nutrients that many serious athletes don't get enough of as a result of high training volumes or poor food choices:

- POTASSIUM**
- SELENIUM**
- MAGNESIUM**
- IRON**
- CALCIUM**
- B12**
- VITAMIN D**
- B6**
- ZINC**
- OMEGA-3 FATTY ACIDS: EPA AND DHA**

# FEED YOUR FITNESS WITH ALASKA SEAFOOD

Alaska seafood is a good source of potassium, Vitamin D, zinc, B6, B12, selenium, magnesium (10% to 20% of the Daily Value recommended for these nutrients) and a high source of protein and omega-3 fatty acids (20% or more of the Daily Value recommended for these nutrients). Such an expansive nutrient profile means Alaska seafood meets the most important physiological demands of the athlete in training.

## TIPS FOR ATHLETES ON LOSING BODY FAT

For an athlete, shedding body fat is a balancing act. Many equate cutting calories with weight loss, but you need enough calories and protein to maintain muscle mass and preserve your metabolism while creating a small energy deficit. If you cut back on calories too much, you'll likely lose muscle, not fat. Alaska seafood delivers high-quality, low-calorie proteins and healthy fats to maintain lean muscle and help you lose body fat.

- Eat frequently throughout the day – at least 4 to 6 times
- Limit high fat, fried and highly processed foods
- Minimize late-night eating and eat only when you are truly hungry
- Include high-fiber foods in your diet (fruits, vegetables, beans, nuts, seeds)
- Eat smaller portions
- Add additional aerobic exercise to burn calories
- Practice good recovery nutrition, but don't overestimate your food intake
- Control calories with lean proteins like Alaska seafood
- Drink plenty of water

## REFERENCES

**1.** Nutrient Content & Variability in Newly Obtained Salmon Data for USDA Nutrition Database for Standard Reference. Jacob Exler, Pamela R. Pehrsson. USDA, Human Nutrition Research Center Program No. 533.7

**2.** Issues of Fish Consumption for Cardiovascular Disease Risk Reduction. Susan K Raatz, Jeffrey Silverstein, Lisa Jahns, Matthew J. Picklo Sr. Review in Nutrients 2013, 5(4), 1081-1097; doi.

**3.** AgResearch Magazine August 2015. Americans Missing Out on Seafood Health Benefits

**4.** Medline Plus Fish Oil Drug Information at [www.nlm.gov/medlineplus/druginfo/natural/993.html](http://www.nlm.gov/medlineplus/druginfo/natural/993.html)

**5.** Long Chain Omega 3 Fatty Acids: EPA & DHA and Blood Pressure: A Meta-Analysis of Randomized, Controlled Trials. Page E. Miller, Marty Van Elswyk and Dominik Alexander, Jan. 2014 American Journal of Hypertension 2014 27 (7) pg 885-896.

**6.** Nutrition and Athletic Performance. Position Statement from the Academy of Nutrition and Dietetics and The American College of Sports Medicine. Nancy R. Rodriguez, Nancy M. DiMarco, Susie Langley. March 01, 2010.

**7.** Bone Health and Osteoporosis: A Report of the Surgeon General (US) 2004 at <http://www.ncbi.nlm.nih.gov/books/NBK45503>

**8.** Overview of Omega-3 Fatty Acids. University of Maryland Medical Center at <https://umm.edu/health/medical/altmed/supplement/omega3-fatty-acids>

