



## Seafood Health Facts: Making Smart choices Balancing the Benefits and Risks of Seafood Consumption *Resources for Healthcare Providers and Consumers*

### **Scientific Publications [1]**

These resources are for consumers, patients, and health professionals who are interested in reviewing the results of studies published in scientific or medical journals or by government agencies or health organizations. They are presented at this site in the format of abstracts or other summaries of scientific papers or government reports with a link to the original source.

### **2015-2020 Dietary Guidelines for Americans [2]**

The *2015-2020 Dietary Guidelines* provides five overarching Guidelines that encourage healthy eating patterns, recognize that individuals will need to make shifts in their food and beverage choices to achieve a healthy pattern, and acknowledge that all segments of our society have a role to play in supporting healthy choices. These Guidelines also embody the idea that a healthy eating pattern is not a rigid prescription, but rather, an adaptable framework in which individuals can enjoy foods that meet their personal, cultural, and traditional preferences and fit within their budget. Several examples of healthy eating patterns that translate and integrate the recommendations in overall healthy ways to eat are provided.

Chapter 4 of the report summarizes Foods and Nutrients to Increase, which includes information on their recommendations for seafood consumption and average EPA and DHA intakes for the general population and special groups. To view this report [click here](#) [2].

### **PUFA (Polyunsaturated Fatty Acid) Newsletter [3]**

This newsletter is designed for health professionals and provides detailed summaries of recent scientific studies on PUFAs, especially omega-3s and their derivatives, with full citations and links to related articles. This publication also includes occasional guest articles by prominent scientists in the field. The PUFA Newsletter and Fats of Life are written by nutrition scientist [Joyce A. Nettleton, D.Sc.](#) [4], with input from a Scientific Advisory Board below and other science and medical experts as needed. Each issue is reviewed by the board members before posting. The PUFA Newsletter is sponsored solely by DSM Nutritional Products, Inc., headquartered in Kaiseraugst, Switzerland. To view the latest issue of the PUFA Newsletter [click here](#) [3]:

### **JADA Article, July 2010, Intake of Fish and n-3 Fatty Acids and Future Risk of Metabolic Syndrome [5]**

Intake of Fish and n-3 Fatty Acids and Future Risk of Metabolic Syndrome, Inkyung Baik, PhD, Robert D. Abbott, PhD, J. David Curb, MD, PhD, Chol Shin, MD, PhD. *Journal of the American Dietetic Association*, Vol. 110, 7, July 2010, p.1018-1026.

#### Abstract

**Background:** Whether or not fish and n-3 fatty acid intake is associated with the metabolic syndrome risk has not been carefully evaluated. This study investigated the effect of fish and n-3 fatty acid intake on the incidence of metabolic syndrome and on the individual risk factors for the syndrome.

**Methods:** A population-based prospective cohort study included 3,504 male and female Koreans aged 40 to 69 years from the Korean Genome Epidemiology Study. At the beginning of follow-up, all individuals were free of metabolic syndrome and known cardiovascular disease. Each participant completed a food frequency questionnaire. Incident cases of metabolic syndrome were identified by biennial health examinations during a follow-up period between April 17, 2003, and November 17, 2006. Pooled logistic regression analysis was

applied to obtain an odds ratio (OR) of metabolic syndrome with its 95% confidence interval (CI) for fish or n-3 fatty acid intake.

Results: After controlling for potential cardiovascular risk factors, multivariate OR for metabolic syndrome was 0.43 (95% CI 0.23 to 0.83) for men who ate fish daily when compared with those eating fish less than once a week. Similarly, metabolic syndrome risk was halved for men in the top decile of n-3 fatty acid intake when compared with those in the bottom decile (OR 0.53, 95% CI 0.28 to 0.99). In particular, fish intake was significantly associated with triglyceride level and high-density lipoprotein cholesterol level among the metabolic syndrome components. For women, apparent associations were not observed between fish intake or n-3 fatty acid intake and metabolic syndrome risk.

Conclusions: In a prospective study, high consumption of fish and n-3 fatty acids was significantly associated with a lower risk of metabolic syndrome among men, but not among women. Whether or not encouraging fish intake can help prevent the development of metabolic syndrome warrants further studies.

[Click here to view this article](#) [5].

### **[January 20, 2010, Association of Marine Omega-3 Fatty Acid Levels With Telomeric Aging in Patients With Coronary Heart Disease, Journal of the American Medical Association Abstract](#)** [6]

Inkyung Baik, PhD, Robert D. Abbott, PhD, J. David Curb, MD, PhD, Chol Shin, MD, PhD

Context: Increased dietary intake of marine omega-3 fatty acids is associated with prolonged survival in patients with coronary heart disease. However, the mechanisms underlying this protective effect are poorly understood.

