

Omega-3 Fatty Acids Test

We've become conditioned to think of fat as "bad." Omega-3 fats (technically fatty acids), however, are essential to the human body, and have benefits for our heart, brain, eyes, and joints. By reducing inflammation, blood clots, and improving membrane function, omega-3 fats are associated with a lower risk of heart complications – including heart disease, plaque build-up, and heart attacks – both in persons with a history of heart disease and in healthy individuals.

Omega-3 fats also seem to be important for optimal brain development in babies, and mental function, particularly later in life. For pregnant women, an intake of omega-3 fats supports normal visual development in the foetus. In short, the addition of omega-3 fats to the diet is important to maintaining both our physical and mental health.

There are potential benefits of omega-3 oils in a wide range of medical conditions. While optimal levels have not yet been defined for EPA and DHA in all circumstances, the Omega-3 Index may be used to document improved omega-3 levels in people who want to reduce risk for several maladies.

Table 1: Omega-3 Fatty Acids and their Associations with Our Health

Eye Health	Heart Health
Joint Diseases	Mental Health
Pre-natal / Infant Health	

Eye Health

The retina is enriched with omega-3 fatty acids and studies have shown that omega-3 fatty acids are important for optimal visual development in infants. In adults, there is growing evidence for a reduction in risk for macular degeneration associated with higher omega-3 fatty acid intakes; the same is true for symptoms of dry eye syndrome.

Heart Health

Various medical studies have shown that there are strong benefits for patients with coronary heart disease from fish and fish oil supplement consumption. For example, in two studies the risk for sudden cardiac death was reduced by about 90% in patients with the highest blood omega-3 levels. A strong link between omega-3 fatty acids and the reduced risk for fatal ischemic heart disease has

also been found. Several prospective, randomized, and controlled trials have tested the effects of giving omega-3 fatty acids, either as purified oils or as oily fish, and these have almost universally shown benefits.

Joint Diseases

There is growing support for the use of high dose omega-3 fatty acid treatment (3,000-6,000 mg/day of EPA+DHA) in certain inflammatory diseases. In arthritis, some reduction in inflamed joints and tenderness has been seen in studies, and in a wide range of other inflammatory conditions, some benefits have been reported. This field, like several others, remains promising for a palliative effect of intakes of omega-3 fatty acids, but the research has not lead to firm conclusions to date.

Mental Health

Like other areas of emerging research, the link between low levels of omega-3 fatty acids and a variety of mental conditions is far from complete. From attention-deficit-hyperactivity disorder and dyspraxia in children, to depression, bipolar disorder, schizophrenia in middle aged individuals, to dementia and Alzheimer's disease in the elderly, some studies have been positive, others have not. Studies on mood, hostility, aggression, and borderline personality disorder have also reported potential benefits of omega-3 fatty acids.

Pre-natal / Infant Health

Although evidence directly linking benefits of increased maternal intake of omega-3 fatty acids to infant health is speculative, there are many theoretical reasons why pregnant and nursing mothers should increase their intake of omega-3 fatty acids.

For example, the presence of DHA in breast milk (and the brain) suggests that omega-3 fatty acids are important in early development. Omega-3 fatty acids are thought to lead to increased birth weights and may lower the risk of complications of pregnancy.

FAQs (Frequently Asked Questions)

How is the Omega-3 Index different from other fatty acid profile tests?

A. It differs in several ways.

First, the sample types we typically use (red blood cells or dried blood spots versus whole plasma or plasma phospholipids). Each of these sample types has a unique fatty acid profile, so you cannot compare the EPA+DHA level in RBCs to the EPA+DHA level in plasma, or in plasma phospholipids – the numbers will be quite different, even from the same lab. So regardless of which lab you choose to work with, you should always order the same type of test if you want to be able to track trends in the same patient over time. We focus on RBC and whole blood (dried blood spot) analyses because from either one we can provide the Omega-3 Index, and because these provide the best reflection of tissue omega-3 fatty acid status. In addition, there is considerably more day-to-day variation in the plasma tests than in the RBC – (or whole blood) – based tests.

