Dr. Sears ZONE Diagnostics

OMEGA QUANT® ...because knowing matters

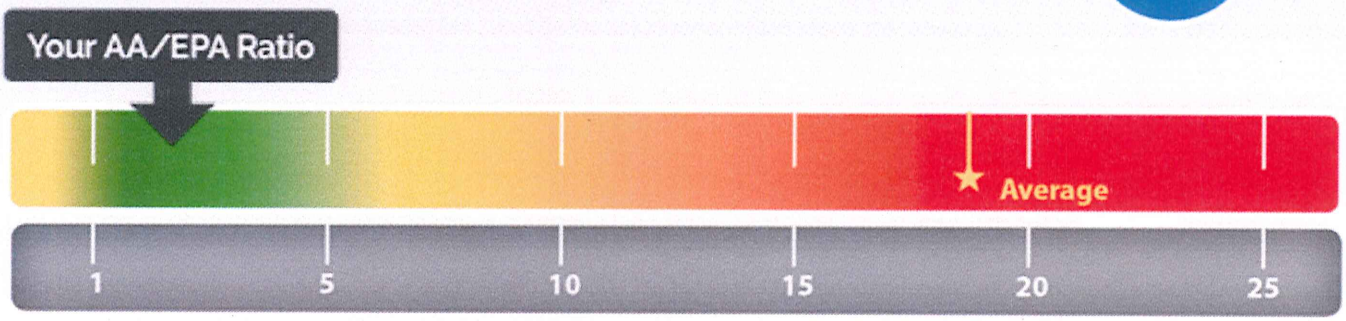
AA/EPA RATIO REPORT

NAME: Christian, Charles
DOB: 02/15/1944
ID: 8242014CC

COLLECTION DATE: 08/28/2015
RESULT DATE: 09/15/2015
PROVIDER:
ACCOUNT: Zone Diagnostics

Your AA/EPA Ratio **1.7**

Reference Range*: 1.40 - 52.60



Arachidonic Acid (AA%) = 7.4%

Eicosapentaenoic Acid (EPA%) = 4.4%

* Reference Ranges encompass about 99% of US adults. Visit our FAQ section for more information on Ratios and Ranges.

We would all like a clinical marker of our future wellness. It might be body weight, lipid or glucose levels, or any number of other clinical markers used in medicine. However, in my opinion the best marker is the ratio of two key fatty acids in the blood as an indication of the level of cellular inflammation in the body. These fatty acids are the omega-6 fatty acid arachidonic acid (AA) and the omega-3 fatty acid eicosapentaenoic acid (EPA). From AA come the pro-inflammatory hormones that in excess accelerate chronic disease. From EPA come very powerful anti-inflammatory hormones that resolve inflammation.

The AA/EPA ratio is a measure of the inflammatory balance with your cells. The higher the ratio, the greater the amount of cellular inflammation you have. The increased inflammation will make you age faster and lose your wellness more rapidly then you should.

Your future wellness is too important to guess about it, that's why you should always test.

Sincerely yours,

Barry Sears

Barry Sears, Ph.D.

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Testing by OmegaQuant LLC, 2329 N. Career Ave, Sioux Falls, SD 57107

Lab Director: Brad Randall, MD. CLIA#: 43D1105229

Interpreting the Results

The best marker of cellular inflammation is the AA/EPA ratio. If it's too elevated then this is indicative that you are aging at a faster rate regardless of how good you look in swimsuit.

A good AA/EPA ratio would be 3, and the ideal ratio is about 1.5. You might ask where those numbers came from. If you ask who are the longest-lived people in the world today, the answer is the Japanese. If you ask who are the people with the longest health span (longevity minus years of disability), the answer is again the Japanese. If you ask who has the lowest levels of heart disease in the world, the answer again is the Japanese. And you wouldn't be too surprised to find out that the Japanese have the lowest rates of depression in the world today.

When you look at the blood of the Japanese population, the AA/EPA ratio ranges from 1.5 to 3. For example, if your AA levels are 9% and your EPA levels are 4%, then your AA/EPA ratio would be 2.2 which is mid-range for ideal management of cellular inflammation. For comparison the average "healthy" American has an AA:EPA ratio of 18. This means Americans are not only the fattest people in the world today, but also the most inflamed.

Can your AA:EPA ratio be too low? The answer is yes. If the AA:EPA ratio is too low, you might not be able to mount an appropriate inflammatory response when you need to. If the ratio is about 0.7 (as it is in the native Eskimo population), you will be more prone to infections. If it drops to 0.5, the risk of hemorrhagic stroke increases. This is why I like to keep the lower limit of the AA/EPA ratio to 1.5 as found in the Japanese population.

