Attention: Healthcare Professional

The '**Omega-3 Score**' and '**DHA Score**' are being made available by Nutrasource Diagnostics Inc., a University of Guelph spin-off company. An accompanying information piece (see attached) for your patient/client is included. The rationale for these tests (the '**Omega'3 Score**' and '**DHA Score**') is evidence-based from the published literature, as are strategies for increasing these values. Published clinical and population studies have shown that, as the measured levels of omega-3 fatty acids and DHA increase in blood serum (plasma) phospholipid, the risk of coronary heart disease (CHD) and fatal ischemic heart disease significantly decreases. This relationship was found even when controlling for the blood cholesterol levels.

The levels of the long-chain omega-3 fatty acids known as EPA (eicosapentaenoic acid, 20:5n-3) plus DHA (docosahexaenoic acid, 22:6n-3) can best be increased in the body tissues (heart, platelets, etc.) via their direct consumption. Fatty acid analysis of blood serum (plasma) phospholipid via specialized capillary gas-liquid chromatography is a useful biomarker for assessing physiological status and EPA/DHA intakes. Consuming certain omega-3 rich foods and/or supplements containing canola oil, flax/flaxseed oils, walnuts, others (which contain omega-3 fatty acid as ALA, alpha-linolenic acid, but not as EPA/DHA) will usually not provide a marked rise in physiological levels of total omega-3 fatty acids or DHA as measured in blood serum (plasma) phospholipid.

Epidemiological and controlled clinical trials have indicated that omega-3 fatty acids from fish and fish oils (EPA/DHA) can have a significant role in the prevention and supportive management of coronary heart disease. Various mechanisms for the cardioprotective effects of EPA/DHA (omega-3) have been proposed (anti-arrhythmic, anti-thrombotic, improved endothelial relaxation, triglyceride-lowering, others).

Different sources of EPA/DHA from fish, fish oil supplements, or novel functional foods containing EPA/DHA can be expected to markedly improve the total omega-3 and DHA status in the body within 4-6 weeks if they are consumed on a regular basis. Due to some variability across these sources (levels of EPA/DHA, digestibility/bioavailability, etc.) post-treatment blood measures are recommended to ensure their elevation in the circulation. The vast majority of North Americans will exhibit relatively low levels of total omega-3 fatty acids and DHA in their blood serum (plasma) phospholipid. This low physiological status usually reflects the very low intakes of EPA/DHA (omega-3) in a typical North America diet (100–150 mg of EPA/DHA combined/day). The 1999 Workshop on the Essentiality of and Recommended Dietary Intakes of Omega-6 and Omega-3 Fatty Acids (NIH-Bethesda) has recommended a combined average EPA/DHA intake of 650 mg/day for healthy adults. The recently-released American Heart Association Guidelines (Revision 2000) for Healthcare Professionals have included the following recommendations with respect to ω3 fatty acid supplements: ' Consumption of 1 fatty fish meal per day (or alternatively, a fish oil supplement) could result in an ω3 fatty acid intake (ie, EPA and DHA) of ~900mg/d, an amount shown to beneficially affect coronary heart disease mortality rates in patients with coronary disease'. Increasing intakes of EPA/DHA to the aforementioned 900mg/day (averaged over a 4-6 week period) can be expected to markedly increase both the '**Omega-3 Score**' and '**DHA Score**'. Increases in the '**Omega-3 Score**' and '**DHA Score**' towards a more desirable range as determined following dietary and/or supplement treatment will also support evaluations of compliance and efficacy of the diet/supplementation recommendation(s).

Selected References:

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