



GLOBAL ORGANIZATION FOR EPA AND DHA OMEGA-3S

April 6, 2018

Brazilian Health Regulatory Agency (Anvisa)
National Institute of Metrology, Quality and Technology (INMETRO)
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Submitted via email to: barreirastecnicas@inmetro.gov.br

RE: *Consulta Pública nº 457, de 28 de dezembro de 2017*

To Whom It May Concern:

The Global Organization for EPA and DHA Omega-3s (GOED) is a 200+ member association of processors, refiners, manufacturers, distributors, marketers, retailers and supporters of products containing eicosapentaenoic acid (EPA) and docosahexaenoic acid (DHA) omega-3 fatty acids. GOED is extremely interested in ensuring that consumers continue to have access to safe, high quality EPA and DHA products. Thus said, GOED thanks ANVISA for the opportunity to provide comments on Draft Resolution Number 457 of December 28, 2017.

Annex II

GOED notes a lack of a minimum level of EPA+DHA from birth to 18 years and believes this is a missed opportunity to communicate the benefits of EPA+DHA and thus encourage adequate intake as part of a healthy lifestyle. The benefits of EPA and DHA are particularly well-documented from birth to two years old.¹

In addition, GOED notes the relatively low minimum daily levels for adults (i.e. 37.5 mg EPA+DHA) and pregnant and lactating women (i.e. 45 mg EPA+DHA with at least 30 mg from DHA). There are numerous global intake recommendations across the lifecycle which are supported by sound science and provided for your reference as an attachment to this letter. You'll note that the minimum recommended intake for adults and pregnant and lactating women starts at 250 mg EPA+DHA (with additional DHA for pregnant/lactating women) per day.

Annex III

GOED encourages increasing the maximum daily levels from 2,000 to 3,000 mg for EPA+DHA for adults and pregnant/lactating women. It is important to note the absence of safety concerns associated with higher daily levels [e.g. United States Food and Drug Administration (FDA); 3

¹ Shulkin M, Pimpin L, Bellinger D, Kranz S, Fawzi W, Duggan C and Mozaffarian D (2018). n-3 Fatty Acid Supplementation in Mothers, Preterm Infants, and Term Infants and Childhood Psychomotor and Visual Development: A Systematic Review and Meta-Analysis. J Nutr. 148:409-418. <https://www.ncbi.nlm.nih.gov/pubmed/29546296>



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grams/day)², the European Food Safety Authority (EFSA; 5 grams/day)³ and the Norwegian Scientific Committee for Food Safety (VKM; 6.9 grams/day)⁴]. In addition, there are documented benefits associated with daily intakes exceeding 2,000 mg EPA+DHA. Some of those benefits are associated with EU authorized health claims as detailed in GOED's comments on Annex IV.

Annex IV

While the ability of EPA/DHA to reduce triglycerides is a well-established benefit and thus provides a compelling and substantiated health claim, GOED believes ANVISA should consider adopting additional health claims associated with other established benefits. For this reason, GOED brings to your attention EPA- and DHA-related health claims that have been methodically evaluated by the European Food Safety Authority (EFSA) and authorized for use in the EU. From GOED's perspective, because of the EU's rigorous claims evaluation process, the following are worth considering for adoption.

DHA contributes to maintenance of normal brain function

<https://efsa.onlinelibrary.wiley.com/doi/abs/10.2903/j.efsa.2010.1734>

<https://efsa.onlinelibrary.wiley.com/doi/abs/10.2903/j.efsa.2011.2078>

Conditions of Use

- The claim may be used only for food which contains at least 40 mg of DHA per 100 g and per 100 kcal.
- To bear the claim, information shall be given to the consumer that the beneficial effect is obtained with a daily intake of 250 mg of DHA.

DHA contributes to the maintenance of normal vision

<https://efsa.onlinelibrary.wiley.com/doi/abs/10.2903/j.efsa.2010.1734>

<https://efsa.onlinelibrary.wiley.com/doi/abs/10.2903/j.efsa.2011.2078>

Conditions of Use

- The claim may be used only for food which contains at least 40 mg of DHA per 100 g and per 100 kcal.
- To bear the claim, information shall be given to the consumer that the beneficial effect is obtained with a daily intake of 250 mg of DHA.

EPA and DHA contribute to the normal function of the heart

<https://efsa.onlinelibrary.wiley.com/doi/abs/10.2903/j.efsa.2010.1796>

<https://efsa.onlinelibrary.wiley.com/doi/abs/10.2903/j.efsa.2011.2078>

Conditions of Use

- The claim may be used only for food which contains at least 40 mg EPA+DHA per 100 g and per 100 kcal.

² <https://www.federalregister.gov/documents/1997/06/05/97-14683/substances-affirmed-as-generally-recognized-as-safe-menhaden-oil>

³ <https://efsa.onlinelibrary.wiley.com/doi/epdf/10.2903/j.efsa.2012.2815>

⁴ <https://vkm.no/download/18.a665c1015c865cc85bab93e/1501509143166/c7a41adb79.pdf>



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- To bear the claim, information shall be given to the consumer that the beneficial effect is obtained with a daily intake of 250 mg of EPA and DHA.

DHA and EPA contribute to the maintenance of normal blood pressure

<https://efsa.onlinelibrary.wiley.com/doi/abs/10.2903/j.efsa.2009.1263>

<https://efsa.onlinelibrary.wiley.com/doi/abs/10.2903/j.efsa.2010.1796>

Conditions of Use

- The claim may be used only for food which provides a daily intake of 3 g of EPA and DHA.
- To bear the claim, information shall be given to the consumer that the beneficial effect is obtained with a daily intake of 3 g of EPA and DHA.
- When the claim is used on food supplements and/or fortified foods information shall also be given to consumers not to exceed a supplemental daily intake of 5 g of EPA and DHA combined.