Objective: To investigate the association of omega-3 fatty acid blood levels with temporal changes in telomere length, an emerging marker of biological age.

Conclusion: Among this cohort of patients with coronary artery disease, there was an inverse relationship between baseline blood levels of marine omega-3 fatty acids and the rate of telomere shortening over 5 years.

To view this abstract from the Journal of the American Medical Association [click here](#) [6]:

### **[January 2009, Summary of Published Research on the Beneficial Effects of Fish Consumption and Omega-3 Fatty Acids for Certain Neurodevelopmental and Cardiovascular Endpoints, Draft Report from the U.S. Food and Drug Administration](#)** [7]

This report serves as a companion document to the Food and Drug Administration (FDA) draft report entitled "Report of Quantitative Risk and Benefit Assessment of Commercial Fish, Focusing on Fetal Neurodevelopmental Effects (Measured by Verbal Development in Children) and on Coronary Heart Disease and Stroke in the General Population." The information contained in this document represents an in-depth overview of the scientific literature regarding the health effects of fish and of the long chain omega-3 fatty acids eicosapentaenoic acid and docosahexaenoic acid on cardiovascular disease and neurodevelopment.

To view this research summary from the U.S. Food and Drug Administration [click here](#) [7]:

### **[2002, American Heart Association Scientific Statement on Fish Consumption, Fish Oil, Omega-3 Fatty Acids, and Cardiovascular Disease, Circulation 2002; 106:2747](#)** [8]

Statement Summary: Omega-3 fatty acids have been shown in epidemiological and clinical trials to reduce the incidence of CVD. Large-scale epidemiological studies suggest that individuals at risk for CHD benefit from the consumption of plant- and marine-derived omega-3 fatty acids, although the ideal intakes presently are unclear. Evidence from prospective secondary prevention studies suggests that EPA+DHA supplementation ranging from 0.5 to 1.8 g/d (either as fatty fish or supplements) significantly reduces subsequent cardiac and all-cause mortality. For -linolenic acid, total intakes of 1.5 to 3 g/d seem to be beneficial.

Collectively, these data are supportive of the recommendation made by the AHA Dietary Guidelines to include at least two servings of fish per week (particularly fatty fish). In addition, the data support inclusion of vegetable oils (eg, soybean, canola, walnut, flaxseed) and food sources (eg, walnuts, flaxseeds) high in - linolenic acid in a healthy diet for the general [population](#) [9]. The fish recommendation must be balanced with concerns about environmental pollutants, in particular PCB and methylmercury, described in state and federal advisories. Consumption of a variety of fish is recommended to minimize any potentially adverse effects due to environmental pollutants and, at the same time, achieve desired CVD health outcomes.

To view this American Heart Association Scientific Statement [click here](#) [8].

### **[Current Health Research on Seafood, NOAA Fish Watch Website](#) [10]**

This site contains a selected summary of current research and position papers on seafood and health. Studies featured at the site include research on omega-3 fatty acids in seafood and some seafood safety risks. The site was developed and published by the U.S. National Oceanic and Atmospheric Administration (NOAA) in cooperation with the Food and Drug Administration (FDA) and Environmental Protection Agency (EPA).

To visit this site [click here](#) [10].



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#### **Links**

[1] <https://www.seafoodhealthfacts.org/seafood-nutrition/scientific-publications>

[2] <http://www.cnpp.usda.gov/DGAs2010-PolicyDocument.htm>

[3] <http://www.fatsoflife.com/newsletter.php?nid=1&edition=this>

[4] <http://www.fatsoflife.com/about-us-1.php>

[5] [http://www.adajournal.org/article/S0002-8223\(10\)00394-9/abstract](http://www.adajournal.org/article/S0002-8223(10)00394-9/abstract)

[6] <http://jama.ama-assn.org/cgi/content/abstract/303/3/250>

[7] <http://www.fda.gov/Food/FoodSafety/Product-SpecificInformation/Seafood/FoodbornePathogensContaminants/Methylmercury/ucm153051.htm>

[8] <http://circ.ahajournals.org/cgi/content/full/106/21/2747>

[9] <http://circ.ahajournals.org/cgi/content/full/106/21/2747#TBL5#TBL5>

[10] [http://www.nmfs.noaa.gov/fishwatch/seafood\\_and\\_health.htm](http://www.nmfs.noaa.gov/fishwatch/seafood_and_health.htm)