

# The ABCs of Omega-3s

## *An update on the science, and how to reach the consumer*

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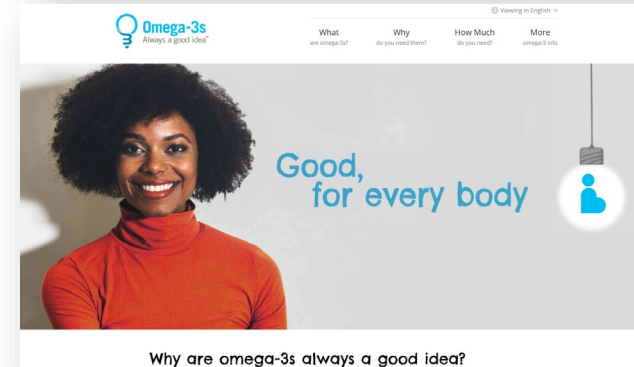
Director, Consumer and Healthcare Practitioner Outreach  
GOED: the Global Organization for EPA and DHA Omega-3s

28 May 2020



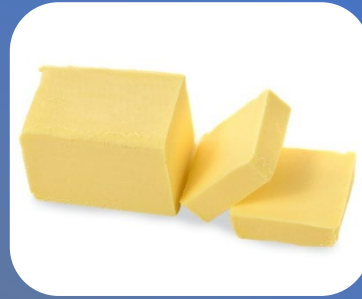
# Why I'm Here Today

- **GOED: The Global Organization for EPA and DHA Omega-3s**
  - Omega-3 trade association
  - Global in reach, 170 members
- **Goals:**
  - Increase awareness of the science-backed benefits of **EPA and DHA omega-3s**
  - Ensure the industry is producing quality omega-3 products that consumers can trust
- **Find us online:**
  - [GOEDomega3.com](http://GOEDomega3.com) (Member site)
  - [AlwaysOmega3s.com](http://AlwaysOmega3s.com) (Consumer site)
  - [FatsOfLife.com](http://FatsOfLife.com) (Healthcare Professionals site)



# Fats: A Review

- Saturated fats
- Unsaturated fats
  - Monounsaturated fats
  - Polyunsaturated fats
    - Omega-6
    - Omega-3



# Omega-3 Fatty Acids

- Alpha-linolenic acid (ALA)
- Eicosapentaenoic acid (EPA)
- Docosahexaenoic acid (DHA)



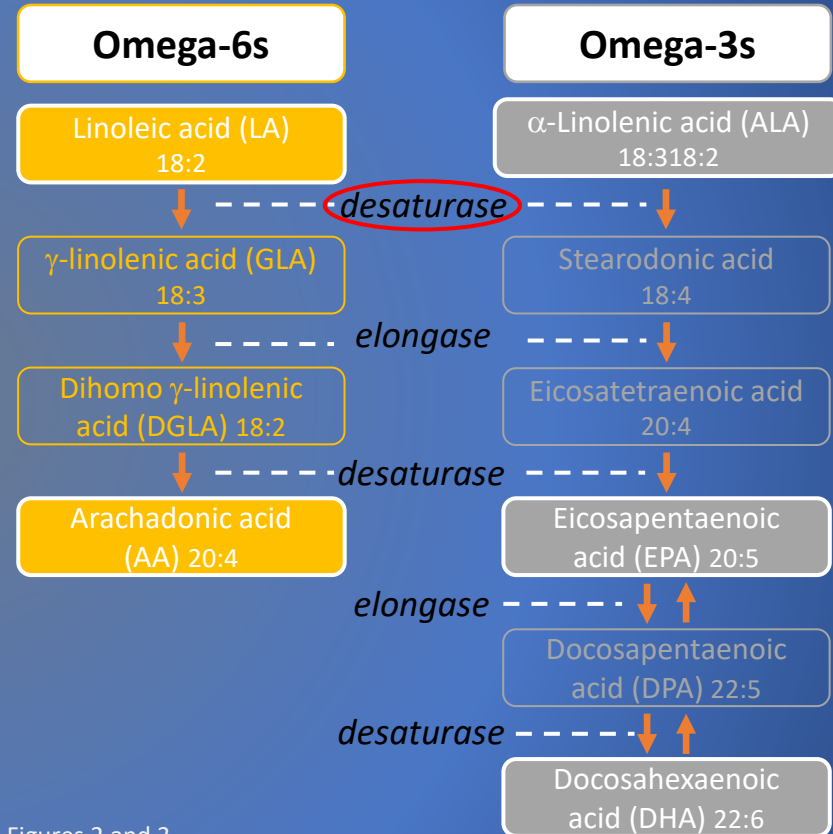
*Polling Question #1*

**Are omega-3s  
essential?**

# Essential? Yes, But...

- Essential = must come from diet; cannot be generated in the body
- Conversion rate ALA → EPA = low
- Conversion rate ALA → EPA → DHA = lower

**Best to consume  
EPA+DHA directly**



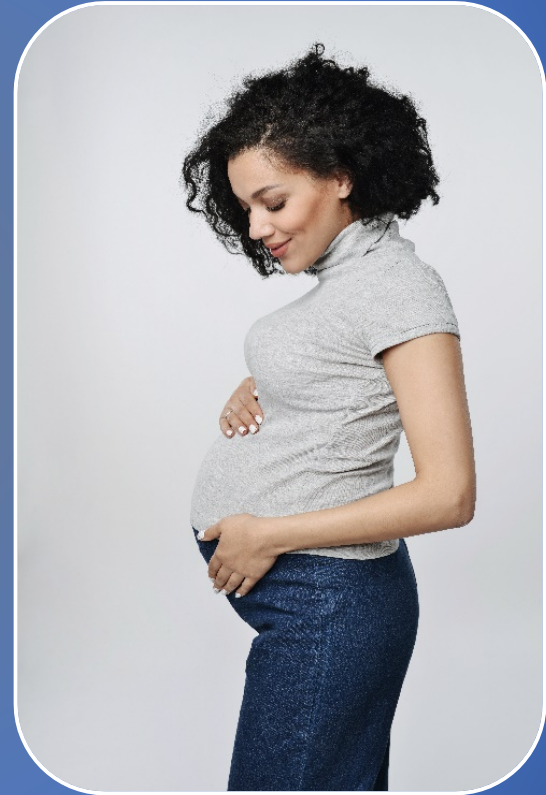
Adapted from Linus Pauling Institute, Oregon State University, Essential Fatty Acids, Figures 2 and 3  
<https://lpi.oregonstate.edu/mic/other-nutrients/essential-fatty-acids>

# Why You Need Omega-3s



# Omega-3s and Prenatal Health

- Brain development
  - Attention
  - Motor function
- Retinal development
  - Visual development
- Preterm birth risk
- Low birth weight





# Omega-3s and Brain Health



- DHA concentrated in the brain
- Improvements in cognition and working memory
  - May prevent cognitive decline
- Emerging research on EPA/DHA and mental health:
  - ADHD<sup>1</sup>
  - Major depressive disorder (MDD)<sup>2</sup>
  - Bipolar disorder<sup>3</sup>
  - Schizophrenia<sup>4</sup>
- Potential for treatment of traumatic brain injury (TBI)<sup>5</sup>



1. Chang et al. Neuropsychopharmacology. 2018;43(3):534-545.
2. Lin et al. Biol Psychiatry. 2010;68(2):140-147.
3. McNamara & Welge. Bipolar Disord. 2016;18(3):300-306.
4. van der Kamp et al. Schizophr Res. 2012;14(2-3):153-161.
5. Gupta et al. Curr Rev Musculoskelet Med. 2019;12(2):117-123.

