Subject information for participation in a scientific study

Feedback on snacking behaviour, assessed with the SnackBox in relation to mood

Introduction

Dear Sir/Madam,

You are being asked to take part in a scientific study. Participation is voluntary. In order to participate your written consent is required.
Before you decide whether you want to take part in this study, you will be given an explanation about what the study involves. Please take your time to read this information and ask the investigator if you have any questions. You can also ask the independent expert mentioned at the end of this letter for additional information. You can also discuss it with your partner, friends or family.

1. General information

The protocol will be executed under the supervision of imec-NL. The measurements will mostly take place at your home. The intake session and end of experiment will either take place at the Holst Centre (Eindhoven) or One-Planet (Nijmegen/Wageningen) upon your choice. The Sponsor of the study is IMEC-NL.

2. Purpose of the study

The primary objective of this study is to validate the effect of JITAIs (Just-In-Time-Adaptive-Interventions) on snacking behaviour, assessed with the SnackBox. As secondary objectives, the study investigates the effect of the JITAIs on participants' mood, and if and which factors (demographics, eating behaviour scores, mental wellbeing-scores and physiology) affect JITAI outcomes.

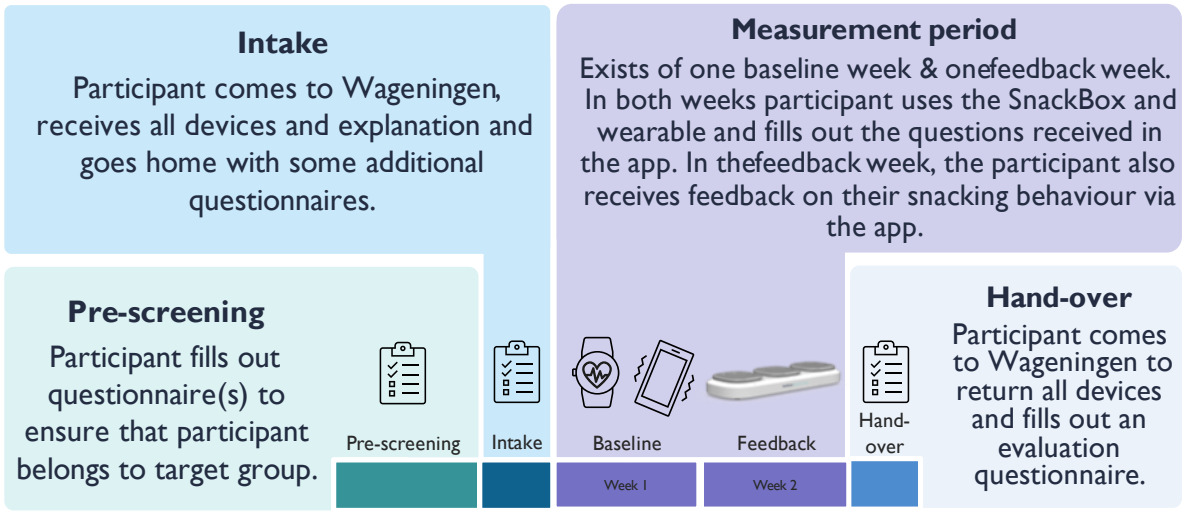
3. Background of the study

To investigate snacking behaviour and how to affect it in relation to mood and physiology, we developed the SnackBox. The SnackBox accurately tracks snacking behaviour without actions of researcher or user and then uses this information to trigger ecological momentary assessments to assess perceived mental wellbeing or just-in-time-adaptive-interventions (JITAIs) to support a healthy snacking behaviour. In this study, we would like to investigate the effect of JITAIs on snacking behaviour.

4. What participation involves

If you participate, your participation will consist of a pre-screening questionnaire, an intake session, 10 measurement days (divided over 14 days) and a hand-over session. You are asked to set-up the Snackbox at your desk at home or at the office / break room for 10 days spread over 14 days at maximum. In the evenings you are asked to bring the SnackBox to your living room or other location you spend your evening. You will also wear the Garmin only on those 10 days. Please find a schematic overview of the full study design below in Figure 1.

Figure 1. Schematic overview of study design.



