Participant information brochure for medical and scientific research

The impact of short-term forearm immobilization on forearm muscle glucose and amino acid metabolism of volunteers with or without type 2 diabetes

Preface

Dear Sir/Madam,

With this information letter, we would like to ask if you would like to participate in the medical-scientific study: The impact of short-term forearm immobilization on forearm muscle glucose and amino acid metabolism of volunteers with or without type 2 diabetes (T2D). It is entirely up to you to decide whether you want to participate. Before making a decision about participating in this study, you will be provided with an explanation of the research. Please read this information letter carefully. If you have any questions or wish to participate in the study after reading, you can always contact one of the researchers for further clarification. The contact details can be found on pages 10-11. If you wish to participate, you can complete the consent form provided by us.

Ask questions

Please feel free to ask any questions you may have after reviewing the information provided in this information brochure. In addition, we recommend you do the following:

- Ask the researcher who provided you with this information for any clarifications you may need.
- Discuss this research with your partner, family, or friends.
- Ask questions to the independent expert. Contact details can be found on page 11.
- Read the information on www.rijksoverheid.nl/mensenonderzoek.
- Review the brochure 'General Information for the Research Participant' from the Ministry of Health, Welfare, and Sport, which you received along with this brochure.

1. General information

Wageningen University is the sponsor of this research. Throughout this document, Wageningen University will be referred to as the ‘sponsor’. The research is being conducted by investigators, who may include researchers or research nurses, at Wageningen University. The Dutch Diabetes Foundation is funding this study.

Participants in a medical-scientific study are often referred to as research subjects. Further details regarding the eligibility criteria for this study can be found in section 5, titled ‘Who can participate in this research?’

This research has been approved by the Brabant Medical Ethics Committee.

2. What is the purpose of the study?

This study looks at how temporarily not using the forearm affects the uptake of sugars and amino acids by the forearm muscles. We are comparing this in participants with and without type 2 diabetes.

3. What is the background of the study?

The number of people with type 2 diabetes (T2D) is increasing worldwide. It is expected to rise in the Netherlands to 1.3 million people by 2040. In addition, periods of physical inactivity are becoming more common, for example during bed rest due to illness (such as COVID-19) after surgery, or when someone has to wear a cast after a bone fracture or for a diabetic foot. During these periods of physical inactivity, the muscles of people with normal blood sugar levels become less sensitive to insulin, absorbing almost half as much sugar from the blood. They also lose muscle mass, up to nearly 1.5 kilograms after just a week of complete bed rest, and become weaker. Why muscles react this way is still unknown, but we do know that muscle building decreases. By muscle building, we mean how quickly so-called “amino acids,” the building blocks of our muscles, are converted into muscle mass.

Because the muscles of people with T2D are already less sensitive to insulin, this may get worse during periods of physical inactivity and disrupt blood sugar balance. We also expect their rate of muscle building to be less as a result. So far, research has mainly focused on people with normal blood sugar levels, so we do not yet know exactly how people with T2D respond to periods of inactivity.

This study involves casting the forearm muscle to examine the effects of periods of physical inactivity. The goal is to investigate how temporarily not using your forearm affects the uptake of sugars and amino acid processing in the forearm muscles of individuals with T2D. We will compare these effects with those in people without T2D. With the information we gather, we aim to find ways to prevent or reduce muscle loss in people who are temporarily unable to move, such as hospitalized patients.

4. What participation involves

The entire study consists of five visits to the Human and Animal Physiology laboratory at Wageningen University (explained further on page 4). You will visit the lab for informed consent, where you will receive information about the study and be asked to give your consent. After giving your consent, you will return to the lab for a screening visit, where your suitability for the study will be evaluated to ensure you meet the criteria. Additionally, there are three testing days when your forearm will be casted. The cast will be on your forearm for approximately 2.5 days (53.5 hours). We are looking for 26 male and female participants between the ages of 18 and 65. This is a study that includes two groups: a group with and a group without T2D. You will eat a ready-to-eat meal one day before the start and a standardized diet during the study, provided by us. While your forearm is in the cast, we will measure the uptake and release of sugars and amino acids in your forearm muscle. An overview of the entire study is shown in **Figure 1**.

The informed consent visit

During the visit, you will receive a thorough explanation of the study's objectives, procedures, and potential risks. You can also ask questions and receive detailed answers about the research. Once everything is clear, we will ask you to sign a consent form.

