

# The Good Health Retrospective Data Analysis

<b>Submission date</b> 25/06/2025	<b>Recruitment status</b> No longer recruiting	<input type="checkbox"/> Prospectively registered <input type="checkbox"/> Protocol
<b>Registration date</b> 21/07/2025	<b>Overall study status</b> Ongoing	<input type="checkbox"/> Statistical analysis plan <input checked="" type="checkbox"/> Results
<b>Last Edited</b> 10/12/2025	<b>Condition category</b> Other	<input type="checkbox"/> Individual participant data

## Plain English summary of protocol

### Background and study aims

Health is a complex area of research involving various areas and the network of interactions between physical, mental, and social well-being domains. Micronutrient status appears to be closely tied to health. Every 4 to 5 years, Austrian nutrition reports publish an assessment of the nutritional status of the population, which also analyzes the supply of essential micronutrients. These reports generally form a basis in the food and nutrition sector, not only on a national level, but also on a European and international level. Continuous publication of the nutrition reports in Austria ensures regular monitoring and access to the nutritional status of the population. However, the initial situation of the individual respondent, including personal metabolism, cannot be taken into account when making mathematical conclusions about the supply status, as the previous nutritional reports have done thus far. For example, using food tables, random error ranges from 2 to 20 % for individual estimates of iron and calcium have been reported. Additionally, food estimations based on frequency reports involve errors up to 90 %, and are typically in the 20-50 % range. Therefore, this study aims to retrospectively analyze the micronutrient status of a large sample of healthy Austrian adults, and to identify possible differences in the micronutrient status based on various factors, solely based on retrospective data analyses in 2025 of an already existing data set.

### Who can participate?

Adults 20 to 65 years of age and residing in Austria. Participants are enrolled on a voluntary basis via direct contact with registered physicians in primary care offices. The region for involvement is Austria, nationwide and voluntary in all cases.

### What does the study involve?

Analysis of sociodemographic-anthropometric variables: region of residence in Austria, sex, age, body weight, calculated body mass index (BMI), including a questionnaire with self-reported measures for diet pattern; physical activity levels; alcohol and nicotine consumption; supplement intake; medication intake (based on sex, age, substance prevalence); and a blood sample.

### What are the possible benefits and risks of participating?

As this is a retrospective study, there is no direct involvement or risk for the patients.

### Where is the study run from?

University of Innsbruck (Austria)

When is the study starting and how long is it expected to run for?  
The study began in March 2023 and will end in December 2025.

Who is funding the study?  
BIOGENA GmbH & Co KG (Austria)

Who is the main contact?  
Prof. Dr. rer. nat. Katharina Wirnitzer, [katharina.wirnitzer@uibk.ac.at](mailto:katharina.wirnitzer@uibk.ac.at)

## Contact information

**Type(s)**  
Public, Scientific, Principal investigator

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## Additional identifiers

**Clinical Trials Information System (CTIS)**  
Nil known

**ClinicalTrials.gov (NCT)**  
Nil known

**Protocol serial number**  
P6210-045-011

## Study information

**Scientific Title**  
Retrospective data analysis of the micronutrient status of healthy adults in Austria and the relationship with health variables

**Acronym**  
GHRDA

**Study objectives**  
This research hypothesized that there are distinct associations between blood micronutrient levels and health indicators in adulthood, including blood lipids and body composition.

## **Ethics approval required**

Ethics approval not required

## **Ethics approval(s)**

Due to the retrospective design, no ethics approval is applicable for the present project. The new medical methods involve treatments after existing conventional medical treatment methods have been exhausted (Section 30 of the Salzburg Hospitals Act). This situation, in combination with the lack of intervention, blood sampling via registered doctors as standardized medical check-up, anonymization of the data and the fact that no ethics vote would have been legally required for an Austrian project with a similar structure - the Austrian Nutrition Report 2012 - and that this was obtained purely on a voluntary basis, leads to the conclusion that no ethics vote was required for the aforementioned research project.

## **Study design**

Retrospective data analysis

## **Primary study design**

Observational

## **Study type(s)**

Prevention

## **Health condition(s) or problem(s) studied**

Micronutrient status of healthy adults in Austria and the relationship with health variables

## **Interventions**

This project is retrospective, includes no intervention, and utilizes data from an online questionnaire on sociodemographic characteristics as well as a previous blood collection for micronutrient laboratory analysis.

Sociodemographic-anthropometric variables: region of residence in Austria, sex, age, body weight, calculated body mass index (BMI), including a questionnaire with self-reported measures for diet pattern, physical activity levels, alcohol and nicotine consumption, supplement intake, and medication intake (based on sex, age, substance prevalence).

Blood sample: omega-3-index, cholesterol corrected coenzyme q10, folic acid, ferritin, vitamin B12, vitamin D, vitamin B6, molybdenum, manganese, selenium, zinc, copper, magnesium, calcium, potassium, iron, soluble transferrin-receptor, hemoglobin, wrCRP, apolipoprotein A, triglycerides, HDL-C, LDL-C, total cholesterol, homocysteine, leukocytes, erythrocytes, hematocrit, mean corpuscular volume, mean corpuscular hemoglobin, mean corpuscular hemoglobin concentration, thrombocytes, and mean platelet volume.