# Omega-3s and Eye Health



- DHA concentrated in the retina of the eye
- Important in early development
- Some indication of omega-3s and dry eye, age-related macular degeneration





# Omega-3s and Heart Health

- Reduced risk of mortality from coronary heart disease or sudden cardiac death<sup>1</sup>
- Lowers triglycerides<sup>2</sup>
- Improves blood vessel function<sup>3</sup>
- Lowers blood pressure<sup>4</sup>



1. [http://www.nel.gov/evidence.cfm?evidence\\_summary\\_id=250321](http://www.nel.gov/evidence.cfm?evidence_summary_id=250321).
2. Eslick GD, Howe PR, Smith C, Priest R, Bensoussan A. Benefits of fish oil supplementation in hyperlipidemia: a systematic review and meta-analysis. *Int J Cardiol.* 2009;136:4-16.
3. Nestel P, Shige H, Pomeroy S, Cehun M, Abbey M, Raederstorff D. The n-3 fatty acids eicosapentaenoic acid and docosahexaenoic acid increase systemic arterial compliance in humans. *Am J Clin Nutr.* 2002;76:326-30.
4. Miller PE, Van Elswyk M, Alexander DD. Long-chain omega-3 fatty acids eicosapentaenoic acid and docosahexaenoic acid and blood pressure: a meta-analysis of randomized controlled trials. *Am J Hyperten.* 2014;27:885-96.



# Three Major Studies in 2018

- ASCEND: A Study of Cardiovascular Events in Diabetes<sup>1</sup>
  - 18% statistically significant reduction in risk of vascular death
- REDUCE-IT: Reduction of Cardiovascular Events With EPA - Intervention Trial<sup>2</sup>
  - Reduction of first occurrence of major adverse cardiovascular events (MACE): 25%
- VITAL: Vitamin D and Omega-3 Trial<sup>3</sup>
  - 28% reduced risk for heart attacks among omega-3 supplement users (given 1 g/day)
  - 17% reduced risk for CHD

1. Bowman L, Mafham M, Wallendszus K, et al.; ASCEND Study Collaborative Group. Effects of n-3 Fatty Acid Supplements in Diabetes Mellitus. N Engl J Med. 2018; 379:1540-1550. <http://bit.ly/2RZ1RID>
2. Bhatt DL, Steg PG, Miller M, et al.; REDUCE-IT Investigators. Cardiovascular Risk Reduction with Icosapent Ethyl for Hypertriglyceridemia. N Engl J Med. 2019; 380:11-22. <http://bit.ly/2Uh6ll6>
3. Manson JE, Cook NR, Lee IM, et al.; VITAL Research Group. Marine n-3 Fatty Acids and Prevention of Cardiovascular Disease and Cancer. N Engl J Med. 2019; 380:23-32. <http://bit.ly/2MxnyKl>





# More Just Might Be Better...

- “...marine omega-3 supplementation was associated with a **significantly lower risk** for myocardial infarction, CHD death, total CHD, CVD death, and total CVD.”
- “Risk reductions appeared to be **linearly related** to marine omega-3 dose.”



Hu Y, Hu FB and Manson JE. Marine omega-3 supplementation and cardiovascular disease: and updated meta-analysis of 13 randomized controlled trials involving 127,477 participants. J Am Heart Assoc. 2019 Oct;8(19):e013543. doi: 10.1161/JAHA.119.013543. Epub 2019 Sep 30.

# Omega-3s: What You Need

# “Get More Omega-3s”



“Get More Omega-3s” → “Get More *EPA and DHA*  
*Omega-3s*”





*Polling Question #2*

How much omega-3s  
should a person have  
each day?

# GOED EPA+DHA DAILY INTAKE RECOMMENDATIONS

Based on the current body of scientific evidence, GOED has established the following intake recommendations:



## 500 MG

For the general healthy adult population, in order to lower the risk of coronary heart disease (CHD)<sup>1</sup>



## 700-1000 MG

For pregnant and lactating women, optimal intake is 700 mg/day of EPA + DHA. At least 300 mg should be DHA.<sup>2</sup>

For secondary prevention of CHD: 1000 mg/day EPA + DHA<sup>3</sup>



## > 1 G

Higher intakes are supported for a range of additional health conditions (e.g. blood pressure<sup>4</sup>, triglycerides<sup>5</sup>)

# GOED Recommendation



## IMPORTANT REMINDERS REGARDING INTAKE

Some governments recommend higher intakes than those listed above<sup>6</sup>

Intakes can be increased significantly without concern for adverse health effects, according to reports from Spherox<sup>7</sup>, EFA<sup>8</sup>, and Norway's VKM<sup>9</sup>.

EPA and DHA omega-3s are only part of the composition of omega-3 rich oils (e.g. fish, krill, algal, etc.). If you are shopping for an omega-3 supplement, look at the EPA+DHA content.

Omega-3 Fatty Acids	300 mg
EPA (eicosapentaenoic acid)	180 mg
DHA (docosahexaenoic acid)	120 mg

### References:

- Report of the sub-committee on recommendations for intake of polyunsaturated fatty acids in healthy adults [Internet]. Washington, DC: International Society for the Study of Fatty Acids and Lipids; 2004. Available from: <http://www.jstor.org/stable/4181265/series/publications/EPA.DHA.intake.combinedReport.pdf>
- Roberts R, Bory C, Carty C. Critical literature inclusion perspectives on long-chain polyunsaturated fatty acids in pregnancy, lactation, and infancy: systematic review and practice recommendations from an Early Nutrition Academy Workshop. *Am J Nestl Metab*. 2014; 65:68-80.
- Kris-Etherton PM, Harris WS and Appel LJ for the American Heart Association Nutrition Committee (2002). Fish consumption, fish oil, omega-3 fatty acids, and cardiovascular disease [published correction appears in *Circulation* 2004; 109:2048-2050]. *Circulation* 104:2806-2816.
- Scientific opinion on the nutritional value of health claims related to EPA, DHA, EPA, and maintenance of normal blood pressure (ID 502), maintenance of normal HDL-cholesterol concentrations (ID 510), maintenance of normal (fasting) blood concentrations of triglycerides (ID 511), maintenance of normal LDL-cholesterol concentrations (ID 514, 516), and maintenance of normal (fasting) blood concentrations of triglycerides (ID 517). *EFSA Journal* 2009; 7(1):1521. Available from: <http://www.efsa.europa.eu/en/efsajournal/doc/1521/1521.pdf>
- Global recommendations for EPA and DHA intake [Internet]. Salt Lake City: Global Organization for EPA and DHA Omega-3s; 2014. Available from: <http://goedomega3.com/files/downloads/3c3>
- Hazard characterization of the long-chain polyunsaturated n-3 fatty acids, DHA, EPA, and DHA [Internet]. Bethesda, MD: Syneris Consulting, Inc; 2002. Available from: <http://goedomega3.com/files/downloads/247>
- Reported for the Global Organization for EPA and DHA Omega-3s.
- Scientific opinion on the nutritional value of health claims of eicosapentaenoic acid (EPA), docosahexaenoic acid (DHA) and docosapentaenoic acid (DPA). *EFSA Journal* 2012; 10(1):2315. Available from: <http://www.efsa.europa.eu/en/efsajournal/doc/2315/2315.pdf>
- Evaluation of negative and positive health effects of n-3 fatty acids as constituents of food supplements and fortified foods [Internet]. Oslo: Norskiskipkomiteen for marerogget (Newegian Scientific Committee for Food Safety); 2011. Available from: <http://www.kv.no/da/cta/da/03.pdf>

# Omega-3 Intake Needs

“...8 ounces per week of seafood, which provide an average consumption of 250 mg per day of EPA and DHA...”



