

BALANCETEST

DRIED BLOOD TEST FOR FATTY ACID ANALYSIS



PRODUCT HIGHLIGHTS

Zinzino's BalanceTest is an easy test for analyzing the fatty acids found in capillary blood obtained from a fingertip using the Dried Blood Spot (DBS) technique. Reveal your unique fatty acid profile and learn more about your key Omega-6:3 ratio based on laboratory analysis of 11 fatty acid levels in your blood, reported across six different fatty acid-related markers. All it requires is a few drops of blood from the fingertip on a filter paper and it takes less than a minute to complete.

VITAS Analytical Services¹ in Norway will anonymously analyze the percentage content of 11 fatty acids, which together represent approximately 98% of the fatty acids in the blood. Due to the life span of blood cells (up to 120 days), the values provide insights into your longer-term diet. The results are then displayed, after about 10-20 days, on the zinzinotest.com website.

¹ Vitas AS' contribution is limited to the chemical analysis of each dried blood spot (DBS) test, performed in accordance with applicable quality standards.

KEY BENEFITS

- ▶ **Easy-to-use dried blood spot test**
- ▶ **Measures 11 fatty acids in your blood**
- ▶ **Provides data about your Omega-6:3 ratio, and 5 additional fatty acid wellness markers**

HOW DOES IT WORK?

Take your first BalanceTest to assess your fatty acid profile. At zinzinotest.com your results will be displayed when you enter your anonymous BalanceTest ID. Once you have completed the questionnaire, you will have access to your complete report.

Based on the results, you may choose to adjust your dietary intake of e.g. marine omega-3, through foods and/or supplements. After a period of approximately 120 days, take a second BalanceTest to evaluate how your fatty acid profile has changed over time.

WHAT WE MEASURE

The test analyzes 11 fatty acids, including saturated, monounsaturated (Omega-9) and polyunsaturated (Omega-6 and Omega-3) fatty acids. Individual fatty acid values are shown in the table and expressed as percentages of the total fatty acids measured. For comparison in the table, a reference range based on analyzed sample data is presented as Reference Value. The following fatty acids are measured:

Palmitic acid, C16:0, saturated fat

Stearic acid, C18:0, saturated fat

Oleic acid, C18:1, Omega-9

Linoleic acid, C18:2, Omega-6

Alpha-linolenic acid, C18:3, Omega-3

Gamma-linolenic acid, C18:3, Omega-6

Dihomo-gamma-linolenic acid, C20:3, Omega-6

Arachidonic acid (AA), C20:4, Omega-6

Eicosapentaenoic acid (EPA), C20:5, Omega-3

Docosapentaenoic acid (DPA), C22:5, Omega-3

Docosahexaenoic acid (DHA), C22:6, Omega-3

INDEPENDENT LABORATORY

Your test is analyzed by an independent and GMP-certified laboratory. The fact that Vitas is GMP-certified means that they follow good manufacturing practices. They are a contract laboratory for chemical analysis with 25 years of experience, providing high-quality chromatographic analysis based on cutting-edge knowledge and technology. Included with the blood test is a BalanceTest ID that only you can see. Neither the lab, nor Zinzino knows who submitted the test.

CERTIFIED TEST KIT

The Zinzino Dried Blood Spot Test complies with the requirements of Regulation (EU) 2017/746 on in vitro diagnostic medical devices (IVDR) and is manufactured under a quality management system certified to ISO 13485. Compliance with applicable regulatory requirements allows the test kit to bear the CE mark.

THIS IS HOW YOUR RESULTS ARE CALCULATED

11 fatty acids are analyzed and the total sum of their amounts is considered 100%. For the following 6 values, we use 7 of the fatty acids. The analyzed amount of each of the 7 fatty acids is calculated as a percentage out of the 100%.

1. Omega-3 Eicosapentaenoic acid (EPA)
2. Omega-3 Docosahexaenoic acid (DHA)
3. Omega-3 Docosapentaenoic acid (DPA)
4. Omega-6 Arachidonic acid (AA)
5. Omega-6 Dihomo-gamma-linolenic acid (DGLA)
6. Saturated fat, Palmitic acid (PA)
7. Saturated fat, Stearic acid (SA)

FATTY ACID SCORE

The Fatty acid score is calculated based on 3 recognized markers;

1. The value for the Omega-6 ratio is calculated as follows:
 $(DGLA + AA) \times 100 / (DGLA + AA + EPA + DPA + DHA)$
2. The value for the Omega-3 level is the sum of EPA + DHA
3. The Omega-6:3 ratio is calculated as Omega-6 (AA) / Omega-3 (EPA)

Each indicator value is given the same weight in a second calculation and assigned a value between 0 and 100, which is then divided by 3 to calculate the Fatty acid score.