Inclusion criteria

In order to be eligible to participate in this study, a subject must meet all the following criteria:

- The participant must be between 18 years to 49 years old.
- The participant should have at least eight days in which he/she works from a location with a stationary place to take breaks (f.e. desk or canteen) within a maximum period of 14 days. This can be either a complete working day from a desk at home or a complete working day from a desk at a work location, or a complete working day where breaks are taken at a canteen (at least three times a day).
- The participant does not have Covid-19 and does not experience any remaining symptoms from previous exposure to Covid-19, such as loss of taste or smell.
- The participant has no interfering dietary restrictions, such as being on a diet and has a restricted eating score lower than 3.13.
- The participant is likely to snack, expressed in having an emotional eating score higher than 1.08.
- The participant likes to snack at least 1 or more of the high-caloric snack options in the list in “snack options”.
- The participant is not allergic to stainless steel or Ag/AgCl electrodes.
- The participant is not pregnant (unknown potential effect of Chill+ device on the child).
- The participant has no acute and/or chronic cardiovascular and metabolic conditions (including e.g. diabetes mellitus).

- The participant has no broken skin, cuts, or wounds at the sensor placement sites (wrist, upper arm).
- The participant is not using medication with phototoxic side effects: tetracyclines, doxycycline, phenothiazines, dacarbazine, ketoprofen, lomefloxacin; to exclude the possibility of local skin irritation from prolonged irradiation by LED-light.
- The participant is not wearing any other medical devices (e.g., Holter).
- The participant does not have an implanted active device (e.g., device containing a battery).
- The participant does not have any mental disorders.

Exclusion criteria

A potential participant who meets any of the following criteria will be excluded from participation in this study: if the participant does not like the snacks and/or drinks provided in the study or is allergic to the snacks and/or drinks provided in the study (the list of ingredients will be available for all snacks and drinks at all times).

Pre-screening

When you respond to our study email-address that you can find in the recruitment material, you will receive this subject information sheet (SIS) and the question to digitally sign the informed consent if you would still like to participate. When you have returned the digitally signed informed consent, you will receive the pre-screening questionnaire set, which is sent to you from Castor. The pre-screening questionnaire set contains the following questionnaires:

- Questionnaire on demographics as gender, age and BMI (see Appendix D)
- Questionnaire on snack & drink preferences (see Appendix E)
- Dutch Eating Behaviour Questionnaire (DEBQ, see Appendix F)
- Depression, Anxiety, Stress Scale (DASS, see Appendix G)
- Warwick Edinburgh Mental Well-Being Scale ($WEMWBS_{adjusted}$, see Appendix H)

After filling out the questionnaires, the researcher will contact you whether you meet the inclusion criteria and if you will be included in the study.

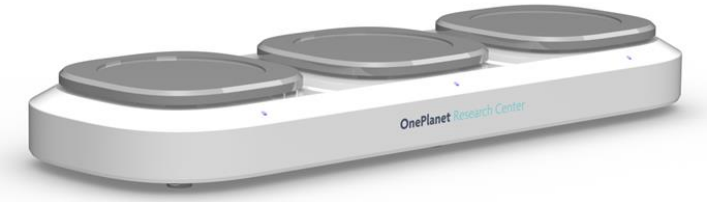
Intake session

The intake session takes place at the office of OnePlanet Research Centre in Wageningen, the office in Nijmegen, or the office in Eindhoven. One or two of the researchers of this study will be present at that meeting. During this meeting, you will again, now orally, be informed about the protocol, the inclusion and exclusion criteria and the contact person during participation. The researcher(s) will provide you with a Garmin Vivosmart 5, a SnackBox, the 5 chosen snacks and 3 drinks (in preferences questionnaire) and charging cables for the Garmin VivoSmart 5 and the SnackBox. You will be guided in the download of the Traqq application (food recall app) and OnePlanet Research app. You will be provided with a participant guide about the daily use of the SnackBox (power-up, refill snacks, etc.), the EMAs that will end up on your smartphone, the food recall app that you are asked to fill out and the charging of the Garmin Vivosmart 5. At the end of the intake session, the hand-over session will be planned by the researcher together with you.

Devices

Snackbox

The Snackbox, will be used to record the snacking behaviour of the participant during the five study days. The SnackBox exists of three weight stations allowing the weighting of snacks (in boxes) or drinks. The SnackBox can provide the user with visual feedback if weight stations are empty when they should not, and it can prompt the OnePlanet Research app to send an EMA when a snack or drink is consumed. A Raspberry Pi collects and stores the weight and log data.



Garmin VivoSmart 5

The Garmin VivoSmart 5 watch will provide heart rate estimations based on PPG data (no raw data will be available). Data will be streamed through the OnePlanet Research app. Data will only be stored with a participant number, no name or other personal details will be stored with the data.

