



# Fatty Acid Analysis

## NORSAN Fatty Acid Analysis

Analyse-ID	HK68NQ54	Use natural fish oil with 2g daily dose?	No
Date of analysis	17.08.2018	Use other omega-3?	No
Country	LV	Replicate test?	No
Sex	Female	Date of birth	19.10.1987

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## Your result - Summary

Keys	Your test result	Recommendation	Evaluation*
Omega-6/3 ratio	3.09	Between 1:1 and 2.5:1	Orange
Omega-3 index	8.82%	Above 8%	Green
Trans fat level	0.37%	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



Reference Range



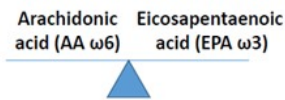
### Therapeutic recommendation

The measurement of your blood test shows a moderate predominance of the omega-6 fatty acid AA (arachidonic acid) compared to omega-3 fatty acid EPA. Your ratio is significantly better than the UK average of approx. 15:1. An Omega-6/3 ratio between 1:1 and 3:1 is considered inflammation neutral.

To reduce your Omega-6/3 Ratio within the "green" area, only a moderate diet adjustment is necessary:

- Increase your Omega-3 fatty acid EPA, which was measured at **2.8%**. Recommended are high EPA values with a guideline range above 3.5%. Intake of marine fatty acids from fish will increase EPA value as will the use of natural fish oil as supplement. If using a supplement, recommended dose is one table spoon (approx. 8ml with minimum 500mg EPA) of natural fish oil per day. This should increase your EPA value to above 3% within 2-3 months and contribute to an improved Omega-6/3 Ratio.
- Keep your Omega-6 Arachidonic Acid value at a relatively low level, i.e., not significantly above 9%. Your Omega-6 Arachidonic acid value was measured at **8.8%** which is relatively low. Your relative low level is positive and indicates a low consumption of meat and other products from animals fed on industrial feed. In general Omega-6 is contained in finished/semifinished products as well as other food products that directly or indirectly have a high content of omega-6 rich vegetable oils (especially sunflower, soybean and corn kernel). Meat and other products from animals fed on industrial feed is a significant source for Omega-6 because industrial feed to a large part consists of Omega-6 rich soybean meal.

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



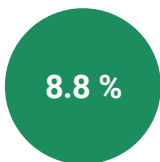
**Die EPA (ω3) from fish or algae** - Higher value -> lower ratio

**Die arachidonic acid (AA ω6) from meat** - Higher value -> higher ratio

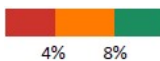
**Linolic acid (LA ω6) from omega-6 rich plants** - Higher value -> higher ratio (indirectly through the conversion of LA to AA)

## Omega-3 Index

Your result



Reference values



### Therapeutic recommendation

Congratulation! Your Omega-3 Index is measured at **8.8%** which indicates a healthy high consumption of fish products (or the use of an omega-3 supplement). Values above 8% are favorable.

Our recommendation is simple: Continue with your current high consumption of fish and/or omega-3 supplement.

## Trans fat level

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Your result

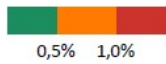


### Therapeutic recommendation

The measurement of your blood test shows that your industrial trans fatty acids constitute **0.37%** 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".

Reference values

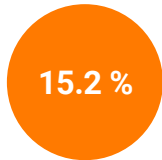


**Natural trans fatty acids:** Transfatty acids that are naturally produced in the organism of the animals by incomplete fat hardening (partial hydrogenation) of unsaturated fatty acids as a result of bacterial processes. These are so-called natural trans fatty acids, typically found in milk products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

## Oleic acid ( $\omega$ 9)

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Your result



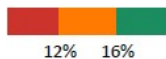
### Therapeutic recommendation

The Omega-9 Oleic Acid value is in your blood sample at **15.2%**, Oleic acid is a health-important fatty acid and a slightly higher value is considered to be advantageous.

Two typical approaches to increase the omega-9-oleic acid value:

- Increased consumption of omega-9 rich products such as olive oil and avocado oil.
- Improved enzyme ability of the body to convert saturated fats into oleic acid. In general, exercise and vitamin-rich diet promote the enzyme function.

Reference values



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

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Your result

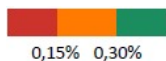


### Therapeutic recommendation

Your value of Alpha-Linolenic Acid is with **0.21%** - even if slightly below the recommended level of 0.3% - at a relatively healthy 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 %)

<b>Omega-3 Fatty Acids</b>	<b>Your values</b>	<b>Reference values*</b>
Alpha-linolenic acid (ALA, 18:3 ω3)	0.21	0.36
Eicosapentaenoic acid (EPA, 20:5 ω3)	2.83	3.78
Docosapentaenoic acid (DPA, 22:5 ω3)	1.47	2.03
Docosahexaenoic acid (DHA, 22:6 ω3)	5.25	6.00
<b>Sum Omega-3</b>	<b>9.76</b>	<b>12.17</b>

<b>Omega-6 Fatty Acids</b>	<b>Your values</b>	<b>Reference values*</b>
Linoleic acid (LA, 18:2 ω6)	19.06	16.72
Gamma-Linoleic acid (GLA, 18:3 ω6)	0.07	0.14
Eicosadienoic acid (C20:2 ω6)	0.15	0.20
Dihomo-γ-Linoleic acid (DGLA, 20:3 ω6)	1.00	1.29
Arachidonic acid (AA, 20:4 ω6)	8.75	8.94
Docosatetraenoic acid (DTA, 22:4 ω6)	0.68	0.76
C22:5 ω6	0.19	0.25
<b>Sum Omega-6</b>	<b>29.90</b>	<b>28.30</b>

<b>Omega-7 Fatty Acids</b>	<b>Your values</b>	<b>Reference values*</b>
Palmitoleic acid (16:1 ω7)	0.70	0.70

<b>Omega-9 Fatty Acids</b>	<b>Your values</b>	<b>Reference values*</b>
Oleic acid (18:1 ω9)	15.21	18.74
Gondonic acid (20:1 ω9)	0.16	0.21
Nervonic acid (24:1 ω9)	0.58	0.38
<b>Sum Omega-9</b>	<b>15.95</b>	<b>19.33</b>

<b>trans Fatty Acids</b>	<b>Your values</b>	<b>Reference values*</b>
Trans-Palmitoleic acid (16:1 ω7t)	0.15	0.13
Elaidinic acid (trans oleic) (18:1t)	0.35	0.20
Trans-Linoleic (18:2 ω6tt/tc/ct)	0.19	0.17
<b>Sum trans Fatty Acids</b>	<b>0.69</b>	<b>0.50</b>

<b>Saturated Fatty Acids</b>	<b>Your values</b>	<b>Reference values*</b>
Myristic acid (14:0)	0.60	0.72
Palmitic acid (16:0)	24.98	24.0
Stearic acid (18:0)	16.49	13.15
Arachidic acid (C20:0)	0.17	0.16
Behenic acid (C22:0)	0.31	0.19
Lignoceric acid (24:0)	0.46	0.37
<b>Sum Saturated Fatty Acids</b>	<b>43.01</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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