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Contact: Candice Wartier
Communication Strategies Group, Inc.
773-991-1210
cwartier@sbcglobal.net

New Omega-3 Blood Test: A Better Predictor of Coronary Heart Disease Than Cholesterol

Gene Smart Omega-3 Index™ Assesses Risk of Heart Attack

Winston-Salem, NC (August 17, 2009) – A new blood test, measuring the level of omega-3 fatty acids in red blood cells, is now broadly available for the first time to the public everywhere as a consumer-friendly, at-home “finger stick” test. While scientists have long known of the benefits of fish and fish oil for overall heart health, over the past decade research has proven that the omega-3 fatty acids found in fish dramatically reduce one’s risk for cardiovascular disease. Further, recent research indicates that omega-3 levels may be among the best predictors of future coronary heart disease – providing much stronger correlations to the risk of sudden cardiac death than traditional indicators, including HDL and LDL cholesterol.

The *Gene Smart Omega-3 Index* measures the amount of EPA and DHA omega-3 fatty acids in red blood cell membranes and is expressed as the percent of total fatty acids. The results of the test are represented as a score that a significant body of research indicates may be an independent predictor of heart disease – with a score of 4 percent or less indicating a high risk, and a score of 8 percent or more indicating a relatively low risk.

“The research suggests that the levels of omega-3 fatty acids should be routinely measured, especially in vulnerable populations such as those at risk of cardiovascular and inflammatory diseases,” said Floyd “Ski” Chilton, PhD, a pioneer in inflammatory disease and omega-3 research and a professor of Physiology and Pharmacology at Wake Forest University School of Medicine. “This test is the most convenient, affordable and effective way to measure omega-3 levels.”

However, very recent studies suggest that individuals have varying capacities to metabolize omega-3s. “So even if a person eats fish or takes fish oil supplements, they may not be getting enough,” Dr. Chilton added. “It is important to measure omega-3 levels, so individuals can determine whether their dietary intake of this important nutrient needs to be adjusted.”

In introducing the *Gene Smart Omega-3 Index*, Gene Smart has partnered with a pioneer of omega-3 research and cardiovascular disease, William S. Harris, Ph.D., a professor in the Department of Internal Medicine and Basic Biomedical Sciences at the Sanford School of Medicine of the University of South Dakota and a co-author on the American Heart Association’s (AHA) Scientific Advisory on Fish and Omega-3 Fatty Acids published in *Circulation* (Vol. 106:2002).

Dr. Harris has published over 80 scientific articles on omega-3s, including his ground-breaking study, published in *Preventive Medicine* (Vol. 39, 2004) with co-author Clemens von Schacky, MD, a cardiologist from Munich, which first proposed the *Omega-3 Index* as a cardiovascular risk factor.

The *Gene Smart Omega-3 Index™* uses Dr. Harris's proprietary HS-Omega-3 Index® methodology -- the same methodology used in the clinical studies that validated the correlation between the *Omega-3 Index* and heart disease risk. The science behind the Index has been tested and validated by data from numerous large-scale human clinical studies, including the highly-regarded Physicians' Health Study (PHS), which involved 14,916 healthy male physicians.

"The strength of the association between omega-3s and heart disease is really quite remarkable," said Dr. Harris. "And the benefits of having a high *Omega-3 Index*, in the 8 to 10 percent range, speak for themselves. Individuals with a high Index have a decrease in the relative risk for sudden cardiac death by as much as 90 percent."

Beyond Omega-3: The Critical Omega-6/Omega-3 Ratio

In addition to measuring the amount of omega-3s in the bloodstream, the new *Gene Smart* blood test provides a measure of a person's omega-6 to omega-3 ratio. Leading experts believe that the marked shift in omega-6/omega-3 fatty acids in the Western diet over the past three generations has led to an overall increase in chronic whole body inflammation and a higher incidence of allergic and inflammatory disease including cardiovascular disease, asthma, allergies, diabetes and arthritis. This is of concern because omega-3s tend to be anti-inflammatory and cardioprotective, while consuming too many omega-6 fats can lead to an overproduction of inflammatory messengers.

Dr. Chilton's latest research in nutrient/gene interactions, published in the *Journal of Biological Chemistry* (June 5, 2009), demonstrated that shifting ratios of omega-6 to omega-3 from greater than 15:1 to less than 5:1 in humans can positively influence genes that provide protection against allergies and other inflammatory diseases. According to Chilton, the increased omega-6 fatty acids in the typical U.S. diet is due in large part to the industrialization of our food supply and increased consumption of omega-6 rich foods such as vegetable oils, salad oils, margarine and fried foods. Combined with a reduced consumption of omega-3 rich fish, this has resulted in omega-6/omega-3 ratios often well in excess of 10:1. Anthropological evidence suggests that our hunter-gatherer ancestors maintained a ratio closer to 2:1.

"The best news in all of this is that a low *Omega-3 Index* is an easily modifiable risk factor," added Dr. Chilton. "By simply eating more oily fish like salmon and albacore tuna, or taking a quality omega-3 supplement with the right levels of EPA and DHA, anyone can improve their *Omega-3 Index* score which research suggests will reduce their risk of heart disease – the number one killer of men and women in this country."

The *Gene Smart Omega-3 Index* test is now available through Gene Smart Wellness at www.genesmart.com as a convenient, at-home “finger stick” kit which is sent by the user to a lab for a comprehensive analysis. Research suggests that the *Gene Smart Omega-3 Index* may be an independent risk factor that is not influenced by other heart disease risk factors like cholesterol or blood pressure. All risk factors, including the *Omega-3 Index*, should be addressed as part of an overall heart health risk reduction strategy.

About Gene Smart

Gene Smart™ Wellness (GSW) is a preventative healthcare company that utilizes the latest understanding of the relation between diet & exercise, our genes and our health to empower individuals to take control of their health in order to live life abundantly. Floyd “Ski” Chilton, PhD, is the company’s Chief Scientific Advisor and author of numerous articles and books on health and nutrition. His most recent book, *The Gene Smart Diet* (Rodale, 2009), makes the connection between what we eat, our genes and our health. More information on the Gene Smart program and the *Omega-3 Index* is available at www.genesmart.com.

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Dr. Chilton is a professor at Wake Forest University School of Medicine and Chief Scientific Advisor to GeneSmart Wellness, the company offering the Omega-3 Index test. His conflict of interest has been disclosed to Wake Forest University Health Sciences and outside sponsors and is institutionally managed.