## About Seafood

Seafood, which includes fish and shellfish, received particular attention in the *2010 Dietary Guidelines* because of evidence of health benefits for the general populations as well as for women who are pregnant or breastfeeding. For the general population, consumption of about 8 ounces per week of a variety of seafood, which provide an average consumption of 250 mg per day of EPA and DHA, is associated with reduced cardiac deaths among individuals with and without preexisting CVD. Similarly, consumption by women who are pregnant or breastfeeding of at least 8 ounces per week from seafood choices that are sources of DHA is associated with improved infant health outcomes.

The recommendation to consume 8 or more ounces per week (less for young children) of seafood is for the total package of nutrients that seafood provides, including its EPA and DHA content. Some seafood choices with higher amounts of EPA and DHA should be included.

Strong evidence from mostly prospective cohort studies but also randomized controlled trials has shown that eating patterns that include seafood are associated with reduced risk of CVD, and moderate evidence indicates that these eating patterns are associated with reduced risk of obesity. As described earlier, eating patterns consist of multiple, interacting food components and the relationships to health exist for the overall eating pattern, not necessarily to an isolated aspect of the diet.

Mercury is a heavy metal found in the form of methyl mercury in seafood in varying levels. Seafood choices higher in EPA and DHA but lower in methyl mercury are encouraged.<sup>[17]</sup> Seafood varieties commonly consumed in the United States that are higher in EPA and DHA and lower in methyl mercury include salmon, anchovies, herring, shad, sardines, Pacific oysters, trout, and Atlantic and Pacific mackerel (*not* king mackerel, which is high in methyl mercury). Individuals who regularly consume more than the recommended amounts of seafood that are in the Healthy U.S.-Style Pattern should choose a mix of seafood that emphasizes choices relatively low in methyl mercury.

Some canned seafood, such as anchovies, may be high in sodium. To keep sodium intake below recommended limits, individuals can use the Nutrition Facts label to compare sodium amounts.

Women who are pregnant or breastfeeding should consume at least 8 and up to 12 ounces<sup>[18]</sup> of a variety of seafood per week, from choices that are lower in methyl mercury. Obstetricians and pediatricians should provide guidance on how to make healthy food choices that include seafood. Women who are pregnant or breastfeeding and young children should not eat certain types of fish that are high in methyl mercury.<sup>[19]</sup>

# Omega-3 Intake Needs

Age	Male	Female
Birth to 6 months <sup>1</sup>	0.5 g	0.5 g
7-12 months <sup>1</sup>	0.5 g	0.5 g
1-3 years <sup>2</sup>	0.7 g	0.7 g
4-8 years <sup>2</sup>	0.9 g	0.9 g
9-13 years <sup>2</sup>	1.2 g	1.0 g
14-18 years <sup>2</sup>	1.6 g	1.1 g
19-50 years <sup>2</sup>	1.6 g	1.1 g
51 years and older <sup>2</sup>	1.6 g	1.1 g

Pregnancy <sup>2</sup>	Lactation <sup>2</sup>
1.4 g	1.3 g

<sup>1</sup> as total omega-3s

<sup>2</sup> as ALA omega-3s

Institute of Medicine, Food and Nutrition Board. Dietary reference intakes for energy, carbohydrate, fiber, fat, fatty acids, cholesterol, protein, and amino acids (macronutrients). Washington, DC: National Academy Press; 2005. <https://ods.od.nih.gov/factsheets/Omega3FattyAcids-HealthProfessional/#en5>

# “Get More Omega-3s” → “Get More *EPA and DHA* Omega-3s”

What We Eat in America, NHANES 2015-2016

Table 1. Nutrient Intakes from Food and Beverages: Mean Amounts Consumed per Individual, by Gender and Age, in the United States, 2015-2016 (continued)

Gender and age (years)	MFA 16:1 g (SE)	MFA 18:1 g (SE)	MFA 20:1 g (SE)	MFA 22:1 g (SE)	PFA 18:2 g (SE)	PFA 18:3 g (SE)	PFA 18:4 g (SE)
<b>Males:</b>							
2 - 5.....	0.73 (0.037)	18.65 (0.621)	0.21 (0.010)	0.02 (0.002)	11.51 (0.440)	1.11 (0.045)	0.01 (0.001)
6 - 11.....	0.98 (0.043)	23.86 (0.623)	0.27 (0.012)	0.02 (0.002)	15.06 (0.383)	1.36 (0.031)	0.01 (0.001)
12 - 19.....	1.24 (0.063)	27.97 (1.056)	0.35 (0.032)	0.03 (0.004)	17.10 (0.477)	1.65 (0.068)	0.01 (0.001)
20 - 29.....	1.52 (0.077)	32.60 (1.376)	0.39 (0.025)	0.03 (0.003)	19.24 (0.796)	1.93 (0.102)	0.01 (0.001)
30 - 39.....	1.58 (0.094)	33.75 (1.660)	0.41 (0.044)	0.04 (0.005)	20.47 (0.958)	2.18 (0.085)	0.03* (0.008)
40 - 49.....	1.45 (0.050)	32.65 (0.828)	0.38 (0.012)	0.04 (0.007)	19.97 (0.639)	1.99 (0.083)	0.01 (0.002)
50 - 59.....	1.42 (0.080)	32.26 (1.342)	0.37 (0.017)	0.04 (0.010)	19.80 (0.940)	2.17 (0.142)	0.01 (0.003)
60 - 69.....	1.16 (0.033)	28.94 (1.001)	0.32 (0.016)	0.04 (0.005)	17.87 (0.905)	1.94 (0.136)	0.01 (0.003)
70 and over.....	1.10 (0.046)	27.69 (1.081)	0.29 (0.010)	0.04 (0.011)	16.84 (0.926)	1.86 (0.121)	0.01 (0.002)
2 - 19.....	1.05 (0.037)	24.64 (0.674)	0.29 (0.018)	0.03 (0.002)	15.26 (0.286)	1.44 (0.035)	0.01 (0.001)
20 and over.....	1.40 (0.027)	31.61 (0.565)	0.37 (0.010)	0.04 (0.003)	19.18 (0.386)	2.02 (0.052)	0.01 (0.001)
2 and over.....	1.31 (0.024)	29.87 (0.557)	0.35 (0.009)	0.04 (0.002)	18.20 (0.346)	1.87 (0.044)	0.01 (0.001)
<b>Females:</b>							
2 - 5.....	0.68 (0.030)	16.85 (0.473)	0.17 (0.010)	0.01 (0.001)	9.99 (0.413)	1.00 (0.048)	#
6 - 11.....	0.93 (0.033)	22.63 (0.654)	0.25 (0.012)	0.02 (0.001)	13.96 (0.356)	1.37 (0.042)	#
12 - 19.....	0.90 (0.030)	22.71 (0.648)	0.25 (0.012)	0.02 (0.002)	14.73 (0.486)	1.42 (0.064)	0.01 (0.001)
20 - 29.....	1.01 (0.026)	24.89 (0.594)	0.28 (0.014)	0.02 (0.001)	16.51 (0.476)	1.75 (0.072)	0.01 (0.001)
30 - 39.....	0.95 (0.029)	23.98 (0.752)	0.28 (0.017)	0.03 (0.003)	15.56 (0.677)	1.61 (0.082)	0.01 (0.002)
40 - 49.....	1.00 (0.040)	24.26 (0.887)	0.28 (0.017)	0.02 (0.003)	15.45 (0.546)	1.64 (0.087)	0.01* (0.004)
50 - 59.....	0.99 (0.069)	24.96 (1.681)	0.28 (0.022)	0.02 (0.004)	15.75 (0.775)	1.71 (0.100)	0.01 (0.001)
60 - 69.....	0.94 (0.038)	22.62 (0.770)	0.25 (0.016)	0.03 (0.008)	14.05 (0.668)	1.72 (0.113)	0.01* (0.004)
70 and over.....	0.79 (0.042)	20.87 (0.874)	0.23 (0.017)	0.02* (0.008)	13.04 (0.599)	1.52 (0.115)	0.01* (0.003)
2 - 19.....	0.86 (0.018)	21.35 (0.364)	0.23 (0.006)	0.02 (0.001)	13.40 (0.215)	1.31 (0.037)	0.01 (0.001)
20 and over.....	0.95 (0.018)	23.73 (0.488)	0.27 (0.009)	0.02 (0.002)	15.16 (0.311)	1.66 (0.036)	0.01 (0.001)
2 and over.....	0.93 (0.014)	23.18 (0.360)	0.26 (0.007)	0.02 (0.002)	14.75 (0.257)	1.58 (0.031)	0.01 (0.001)
<b>Males and females:</b>							
2 - 19.....	0.95 (0.024)	23.02 (0.449)	0.26 (0.009)	0.02 (0.001)	14.34 (0.189)	1.37 (0.030)	0.01 (0.001)
20 and over.....	1.17 (0.019)	27.52 (0.364)	0.32 (0.006)	0.03 (0.002)	17.10 (0.261)	1.84 (0.036)	0.01 (0.001)
2 and over.....	1.11 (0.016)	26.44 (0.344)	0.30 (0.005)	0.03 (0.001)	16.43 (0.226)	1.72 (0.031)	0.01 (0.001)