DHA maternal intake contributes to the normal brain development of the foetus and breastfed infants.

<https://efsa.onlinelibrary.wiley.com/doi/abs/10.2903/j.efsa.2009.1007>

Conditions of Use:

- Information shall be given to pregnant and lactating women that the beneficial effect is obtained with a daily intake of 200 mg of DHA in addition to the recommended daily intake for omega-3 fatty acids for adults, i.e.: 250 mg DHA and EPA.
- The claim can be used only for food which provides a daily intake of at least 200 mg DHA.

DHA intake contributes to the normal visual development of infants up to 12 months of age.

<https://efsa.onlinelibrary.wiley.com/doi/full/10.2903/j.efsa.2009.941>

<https://efsa.onlinelibrary.wiley.com/doi/abs/10.2903/j.efsa.2009.1003>

<https://efsa.onlinelibrary.wiley.com/doi/abs/10.2903/j.efsa.2009.1004>

Conditions of Use:

- Information shall be given to the consumer that the beneficial effect is obtained with a daily intake of 100 mg of DHA. When the claim is used on follow-on formula, the food shall contain at least 0.3 % of the total fatty acids as DHA.

DHA maternal intake contributes to the normal development of the eye of the foetus and breastfed infants.

<https://efsa.onlinelibrary.wiley.com/doi/abs/10.2903/j.efsa.2009.1006>

Conditions of Use

- Information shall be given to pregnant and lactating women that the beneficial effect is obtained with a daily intake of 200 mg of DHA in addition to the recommended daily intake for omega-3 fatty acids for adults, i.e.: 250 mg DHA and eicosapentaenoic acid (EPA).
- The claim can be used only for food which provides a daily intake of at least 200 mg DHA.



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Thank you in advance for your consideration of GOED's comments. Should you need additional information related to this consultation or in the future concerning another issue related to EPA/DHA, please do not hesitate to contact me at harry@goedomega3.com or +1 612-600-6499.

Sincerely,

A handwritten signature in blue ink, appearing to read 'Harry B. Rice', written over a light blue horizontal line.

Harry B. Rice, Ph.D.
Vice-President, Regulatory & Scientific Affairs



Global Recommendations for EPA and DHA Intake (Rev 5 April 2018)

Country/Region	Organization	Org. Type	Target Population	Recommendation	Publication Date
Global	World Health Organization (WHO)/Food and Agriculture Organization of the United Nations (FAO) ¹	Authoritative Body	General adult population	<ul style="list-style-type: none"> n-3 PUFAs: 1-2% of energy/day 	2003
	Food and Agriculture Organization of the United Nations (FAO) ²	Authoritative Body	0-6 months	<ul style="list-style-type: none"> DHA: 0.1-0.18%E 	2008
			6-24 months	<ul style="list-style-type: none"> DHA: 10-12 mg/kg bw 	
			2-4 years	<ul style="list-style-type: none"> EPA + DHA: 100-150 mg 	
			4-6 years	<ul style="list-style-type: none"> EPA + DHA: 150-200 mg 	
			6-10 years	<ul style="list-style-type: none"> EPA + DHA: 200-250 mg 	
			Adults as part of healthy diet	<ul style="list-style-type: none"> 0.250-2.0 g 	
	International Society for the Study of Fatty Acids and Lipids (ISSFAL)	Expert Scientific Organization	General adult population for cardiovascular health ³	<ul style="list-style-type: none"> at least 500 mg/day of EPA+DHA 	2004
			Pregnant/Lactating Women ⁴	<ul style="list-style-type: none"> DHA: 200 mg/day 	2007
	NATO Workshop on ω -3 and ω -6 Fatty Acids ⁵	Workshop	General Adult Population	<ul style="list-style-type: none"> 300-400 mg EPA+DHA/day 	1989
World Association of Perinatal Medicine ⁶	Working Group	Pregnant and Lactating Women	<ul style="list-style-type: none"> 200 mg DHA/ day 	2008	
		Infants, when breastfeeding is not possible	<ul style="list-style-type: none"> 0.2-0.5% wt total fat 		
World Gastroenterology Organisation ⁷	Expert Scientific Organization	General Adult Population	<ul style="list-style-type: none"> 3-5 servings/wk of fish 	2008	

Country/Region	Organization	Org. Type	Target Population	Recommendation	Publication Date
Australia	National Heart Foundation of Australia ⁸	Expert Scientific Organization	Primary prevention of coronary heart disease	2–3 servings of fish (including oily fish) per week which provides about 250–500 milligrams of marine-sourced omega-3s, EPA and DHA, per day	2015
			People with existing heart disease	2–3 servings of fish and seafood as part of a heart-healthy diet	
	Australian & New Zealand Health Authorities (Department of Health & Ageing, National Health & Medical Research Council) ⁹	Authoritative Bodies	Infants (0-12 mo)	<ul style="list-style-type: none"> 0.5 g n-3 polyunsaturated fats/day adequate intake 	2006
			Boys & Girls (1-3 yrs)	<ul style="list-style-type: none"> 40 mg total LC n-3 (DHA+EPA+DPA) / day adequate intake 	
			Boys & Girls (4-8 yrs)	<ul style="list-style-type: none"> 55 mg total LC n-3 (DHA+EPA+DPA) / day adequate intake 	
			Boys & Girls (9-13 yrs)	<ul style="list-style-type: none"> 70 mg total LC n-3 (DHA+EPA+DPA) / day adequate intake 	
			Boys (14-18 yrs)	<ul style="list-style-type: none"> 125 mg total LC n-3 (DHA+EPA+DPA) / day adequate intake 	
			Girls (14-18 yrs)	<ul style="list-style-type: none"> 85 mg total LC n-3 (DHA+EPA+DPA) / day adequate intake 	
			Men (19+ yrs)	<ul style="list-style-type: none"> 160 mg total LC n-3 (DHA+EPA+DPA) per day adequate intake 	
			Women (19+ yrs)	<ul style="list-style-type: none"> 90 mg total LC n-3 (DHA+EPA+DPA) / day adequate intake 	
			Pregnancy (14 -18 yrs)	<ul style="list-style-type: none"> 110 mg total LC n-3 	