The screening visit

We ask you to remain fasted (drinking water is allowed) from 22:00 the night before the screening. If you have T2D, you must refrain from using metformin for 48 hours before this visit. The visit will begin with an explanation of the screening process, followed by a chance for you to ask questions. We will discuss a medical questionnaire regarding your general health, medical history, medication use, and physical activities. Additionally, your body weight, height, blood pressure, body composition (DXA), handgrip strength, and HbA1c will be measured. Moreover, an oral glucose tolerance test (OGTT) will be conducted to determine your glucose tolerance. For this test, you will drink a solution with sugar, and we will measure your blood sugar levels at specific moments to determine how well your body processes sugar. After the tests, we will provide you with a small snack or a sandwich. Based on the screening results, a decision will be made regarding your eligibility to participate in the study. You will be informed of this decision by phone or e-mail.

Diet, medication, and physical activity prior to the screening and test period

During the test days and 48 hours before the testing period and screening visit, you must avoid strenuous physical activities, such as intense sports or heavy physical labour. Additionally, you must refrain from consuming alcohol for 24 hours before and during the test period and screening visit. If you have T2D, you are asked not to use metformin for 48 hours before the screening and throughout the entire test period.

During your screening visit, we will provide you with a ready-to-eat meal and yoghurt dessert. This meal should be consumed the evening before the start of the first test day. You can choose between a chicken and a vegetarian option. Furthermore, we ask you to remain fasting from 22:00 the night before the screening and from 23:00 the subsequent test days (drinking water is allowed).

Food diary

We request that you keep a record of your food intake (both food and drinks) for 72 hours in a paper-based food diary between the screening period and before the start of the test period. This diary, provided during the screening visit will help us obtain an idea of your usual food consumption patterns.

Test day

On the test day, you are expected to arrive at the university at 7:00 in an overnight fasted state. This means that you should not have eaten or consumed any liquids since 23:00. However, drinking water is allowed. The first test day will last approximately 15.5 hours (see **Figure 1** for a study overview).

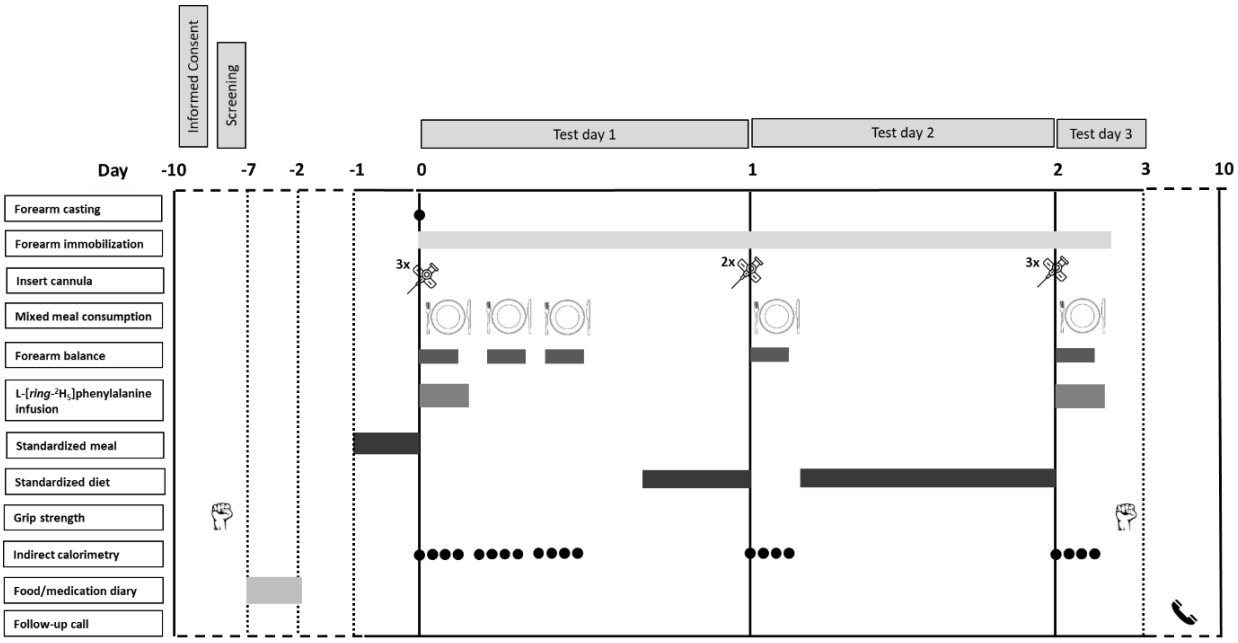

Figure 1: Overview of the study protocol.

