



# Fatty Acid Analysis

## NORSAN Fatty Acid Analysis

Analyse-ID	demo	Use natural fish oil with 2g daily dose?	No	<a href="http://www.norsan-omega.com">www.norsan-omega.com</a>
Date of analysis	17.10.2015	Use other omega-3?	No	<a href="mailto:post@norsan-omega.com">post@norsan-omega.com</a>
Country	Norge	Replicate test?	No	+49 30 555 788 990
Sex	Male	Date of birth	16.06.1974	

## Your result - Summary

Keys	Your test result	Recommendation	Evaluation*
Omega-6/3 ratio	32.29	Between 1:1 and 2.5:1	Red
Omega-3 index	3.28%	Above 8%	Red
Trans fat level	0.20%	Below 0.5%	Green

- \*Green indicates a **good diet and fatty acid structure** for the respective key value
- \*Orange indicates **potential for improvement for the diet and fatty acid structure** for the respective key value
- \*Red indicates **substantial improvement required for the diet and fatty acid structure** for the respective key value.

## Content of the Analysis

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## Omega-6/3 Ratio

Your result

32.3 :1

Reference Range



1:1 2,5:1 3:1 6:1

### Therapeutic recommendation

The measurement of your blood test shows an undesirably predominance of the omega-6 fatty acid AA (arachidonic acid) compared to omega-3 fatty acid EPA. The Omega-6/3 Ratio is a marker for silent inflammation and a ratio between 1:1 and 3:1 is considered favourable.

To balance your Omega-6/3 Ratio the following dietary recommendations can be made:

- The value of the Omega-3 fatty acid EPA was measured in your blood test to at **0.3%** which is relatively low. You are advised to increase your intake of marine fatty acids from fish (ideally fish with a high fat-percentage such as anchovy, salmon, sardines) or use a natural fish oil with high omega-3 content. Therapeutic dose: 20ml for a period of approx. 3 months. Thereafter a normal dose of 10ml to sustain a high EPA value (close to or higher than 3%).
- Reduce your Omega-6 arachidonic acid value. We recommend values close to - or lower than - 9%. There are two approaches to reduce your arachidonic acid value (depending on your diet one or both of these can be applicable):
  - Reduce your consumption of meat and other products from animals fed on industrial feed. The reason is that industrial feed is based on omega-6 rich components, in particular soyabean meal.
  - Reduce intake of omega-6 rich vegetable oils, especially sunflower, soybean and corn kernel. Note that sunflower oil and soybean oil are widely used in the industry as components of finished and semifinished food products.

### Fatty acids influencing the omega-6/3 ratio:

Arachidonic acid (AA  $\omega 6$ )      Eicosapentaenoic acid (EPA  $\omega 3$ )



Die EPA ( $\omega 3$ ) from fish or algae - Higher value -> lower ratio

Die arachidonic acid (AA  $\omega 6$ ) from meat - Higher value -> higher ratio

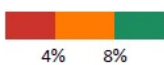
Linolic acid (LA  $\omega 6$ ) from omega-6 rich plants - Higher value -> higher ratio (indirectly through the conversion of LA to AA)

## Omega-3 Index

Your result

3.3 %

Reference values



4% 8%

### Therapeutic recommendation

Your Omega-3 Index of **3.3%** is low. The Omega-3 Index is a measurement of omega-3 compared to all the fatty acids in your body and the low value indicates low consumption of fish products. Omega-3 Index above 8% is beneficial from a health perspective.

Dietary recommendation to increase your Omega-3 Index to above 8%:

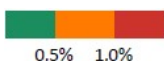
- Increase intake of omega-3 fatty acids. For regulation within a 3-4 months' period, daily dose of omega-3 should be approx. 4 grams. Fish with a high fat and omega-3-percentage are mainly anchovy, salmon and sardines.
- Alternative to fish consumption, regulating your omega-3 index would require a daily dose of 2 table spoons natural fish oil per day (approx. 16ml). After the regulation period of 3-4 months, the normal dose of 8ml fish oil per day is recommended to sustain a high omega-3 index.

## Trans fat level

Your result

0.20 %

Reference values



0,5% 1,0%

### Therapeutic recommendation

The measurement of your blood test shows that your industrial trans fatty acids constitute **0.20%** of the total fatty acids (= industrial trans fat content). Values below 0.5% are considered beneficial from a health perspective. Our diet recommendation is to continue with your current diet with a low content of industrial trans fatty acids.

Sources for industrial trans fatty acids are biscuits, bread, cakes, meat products, individual ready-made soups, snacks and generally so-called "junk food". Products which contain trans fat, mostly describe these with a finer euphemism such as "partially hardened" or "partially hydrogenated vegetable oils".