Apps on smartphone

Participants will be asked to install two apps on their smartphones. The first app installed (OnePlanet Research app) will prompt participants with a short number of questions for 5 to 10 times a day. This app is developed within OnePlanet with support of Iquality. Answers to the questionnaires will be send through a secure and encrypted Azure Cloud, designed by OnePlanet. The data will be stored under a participant code and will not contain any contact details, such as name, phone number and email address. The feedback will also be sent via this app. Opening time and duration of feedback screen time are stored at the same location as the questionnaire responses. The second app installed (Traqq) will be used to track the participants dietary intake in meals and will prompt participants once after every meal (09:30, 13:30 and 19:30).

Snacks options

You are asked to choose 3 high-caloric snacks, 2 low-caloric snacks, 2 high-caloric drinks and 1 low-caloric drink that we will supply you with. You will always be supplied with water. On measurement days, you are asked to consume all between-meal food and drinks from these options and from the SnackBox. You are also allowed to drink coffee and tea to your choice, but then consume it from the SnackBox in the provided cups. The coffee and tea will not be supplied.
The quantity of snacks and drinks provided will be sufficient for 10 days of (daily) usage. All allergy information on the snacks and drinks, including ingredients, can be found in Appendix C, which is always available to you. As there are some fresh options which do not stay fresh for over two weeks, we offer you a 10-euro shopping card for your local grocery shop (options: AH, Jumbo, Plus, Spar, Jan Linders, Dirk). You can also use this shopping card to get additional supplies during the study period, when you have finished the original supplies. You are allowed to keep the remaining credit on the card as a reimbursement for the coffee and tea you will consume from the SnackBox. Please find all options in the different categories of snacks and drinks in the excel sheet SnackBox_snacks_drinks_table.xlsx.

Measurement days

The main part of the study is stretched over 14 days, of which ten (work)days are considered measurement days. The measurement days should be days where you either work from home, from the office or from any other work site. You are asked to not use Garmin watch, *SnackBox* and applications on other days.

You will be asked to start the measurement day with putting on the Garmin watch and setting up the *SnackBox* on your desk or other location where you sit during your snack consumption. This includes plugging the *SnackBox* and filling snacks when required to. The researcher will have this time booked in the agenda to be available for support over video-call. You will wear the Garmin watch for the entire day, without receiving any information on your physiological signals. Furthermore, you will be asked to only consume snacks and drinks from the *SnackBox* for the entire day during these ten measurement days, besides your regular meals as breakfast, lunch and dinner. You are asked to track your consumption during these meals in Traqq, which prompts you with a questionnaire on this at 11:30, 16:30 and 21:30, which you can fill out for the remainder of the day. You will be asked to fill out the Ecological Momentary Assessments (EMAs) when you are prompted (more information below). The Garmin watch can be removed before sleep and connected to the charger to limit the discomfort during sleep. In the feedback week, you are asked to open the notifications from the OnePlanet Researcher app as soon as possible after you are prompted and read / look at the message carefully. The details on the just-in-time-adaptive intervention (JITAI) notifications can be found below. There are no further actions required by you and you are stimulated to continue your normal daily life routine during these ten days.

<u>Ecological Momentary Assessments (EMAs)</u>
To measure subjective experience, we will ask you to complete EMA questionnaires to provide sampling of recent mood states and mental wellbeing (see Appendix I). There will be six non-events related EMAs pushed to the OnePlanet Research application on your smartphone per day. In addition, the *SnackBox* can send EMAs, with a 30-minute delay to the application based on a detected snack or drink moment. EMAs can only be sent once per

60 minutes. With on average five snacks a day and two caloric drinks (based on our internal study), of which at least three snack or drink moments are already covered by the standard EMAs, this would lead to ten EMAs per day on average. This is necessary to compare the effect of mood states and mental well-being between when there is a snack or drink event and when there is no snack or drink event. The first questionnaire of the day will be prompted when the *SnackBox* is turned on and is called the 'Morning-EMA'. In a time-window of one hour around 11:00, 14:00, 16:00 and 21:00, non-events related (standard) EMAs will be prompted, and when turning on the *SnackBox* in the evening at home (after finishing work), you will receive an 'evening EMA'. The EMA questionnaires can be found in Appendix I of this Subject Information Sheet. Filling out the EMA questionnaires will take up to 10 minutes per day.