The Fatty acid score is intended to be above 90. This does not provide information about the person's health status, only the calculated fatty acid score based on the fatty acid markers included in the test.

Note: EPA and DHA values have a high impact on the calculations. If EPA and DHA percentages are low, very low or even zero fatty acid scores are not uncommon.

OMEGA-3 INDEX^{WB**}

The Omega-3 index^{WB**} is the summary of the percentage values for the two marine Omega-3 fatty acids EPA and DHA in the analyzed blood sample. The reference level is at least 8%, while higher values such as 10% may also be shown in the report. Omega-3 fatty acids are important components of cell membranes. EPA is found in blood, muscles and tissues, while DHA is found in the brain, sperm and eyes.

^{**} Measures fatty acids in whole blood (WB = Whole Blood)

OMEGA-6:3 RATIO

The Omega-6:3 ratio is calculated by dividing the percent value of AA by the percent value of EPA (AA / EPA), which is then expressed as a ratio, for example 3:1. If this ratio is above 3:1, a change in diet may be considered. A low Omega-6:3 ratio is an indicator of fatty acid balance in the analyzed sample.

FATTY ACID FLUIDITY RATIO

Fluidity is calculated by dividing the percent value of the two saturated fats by the percent value of the two Omega-3s. The Fatty acid fluidity ratio is thus defined as $(PA + SA) / (EPA + DHA)$, and the result is expressed as a ratio, for example 3:1. If the Fatty acid fluidity ratio is below 4:1, it indicates a lower relative level of saturated fatty acids compared with EPA and DHA in the analyzed sample.

The more saturated the fats are in a membrane, the more rigid the membrane. Conversely, the more polyunsaturated the fats are in a membrane, the more fluid the membrane. Cell membrane composition and structural architecture are important for normal cell membrane properties. On the one hand, the membrane needs to be rigid enough to provide cellular structure. On the other hand, the membrane needs to be fluid enough to allow normal membrane function.

COGNITIVE FATTY ACID INDEX

This is calculated by dividing the percent value of AA by the sum of the percent values of EPA and DHA, i.e. the Cognitive fatty acid index = $AA / (EPA + DHA)$. The result is expressed as a ratio, for example 1:1. The value should be below 1:1 for a balanced relationship between selected Omega-6 and Omega-3 fatty acids in the analyzed sample. The Cognitive fatty acid index provides information about selected fatty acids and does not assess cognitive function, mental health, learning, memory, or mood.

OMEGA-6 (AA) LEVEL^{WB**}

The Omega-6 (AA)^{WB**} level shows the measured value of the Omega-6 fatty acid (AA) as a percentage of the total fatty acids measured. Average values are in the range of 6.5 to 9.5%. Arachidonic acid (AA) is an important Omega-6 fatty acid in the body. It is the starting point for the production of local tissue hormones triggered by Omega-6, such as prostaglandins, thromboxanes and leukotrienes, all with various functions. Overall, these compounds are involved in normal physiological signaling processes in the body.

^{**} Measures fatty acids in whole blood (WB = Whole Blood)

TAKING THE TEST

1. Zinzino Test is an approved in vitro diagnostics product for personal blood sample collection at home.

- First wash your hands with soap and rinse well with warm water and dry them.

2. Take out the **sample card** from the paper envelope.

Save the envelope for later use.

Tear off the **SAVE** part on the sample card and take a picture of the test ID. You can **only** see **your** test result with your anonymous test ID. Place the card with the two circles facing up on the table.

3. Stimulate blood flow by making big circles with your arm or shaking the hand downwards for 20 seconds.

4. Take out the single-use lancet. Remove the transparent safety cap and the lancet is ready to use.

Use the alcohol wipe to clean the tip of your finger (middle finger is recommended).

Place the lancet against the **lower** part of the fingertip facing the collection paper on the table. Push the top of the lancet towards the finger until you hear a click. The lancet will automatically make a small prick in the finger.

5. Do not touch the filter paper with your fingers.

6. Fill one circle at a time with blood. Squeeze your finger gently and wait for a drop of blood to fall inside the circle by itself. If one drop of blood does not cover the circle, allow one more drop from your finger to drip immediately.

Leave the **sample card** in a horizontal position at room temperature for at least 10 minutes for the samples to dry well.

7. Insert the **sample card** back into the paper envelope. Then place the paper envelope into the metal bag and **close it**.

IMPORTANT: Do not remove desiccant packet inside the metal bag.

8. Place the closed metal bag into the big envelope with the laboratory address on it. **NOTE!** You **must** put the correct amount of postage stamps on the envelope before you put in the mail box.

Register your test ID code at **www.zinzinotest.com**. This is the website where you can see your test result later. It takes 10-20 days until your result is ready.

IMPORTANT: Keep the **SAVE** part of the card. You can **only** see **your** test result with your anonymous test ID.