## **Intervention Type**

Other

## **Primary outcome(s)**

1. Body weight (kg) reported by questionnaire, single cross-sectional assessment
2. Body mass index (BMI; kg/m<sup>2</sup>) calculated from questionnaire, single cross-sectional assessment
3. Region of residence in Austria reported by questionnaire, single cross-sectional assessment
4. Omega-3-index measured by blood test (% of total Fatty Acids), single cross-sectional

assessment

5. Cholesterol measured by blood test (mg/dl), single cross-sectional assessment
6. Adjusted coenzyme q10 ( $\mu\text{mol}/\text{mmol Chol}$ ) measured by blood test, single cross-sectional assessment
7. Folic acid measured by blood test (ng/ml), single cross-sectional assessment
8. Ferritin measured by blood test (ng/ml), single cross-sectional assessment
9. Vitamin B 12 measured by blood test (pg/ml), single cross-sectional assessment
10. Vitamin D measured by blood test (nmol/l), single cross-sectional assessment
11. Vitamin B 6 measured by blood test ( $\mu\text{g}/\text{l}$ ), single cross-sectional assessment
12. Molybdenum measured by blood test ( $\mu/\text{l}$ ), single cross-sectional assessment
13. Manganese measured by blood test ( $\mu/\text{l}$ ), single cross-sectional assessment
14. Selenium measured by blood test ( $\mu/\text{l}$ ), single cross-sectional assessment
15. Zinc measured by blood test (mg/l), single cross-sectional assessment
16. Copper measured by blood test (mg/l), single cross-sectional assessment
17. Magnesium measured by blood test (mg/l), single cross-sectional assessment
18. Calcium measured by blood test (mg/l), single cross-sectional assessment
19. Potassium measured by blood test (mg/l), single cross-sectional assessment
20. Iron measured by blood test (mg/l), single cross-sectional assessment
21. Soluble transferrin-receptor measured by blood test (mg/l), single cross-sectional assessment
22. Hemoglobin measured by blood test (g/dl), single cross-sectional assessment
23. wrCRP measured by blood test (mg/l), single cross-sectional assessment
24. Apolipoprotein A measured by blood test (g/l), single cross-sectional assessment
25. Triglycerides measured by blood test (mg/dl), single cross-sectional assessment
26. HDL-C measured by blood test (mg/dl), single cross-sectional assessment
27. LDL-C measured by blood test (mg/dl), single cross-sectional assessment
28. Homocysteine measured by blood test ( $\mu\text{mol}/\text{l}$ ), single cross-sectional assessment
29. Leukocytes measured by blood test (cells/nl), single cross-sectional assessment
30. Erythrocytes measured by blood test (cells/pl), single cross-sectional assessment
31. Hematocrit measured by blood test (V%), single cross-sectional assessment
32. Mean corpuscular volume measured by blood test (fl), single cross-sectional assessment
33. Mean corpuscular hemoglobin measured by blood test (pg), single cross-sectional assessment
34. Mean corpuscular hemoglobin concentration measured by blood test (g/dl Ery), single cross-sectional assessment
35. Thrombocytes measured by blood test (cells/nl), single cross-sectional assessment
36. Mean platelet volume measured by blood test (fl), single cross-sectional assessment

### **Key secondary outcome(s)**

1. Physical activity levels reported by questionnaire (WHO PA guidelines 150-300 min/week), single cross-sectional assessment
2. Dietary pattern reported by questionnaire, single cross-sectional assessment
3. Diastolic blood pressure assessed during medical check-up examination (mmHg), single cross-sectional assessment
4. Alcohol consumption reported by questionnaire, single cross-sectional assessment
5. Smoking prevalence reported by questionnaire, single cross-sectional assessment
6. Supplement intake reported by questionnaire, single cross-sectional assessment
7. Medication intake reported by questionnaire, single cross-sectional assessment

### **Completion date**

31/12/2025

## **Eligibility**

**Key inclusion criteria**

1. Reside in Austria
2. Aged at least 20 years
3. No severe health ailments

**Participant type(s)**

Healthy volunteer

**Healthy volunteers allowed**

Yes

**Age group**

Mixed

**Lower age limit**

20 years

**Upper age limit**

65 years

**Sex**

All

**Total final enrolment**

1377

**Key exclusion criteria**

1. Failing to provide written informed consent
2. Being younger than 20 years or older than 65 years
3. Lactating or pregnant
4. Being diagnosed with a severe health condition (such as diabetes, cardiovascular disease, hypertension, specific allergies, chronic lung disease, liver disease, musculoskeletal disorders, cancer, mental illness, chronic pain, or COVID-19)
5. Taking medications for severe illnesses (whether prescribed or self-administered)
6. Incomplete questionnaires or lacking responses to key questions

**Date of first enrolment**

25/03/2021

**Date of final enrolment**

27/04/2021

**Locations****Countries of recruitment**

Austria

**Study participating centre**

**University of Innsbruck**  
Fürstenweg 185  
Innsbruck  
Austria  
6020

## Sponsor information

**Organisation**  
BIOGENA GmbH & Co KG

## Funder(s)

**Funder type**  
Industry

**Funder Name**  
BIOGENA GmbH & Co KG

## Results and Publications

Individual participant data (IPD) sharing plan

**IPD sharing plan summary**  
Not expected to be made available

### Study outputs

Output type	Details	Date created	Date added	Peer reviewed?	Patient-facing?
<a href="#">Results article</a>		10/10/2025	10/12/2025	Yes	No