Dietary Guidelines to Optimize the AA/EPA Ratio

Arachidonic Acid (AA): Ideal 7-9% of total fatty acids.

If AA is greater than 9%: The best way to lower AA levels is by following the Zone Diet. AA is found in fatty red meats, egg yolks, and organ meats so you want to minimize these in your diet if your AA levels are greater than 9%. In addition, increased intake of omega-6 fatty acids can lead to increased levels of AA, thus generating too many pro-inflammatory hormones derived from AA. The common sources of omega-6 fatty acids include vegetable oils such as corn, sunflower, safflower, and soybean. What you want to substitute these AA elevating foods with is fresh fruits and vegetables, low-fat protein such as chicken and fish and monounsaturated fatty acids such as those found in olive oil, nuts, and avocados.

If AA is less than 7%: Consume one egg yolk a week

Eicosapentaenoic Acid (EPA): Ideal > 4% of total fatty acids

If EPA is less than 4%: EPA is an omega-3 fatty acid found primarily in fish and fish oil. EPA is the molecular building block for a group of powerful anti-inflammatory hormones known as resolvins. Our recommendation for maintaining wellness is consuming at least 2.4 grams of EPA and DHA on a daily basis assuming the fish oil you are using is extremely low in toxins such as PCBs.

AA/EPA Ratio: Ideal range 1.5-3

If the AA/EPA ratio is greater than 3: Increasing the level of EPA in the blood through fish and/fish oil supplementation and simultaneously decreasing the levels of AA in the diet will help bring this into an ideal range.

If the AA/EPA ratio is less than 1.5: It is possible to have an AA/EPA that is too low. This may mean you won't be able to mount an appropriate inflammatory response. If this is the case, consider decreasing your dosage of fish oil.

Should you have further questions about your results please contact your physician.

FULL FATTY ACID PROFILE REPORT

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Dried Blood Spot Fatty Acid Profile

Fatty Acid Group	Total	Percentile Rank	Reference Range*
Omega-3 Fatty Acids	**12.76%**	**98th**	**2.92-13.29%**
Alpha-Linolenic (18:3n3)	0.51%		
Eicosapentaenoic (EPA, 20:5n3)	4.39%		
Docosapentaenoic-n3 (22:5n3)	2.27%		
Docosahexaenoic (DHA, 22:6n3)	5.59%		
Omega-6 Fatty Acids	**29.13%**	**3rd**	**26.35-45.15%**
Linoleic (18:2n6)	19.37%		
Gamma-Linolenic (18:3n6)	0.12%		
Eicosadienoic (20:2n6)	0.24%		
Dihomo-y-linolenic (20:3n6)	1.19%		
Arachidonic (AA, 20:4n6)	7.39%		
Docosatetraenoic (22:4n6)	0.56%		
Docosapentaenoic-n6 (22:5n6)	0.26%		
cis-Monounsaturated Fatty Acids	**23.73%**	**80th**	**15.65-32.26%**
Palmitoleic (16:1n7)	1.13%		
Oleic (18:1n9)	21.73%		
Eicosenoic (20:1n9)	0.23%		
Nervonic (24:1n9)	0.64%		
Saturated Fatty Acids	**33.61%**	**53rd**	**29.52-37.74%**
Myristic (14:0)	0.61%		
Palmitic (16:0)	22.19%		
Stearic (18:0)	9.83%		
Arachidic (20:0)	0.19%		
Behenic (22:0)	0.38%		
Lignoceric (24:0)	0.41%		
Trans Fatty Acids	**0.78%**	**13th**	**0.35-2.69%**
Trans Palmitoleic (16:1n7t)	0.17%		
Trans Oleic (18:1t)	0.26%		
Trans Linoleic (18:2n6t)	0.35%		
Trans Fat Index	0.61%	12th	0.30-2.42%
Ratios			
AA:EPA	*1.7:1*	*1st*	*1.4 – 52.6*

Technical note: It is often asked how the AA/EPA ratio determined by the finger stick test compares to the AA/EPA in isolated plasma phospholipids? The answer is they are quite similar and in fact virtually identical if the AA/EPA ratio ranges between 1 and 20. The actual formula is: Isolated plasma phospholipid AA/EPA ratio = 0.73 x finger stick AA/EPA ratio + 0.31 This means if the finger stick AA/EPA ratio was 2.0, the AA/EPA ratio in the isolated plasma phospholipids would be: (0.73 x 2.0) + 0.31 or 1.8. It is only a very high AA/EPA ratio by the finger stick method that you begin to see deviation between the two. Of course at a very high AA/EPA ratio, you already have a lot of cellular inflammation that needs to be reduced.