Country/Region	Organization	Org. Type	Target Population	Recommendation	Publication Date
				(DHA+EPA+DPA) / day	
			Pregnancy (19-50 yrs)	▪ 115 mg total LC n-3 (DHA+EPA+DPA) / day	
			Lactating (14-18 yrs)	▪ 140 mg LC n-3 (DHA+EPA+DPA) / day	
			Lactating (19-50 yrs)	▪ 145 mg LC n-3 (DHA+EPA+DPA) / day	
			Men-Suggested dietary target to reduce chronic disease risk	▪ 610mg LC n-3 (DHA+EPA+DPA) / day	
			Women-Suggested dietary target to reduce chronic disease risk	▪ 430mg LC n-3 (DHA+EPA+DPA) / day	
	Defence Science and Technology Organisation, Australian Government Department of Defence ¹⁰	Authoritative Body	Male soldiers	▪ 610mg EPA+DPA+DHA/day	2009
			Female soldiers	▪ 430mg EPA+DPA+DHA / day	
	Australasian Society of Clinical Immunology and Allergy Limited (ASCIA) ⁷²	Expert Scientific Organization	Pregnant and lactating women	▪ Up to 3 serves of oily fish per week may be beneficial, as there is some evidence that omega-3 fatty acids (found in oily fish) during pregnancy and breastfeeding may help prevent eczema in early life.	2016
Europe	Expert Workshop of the European Academy of Nutritional Sciences ¹¹	Expert Scientific Organization	General Adult Population	▪ People who do not eat fish should consider obtaining 200 mg EPA + DHA from other sources	1998
	European Food Safety Authority ¹²	Authoritative Body	General Adult Population	▪ 250mg EPA+DHA /day	2010

Country/Region	Organization	Org. Type	Target Population	Recommendation	Publication Date
			Pregnant & Lactating Women	<ul style="list-style-type: none"> ▪ 100-200 mg DHA / day in addition to general adult requirements 	
			Children 7-24 months	<ul style="list-style-type: none"> ▪ 100 mg DHA / day 	
			Children 2-18 years	<ul style="list-style-type: none"> ▪ 250mg EPA+DHA /day 	
	The PeriLip and EARNEST projects of the European Commission ⁴	Expert Scientific Organization	Pregnant & Lactating Women	<ul style="list-style-type: none"> ▪ 200mg DHA/day 	2007
	The Sixth Joint Task Force of the European Society of Cardiology and Other Societies on Cardiovascular Disease Prevention in Clinical Practice (constituted by representatives of 10 societies and by invited experts) ¹³	Expert Scientific Organization	General Adult Population for Cardiovascular Disease Risk Reduction	<ul style="list-style-type: none"> ▪ Eat fish 1-2 times per week, one of which to be oily fish. 	2016
	Task Force on the Management of ST-Segment Elevation Acute Myocardial Infarction of the European Society of Cardiology ¹⁴	Expert Scientific Organization		<ul style="list-style-type: none"> • Increase consumption of omega-3 fatty acid (oily fish) • Supplementation with 1 g of fish oil in patients with a low intake of oily fish ▪ omega-3 supplements should be considered in patients who do not tolerate statins, especially if TG >150 mg/dL (1.7 mmol/L) 	2008
	Task Force for the management of dyslipidaemias of the European Society of Cardiology (ESC) and the European Atherosclerosis Society (EAS) ¹⁵	Expert Scientific Organization	General Adult Population for Cardiovascular Disease Risk Reduction	<ul style="list-style-type: none"> ▪ At least two or three portions of fish per week 	2011
			Secondary prevention of CVD	<ul style="list-style-type: none"> ▪ 1 g/day n-3 unsaturated fats, which is not easy to 	

Country/Region	Organization	Org. Type	Target Population	Recommendation	Publication Date
				derive exclusively from natural food sources, and use of nutraceutical and/or pharmacological supplements may be considered	
	The Task Force for the Diagnosis and Treatment of Acute and Chronic Heart Failure 2012 of the European Society of Cardiology. Developed in collaboration with the Heart Failure Association (HFA) of the ESC ⁶⁴	Expert Scientific Organization	patients with symptomatic (NYHA class II–IV) systolic heart failure	An n-3 PUFA preparation may be considered to reduce the risk of death and the risk of cardiovascular hospitalization in patients treated with an ACE inhibitor (or ARB), beta-blocker, and an MRA (or ARB)	2012
	The European Society for Clinical Nutrition and Metabolism (ESPEN) ⁷³	Expert Scientific Organization	surgical and non-surgical ICU patients	<ul style="list-style-type: none"> ▪ supports the use of fish oil in nutrition support in surgical and non-surgical ICU patients 	2014
France	AFFSA ¹⁶	Authoritative Body	General Adult Population	<ul style="list-style-type: none"> ▪ 500 mg EPA + DHA / day ▪ 250 mg EPA / day ▪ 250 mg DHA / day 	2010
			Metabolic Syndrome-Diabetes-Obesity Risk Reduction	<ul style="list-style-type: none"> ▪ 500 mg EPA + DHA / day 	
			Cardiovascular Risk Reduction	<ul style="list-style-type: none"> ▪ 500-750 mg EPA + DHA / day 	
			Breast & Colon Cancer Risk Reduction	<ul style="list-style-type: none"> ▪ 500 mg EPA + DHA / day 	
			Neuropsychiatric Risk Reduction	<ul style="list-style-type: none"> ▪ >200-300 mg EPA + DHA / day 	
			Age-Related Macular Degeneration Risk Reduction	<ul style="list-style-type: none"> ▪ 500 mg EPA + DHA / day 	
			Infants (0-6 months)	<ul style="list-style-type: none"> ▪ 0.32% of fats from DHA 	