**Natural trans fatty acids:** Transfatty acids that are naturally produced in the organism of the animals by incomplete fat hardening (partial hydrogenation) of unsaturated fatty acids as a result of bacterial processes. These are so-called natural trans fatty acids, typically found in milk products and cheese; they are generally considered not to be harmful.

## Oleic acid ( $\omega$ 9)

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Your result

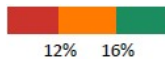


### Therapeutic recommendation

Your value of omega-9 Oleic Acid is with **18.0%** at a relative healthy high level. Omega-9 is an important fatty acid and your high value is positive from a health perspective.

Typical source of omega-9 Oleic Acid is olive oil.

Reference values



## Alpha-Linolenic Acid (ALA, $\omega$ 3)

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Your result

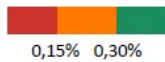


### Therapeutic recommendation

Your value of Alpha-Linolenic Acid is with **0.30%** at a healthy and relative high level.

Main sources for ALA are various plant oils, in particular flaxseed oil and rapeseed oil. When selecting a flaxseed oil, you should consider the advantage of a recently cold-pressed oil (in order to reduce oxidation risk).

Reference value



## Fatty Acids (all values in %)

Omega-3 Fatty Acids	Your values	Reference values*
Alpha-linolenic acid (ALA, 18:3 ω3)	0.30	0.36
Eicosapentaenoic acid (EPA, 20:5 ω3)	0.34	3.78
Docosapentaenoic acid (DPA, 22:5 ω3)	1.31	2.03
Docosahexaenoic acid (DHA, 22:6 ω3)	2.28	6.00
<b>Sum Omega-3</b>	<b>4.23</b>	<b>12.17</b>

Omega-6 Fatty Acids	Your values	Reference values*
Linoleic acid (LA, 18:2 ω6)	18.49	16.72
Gamma-Linoleic acid (GLA, 18:3 ω6)	0.08	0.14
Eicosadienoic acid (C20:2 ω6)	0.29	0.20
Dihomo-γ-Linoleic acid (DGLA, 20:3 ω6)	1.79	1.29
Arachidonic acid (AA, 20:4 ω6)	10.98	8.94
Docosatetraenoic acid (DTA, 22:4 ω6)	1.90	0.76
C22:5 ω6	0.34	0.25
<b>Sum Omega-6</b>	<b>33.87</b>	<b>28.30</b>

Omega-7 Fatty Acids	Your values	Reference values*
Palmitoleic acid (16:1 ω7)	0.53	0.70

Omega-9 Fatty Acids	Your values	Reference values*
Oleic acid (18:1 ω9)	18.01	18.74
Gondonic acid (20:1 ω9)	0.35	0.21
Nervonic acid (24:1 ω9)	0.52	0.38
<b>Sum Omega-9</b>	<b>18.88</b>	<b>19.33</b>

trans Fatty Acids	Your values	Reference values*
Trans-Palmitoleic acid (16:1 ω7t)	0.12	0.13
Elaidinic acid (trans oleic) (18:1t)	0.30	0.20
Trans-Linoleic (18:2 ω6tt/tc/ct)	0.05	0.17
<b>Sum trans Fatty Acids</b>	<b>0.47</b>	<b>0.50</b>

Saturated Fatty Acids	Your values	Reference values*
Myristic acid (14:0)	0.44	0.72
Palmitic acid (16:0)	24.68	24.0
Stearic acid (18:0)	16.04	13.15
Arachidic acid (C20:0)	0.18	0.16
Behenic acid (C22:0)	0.40	0.19
Lignoceric acid (24:0)	0.27	0.37
<b>Sum Saturated Fatty Acids</b>	<b>42.01</b>	<b>38.59</b>

Reference values are reproduced from the blood analysis of "healthy" people. The data represents 2,000 blood samples. The purpose is to provide a reference basis to support analysis and interpretation of individual blood samples. Important: The purpose is not to indicate "correct" values. The reference values should serve as a basis for the practical explanation and analysis of individual blood samples. The reference values are not objectively correct values, since proper nutrition always depends on individual factors.

## About the test

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The Fatty Acid Analysis is conducted by an independent authorised lab in Germany according to a documented and tested process and strict regulations. A total of 26 fatty acids are measured based on the blood spot sample. Presented test results represent the key indicators from a health perspective. Enhanced explanations are provided on request.

## What is analyzed?

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**Using a blood sample 26 of your fatty acids are measured, which makes up about 99% of all the fatty acids in the body.**



Your fatty acid values and structures are analyzed in relation to nutrition and its influence on our health. Three values are considered particularly important in nutritional medicine perspective::

- Omega-6/3 Ratio
- Omega-3 Index
- trans Fat Level



The fatty acid analysis provides information on a total of 26 fatty acids (corresponding with more than 99% of all fatty acids in the body) and serves as a basis for various health analyses. We will be pleased to help you with individual advice and explain your analysis result.

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