DATA SOURCE: What We Eat in America, NHANES 2015-2016, individuals 2 years and over (excluding breast-fed children), day 1. Available: [www.ars.usda.gov/nut/nhanes/](http://www.ars.usda.gov/nut/nhanes/)

Children and adults are getting the recommended amounts of ALA omega-3s

	Adequate Intake (AI)	Actual Intake
Men (20+)	1.6 g	2.02 g
Females (20+)	1.1 g	1.66 g

U.S. Department of Agriculture, Agricultural Research Service. 2018. Nutrient Intakes from Food and Beverages: Mean Amounts Consumed per Individual, by Gender and Age, What We Eat in America, NHANES 2015-2016

# “Get More Omega-3s” → “Get More *EPA and DHA* Omega-3s”

What We Eat in America, NHANES 2015-2016

**Table 1. Nutrient Intakes from Food and Beverages:** Mean Amounts Consumed per Individual, by Gender and Age, in the United States, 2015-2016 (continued)

Gender and age (years)	PFA 20:4		PFA 20:5		PFA 22:5		PFA 22:6	
	g	(SE)	g	(SE)	g	(SE)	g	(SE)
<b>Males:</b>								
2 - 5	0.10	(0.008)	0.01	(0.002)	0.01	(0.001)	0.02	(0.005)
6 - 11	0.12	(0.008)	0.02	(0.004)	0.02	(0.002)	0.03	(0.006)
12 - 19	0.15	(0.007)	0.02	(0.003)	0.02	(0.001)	0.04	(0.005)
20 - 29	0.20	(0.012)	0.02	(0.002)	0.03	(0.003)	0.06	(0.012)
30 - 39	0.20	(0.013)	0.04*	(0.017)	0.03	(0.005)	0.08*	(0.030)
40 - 49	0.18	(0.006)	0.04	(0.006)	0.03	(0.002)	0.07	(0.009)
50 - 59	0.19	(0.016)	0.03*	(0.015)	0.03	(0.003)	0.07*	(0.022)
60 - 69	0.17	(0.012)	0.03	(0.004)	0.02	(0.001)	0.06	(0.007)
70 and over	0.14	(0.009)	0.02	(0.006)	0.02	(0.001)	0.06	(0.009)
2 - 19	0.13	(0.005)	0.02	(0.002)	0.02	(0.001)	0.03	(0.004)
20 and over	0.18	(0.006)	0.03	(0.005)	0.03	(0.002)	0.07	(0.008)
2 and over	0.17	(0.005)	0.03	(0.004)	0.02	(0.001)	0.06	(0.007)
<b>Females:</b>								
2 - 5	0.08	(0.005)	0.01	(0.001)	0.01	(0.001)	0.02	(0.003)
6 - 11	0.11	(0.008)	0.01	(0.002)	0.02	(0.001)	0.03	(0.004)
12 - 19	0.11	(0.005)	0.01	(0.002)	0.02	(0.001)	0.03	(0.005)
20 - 29	0.15	(0.007)	0.02	(0.003)	0.02	(0.002)	0.05	(0.007)
30 - 39	0.14	(0.008)	0.03	(0.006)	0.02	(0.003)	0.06	(0.013)
40 - 49	0.14	(0.007)	0.03	(0.006)	0.02	(0.002)	0.06	(0.013)
50 - 59	0.14	(0.010)	0.03	(0.005)	0.02	(0.006)	0.06	(0.010)
60 - 69	0.12	(0.009)	0.03	(0.006)	0.02	(0.003)	0.06	(0.010)
70 and over	0.11	(0.005)	0.03	(0.006)	0.02	(0.002)	0.06	(0.010)
2 - 19	0.11	(0.003)	0.01	(0.001)	0.01	(0.001)	0.02	(0.003)
20 and over	0.13	(0.003)	0.03	(0.003)	0.02	(0.001)	0.06	(0.005)
2 and over	0.13	(0.003)	0.02	(0.002)	0.02	(0.001)	0.05	(0.004)
<b>Males and females:</b>								
2 - 19	0.12	(0.003)	0.01	(0.002)	0.02	(0.001)	0.03	(0.003)
20 and over	0.16	(0.003)	0.03	(0.003)	0.02	(0.001)	0.06	(0.005)
2 and over	0.15	(0.003)	0.02	(0.003)	0.02	(0.001)	0.05	(0.005)

DATA SOURCE: What We Eat in America, NHANES 2015-2016, individuals 2 years and over (excluding breastfed children), day 1. Available: [www.ars.usda.gov/nea/hhnr/frs](http://www.ars.usda.gov/nea/hhnr/frs)

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Children and adults are not getting enough EPA+DHA omega-3s