Notifications

In the feedback week, you will receive notifications on the OnePlanet Researcher App which is installed on your phone. Depending on whether you are in the intervention group or the control group, you will receive only one or multiple notifications. The JITAI notifications are only for the intervention group and are triggered on times of the day that you are most likely to snack, based on the data of the baseline week. Deriving these times of the day is done automatically by an algorithm that runs in a rest API in Azure, accessing the SnackBox data that is stored there. It will output three times of the day to send a notification. These times are updated every day, meaning that, for example, on day 3 of the feedback week the times can be slightly different as on day 1 as it also includes data of day 1 and 2 of the feedback week. The content of the feedback can be different depending on whether in the first week you were snacking a high-/low-caloric snack/drink at that time of the day. When in the intervention group, you receive three of these notifications per day and the content can differ per notification (for example one on only drinks and low-caloric based, two on snacks and drinks and high-caloric based).

Hand-over session

After the two weeks (or in case of early termination), the Principal Investigator will meet with you at the chosen research-site on the timeslot that is scheduled with you during the intake session. During this meeting, you will hand over the devices and are asked about your experience with participating in the study and the use of the devices by filling out the evaluation questionnaire (see Appendix J) via the castorEDC system. This will be the end of participation.

5. What will be expected of you

For the study to run smoothly and for your own safety, it is important that you follow the following agreements.

The agreements are that you:

- perform the protocol as explained.
- do not participate in another medical-scientific study.
- follow appointments for visits.

It is important that you contact the investigator:

- if you suddenly experience health symptoms that might be related to your participation in the study.
- if you no longer wish to participate in the study.
- if your contact details change.
- If you have any questions on the devices or the protocol.

6. Possible discomforts

In this study no discomforts or side effects are expected. If you do experience such issues, immediately contact the principal investigator. The main burden for the participant is expected to be the refrainment from other snacks on measurement days and the numerous questionnaires that need to be filled out.

7. Possible advantages and disadvantages

It is important that you properly consider the possible advantages and disadvantages before you decide to participate. You will not personally receive any advantage from taking part in this study. Your participation may contribute to more knowledge about the SnackBox.
Disadvantages of participation in the study may be:

- Possible discomforts of the measurements in the study, as described in 6.
- You will lose some time when participating in the study.

8. If you do not want to participate, or would like to stop participating in the study

You decide for yourself whether you want to participate in the study. Participation is voluntary.
If you do participate, you can always change your mind and stop, even during the study. You will be asked the reason for terminating the study, however you do not have to state why you are stopping. However, you should immediately inform the investigator.
The data obtained thus far will be used for the study.

If there is any new information about the study that is important for you, the investigator will inform you of this. You will then be asked if you wish to continue your participation.

9. End of the study

Your participation in the study ends when

- all visits according to the schedule/such as described under point 4 have been completed
- you personally choose to stop
- the end of the study has been reached
- the investigator finds that it is better for you to stop
- Signs of major skin irritation, allergic reactions, or other problems appear
- the imec, the government or the medical ethical committee decides to stop the study.

The entire study ends when all participants are finished.

10. Use and storage of your data

We ask your consent to collect, use and store your personal data. We will only collect, store or use personal data that is necessary to answer the questions asked in this study and to be able to publish the results.

Confidentiality of your data

To protect your privacy, your data will receive a code. Your name and other information that could directly identify you are therefore omitted. This information can only identify you with the key. The key to the code will be stored securely in the local research facility. The data that is sent to the sponsor and Wageningen University only contain a code, but not your name or other data that can identify you, ie coded data. In reports, publications and visualisations about the study, the data will also not be identifiable.

Access to your data for review

Some individuals may have full access to your data at the study site. Also, to the data without a code. This is needed in order to check whether the study is performed properly and reliably. Individuals who have access to your data for review are: the committee monitoring the safety of the study, the INMEC *a monitor that works for the Stichting imec Netherlands*, national and international regulatory authorities, for example, the Health Care Inspectorate and Youth, and the principle investigator of the study. They will keep your data confidential. We ask your consent for this access.

Retention period of data

Your data must be stored for 15 years at the study.

Storage and use of data for other studies

Your data may still be of interest after the end of this study for other clinical research in the area of snacking behaviour. For this your data will be stored for 15 years. You can indicate on the consent form if you do or do not agree with this. If you do not consent to this, you can still participate in the current study.