Country/Region	Organization	Org. Type	Target Population	Recommendation	Publication Date
				<ul style="list-style-type: none"> ▪ EPA < DHA 	
			Infants & Toddlers (6 months to 3 years)	<ul style="list-style-type: none"> ▪ 70mg DHA /day 	
			Children (3-9 years)	<ul style="list-style-type: none"> ▪ 125mg DHA /day ▪ 250mg EPA+DHA /day 	
			Adolescents (9 to 18 years)	<ul style="list-style-type: none"> ▪ 250mg DHA /day ▪ 250mg EPA+DHA /day 	
			Pregnant & Lactating Women	<ul style="list-style-type: none"> ▪ 250mg DHA /day ▪ 250mg EPA+DHA day 	
	ANSES ⁷⁷	Authoritative Body	Adult men and women	<ul style="list-style-type: none"> ▪ 250 mg/day DHA ▪ 250 mg/day EPA 	2016
Austria	Austrian Society for Nutrition (as part of joint effort with Germany and Switzerland) ¹⁷	Expert Scientific Organization	General adult population	<ul style="list-style-type: none"> ▪ 250mg LCPUFA / day for primary prevention of CVD 	2008
			General adult population	<ul style="list-style-type: none"> ▪ 0.5% of energy total n-3 PUFA intake 	
			CHD Patients	<ul style="list-style-type: none"> ▪ 1g LCPUFA / day for secondary prevention of CVD 	
			Pregnant & nursing women	<ul style="list-style-type: none"> ▪ At least 200mg DHA / day 	
Germany	German Society for Nutrition ⁶⁹	Expert Scientific Organization	Vegan adult population	<ul style="list-style-type: none"> ▪ No specific recommendation, but classified EPA and DHA as "potentially critical nutrients" for strict vegans. Critical nutrients should be added – either in dietary supplements or fortified foods to achieve recommended 250 mg/day EPA+DHA. 	2016
	German Society for Nutrition ⁶⁷	Expert	General adult population	<ul style="list-style-type: none"> ▪ 250 mg/day EPA+DHA for 	2015

Country/Region	Organization	Org. Type	Target Population	Recommendation	Publication Date
		Scientific Organization		primary prevention of CHD	
	German Society for Nutrition (as part of joint effort with Austria and Switzerland) ¹⁷	Expert Scientific Organization	General adult population	<ul style="list-style-type: none"> ▪ 250mg LCPUFA / day for primary prevention of CVD 	2008
General adult population			<ul style="list-style-type: none"> ▪ 0.5% of energy total n-3 PUFA intake 		
CHD Patients			<ul style="list-style-type: none"> ▪ 1g LCPUFA / day for secondary prevention of CVD 		
Pregnant & nursing women			<ul style="list-style-type: none"> ▪ At least 200mg DHA / day 		
	Healthy Start - Young Family Network ^{25, 45, 57}	Expert Scientific Organization	Pregnant women	<ul style="list-style-type: none"> • to supply the recommended 200mg/day of DHA, consume 2 servings/wk of marine fish, including at least one serving of fatty sea fish (such as mackerel, Herring, sardines, salmon) ▪ pregnant women who do not regularly consume fish, the use of supplements with the Omega-3 fatty acid DHA is recommended 	2012-2013
Italy	Multiple (see publication) ⁷⁰	Multiple	Pregnant Women	<ul style="list-style-type: none"> ▪ An adequate intake of DHA, essential for the growth and development of brain and retina, is of utmost importance 	2016
	Italian Society of Human Nutrition ⁷¹	Expert	Children 2 years and	<ul style="list-style-type: none"> ▪ at least 250 mg/day in 	2014

Country/Region	Organization	Org. Type	Target Population	Recommendation	Publication Date
		Scientific Organization	older	the form of EPA+DHA	
			Children less than 2 years old	<ul style="list-style-type: none"> for neurological and cognitive development, 100 mg/day of DHA, in addition to 250 mg/day of EPA+DHA 	
	Ministry of Health, Department of Prevention and Communication General, General Administration of Veterinary Health and Food ⁷⁶	Authoritative Body	elderly	<ul style="list-style-type: none"> In the absence of eating fish at least 3X/week, obtain omega-3s through supplementation 	unknown
Switzerland	Swiss Society for Nutrition Research / Swiss Nutrition Association (as part of joint effort with Austria and Germany) ¹⁷	Expert Scientific Organization	General adult population	<ul style="list-style-type: none"> 250mg LCPUFA / day for primary prevention of CVD 	2008
			General adult population	<ul style="list-style-type: none"> 0.5% of energy total n-3 PUFA intake 	
			CHD Patients	<ul style="list-style-type: none"> 1g LCPUFA / day for secondary prevention of CVD 	
			Pregnant & nursing women	<ul style="list-style-type: none"> At least 200mg DHA / day 	
Poland	Polish Gynecological Society ⁶⁰	Scientific Organization	Pregnant Women	<ul style="list-style-type: none"> pregnant women at low risk of preterm birth should take at least 600 mg/day DHA pregnant women at high risk of preterm birth should take at least 1000 mg/day DHA 	2014
Belgium	Superior Health Council of Belgium ¹⁸	Authoritative Body	Pregnant & nursing women	<ul style="list-style-type: none"> 250mg DHA / day 	2004
			General adult population (primary	<ul style="list-style-type: none"> Two servings of fatty fish/wk 	