	Recommended Amount (DGA)	Actual Intake
Men (20+)	250 mg	<b>100 mg</b>
Females (20+)	250 mg	<b>90 mg</b>

**This amount may be too low!**

U.S. Department of Agriculture, Agricultural Research Service. 2018. Nutrient Intakes from Food and Beverages: Mean Amounts Consumed per Individual, by Gender and Age, What We Eat in America, NHANES 2015-2016

*Talking to Consumers*

# How to Boost EPA and DHA Omega-3 Intake



# How to Boost *EPA and DHA* Omega-3s



≈ 250 mg daily average  
EPA+DHA

Must get two servings  
*each week*

Fish servings can't be poor  
sources of omega-3s



# How to Boost *EPA and DHA* Omega-3s



> 250 mg daily average  
EPA+DHA

# How to Boost *EPA and DHA* Omega-3s



Best strategy for boosting levels of EPA+DHA

# How to Read a Supplement Label



## Supplement Facts

1

Serving Size: **2 Soft Gels**

Amount Per Serving		% Daily Value
Calories		18
Calories from fat		18
Total Fat	2.0g	3%
Saturated Fat	0.1g	1%
Trans Fat	0g	**
Vitamin E (d-alpha tocopherol)	30 I.U.	100%
Omega-3s	<b>Weight***</b>	<b>Volume %</b>
EPA (Eicosapentaenoic Acid)	650mg	35%
DHA (Docosahexaenoic Acid)	450mg	25%
Other Omega-3s	180mg	10%
<b>Total Omega-3s</b>	<b>1280mg</b>	<b>3%</b>
Oleic Acid (Omega-9)	56mg	3%

\* Percent Daily Values are based on a 2,000 calorie diet.  
\*\* Daily Value not established. \*\*\* Natural Triglycerides.  
Less than 5mg of Cholesterol per serving.

2

3

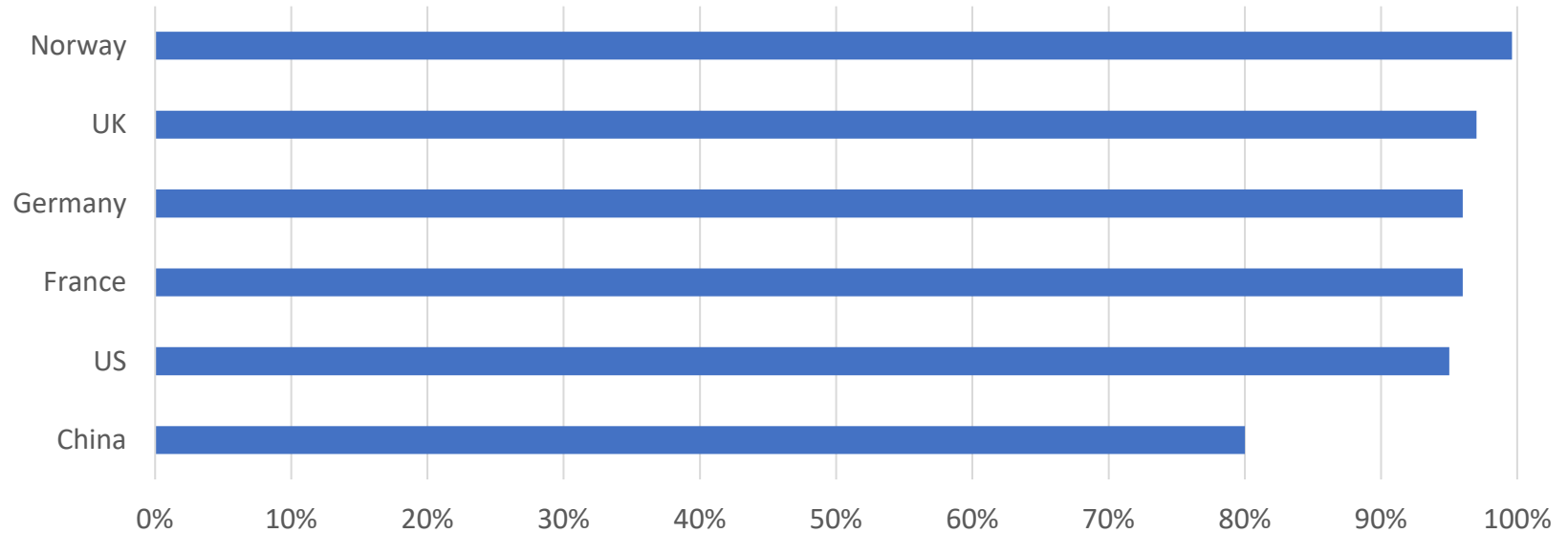
4

**Ingredients:** purified deep sea fish oil (from anchovies and sardines), soft get capsule (gelatin, water, glycerin, natural lemon oil), natural lemon oil, d-alpha tocopherol, rosemary extract.