Information about incidental findings

During this study, there may be incidental findings that are not relevant for the study, but are for you. If this is important for your health, you will be notified by the company physician. You can then discuss with your general practitioner or specialist what needs to be done. You will also consent to this.

Withdrawal of consent
You can always withdraw your consent for the use of your personal data. This applies to this study and also for the storage and use for the future research. The study data that has been collected until the time you withdraw your consent will still be used in the study.

More information about your rights concerning the processing of data
For general information about your rights concerning the processing of your personal data, please consult the website of the Dutch Data Protection Authority https://autoriteitpersoonsgegevens.nl.

If you have any questions about your rights, please contact the person responsible for the processing of your personal data.
For this study the sponsor is:
Imec Netherlands, Kathleen Philips; reception@imec.nl (www.imec.nl)
The (principle) investigator is:
Alex van Kraaij, alex.vankraaij@imec.nl, working at Stichting imec Netherlands.
If you have questions or complaints on how Stichting imec Nederland handles your personal data, you can contact the privacy office via privacy@imec.nl or consult https://www.imec-int.com/en/privacy-statement.

You also have the right to submit a complaint on how your personal data is processed. This complaint can be filed with Autoriteit Persoonsgegevens who is responsible for upholding legislation related to the processing of personal data. This can be done via the website - https://autoriteitpersoonsgegevens.nl

11. Insurance for subjects
Insurance has been taken out for everyone who participates in this study. The insurance covers damage resulting from the study. Not all damage is covered. In **Appendix A** you can find more information about the insurance and the exceptions. It also states who you should report damages to.

12. (No)Compensation for participation
In total, participating in the study requires 5.5 hours of active participation, leading to a Bol.com voucher of €55,-, which will be awarded as an expression of our thanks after the completion of the experiment. This is based on that you will receive an incentive of €10,- in Bol.com vouchers per hour for active participation. Active participation includes joining the intake session of approximately 1 hour, filling out the EMAs and food recalls in the applications, which takes at maximum 30 minutes per day and joining the hand-over session, which will take around 30 minutes. In addition, a €10,- shopping card is provided for any costs on buying fresh snacks, additional snacks and/or coffee/tea.

13. Do you have any questions?
If you have any questions, please contact the principal investigator Alex van Kraaij, Alex.vankraaij@imec.nl.
If you have any complaints or other remarks regarding the study, you can discuss this with the (principal) investigator or the INMEC (inmec@imec.nl).

14. Signing of informed consent form

When you have had a sufficient reflection period, you will be asked to decide about participation in this study. If you consent, you will be asked to confirm this on the corresponding consent form, in writing. With your written consent, you indicate that you have understood the information and agree to participate in the study.
Both you and the investigator will receive a signed version of this consent form.

Thank you for your attention.

Thank you for your attention.

Alex van Kraaij, alex.vankraaij@imec.nl, 06-27898403

15. Appendices with this information:

A. Information about the insurance
B. Informed Consent form
C. List of snacks and drinks
D. Questionnaire on demographics
E. Questionnaire on snack preferences
F. Dutch Eating Behaviour Questionnaire (DEBQ)
G. Depression, Anxiety, Stress Scale (DASS)
H. Warwick Edinburgh Mental WellBeing-Scale (WEMWBS) (adjusted)
I. Ecological Momentary Assessments
J. Evaluation questionnaire

Appendix A: information about the insurance

Stichting imec Netherlands has taken out insurance for everyone participating in this study. The insurance covers damage resulting from participation in the study. This applies to damage incurred during the study or within four years after the end of your participation in the study. You must have reported damage to the insurer within these four years.

The insurance does not cover all damage. The bottom of this text explains briefly what damage is not covered.
These provisions are in the Medical Research Involving Human Subjects Act. This decree is on www.ccmo.nl, the website of the Central Committee on Research Involving Human Subjects (see 'Library' and then 'Laws and regulations').

In case of damage, you can contact the insurance company directly.

The insurer of the study is:	
Name:	HDI-Gerling Industrie Versicherung AG directie for the Netherlands
Address:	Westblaak 14, 3012 KL Rotterdam
Telephone number:	+31 10 4036 100
Policy number:	632865400

The insurance offers a coverage of € 650,000 per subject and € 5,000,000 for the entire study € 7,500,000 per year for all the studies of the same sponsor.

The insurance will **not** cover the following damage:

- damage due to a risk about which you were informed in the written information. This does not apply if the risk is more serious than anticipated or if the risk was very unlikely;
- damage to your health that would also have occurred if you had not taken part in the study;
- damage due to not (completely) following directions or instructions;
- damage to your offspring, due to a negative effect of the study on you or your offspring;
- damage due to an existing treatment method when studying existing treatment methods.