Country/Region	Organization	Org. Type	Target Population	Recommendation	Publication Date
			cardioprevention)		
			secondary cardioprevention	<ul style="list-style-type: none"> 1g EPA+DHA per day 	
Netherlands	Health Council of the Netherlands	Authoritative Body	0-5 months ¹⁹	<ul style="list-style-type: none"> DHA: 20 mg/kg/day 	2001
			6-11 months ¹⁹	<ul style="list-style-type: none"> N-3 fatty acids from fish: 15-20 mg/kg/day 	
			1-18 years old ¹⁹	<ul style="list-style-type: none"> N-3 fatty acids from fish: 15-20 mg/kg/day 	
			19 years + ¹⁹	<ul style="list-style-type: none"> N-3 fatty acids from fish: 20 mg/kg/day 	
			Pregnant women ¹⁹	<ul style="list-style-type: none"> N-3 fatty acids from fish: 20 mg/kg/day 	
			Lactating women ¹⁹	<ul style="list-style-type: none"> N-3 fatty acids form fish: 20 mg/kg/day 	
			Adults ²⁰	<ul style="list-style-type: none"> Eat one serving of fish weekly, preferably oily fish 	2015
Scandinavia	Nordic Council of Ministers ²¹	Authoritative Body	6-11 months	<ul style="list-style-type: none"> n-3 fatty acids should contribute at least 1 E% 	2013
			12-23 months	<ul style="list-style-type: none"> n-3 fatty acids should contribute at least 0.5 E% 	
			Adults and children from 2 yrs of age	<ul style="list-style-type: none"> n-3 fatty acids should contribute at least 1.0 E% 	
			Pregnant & Lactating Women	<ul style="list-style-type: none"> 1 E% from n-3 fatty acids of which 200 mg/d should be DHA 	
United Kingdom	British Nutrition Foundation ²²	Expert Scientific Organization	Adults, 19-50 yrs	<ul style="list-style-type: none"> one to two portions of oil-rich fish per week, which will provide around 2-3g of the very long chain n-3 fatty acids weekly intake of 1.5g of EPA + DHA 	1999

Country/Region	Organization	Org. Type	Target Population	Recommendation	Publication Date
	Committee on Medical Aspects of Food Policy (COMA) ²³	Authoritative Body	Adults	<ul style="list-style-type: none"> at least two portions of fish, of which one should be oily, weekly n-3 PUFA intake: 0.2 g/day 	1994
	Scientific Advisory Committee on Nutrition (SACN) ²⁴	Authoritative Body	Adults	<ul style="list-style-type: none"> at least two portions of fish, of which one should be oily, weekly n-3 PUFA intake: 0.45 g/day 	2004
	National Institute for Health and Clinical Excellence (May 2008) ²⁶	Authoritative Body	People at high risk of or with CVD	<ul style="list-style-type: none"> consume at least two portions of fish per week, including a portion of oily fish 	2008
	Joint British Societies ²⁷	Expert Scientific Organization	General Adult Population	<ul style="list-style-type: none"> Regular intake of fish and other sources of omega 3 fatty acids (at least two servings of fish per week) 	2005
	Irish Heart Foundation ⁵⁴	Expert Scientific Organization	General Adult Population	<ul style="list-style-type: none"> 200 mg/day long-chain fatty acids 	
	British Dietetic Association ⁶⁶	Expert Scientific Organization	General Population	<ul style="list-style-type: none"> Two Portions per week of fish, one of which should be oily; equals ~450mg EPA+DHA 	2014
	National Collaborating Center for Primary Care ²⁸	Expert Scientific Organization	General Adult Population	<ul style="list-style-type: none"> At least two servings of omega-3 fatty acid containing fish per week 	2007
			People with Established CVD	<ul style="list-style-type: none"> At least two servings of omega-3 fatty acid containing fish per week week) 	
Spain	Spanish Society of Intensive Care	Expert	Individuals with acute	<ul style="list-style-type: none"> Administration of 1 g/day 	2011