At the laboratory, three cannulas will be inserted. Two of these cannulas will remain in place throughout the entire test day. The first cannula will be placed in the elbow crease of your arm that is not cast. This cannula will be used to administer a fluid containing a stable isotope (tracer). This tracer will be administered over the first 5 hours of the day, allowing us to track how the tracer behaves in your forearm muscle.

Afterwards, two other cannulas are inserted. These will be used to take blood samples throughout the day. One cannula will be placed in a blood vessel in the hand of the arm that is not in a cast and that you prefer to use. The other cannula is placed in the elbow crease of the arm which will be cast. This is the arm you use less often. If you are right-handed, we will cast your left arm (and vice versa). Your hand will be kept in a hand warmer throughout the day. This device blows warm air over your hand, causing the blood we collect to resemble arterial blood.

After these steps, we will measure your energy expenditure for 20 minutes. You will lie on your back in bed with a transparent ventilated hood over your head. This system measures the amount of oxygen

you inhale and the amount of carbon dioxide you exhale at rest. During this measurement, you must remain still, not move, and not fall asleep.

An hour later, your forearm will be cast. Half an hour after applying the cast, we will simultaneously take blood samples from your hand and the elbow crease to measure the metabolism of the forearm muscles. We will also use an ultrasound device to measure the blood flow in the artery of your upper arm at these times.

After the cast is applied, you will receive a meal (e.g., bread, butter, meat, fruit, salad, dairy), which you must eat within 15 minutes. Blood samples will be taken, and blood flow will be measured at multiple time points after the meal (15, 30, 45, 60, 90, 120, 150, 180, and 210 minutes). Immediately after the meal, your energy expenditure will be measured, and these measurements will be repeated after 60, 120, and 180 minutes. The first cannula will be removed after 3.5 hours. After 4.5 hours, the meal procedure will be repeated twice with the same meals. This means that on the test day, you will receive the same meal three times, at around 9:00, 13:45, and 18:30. After the last meal, you will be given a small snack to eat before 23:00, after which you can go home.

During the test day, you will lie in bed and have the option to read, listen to music, watch TV/videos, or bring a laptop to work or study. You can go to the toilet during the test day. Between meals, you are encouraged to walk around while keeping the casted arm in a sling. Blood samples will be collected at specific times via the cannulas.

Exactly 24 and 48 hours (Day 2 and Day 3) after the cast is applied, you will return to the laboratory to repeat the tests with breakfast. You will be expected at the laboratory at 8:15 on test day 2, and this test day will last until 13:00. On test day 3, we will start at 7:00, and you can go home at 13:30. You will be finished once all samples have been collected on the morning of day 3, the cast has been removed, and your grip strength has been assessed. Within 3 to 7 days after the last study procedures, we will contact you to check how you are doing.

5. Who can participate in this study?

You can participate in this study if you are a male or female between the ages of 18 and 65, with a BMI (body weight (kg) / height (m) squared) between 18.5 and 30. Additionally, you must engage in non-competitive physical activity for at least once a week for minimally 30 minutes. You may or may not have T2D. If you have T2D, you will only be included if you manage your condition through lifestyle changes and/or using metformin. Before the study begins, a screening will be conducted to determine your eligibility for participation.

You **<u>are not eligible</u>** to participate in the study if any of the following criteria apply to you:

- Type 1 or a genetic form of diabetes
- Any diagnosed cardiovascular (heart) disease or high blood pressure (≥140 mmHg systolic and/or ≥90 mmHg diastolic)
- Chronic use of any prescribed or over-the-counter pharmaceuticals (excluding oral contraceptives and contraceptive devices)
- Do not consume three regular meals a day (breakfast, lunch, and dinner) and/or follow a low-carbohydrate diet
- Smoking or chewing tobacco
- Known anaemia
- Regular use of dietary protein and/or amino acid supplements (>3 times per week)
- Currently involved in a structured progressive resistance training program (>3 times per week)
- A personal or family history of thrombosis (clots), epilepsy, seizures, or schizophrenia

- Any previous motor disorders or disorders in muscle and/or lipid metabolism
- History of kidney disease
- History of liver disease
- Pregnant or breastfeeding
- History of any drug or alcohol abuse in the past two years
- Any musculoskeletal injury of the arms in the 12 months before starting the study
- Claustrophobia
- Unable to give consent

6. Time investment

In total, you will visit the laboratory at Wageningen University 5 times. These visits include: one informed consent visit (1 hour), one screening (2.5 hours), and three test days (Day 1: 15.5 hours, Day 2: 5 hours, and Day 3: 6.5 hours). During the test days, you will have the cast on your arm for approximately 2.5 days (53.5 hours).