# Communicating to the Consumer

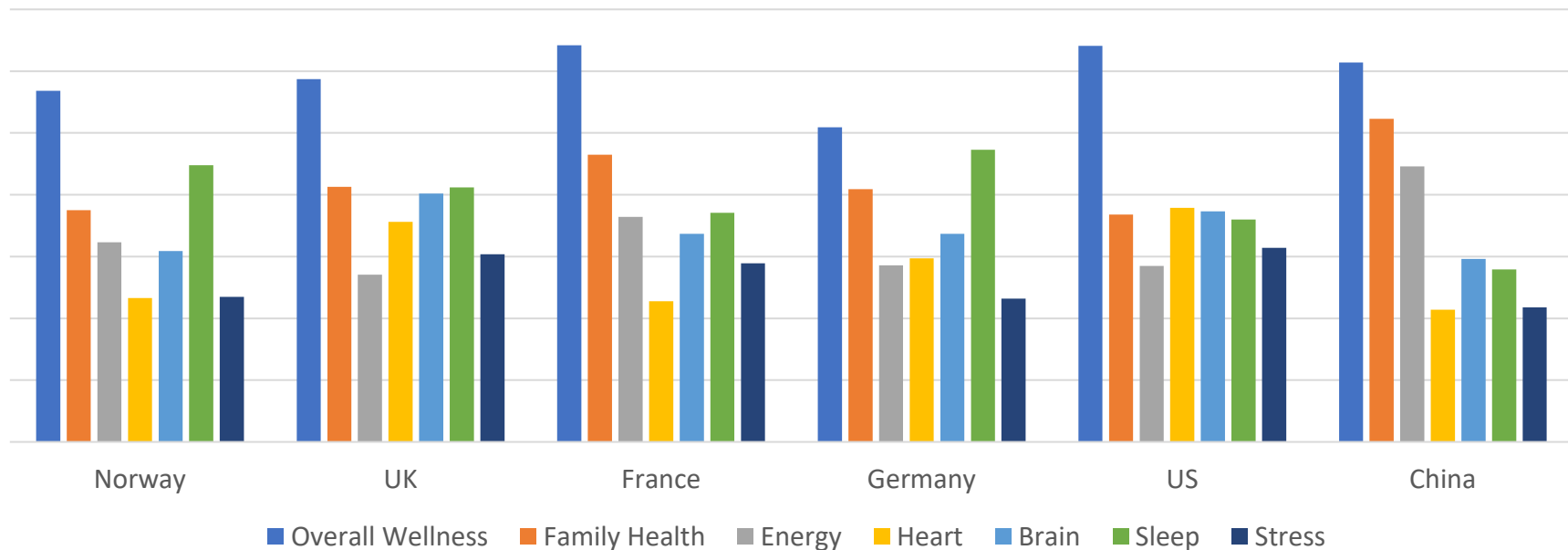
# Consumer Knowledge

High Awareness Worldwide of Omega-3s



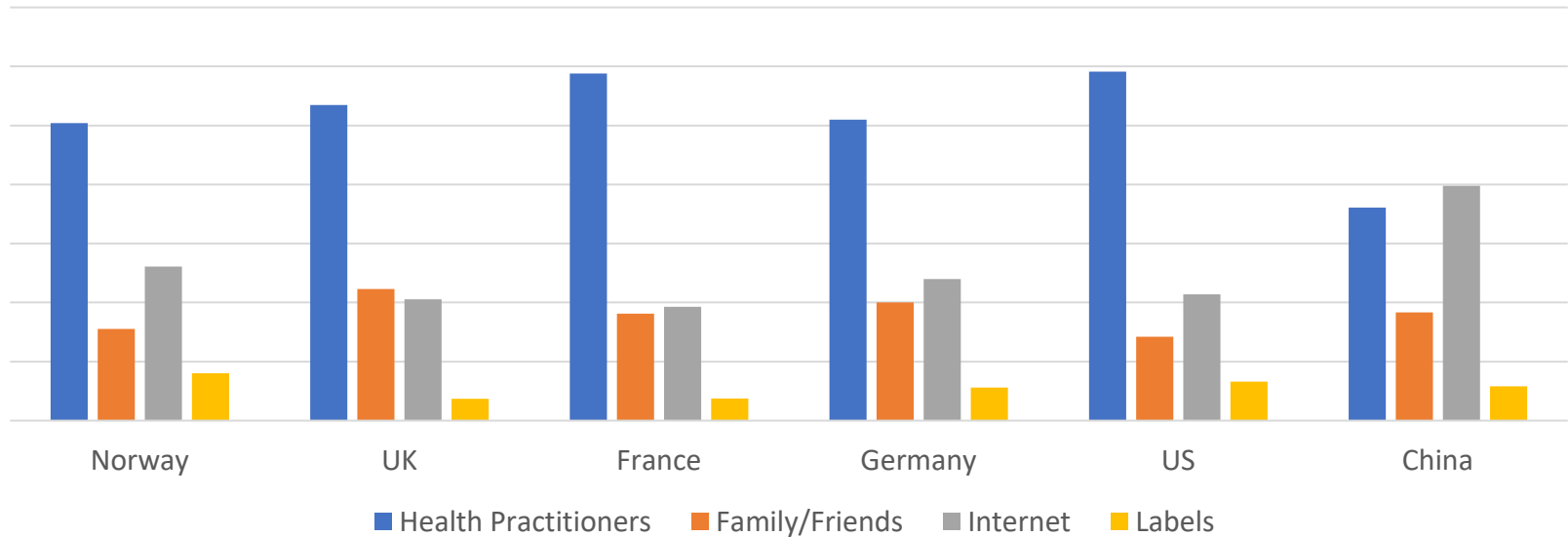
# The Global Consumer

## Top Health Concerns by Country



# The Global Consumer

## Health Information Sources by Country



# How to Reach Consumers

- Influencers
- Media
- Messaging



# How to Reach Consumers


- Influencers
- Media
- Messaging

The screenshot shows a blog post from 'Abbey's KITCHEN'. The header includes navigation links: ABOUT, COOKBOOK, BLOG, COURSES, SERVICES, VIDEOS, MEAL PLANS, and a search icon. A banner at the top features the text 'INVOLVED IN R&D OR SOURCE INGREDIENTS?' and 'HERE'S WHY YOU NEED TO ATTEND' with a 'NEW! THE TOOLKIT!' button and a 'Supply Chain Summit' event in Somers, NJ from April 9-10, 2019. The main title is 'THE REAL TRUTH ABOUT OMEGA-3S : TOP MYTHS ABOUT OMEGA-3S DEBUNKED' dated July 27, 2018. A disclaimer states: 'DISCLAIMER: This post was developed in sponsored partnership with Global Organization for EPA and DHA Omega-3s, however, as always, all opinions are genuine.' The author's bio reads: 'I share the REAL Truth about Omega-3s in your diet and get to the bottom of the top myths about Omega-3s, specifically EPA and DHA.' The main text begins: 'Let's be honest- a lot about nutrition is complicated and controversial. One week gluten is the root cause of all disease, and the next, we're pointing the finger at dairy. As a dietitian, it's my job to try to weed through the noise and help you all make the best decisions possible about what to eat. That means a LOT of myth busting. I used to think that there were very few foods or nutrients that the public could agree on was good, with Omega-3 fats being one of them. But after becoming an active member of the online'.



# How to Reach Consumers

- Influencers
- Media
- Messaging




## The Washington Post

Democracy Dies in Darkness

Wellness • Perspective

### Fatty acids lower your risk of heart disease. Without fish, you're missing out.



(iStock)

By **Christy Brissette**  
August 17, 2017

Are you getting enough omega-3s? These vital fats are beneficial for heart, brain and eye health, but it's not just the amount that matters. The type of omega-3s in your diet could determine the health benefits you're getting — especially if you don't eat fish.

Long-chain omega-3 fatty acids called EPA (eicosapentaenoic acid) and DHA (docosahexaenoic acid) are found in marine sources such as fatty fish and fish oils. Another

PATRICIA BANNAN / MS, RD

ABOUT — WORK WITH ME — PRESS — BLOG — RECIPES — GIVE BACK — SHOP — CONNECT — Q

ARTICLES

## Omega-3s and Brain Health – from Infancy Onward

MAR 22, 2016



I'm delighted to have partnered with the Global Organization for EPA and DHA Omega-3s (GOED) on this blog post. All opinions are my own.

The photo above is of my baby girl at just three weeks old. Among wanting the best for her in every way possible, as a dietitian I'm super aware of the importance of omega-3 fatty acids throughout her life, especially for brain health. The human brain is made up of nearly 60 percent fat, so it's no surprise that omega-3s are linked to the health of this vital organ. Research shows omega-3s are important for

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- FOOD TRENDS
- HEALTH AND WELLNESS
- HEART HEALTH
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Posted at 02:00 in Heart Health. In the News by Toby Amidor · 4 Comments · 0 Likes

This post was sponsored by the Global Organization for EPA and DHA Omega-3s (GOED). All thoughts are my own.

A new study funded by the National Institute of Health (NIH) examining the relationship between omega-3s and heart disease and cancer was recently released. The initial conclusion has some headlines saying omega-3s are ineffective, while others tout the benefits of taking omega-3 supplement, leaving the public confused on what to do when it comes to these vital nutrients. It has become commonplace in our society that every time a new study is released, headlines confuse consumers because they don't put the study into perspective with all the other research that is out there. Upon thoroughly reading the study, it shows promising results, especially among two groups of people: here's a look into what is called VITAL, and what it means for your omega-3 intake.