Country/Region	Organization	Org. Type	Target Population	Recommendation	Publication Date
	Medicine and Coronary Units and Spanish Society of Parenteral and Enteral Nutrition ²⁹	Scientific Organization	coronary syndrome and patients with chronic heart failure	of omega-3 (EPA+DHA) in the form of fish oil can prevent sudden death in the treatment of acute coronary syndrome and can also help to reduce hospital admission for cardiovascular events in patients with chronic heart failure	
	Spanish Society of Intensive Care Medicine and Coronary Units and Spanish Society of Parenteral and Enteral Nutrition ³⁰	Expert Scientific Organization	patients with acute lung injury (ALI) or acute respiratory distress syndrome (ARDS)	<ul style="list-style-type: none"> An enteral diet enriched with ω-3 diet fatty acids may have a beneficial effects 	2011
	Spanish Menopause Society ⁷⁵	Expert Scientific Organization	Postmenopausal women	<ul style="list-style-type: none"> 250 mg/day EPA+DHA 	2017
Russia	Customs Union Commission ⁶¹	Authoritative Body	Adults	<ul style="list-style-type: none"> EPA 600 mg DHA 700 mg 	2010
Brazil	Brazilian Society of Cardiology ³¹	Expert Scientific Organization	Patients with coronary artery disease	<ul style="list-style-type: none"> supplementation of 1 g / day of omega-3 (EPA + DHA) capsules 	2007
	Brazilian Society of Cardiology ⁷⁴	Expert Scientific Organization	<p>persons with severe hypertriglyceridemia (>500 mg/dL) with risk of pancreatitis refractory to nonpharmacological measures and drug treatments</p> <p>high-risk individuals, such as those who have already suffered</p>	<ul style="list-style-type: none"> Supplementation with marine omega-3 PUFAs (2-4 g/day) should be recommended for At least two fish meals per week, as part of a healthy diet, should be 	2013

Country/Region	Organization	Org. Type	Target Population	Recommendation	Publication Date
			myocardial infarction.	recommended to decrease cardiovascular risk.	
			low- to moderate-risk individuals who do not consume two fish meals per week	<ul style="list-style-type: none"> Supplementation with marine omega-3 PUFAs (about 1 g/day) can be recommended to reduce cardiovascular risk 	
			high-risk individuals, such as survivors of myocardial infarction or systolic failure	<ul style="list-style-type: none"> Supplementation with marine omega-3 PUFAs (about 1 g/day) may be recommended to reduce cardiovascular risk 	
	Brazilian Association of Nutrition (ABRAN) ⁶⁵	Expert Scientific Organization	Women who are pregnant or lactating	<ul style="list-style-type: none"> 200 mg/day DHA 	2014
			Infants < 6 months	0.2 to 0.5% of total lipids as DHA	2014
United States	National Lipid Association ⁶⁸	Expert Scientific Organization	General	Therapeutic dosages of EPA + DHA for TG reduction are 2.0 to 4.0 g/day. Strength of Evidence = B; Quality of Evidence = Moderate	2015
United States	National Lipid Association ⁶⁸	Expert Scientific Organization	General	For primary and secondary prevention of atherosclerotic cardiovascular disease (ASCVD), consuming ≥2 servings/week of fish/seafood (preferably oily) is recommended. One serving is equal to 3.5 to 4 oz. and should ideally not be prepared using deep-frying. Strength of Evidence = A;	2015

Country/Region	Organization	Org. Type	Target Population	Recommendation	Publication Date
				Quality of Evidence = Moderate	
United States	National Lipid Association ⁶⁸	Expert Scientific Organization	General	For patients with known ASCVD, suggestive, but not conclusive, evidence from RCTs is available for a benefit of long-chain omega-3 fatty acid supplementation at ~1 g/day EPA + DHA on cardiac mortality, but not non-fatal ASCVD events. EPA + DHA supplements may be considered for such patients, especially those who do not consume the recommended intakes of EPA + DHA from dietary sources. Strength of Evidence = C; Quality of Evidence = Low	2015
United States	National Lipid Association ⁶⁸	Expert Scientific Organization	General	For patients with heart failure, 1 g/day of EPA + DHA is recommended as an adjunct to heart failure therapy. Strength of Evidence = A; Quality of Evidence = Moderate	2015
United States	National Lipid Association ⁶⁸	Expert Scientific Organization	Women	Non-statin drug therapy with cholesterol absorption inhibitor, bile acid sequestrant, fibric acid, nicotinic acid, or long-chain omega-3 fatty acid concentrates (the latter	2015

Country/Region	Organization	Org. Type	Target Population	Recommendation	Publication Date
				currently indicated only for very high TG) may be considered for women with contraindications for, or intolerance to, statin therapy, or in combination with statin therapy for patients who need additional lowering of atherogenic cholesterol to achieve treatment goals. Strength of Evidence = A; Quality of Evidence = High	
United States	National Lipid Association ⁶⁸	Expert Scientific Organization	Pregnant and Nursing Women	Very high TG (≥ 500 mg/dL) may be treated during pregnancy with diet/lifestyle management plus prescription omega-3 fatty acids; fenofibrate or gemfibrozil may be administered beginning early in the second trimester, based on clinical judgment. These agents may be used during breast feeding. Strength of Evidence = B; Quality of Evidence = Low	2015
United States	National Lipid Association ⁶⁸	Expert Scientific Organization	HIV Infected Persons	Elevated TG ≥ 500 mg/dL that is refractory to lifestyle modification or changes in ART (if an option) should generally be treated with either a fibrate (fenofibrate preferred) or prescription	2015

Country/Region	Organization	Org. Type	Target Population	Recommendation	Publication Date
				omega-3 fatty acids. After TG is lowered (<500 mg/dL), non-HDL-C and LDL-C should be reassessed for appropriate management. Strength of Evidence = B; Quality of Evidence = Moderate	
United States	National Lipid Association ⁶⁸	Expert Scientific Organization	Patients with Residual Risk Despite Statin and Lifestyle Therapy	Fibrates and prescription omega-3 fatty acids are first-line drug choices for patients with TG ≥500 mg/dL, although consideration may be given to using statin therapy as a first-line drug in patients with TG 500-999 without a history of pancreatitis. Strength of Evidence = E; Quality of Evidence = Moderate	2015
United States	National Lipid Association ⁶⁸	Expert Scientific Organization	Patients with Residual Risk Despite Statin and Lifestyle Therapy	In patients with elevated TG (200 to 499 mg/dL) on maximum tolerated statin therapy who are at their LDL-C goal but not their non-HDL-C goal, the addition of therapies that primarily lower TG and VLDL-C (fibrates, high-dose omega-3 fatty acids) may be considered to help achieve atherogenic cholesterol goals. Subgroup analyses from cardiovascular outcomes studies provide	2015