7. Diet and drink restrictions

You are asked to remain fasting from 22:00 the evening before the screening and from 23:00 on each test day. This means you should not eat or drink after these times (drinking a small amount of water is allowed). Additionally, we ask you to record your habitual food intake for three consecutive days in a paper-based food diary between the screening visit and before the start of the test period. This diary will be provided during your visit for the screening. You are also asked to eat a standardized meal, which we will provide, the day before the start of test day 1. During the two-day casting period, we will provide you with a standardized diet. This diet consists of normal food products and is based on your calculated specific energy expenditure. You will receive seven meals and two snacks during the testing period. You cannot select what you want to eat yourself, but during the screening visit, we will ask you for allergies/diet preferences so we are sure that you are ok with the diet that we will provide. During the casting period, you are not allowed to consume any food or drink other than what we provide.

8. What side effects, adverse effects, or discomfort may you experience?

With participation in this study, very few risks can be expected. Below the possible risks/side effects of the various actions are discussed.

Stopping with metformin during the study

You are asked to temporarily stop using metformin if you are currently using it. Since you can only participate in the study if you are otherwise healthy and the stop is for a few days, there is no risk involved. After the study is completed, you can take the missed morning dose of metformin (if you take it twice a day) around 2:00 PM. You can then take the evening dose as usual. If you take metformin three times a day, do not make up the missed morning dose. Instead, take the second dose of the day around 2:00 PM, followed by the evening dose at the usual time.

Forearm casting

During this study, one of your forearms will be placed in a cast for a period of 2.5 days, and we will ask you to wear a sling. As a result, you will not be able to use your arm during the casting period. If you are right-handed, we will cast your left arm (and vice versa). This will make it difficult or impossible to perform your daily activities. Activities such as biking, driving, or exercising will not be possible during this period. Please also keep in mind that writing and working on a laptop may be challenging with your arm in a cast.

DXA scan
The DXA scan is used to measure your body composition, including the distribution of fat mass, bone mass, and muscle mass. For the DXA scan, you will lie on your back on a treatment table. You will need to remove all jewellery and accessories, but you can keep your underwear and a shirt or T-shirt on. The DXA scan is completely painless and takes a maximum of 5 minutes. It uses a very low dose of X-ray radiation. The total exposure to radiation from the DXA scan is extremely low and poses no health risks.

Blood collection
You may experience discomfort during the insertion of the cannulas for blood collection. This can result in a local "bruise". A total of 393 mL of blood will be collected during the entire test period (test day 1 through test day 3) including the screening. For comparison: during a blood donation at the blood bank, 500 mL of blood is collected at once. The total amount of blood drawn during the study is therefore less than that of a blood donation. If you donate blood regularly, you may only participate in this study two months after your last blood donation. Also during the examination and up to one month after the examination, you should not donate blood.

Standardized diet
The ready-to-eat meal and standardized diet provided during the test day are prepared using commercially available food products. We will ask you about any allergies or dietary preferences to ensure that you are comfortable with the diet we provide. Therefore, there are no risks associated with consuming the food provided by us.

Infusion
The infusion administered to you on the test day contains amino acids (the building blocks of proteins) that are normally present in the blood. Therefore, there are no risks associated with the infusion itself. However, as with any intravenous injection, there is a small risk of irritation or a bruise at the injection site.

Indirect calorimetry
Indirect calorimetry is a safe and non-invasive method used to measure the amount of oxygen consumed and carbon dioxide expelled in your exhaled breath. For this procedure, you will be required to wear a ventilated transparent hood over your head for 20 minutes while resting. A tube connects the hood to the measuring device, enabling us to collect the air you exhale. There are no risks associated with the ventilated hoods, although you may feel somewhat warm during the procedure.