A Look into the VITAL Study

Affiliations

# How to Reach Consumers

- Influencers
- Media
- Messaging



## Reduction In Coronary Heart Disease Risk

A study published in Mayo Clinic Proceedings found that EPA and DHA omega-3 consumption may reduce the risk of coronary heart disease, particularly in higher risk populations – a 16 percent reduction in those with high triglycerides and a 14 percent reduction in those with high LDL cholesterol. These findings are particularly relevant for the management of CHD risk in the general US population because 25% of Americans older than 20 years are estimated to have triglyceride levels of 150 mg/dL or more and 27% of Americans aged between 40 and 74 years have LDL cholesterol levels of 130 mg/dL or more.

[Click here to read the study](#)

Cardiovascular  
disease

Heart Health

Perioperative  
bleeding

*Bleeding??*

AlwaysOmega3s  
February 18 · 🌐

Want to help your heart? Recent research reinforces that EPA & DHA omega-3s may help reduce the risk of heart attack and coronary heart disease. Check out the findings and full infographic here:  
<https://bit.ly/25jv6ny>

Can **omega-3s** help **reduce** the risk of heart attacks and **CHD**?

**Omega-3s**  
Always a good idea™

AlwaysOmega3s  
Education [Learn More](#)

*Talking to Consumers*

# Common Consumer Questions

# Common Consumer Questions

- *Can I get my omega-3s from flax or chia?*





# Common Consumer Questions

- *Can I get my omega-3s from flax or chia?*
  - “ALA does not convert well to EPA and DHA.”
  - “Most people get enough ALA but not nearly enough EPA and DHA.”
  - “The science is much stronger for EPA and DHA.”\*

*\*40,000 published papers; 4,000 human trials*



# Common Consumer Questions

- *Why do I need supplements? I eat fish!*



# Common Consumer Questions

- *Why do I need supplements? I eat fish!*
  - “Yes, fish is a great way to get omega-3s – and many other beneficial nutrients – but most people do not get enough omega-3s to protect their heart.”
  - “Do you eat the right kind of fish? Fried fish or tilapia won’t give you the health benefits you need.”
  - “Emerging science\* is showing that the advice to eat fatty fish twice a week may not be enough.”



\*[https://www.plefa.com/article/S0952-3278\(18\)30225-4/fulltext](https://www.plefa.com/article/S0952-3278(18)30225-4/fulltext)



# Common Consumer Questions

- *I've heard omega-3s increase risk of bleeding*




*Photo courtesy of Jørn Dyerberg*

# Common Consumer Questions

- *I've heard omega-3s increase risk of bleeding*
- “That is a myth, and research continues to debunk it. A 2017 meta analysis\* shows no increase in bleeding or blood transfusions in surgery.”
- “More recently, another paper\*\* showed higher omega-3 PUFA levels are associated with a lower risk of bleeding.”

\* <https://www.ncbi.nlm.nih.gov/pubmed/28552094>

\*\* <https://www.ncbi.nlm.nih.gov/pubmed/30571332>



The screenshot shows a PubMed search result for a systematic review. The search bar at the top contains the text 'PubMed' and 'Advanced'. The search results are displayed in a list format. The first result is a systematic review titled 'No impact of fish oil supplements on bleeding risk: a systematic review.' by Begtrup KM, Krag AE, and Hvas AM. The abstract is visible, starting with 'INTRODUCTION: Fish oil supplementation may inhibit platelet aggregation and can potentially increase the risk of bleeding. The aim of the present systematic review was to evaluate the effect of fish oil supplements on haemostasis and bleeding risk, and to provide recommendations on whether it is necessary to discontinue fish oil supplementation prior to surgery.' The abstract continues with 'METHODS: Studies were identified through PubMed and Embase searches and by reviewing the reference lists of the included papers. The Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines were used. Included in the review were publications including a minimum of 20 healthy subjects and studies on patients who were undergoing surgery and who had fish oil exposure.' and 'RESULTS: In total, 52 publications were included; 32 publications on healthy subjects and 20 publications on patients undergoing surgery. The majority of the included studies were randomised controlled trials or included a control group. Overall, fish oil supplements reduced platelet aggregation in healthy subjects. Fish oil exposure in surgical patients did not increase bleeding or blood transfusions either during or after surgery.' and 'CONCLUSION: Fish oil supplements reduced platelet aggregation in healthy subjects. This biochemical effect was not reflected in increased bleeding risk during or after surgery evaluated in randomised controlled trials. Consequently, this systematic review does not support the need for discontinuation of fish oil supplements prior to surgery or other invasive procedures.'

# Common Consumer Questions

- *I'm concerned about mercury/contaminants*



# Common Consumer Questions

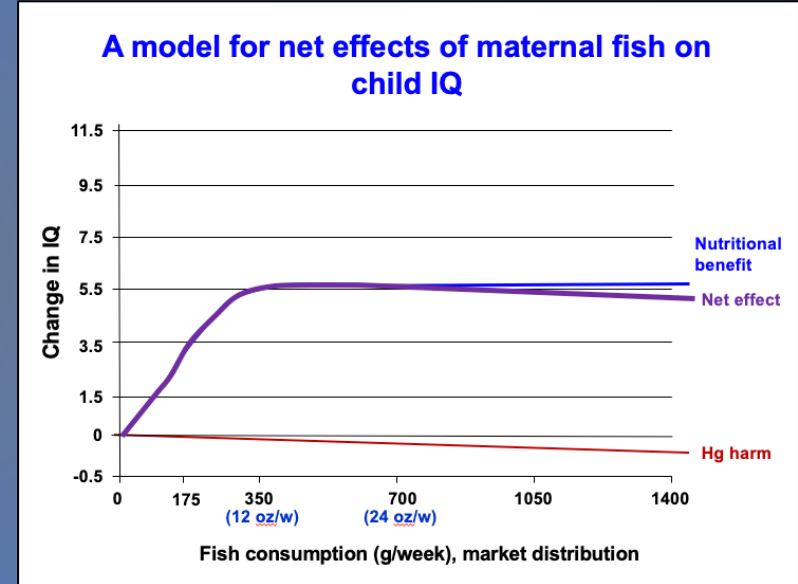
- *I'm concerned about mercury/contaminants*
  - “The refining process removes contaminants and heavy metals, including mercury.”



# Common Consumer Questions

- *I'm concerned about mercury/contaminants*

- “The benefits of maternal intake of omega-3s outweigh the risks of mercury consumption.
- Eating up to 12 oz of fish can increase IQ up to 5.5 points. Risks of loss of IQ due to methyl-mercury found in 12 oz of fish is about 0.01 IQ points.
- Net effects benefit: 5.49 IQ points”  
-Capt. Joseph Hibbeln, MD



# Common Consumer Questions

- *Fish oil production is depleting the oceans!*





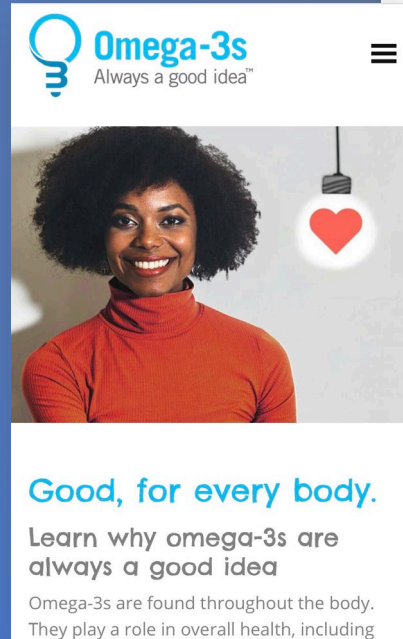
# Common Consumer Questions

- *Fish oil production is depleting the oceans!*
  - “In general, the fisheries that supply omega-3s are sustainably managed.”
  - “The Peruvian anchovy fishery, which supplies most supplements, is monitored by a scientific body that mandates the quota for each fishing season based on the biomass and number of juveniles. They recently cancelled two fishing seasons.”
  - “Tuna and salmon oil come from byproducts of seafood industry.”
  - “Arctic cod fishery is MSC-certified.”