B. The number of fatty acids reported in the profile.

In addition to the Omega-3 Index, we also provide, at no additional charge, a complete fatty acid profile including 4 omega-3 fatty acids, 7 omega-6 fatty acids, 4 monounsaturated fatty acids, 6 saturated fatty acids, 3 groups of trans fatty acids, 5 composites (group sums), and 2 ratios (see below). Other ratios or groups of fatty acids can be calculated from these. But beyond these 26 fatty

acids, there are still others (very minor components) that can be detected in both RBCs and in whole blood, and some labs will report these as well. It is our view at NutriPATH that it is possible to provide too much information, and hence we draw the line at these 26, and in many respects, even this is more than can practically be addressed. We provide them as a courtesy to those clients who want to know. Sometimes “less is more” and we believe that applies here.

C. The ratios included in the profile.

As noted above, we provide two fatty acid ratios: the omega-6/omega-3 and AA/EPA. Although we include these values, we believe that the Omega-3 Index is, by far, the single most important (and actionable) component of our report. These other fatty acids and ratios are provided as a courtesy and because some practitioners find them useful. We would suggest that for the dried blood spot assay, the omega-6/omega-3 ratio should be 4.6 or less, and the AA/EPA ratio should be 9 or less. For the red blood cell assay, the omega-6/omega-3 ratio should be 2.6 or less, and the AA/EPA ratio should be 15 or less.

D. The use of “reference” or “normal” ranges.

Included with each the 5 classes of fatty acids are “reference ranges.” The reference range is provided simply to give an idea of how these values compared to a large number of others taken from a relatively healthy population. In the case of the RBC assay, the reference range was taken from approximately 11,000 individuals whose samples were submitted to the laboratory for analysis. In the case of the dried blood spot assay, the reference range was taken from approximately 27,000 individuals. No information regarding the state of health of any of these individuals is known. In both cases, the reference range encompasses 99% of the individuals in their respective populations. Although “average,” these are not necessarily “optimal” levels, i.e., target levels or levels that one should attempt to achieve. The only result for which we feel justified in providing an actual target or optimal level is the Omega-3 Index since it has received undergone the most research. As the research in this area matures, we will recommend new “target” values for other fatty acids or ratios when we believe that they have been adequately validated.

E. The provision of dietary recommendations to correct deviations from “normal”.

As noted above, we provide reference ranges for general information only, not to suggest or guide changes in diet. We do not believe that the research has advanced to the point where we can tell people who have a below (or above) “average” level of any given fatty acid class that they should try to change it. First, since most fatty acid levels in the blood are not influenced by diet but are established by internal genetics and metabolism, even attempting to alter a fatty acid level by dietary change would be largely futile. Secondly, we don’t have the data at present to show that even if one could change fatty acid levels (again, except for the Omega-3 Index and trans fatty acids), it would benefit them to do so. So until further research convincingly demonstrates that raising or lowering a certain fatty acid or class is beneficial or not, we will take the conservative approach of simply giving each client the numbers, and they can track them as they wish.

Clearly, we are very comfortable with recommending specific targets for the Omega-3 Index because the research supporting a target of 8% is strong, and we know that you can specifically raise the Index by eating more omega-3. We don’t, however, know exactly how much EPA+DHA any particular person should be told to take to achieve the 8% target. People differ, and so each person’s response to supplemental omega-3s will vary. Just like one cannot predict how much serum cholesterol will go down when a patient is placed on statins, we cannot accurately predict how the Omega-3 Index will respond to an increased intake; it must be individually tested.

Omega-3 Fatty Acids Tests

- A simple Blood Spot Fingerprick Test.
- All instructions in the test kit provided.

Profiles Available:

- For overall Fatty Acid measurement
 - For Inflammatory concerns
 - For Chronic Heart Disease concerns
- RED CELL FATTY ACIDS
AA/EPA Ratio
Omega-3-Index

Result Turnaround Time:

- 10 to 14 business days.

How to order a test kit:

Phone Customer Service on 1300 688 522.



Phone **1300 688 522** for further details
www.nutripath.com.au