Country/Region	Organization	Org. Type	Target Population	Recommendation	Publication Date
				suggestive evidence of reduced ASCVD event risk with the addition of a TG-lowering agent to statin therapy, particularly in patients with the combination of elevated TG and low HDL-C. Strength of Evidence = B; Quality of Evidence = Moderate	
United States	Institute of Medicine ³²	Authoritative Body	Boys & Girls 1-3 yrs	▪ ALA: 0.7 g/day of which ~ 10% EPA+DHA	2005
			Boys & Girls 4-8 yrs	▪ ALA: 0.9 g/day of which ~ 10% EPA+DHA	
			Boys 9-13 yrs	▪ ALA: 1.2 g/day of which ~ 10% EPA+DHA	
			Boys 14-18 yrs	▪ ALA: 1.6 g/day of which ~ 10% EPA+DHA	
			Girls 9-13 yrs	▪ ALA: 1.0 g/day of which ~ 10% EPA+DHA	
			Girls 14-18 yrs	▪ ALA: 1.1 g/day of which ~ 10% EPA+DHA	
			Adult men ≥ 19 yrs	▪ ALA: 1.6 g/day of which ~ 10% EPA+DHA	
			Adult women ≥ 19 yrs	▪ ALA: 1.1 g/day of which ~ 10% EPA+DHA	
	American Diabetes Association ⁵⁵	Expert Scientific Organization	Individuals with diabetes	Eat fish (particularly fatty fish) at least two times (two servings) per week.	2013
	Academy of Nutrition and Dietetics (formerly American Dietetics Association)	Expert Scientific Organization	General Adult Population ⁵⁶	▪ 500 mg EPA+DHA per day	2014
			Varied ⁵³	Those with increased requirements (e.g., pregnant	2003

Country/Region	Organization	Org. Type	Target Population	Recommendation	Publication Date
				and lactating women or those with diseases associated with poor essential fatty acid status) or those at risk for poor conversion (e.g., people with diabetes) may benefit from direct sources of long-chain n-3 fatty acids, such as DHA-rich microalgae	
	March of Dimes ³⁴	Expert Scientific Organization	Pregnant and Nursing Women	<ul style="list-style-type: none"> ▪ 200 mg DHA/day 	2009
	Omega-3 Fatty Acids Subcommittee, assembled by the Committee on Research on Psychiatric Treatments of the American Psychiatric Association (APA) ³⁶	Expert Scientific Organization	Adults	<ul style="list-style-type: none"> ▪ Eat fish \geq 2X/wk 	2006
			Patients with mood, impulse control, or psychotic disorders	<ul style="list-style-type: none"> ▪ 1 g EPA + DHA / day 	
	American Heart Association	Expert Scientific Organization	Secondary prevention of CHD and sudden cardiac death among patients with prevalent CHD ³⁷	<ul style="list-style-type: none"> ▪ unspecified 	2017
			Secondary prevention of outcomes in patients with heart failure ³⁷	<ul style="list-style-type: none"> ▪ unspecified 	2017
			General adult population ⁵⁸	<ul style="list-style-type: none"> ▪ Fish with 500 mg or more of EPA+DHA per 85 g (3 oz cooked) can apply for the AHA Heart-Check food certification program at heartcheckmark.org. 	unknown
			Patients with high triglycerides ⁵¹	<ul style="list-style-type: none"> • ...increasing consumption of marine- 	2011

Country/Region	Organization	Org. Type	Target Population	Recommendation	Publication Date
				based omega-3 products,..., will further optimize triglyceride-lowering efforts.	
			Cardiovascular Disease Risk Reduction in Women ³⁸	<ul style="list-style-type: none"> ▪ Consume fish, especially oily fish, at least twice a week ▪ Consumption of omega-3 fatty acids in the form of fish or in capsule form may be considered in women with hypercholesterolemia and/or hypertriglyceridemia for primary and secondary prevention 	2011
			Patients with Coronary and Other Atherosclerotic Vascular Disease ³⁹	<ul style="list-style-type: none"> • For all patients, it may be reasonable to recommend omega-3 fatty acids from fish or fish oil capsules (1 g/d) for CVD risk reduction 	2011

Country/Region	Organization	Org. Type	Target Population	Recommendation	Publication Date
	U.S. Dept of Agriculture and U.S. Department of Health and Human Services ⁴⁰	Authoritative Body	General adult population	<ul style="list-style-type: none"> Consumption of about eight 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 	2016
			Pregnant or breastfeeding women	<ul style="list-style-type: none"> consumption by women who are pregnant or breastfeeding of at least eight ounces per week from seafood choices that are sources of DHA is associated with improved infant health outcomes 	
	Executive Office of the President ⁵⁰	Authoritative Body	General population	<ul style="list-style-type: none"> Dietary Guidelines and Food Guide Pyramid should be revised to emphasize the benefits of...increasing consumption of foods rich in omega-3 fatty acids 	2003
	Agency for Healthcare Research and	Authoritative	General population	<ul style="list-style-type: none"> Fish and fish oil 	2004