9. What are the potential benefits and drawbacks of participating in this research study?
There are no direct benefits associated with your participation in this study. The aim of the research is to understand how temporarily not using the forearm affects the uptake of sugars and amino acids by the muscles in your forearm. All measurements will be used solely for scientific purposes. Your participation contributes valuable information to scientific research. The potential drawbacks of the study include the physical burden it may impose, such as blood sample collection, wearing a forearm cast for 2.5 days, the consent visit, screening, and the test days. Additionally, the time investment required by the study could be a disadvantage for you. You will visit the laboratory a total of 5 times: consent visit (1 hour), screening (2.5 hours), test day 1 (15.5 hours), test day 2 (5 hours), and test day 3 (6.5 hours). Another potential drawback is the dietary restriction: you will need to fast before and during the screening and testing period, and we will provide a ready-to-eat meal and a standardized diet.

10. What happens if you do not wish to participate in the study?

Your participation in this study is entirely voluntary, and you have the right to withdraw from the study at any time without providing a reason. After receiving this information brochure, you will be given at least one week to consider your participation before we contact you again regarding potential involvement.

The study will end for you in the following situations:

- All the scheduled examinations have been completed.
- You become pregnant.
- You decide to voluntarily withdraw from the study. You have the right to do so at any time, and you should inform the researcher immediately. You are not obligated to provide a reason for your decision to withdraw.
- The researcher determines it is in your best interest to discontinue your participation.
- Any of the following authorities decide that the study must be terminated:
  - Wageningen University
  - The government
  - The medical-ethical committee responsible for reviewing the study.

The researchers will retain and utilize the data and biological materials, such as blood, collected up until the point of discontinuation. If you wish, collected biological materials can be destroyed. Please inform the researcher of your preference in this regard.

11. What happens to your samples?

If you participate in the study, you also give consent for the collection, use, and storage of your data and bodily materials. The results will always be provided to you unless you indicate that you are not interested.

What data do we retain?

We retain the following data:

- Your name
- Your gender
- Your address
- Your date of birth
- Health-related information
- (Medical) data collected during the study

What bodily materials do we retain?

We collect, use, and store blood samples.

Why do we collect, use, and store your data and bodily materials?

We collect, use, and store your data and bodily materials to answer the research questions of this study and to publish the results in a scientific journal. The data and/or bodily materials may be used by members of the research team from the Department of Human and Animal Physiology at Wageningen University in conducting the study/analyzing research data, or performing measurements on the bodily materials.

How do we protect your privacy?

To protect your privacy, we assign a code to your data and bodily materials. Only this code is used on all your data and collected samples. The key to the code is stored in a secure Excel file on a server at the university, accessible only to members of the research team at Wageningen University. When processing

your data and blood samples, we always use only this code. In reports and publications on the research, it will not be possible to identify that it pertains to you.

Who can access your data?
Certain individuals may have access to your name and other personal data without the code. This includes data specifically collected for this study. The following individuals may access your data:

- Members of the committee overseeing the safety of the research.
- An auditor hired by the sponsor or working for the sponsor.
- National and international regulatory authorities.

These individuals are bound to keep your data confidential. We require your permission to grant access to these individuals. The Health Care and Youth Inspectorate may access your data without your permission.

How long do we retain your data and bodily materials?
We retain your data for 15 years within the Department of Human and Animal Physiology at Wageningen University. Your blood samples are also stored in the Department of Human and Animal Physiology. They are kept for 15 years to allow for additional measurements related to this study. Once no longer necessary, your samples will be destroyed.

Can we use your data and bodily materials for other research?
Your collected data and any remaining blood samples may be relevant for other scientific research. For this purpose, your data and blood samples will be retained for 15 years at the Department of Human and Animal Physiology at Wageningen University. In the consent form, you indicate whether or not you agree to this. If you do not grant permission, you can still participate in this study. You will receive the same treatment.

What happens in case of unexpected findings?
During the study, we may come across incidental findings that are not directly related to the research but are relevant to your health. In such cases, the researcher will contact your general practitioner. You will then discuss with your general practitioner or specialist what actions should be taken. The costs incurred will be covered by your own health insurance. By completing the form, you give consent for informing your general practitioner or specialist.

Can you withdraw your consent for the use of your data?
You can withdraw your consent for the use of your data at any time. Please inform the researcher about your decision.

We send the data to countries outside the European Union
In this study, we will also send (a part of) the coded data and biological material to countries outside the European Union. This involves sending blood samples to a university in the United States for analysis. The privacy regulations in those countries do not match those of the European Union, but your privacy will be protected at an equivalent level.

