# Postprandial amino acid uptake kinetics of barley rice proteins

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| **Ethical review** | Approved WMO |
| **Status** | Recruitment stopped |
| **Health condition type** | Other condition |
| **Study type** | Interventional |

## Summary

### ID

NL-OMON51345

**Source**
ToetsingOnline

**Brief title**
Bar-Pro study

### Condition

- Other condition

**Synonym**
amino acid uptake kinetics

**Health condition**

opname van aminozuren

**Research involving**
Human

## Sponsors and support

**Primary sponsor:** Wageningen Food and Biobased Research
**Source(s) of monetary or material Support:** EverGrain Ingredients

## Intervention

**Keyword:** barley rice proteins, postprandial amino acid kinetics

## Outcome measures

### Primary outcome

The main study parameters are total amino acid (AA) and essential amino acid

(EAA) uptake kinetics e.g. the appearance of free amino acids in blood samples

collected before and after the postprandial protein load.

### Secondary outcome

Plasma glucose and insulin levels will be determined before and after

postprandial protein load

# Study description

### Background summary

Barley rice protein is extracted from brewers spent grain (BSG), the most voluminous by-product of the beer brewing industry. Valorization and utilization of spent grain protein is of great interest in terms of health and sustainability. However, the knowledge of uptake kinetics of this protein concentrate is insufficient at this point.

### Study objective

In the current study we aim to measure the postprandial amino acid uptake kinetics of barley rice protein, and compare this to pea protein. A benchmark protein (whey) will be included for comparability of amino acid uptake of different protein sources.

### Study design

The study is a randomized, cross-over, double blind, controlled trial.

**Intervention**

During each visit, research subjects will receive one of the three protein concentrates (barley rice protein, pea protein or whey protein) dissolved in water, representing a 20g protein load, in randomized order.

**Study burden and risks**

In this study we will include healthy research subjects based on the study criteria and a health questionnaire. There are minor risks for the research subjects of this study. There are no direct benefits for the research subjects. The total amount of blood collected (360 ml) is spread over three weeks and we will exclude subjects with anaemia. Blood collection will therefore not be expected to cause any problems. Research subjects that will participate in the study will invest approximately 20 hours during the trial.

# Contacts

**Public**
Selecteer

Bornse Weilanden 9
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NL
**Scientific**
Selecteer

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# Trial sites

## Listed location countries

Netherlands

# Eligibility criteria

**Age**
Adults (18-64 years)

## Inclusion criteria

* Apparently healthy men and women;
* Age between 18 and 40 years;
* Body mass index (BMI) between 18.5 and 30 kg/m2 ;
* Having veins suitable for blood sampling via a catheter (judged by study nurse/ medical doctor).

## Exclusion criteria

* Any metabolic, gastrointestinal, inflammatory or chronic disease (such as diabetes, anaemia, hepatitis, cardiovascular disease),or having a condition or disease that may lead to an impaired immune system;
* History of gastrointestinal surgery or having (serious) gastrointestinal complaints;
* History of liver dysfunction (cirrhosis, hepatitis) or liver surgery;
* Kidney dysfunction (self-reported);
* Any use of medication that may suppress the immune system, this will be judged by the medical supervisor;
* Use of medication that may influence the study results, such as gastric acid inhibitors, laxatives, stomach protectors and drugs that can affect intestinal motility, this will be judged by the medical supervisor;
* Anaemia (Hb values <7.5 mmol/L for women and <8.5 mmol/L for men);
* Reported slimming, medically prescribed or other extreme diets;
* Use of protein supplements;
* Not willing to give up blood donation during the study;
* Current smokers;
* Alcohol intake *4 glasses of alcoholic beverages per day;
* Pregnant, lactating or wishing to become pregnant in the period of the study (self-reported);
* Abuse of hard drugs;
* Having food allergies and/or intolerances (e.g. for gluten);
* Not having a general practitioner;
* Participation in another clinical trial at the same time;
* Being an employee of the department Food, Health & Consumer Research of Wageningen Food & Biobased Research.

# Study design

## Design

| | |
|---|---|
| Study type: | Interventional |
| Intervention model: | Crossover |
| Masking: | Double blinded (masking used) |
| Control: | Uncontrolled |
| Primary purpose: | Other |

## Recruitment

NL

| | |
|---|---|
| Recruitment status: | Recruitment stopped |
| Start date (anticipated): | 09-06-2022 |
| Enrollment: | 12 |
| Type: | Actual |

# Ethics review

Approved WMO

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|---|---|
| Date: | 20-05-2022 |
| Application type: | First submission |
| Review commission: | CMO regio Arnhem-Nijmegen (Nijmegen) |

# Study registrations

## Followed up by the following (possibly more current) registration

No registrations found.

## Other (possibly less up-to-date) registrations in this register

No registrations found.

## In other registers

| Register | ID |
| --- | --- |
| Other | het traject loopt |
| CCMO | NL80654.091.22 |