Country/Region	Organization	Org. Type	Target Population	Recommendation	Publication Date
	Quality ⁴⁹	Body		supplements reduce the risk of cardiovascular disease	
	American Academy of Pediatrics ⁴¹	Expert Scientific Organization	Nursing Women	<ul style="list-style-type: none"> The mother's diet should include an average daily intake of 200 to 300 mg of the ω-3 long-chain PUFAs (DHA) to guarantee a sufficient concentration of preformed DHA in the milk. Consumption of 1 to 2 portions of fish (e.g., herring, canned light tuna, salmon) per week will meet this need. The concern regarding the possible risk from intake of excessive mercury or other contaminants is offset by the neurobehavioral benefits of an adequate DHA intake and can be minimized by avoiding the intake of predatory fish (e.g., pike, marlin, mackerel, tile fish, swordfish). Poorly nourished mothers or those on selective vegan diets may 	2012

Country/Region	Organization	Org. Type	Target Population	Recommendation	Publication Date
				require a supplement of DHA as well as multivitamins	
Canada	Minister of National Health and Welfare, Canada ⁴²	Authoritative Body	General adult population	<ul style="list-style-type: none"> 1.2-1.6 g/day total n-3 PUFAs (ALA, EPA, DHA) 	1990
	Dietitians of Canada ³³	Expert Scientific Organization	General adult population	<ul style="list-style-type: none"> 500 mg n-3 long-chain PUFAs/day 	2007
India	Cardiology Society of India ⁵⁹	Expert Scientific Organization	For patients with high triglycerides and patients after MI for secondary prevention	<ul style="list-style-type: none"> Omega-3 acid ethyl esters (2-4g/day) 	2012
China	Chinese Nutrition Society ⁶²	Expert Scientific Organization	0 up to 4 years	<ul style="list-style-type: none"> 100 mg/day DHA 	2014
			18+ years	<ul style="list-style-type: none"> 250 – 2000 mg /day EPA+DHA 	
			Pregnant & lactating women	<ul style="list-style-type: none"> 250 mg/day EPA+DHA of which 200 mg should be DHA 	
Japan	Ministry of Health, Labour and Welfare ⁴³	Authoritative Body	0-5 months – boys and girls	<ul style="list-style-type: none"> 0.9g total omega-3 per day 	2014
			6-11 months- boys and girls	<ul style="list-style-type: none"> 0.8g total omega-3 per day 	
			1-2 years – Boys	<ul style="list-style-type: none"> 0.7g total omega-3 per day 	
			1-2 years – Girls	<ul style="list-style-type: none"> 0.8g total omega-3 per day 	
			3-5 years – Boys	<ul style="list-style-type: none"> 1.3g total omega-3 per day 	
			3-5 years – Girls	<ul style="list-style-type: none"> 1.1g total omega-3 per day 	
			6-7 years – Boys	<ul style="list-style-type: none"> 1.4 total omega-3 per day 	
			6-7 years –Girls	<ul style="list-style-type: none"> 1.3g total omega-3 per 	

Country/Region	Organization	Org. Type	Target Population	Recommendation	Publication Date
				day	
			8-9 years – Boys	• 1.7g total omega-3 per day	
			8-9 years – Girls	• 1.4g total omega-3 per day	
			10-11 years – Boys	• 1.7g total omega-3 per day	
			10-11 years – Girls	• 1.5g total omega-3 per day	
			12-14 years – Boys	• 2.1g total omega-3 per day	
			12-14 years – Girls	• 1.8g total omega-3 per day	
			15-17 years – Boys	• 2.3g total omega-3 per day	
			15-17 years – Girls	• 1.7g total omega-3 per day	
			Adults (18-29 years) – Men	• 2.0g total omega-3 per day	
			18-29 years – Women	• 1.6g total omega-3 per day	
			30-49 years – Men	• 2.1g total omega-3 per day	
			30-49 years – Women	• 1.6g total omega-3 per day	
			50-69 years – Men	• 2.4g total omega-3 per day	
			50-69 years – Women	• 2.0g total omega-3 per day	
			Over 70 years – Men	• 2.2g total omega-3 per day	
			Over 70 years – Women	• 1.9g total omega-3 per	

Country/Region	Organization	Org. Type	Target Population	Recommendation	Publication Date
				day	
			Pregnant & Lactating Women	<ul style="list-style-type: none"> 1.8g total omega-3 per day 	
Malaysia	Ministry of Health	Authoritative Body	Acute ST Segment Elevation Myocardial Infarction ⁴⁶	<ul style="list-style-type: none"> Increase intake of omega 3-fatty acids by eating fish at least twice a week. 	2014 (3 rd edition)
			Women with CHD ⁴⁷	<ul style="list-style-type: none"> omega-3-fatty-acids (>1gm/day) have been found to be beneficial 	2007
			Management of Dyslipidemia ⁴⁸	<ul style="list-style-type: none"> A dose of 3-9 gm/day to lower TG levels A dose of 0.75-1 gm/day as secondary prevention to prevent sudden death 	2011
			For people with high risk or secondary prevention	<ul style="list-style-type: none"> 1000 mg EPA + DHA/day as supplement for people who don't eat fish 	2011
Singapore	Health Promotion Board ⁶³	Authoritative Body	General population	<ul style="list-style-type: none"> 2 servings/week fish 	2014
Thailand	Food and Drug Authority	Authoritative Body	General Population	<ul style="list-style-type: none"> EPA+DHA NMT 1000 mg/day 	Unknown – no reference located
Israel	Israel Heart Society ⁴⁴	Expert Scientific Organization	For the general public or primary prevention	<ul style="list-style-type: none"> 500-1000 mg EPA + DHA/day as fish 	2011

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