Would you like to know more about your privacy?

- If you want to learn more about your rights regarding the processing of personal data, please visit www.autoriteitpersoonsgegevens.nl.
- If you have any questions about your rights or if you have a complaint regarding the processing of your personal data, please contact the person responsible for the processing of your personal data.

- If you have complaints about the processing of your personal data, we recommend discussing them first with the research team. You can also contact the Data Protection Officer at Wageningen University or file a complaint with the Dutch Data Protection Authority.
- Refer to section 14 for contact information.

- **Is there compensation if you decide to participate in this research?**

Upon completion of the study (screening and test days), you will receive a compensation of €250,- plus any travel expenses you incurred for travelling to the university (calculated per kilometer). In the case of partial completion of the study, you will receive compensation proportionate to your participation.

- **Are you insured when you participate in the study?**

Wageningen University has taken out a collective insurance policy for everyone participating in this research. The insurance covers damages caused by the study, although not all damages are covered. You can find more information about the insurance and its exceptions in Appendix A. It also provides details on whom to report any damages to.

- **Do you have any questions?**

If you have any questions after reading this information, you can always contact one of the individuals listed below. Further information about participating in research can be found in the brochure 'General Information for Research Participants' from the Ministry of Health, Welfare, and Sport.

Do you have a complaint? Please discuss this with a member of the research team. If you prefer not to do so, you can contact the complaints officer.

Coordinating investigator/project leader
Gül Turan
Human and Animal Physiology
Wageningen University
Zodiac, Building 122, Room PC0086
De Elst 1, 6708 WD Wageningen
Phone: 0317-484 136
E-mail: Gul.Turan@wur.nl

Principal investigator
Marlou Dirks
Human and Animal Physiology
Wageningen University
Zodiac, Building 122, Room E0238
De Elst 1, 6708 WD Wageningen
Phone: 0317-484 136
E-mail: Marlou.Dirks@wur.nl

Complaints officer
Eveline Waterham
Human Nutrition
Wageningen University
Helix, building 124, Stippeneng 4 6708 WE Wageningen
Email: Eveline.Waterham@wur.nl

Data protection officer
Frans Pingen
Wageningen University
Atlas, building 104, Droevendaalsesteeg 4
Helix, building 124, Stippeneng 4 6708 PB Wageningen
E-mail: functionarisgegevensbescherming@wur.nl

Dutch data protection authority
www.autoriteitpersoonsgegevens.nl
Phone: 070-8888 500

- **Independent physician**

Would you like independent advice regarding participation in this research? Then you can consult an independent physician, Dr. Victor Niemeijer. Dr. Niemeijer is not involved in this research but is sufficiently informed to answer any questions you may have that you cannot or do not want to discuss with the individuals mentioned above. You can reach Dr. Niemeijer using the following contact details:

Phone: 0492-595966
Email: Vm.niemeijer@elkerliek.nl

You can request to speak with Dr. Niemeijer regarding the research; if he is unavailable, you can ask to be called back. You can provide your availability and phone number for the callback.

- **How do you give consent for the research?**

You can take your time to think about this research. Afterwards, you can inform the researcher whether you understand the information and whether or not you want to participate. If you wish to participate, you fill out the consent form that you can find with this information letter. Both you and the researcher will receive a signed copy of this consent statement.

Thank you for your time.

- **Appendix**
  - **A.** Information on Participant Insurance
  - **B.** Food Diary
  - **C.** Research location

Appendix A Information participant insurance

As the (co) sponsor of the aforementioned scientific research, Wageningen University has taken out insurance for all participants who take part in the study. This insurance covers any damage you may sustain during the research or within four years after the end of your participation in the study. You must also report the damage to the insurer within that four-year period.
If you have any damage due to the research, please report it to the following insurer:

Name:	HDI- Global SE, the Netherlands Directie voor Nederland
Address:	Postbus 925, 3000 AX Rotterdam
Phone:	0104036100
E-mail:	info@nl.hdi.global
Polis number:	V-055-862-396-3 / V0100109572

The insurance provides a maximum coverage of €650,000 per participant and €5,000,000 for the entire research project, with an annual coverage limit of €7,500,000 for all research conducted at Wageningen University. The coverage for specific damages and costs is further limited to certain amounts, which can be found in the "Besluit verplichte verzekering bij medisch-wetenschappelijk onderzoek met mensen" (Decree on Mandatory Insurance for Medical-Scientific Research with Humans). Information regarding this can be found on the website of the Central Committee on Research Involving Human Subjects (Centrale Commissie Mensgebonden Onderzoek): www.ccmo.nl.

