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New Paper Published in *Nature Communications* Shows the Omega-3 Index Is a Strong Risk Predictor of Premature Death

April 22, 2021, Sioux Falls, SD: A new research paper examining the relationship between the Omega-3 Index and risk for death from any and all causes has been published in [Nature Communications](#). It showed that those people with higher omega-3 EPA and DHA blood levels (i.e., Omega-3 Index) lived longer than those with lower levels. In other words, those people who died with relatively low omega-3 levels died prematurely, i.e., all else being equal, they might have lived longer had their levels been higher.

Numerous studies have investigated the link between omega-3s and diseases affecting the heart, brain, eyes and joints, but few studies have examined their possible effects on lifespan.

In Japan, omega-3 intakes and blood levels are higher than most other countries in the world AND they happen to live longer than most. Coincidence? Possibly, or maybe a high Omega-3 Index is part of the explanation.

Studies reporting estimated dietary fish or omega-3 intake have reported benefits on risk for death from all causes, but "diet record" studies carry little weight because of the imprecision in getting at true EPA and DHA intakes. Studies using biomarkers – i.e., blood levels – of omega-3 are much more believable because the "exposure" variable is objective.

This new paper is from the FORCE - Fatty Acids & Outcomes Research – Consortium. FORCE is comprised of researchers around the world that have gathered data on blood fatty acid levels in large groups of study subjects (or cohorts) and have followed those individuals over many years to determine what diseases they develop. These data are then pooled to get a clearer picture of these relationships than a single cohort can provide. The current study focused on omega-3 levels and the risk for death during the follow-up period, and it is the largest study yet to do so.

Specifically, this report is a prospective analysis of pooled data from 17 separate cohorts from around the world, including 42,466 people followed for 16 years on average during which time 15,720 people died. When FORCE researchers examined

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the risk for death from any cause, the people who had the highest EPA+DHA levels (i.e., at the 90th percentile) had a statistically significant, 13% lower risk for death than people with EPA+DHA levels in the 10th percentile. When they looked at three major causes of death – cardiovascular disease, cancer and all other causes combined – they found statistically significant risk reductions (again comparing the 90th vs 10th percentile) of 15%, 11%, and 13%, respectively.

The range between the 10th and 90th percentile for EPA+DHA was (in terms of red blood cell membrane omega-3 levels, i.e., the Omega-3 Index) about 3.5% to 7.6%. From other research, an optimal Omega-3 Index is 8% or higher.

In the new paper, the authors noted that these findings suggest that omega-3 fatty acids may beneficially affect overall health and thus slow the aging process, and that they are not just good for heart disease.

“Since all of these analyses were statistically adjusted for multiple personal and medical factors (i.e., age, sex, weight, smoking, diabetes, blood pressure, etc., plus blood omega-6 fatty acid levels), we believe that these are the strongest data published to date supporting the view that over the long-term, having higher blood omega-3 levels can help maintain better overall health,” said Dr. Bill Harris, [Founder of the Fatty Acid Research Institute](#) (FARI), and lead author on this paper.

Dr. Harris co-developed the Omega-3 Index 17 years ago as an objective measure of the body’s omega-3 status. Measuring omega-3s in red blood cell membranes offers an accurate picture of one’s overall omega-3 intake during the last four to six months. To date, the Omega-3 Index has been featured in more than 200 research studies.

“This comprehensive look at observational studies of circulating omega-3 fatty acids indicates that the long chain omega-3s EPA, DPA, and DHA, usually obtained from seafood, are strongly associated with all-cause mortality, while levels of the plant omega-3 alpha-linolenic acid (ALA) are less so,” said Tom Brenna, PhD, Professor of Pediatrics, Human Nutrition, and Chemistry, Dell Medical School of the University of Texas at Austin.

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About the Fatty Acid Research Institute (FARI)

The Fatty Acid Research Institute (FARI) is a non-profit research and education foundation. FARI was founded in order to accelerate discovery of the health effects of fatty acids, most notably, the long chain omega-3 fatty acids EPA and DHA. FARI researchers and scientists will focus single-mindedly on publishing high-quality research studies on the multiple relationships between fatty acid levels and human (and animal) health outcomes. These studies will improve the ability to predict risk for disease, and more importantly, suggest ways to reduce risk by changing our diets and/or supplementation regimens. www.faresinst.org

About the FORCE Consortium

The Fatty Acids and Outcomes Research Consortium ([FORCE](http://www.force.nutrition.tufts.edu)) is a scientific consortium with the aim of understanding how fatty acid biomarkers relate to the risk of developing cardiovascular diseases, diabetes, obesity, cancers, chronic kidney disease, and other conditions. There are 36 prospective cohorts involved in FORCE. What is common to all is having data on blood or adipose tissue fatty acid levels at baseline. www.force.nutrition.tufts.edu

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