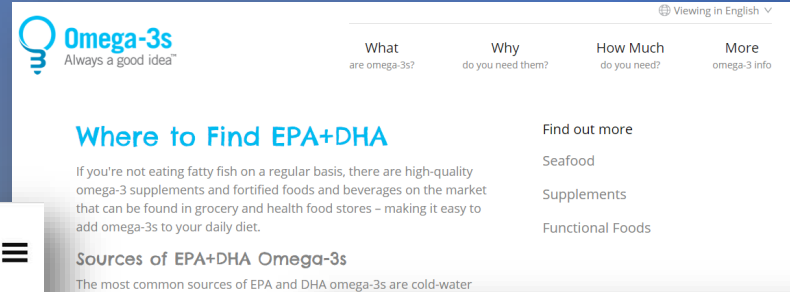


# Reaching the Consumer – Tools for You

AlwaysOmega3s.com



The image shows a mobile app interface for AlwaysOmega3s.com. At the top, there is the logo "Omega-3s Always a good idea™" and a hamburger menu icon. Below the logo is a photograph of a smiling woman with dark curly hair wearing an orange turtleneck. To the right of the photo is a glowing heart icon. Below the photo, the text reads: "Good, for every body. Learn why omega-3s are always a good idea. Omega-3s are found throughout the body. They play a role in overall health, including..."



The image shows a desktop website interface for AlwaysOmega3s.com. At the top left is the logo "Omega-3s Always a good idea™". On the right, there are navigation links: "What are omega-3s?", "Why do you need them?", "How Much do you need?", and "More omega-3 info". Below these is a section titled "Where to Find EPA+DHA" with a sub-header "Find out more". The text under "Where to Find EPA+DHA" says: "If you're not eating fatty fish on a regular basis, there are high-quality omega-3 supplements and fortified foods and beverages on the market that can be found in grocery and health food stores – making it easy to add omega-3s to your daily diet." Below this is a section titled "Sources of EPA+DHA Omega-3s" with the text: "The most common sources of EPA and DHA omega-3s are cold-water fatty fish and omega-3 supplements. The fish food chain that make fish rich..."



The image shows a Spanish version of the AlwaysOmega3s.com website. At the top right, it says "Español". Below the logo "Omega-3s Siempre una buena idea™" are three buttons: "Conozca sobre omega-3", "Ver lo último en ciencia", and "Hágale un favor a su cuerpo". Below these is a large image of a person's hands using a tablet. Overlaid on the image is a white box with a heart icon and the text: "¿Está usted consumiendo suficiente omega-3s? Descúbralo". Below the image, the text reads: "Su cuerpo depende de usted para mantenerse saludable y su nutrición juega un rol importante en la salud general. Entender la información respecto a por qué omega-3s es siempre una buena idea es uno de los primeros pasos para apoyar su salud."



# Reaching the Consumer – Tools for You



Infographics and visuals in multiple languages



- DHA contributes to optimal neuron and memory function in older adults.<sup>[1]</sup>
- DHA plays an important role in visual function throughout life.<sup>[2,3]</sup>
- EPA and DHA omega-3s may help maintain healthy blood pressure<sup>[4]</sup> and healthy triglyceride levels.<sup>[5]</sup>
- As a matter of fact, EPA and DHA are needed in every cell of the body.<sup>[6]</sup>

**Omega-3s**  
Always a good idea<sup>®</sup>  
[alwaysoomega3s.com](http://alwaysoomega3s.com)

Health professionals **recommend a minimum of 250mg to 500mg of EPA+DHA per day** for adults. Eating **two servings of fatty fish per week** or taking a **daily omega-3 supplement** can help reach this goal.<sup>[7]</sup>

# Reaching Healthcare Practitioners – Tools for You

FatsOfLife.com



## RESEARCH-BACKED REASONS TO RECOMMEND OMEGA-3S

EPA and DHA omega-3s are backed by decades of research showcasing their benefits for the heart, brain, eye, and prenatal health. Omega-3s aren't just beneficial – they're vitally important for every cell in the body. This site provides important information you need to educate your patients about the benefits of EPA and DHA omega-3s.



Heart



Brain



Eye



Prenatal and Infant

## JUST THE FACTS: Omega-3s and Bleeding

Concerns about omega-3s and bleeding are not supported in scientific literature.<sup>1-5</sup>

Research has found that supplementation of EPA and DHA up to 5g does not increase bleeding risk.<sup>1,6</sup>

A recent study found that people with more omega-3s in their blood before surgery were not at higher risk of bleeding during and after surgery.<sup>5</sup>

Less than 0.001% of adverse event reports from the U.S. FDA noted abnormal or prolonged bleeding associated with fish oil.<sup>5</sup>

Research also supports that omega-3s are cardioprotective. EPA and DHA omega-3s help:

- ♥ Reduce the risk of cardiac death<sup>7</sup>
- ♥ Reduce triglycerides<sup>8</sup>
- ♥ Reduce blood pressure<sup>9</sup>
- ♥ Allow blood to move freely by inhibiting clot formation without increasing the risk of bleeding<sup>4</sup>

The benefits of getting enough omega-3s on a daily basis far outweigh the risks of bleeding.

Aim for at least 500 mg EPA + DHA omega-3s per day by eating fatty fish or taking a supplement.



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5. <https://www.fda.gov/oc/ohrt/omega-3-fatty-acids-and-bleeding-risk>
6. <https://pubmed.ncbi.nlm.nih.gov/26196262/>
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FatsOfLife.com

This content is for health care professionals only. It is not intended to be a substitute for personal medical advice.

# Reaching Healthcare Practitioners – Tools For You



## Brain Development

In early 2018, the American Academy of Pediatrics recognized the importance of DHA and AR to support brain development in the first 1000 days of life.

[Click here to read the study](#)



## Visual Development

Evidence suggests that maternal DHA intake contributes to the normal visual development in utero and in breastfed babies up to 12 months of age.

[Click here to read the study](#)



## Pre-Term Birth

Research consistently demonstrates a benefit in decreasing the likelihood of early preterm birth and also supports omega-3 intake and healthier birth weight. Specifically, one meta analysis showed a 58% reduction in early pre-term birth in mothers with higher omega-3 intake.

[Click here to read the research](#)

A hub for health practitioners on the benefits of EPA and DHA omega-3s

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# Summary:

- ALA, EPA and DHA are all omega-3s, but we need more EPA and DHA in our diets
- EPA and DHA omega-3s are associated with **heart** health, **brain** health (cognition and mental health), **eye** health, and **prenatal/maternal** health
- To boost blood levels of EPA and DHA, seafood meals are good but **seafood + supplements are better**
- **Consumer awareness** of omega-3s is high, but intake is still lacking. **Communicating effectively** – to them directly and via influencers – can help change behavior.





# Questions?

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