Please note that the insurance does not cover the following damages:

- Damages that were (almost) certain to occur based on the nature of the research.
- Health damages that would have occurred even if you had not participated in the research.
- Damages resulting from non-compliance or incomplete compliance with instructions or guidelines.
- Damages to offspring resulting from adverse effects of the research on you or your offspring.
- In research on existing treatment methods, damages resulting from any of these treatment methods.
- In research on the treatment of specific health problems, damages resulting from the absence of improvement or worsening of these health problems.

These provisions are stated in the 'Besluit verplichte verzekering bij medisch-wetenschappelijk onderzoek met mensen 2015' (Decree on Mandatory Insurance for Medical Scientific Research Involving Human Subjects 2015). This decree can be found in the Government's Legislation Database (https://wetten.overheid.nl).

Appendix B Food Diary

Food Diary

Please fill in for 2 consecutive weekdays and 1 weekend day (e.g., Thursday, Friday, and Saturday, or Sunday, Monday, and Tuesday).

Contact us if you have any questions – gul.turan@wur.nl

Here are some guidelines for filling out the food diary

As part of our screening procedures for this research, we will ask you to fill out this food diary to obtain information about your diet. We are not assessing the specific foods and beverages you consume or their quantities, but it is important to be honest so that we can gather the most accurate information. All data will be treated confidentially.

For a period of 3 consecutive days, including 2 weekdays and 1 weekend day (e.g., Thursday, Friday, and Saturday or Sunday, Monday, and Tuesday), we kindly request that you accurately record everything you eat and drink, including the time of consumption and the quantities consumed.

Here are some instructions to help you accurately fill out the diary:

1. Record your food and drinks as you consume them throughout the day rather than relying on your memory at the end of the day.
2. Remember to include all beverages (except water), including tea/coffee, fruit juices, fruit squash, carbonated drinks (even diet or calorie-free drinks), and alcohol.
3. Remember to include cooking oils, sauces, dressings, seasonings, dips, etc.
4. Only write down the weight of the food you consume. If there are leftovers, try to estimate the amount and note it in the designated column.
5. Note brand names and details about the consumed food and cooking method. For example:
    a. Albert Heijn grilled chicken breast with a teaspoon of olive oil
    b. McDonald's Big Mac sandwich with large fries and a large Diet Coke
    c. Appelsientje no added sugar orange juice
    d. Albert Heijn whole meal bread, medium slice, toasted with 1 teaspoon of Calvé peanut butter.
6. Weigh the items before cooking.

Please fill out this diary for 3 full days, including one weekend day. Write the date at the top of each page.

If you have any questions, please email the researcher.

Here's an example of how to fill out a snack:

Eating moment	Time	Food	Brand or type	Quantity
Snack	15:00	Rice cake Strawberry jam Diet Coke	AH Hero AH	2 pieces 2 servings 1 glass of 250 ml

So don't just write down:
Rice cake with jam and soft drinks

Date:

Eating moment	Time	Food	Brand or type	Quantity	Details
Breakfast					
Snack in the meantime					
Lunch					

Eating moment	Time	Food	Brand or type	Quantity	Details
Snack in the meantime					
Dinner					
Snack in the meantime					

Date:

Eating moment	Time	Food	Brand or type	Quantity	Details
Breakfast					
Snack in the meantime					
Lunch					

Eating moment	Time	Food	Brand or type	Quantity	Details
Snack in the meantime					
Dinner					
Snack in the meantime					

Date:

Eating moment	Time	Food	Brand or type	Quantity	Details
Breakfast					
Snack in the meantime					
Lunch					

Eating moment	Time	Food	Brand or type	Quantity	Details
Snack in the meantime					
Dinner					
Snack in the meantime					

Date:

Eating moment	Time	Food	Brand or type	Quantity	Details
Breakfast					
Snack in the meantime					
Lunch					

Eating moment	Time	Food	Brand or type	Quantity	Details
Snack in the meantime					
Dinner					
Snack in the meantime					

Appendix C Research location

Wageningen UR
Zodiac, building 122 (Marked with a red circle)
De Elst 1, 6708 WD Wageningen