Appendix B: consent form subject

Assessment of snacking behaviour with the SnackBox

- I have read the information letter. I was also able to ask questions. My questions have been answered sufficiently. I have had enough time to decide whether or not to participate.
- I understand that participation is voluntary. I also know that I may decide at any time to not participate or to stop participating in the study. Without having to provide any reason.
- I give consent to collect and use my data for answering the research question in this study.
- I know that for study monitoring purposes some individuals could have access to all my data. Those people are listed in this information letter. I consent to that access by these persons.
- I give consent to be informed of unexpected findings which are (or may be) of interest for my health.
- I □ **give**

  □ **do not give**

  consent for the further storage of my personal data and retention for future research into the area of the SnackBox.
- I am willing to refrain from other snacks and drinks between meals during the ten measurement days.
- I am willing to wear the Garmin Vivosmart wearable during the 10 measurement days.
- I am willing to fill out the questionnaires (intake and evaluation) and applications (EMAs and Traqq food recall) as part of this study.
- I am willing to read the feedback that is provided to me via the OnePlanet Research application in the second week of participation.
- I want to participate in this study.

Name of subject: ……..
Signature: Date : __ / __ / __

I certify that I have fully informed this subject about the said study.

If information becomes known during the study that could influence the consent of the subject, I will inform him/her of this on time.

Name of investigator (or his/her representative):……
Signature: Date: __ / __ / __

The subject will receive a complete information letter, together with a signed version of the informed consent form.

Appendix C: List of snacks and drinks

The snacks and drinks that you can choose for this study are in SnackBox_snacks_drinks_table.xlsx together with the list of ingredients and allergy information. This table is provided to you by the researcher.

Appendix D: Questionnaire on demographics

This questionnaire will be filled out in CastorEDC.

- What is your gender? (male / female / other, multiple choice)
- What is your age? (number in years)
- What is your length? (number in centimeters)
- What is your weight? (number in kilograms)

Appendix E: Questionnaire on snack preferences

This questionnaire will be filled out in CastorEDC.

- Are there any snacks from the list below that you tend to consume on a monthly or more frequent base? If there are more than 3, please select your favourite 3. (multiple-select from list “high-caloric snacks” in 7.1)
- *If less than 3 are selected:* What option(s) do you miss here? (open text answer)
- Are there any snacks from the list below that you tend to consume on a monthly or more frequent base? If there are more than 2, please select your favourite 2. (multiple-select from list “low-caloric snacks” in 7.1)
- *If less than 2 are selected:* What option(s) do you miss here? (open text answer)
- Are there any drinks from the list below that you tend to consume on a monthly or more frequent base? If there are more than 2, please select your favourite 2. (multiple-select from list “high-caloric drinks” in 7.1)
- *If less than 2 are selected:* What option(s) do you miss here? (open text answer)
- Are there any drinks from the list below that you tend to consume on a monthly or more frequent base? If there is more than 1, please select your favourite one. (multiple-select from list “low-caloric drinks” in 7.1)
- *If less than 3 are selected:* What option(s) do you miss here? (open text answer)
- Which from the list below do you tend to drink on at least weekly base? (multiple-select from list “coffee & tea options” in 7.1)
- How much liter water do you on average drink per day? (number (up to 1 digit) in litres)
- Which supermarket do you go to for groceries? If your supermarket is not in the list, please select a supermarket that is close to you. (Multiple-choice from AH, Dirk, Jan Linders, Jumbo, Plus, Spar)

Appendix F: Dutch Eating Behaviour Questionnaire (DEBQ)

This questionnaire will be filled out in CastorEDC.

Please provide one of the following answer options for the questions below: never (l), seldom (2), sometimes (3), often (4), and very often (5).

Restrained Eating

1. When you have put on weight, do you eat less than you usually do?
2. Do you try to eat less than you would like to eat at mealtimes?
3. How often do you refuse offered foods or drinks because you are concerned about your weight?
4. Do you watch exactly what you eat?
5. Do you deliberately eat foods that are slimming?
6. When you have eaten too much, do you eat less than usual the following day?
7. Do you deliberately eat less in order not to become heavier?
8. How often do you try not to eat between meals because you are watching your weight?
9. How often in the evenings do you try not to eat because you are watching your weight?
10. Do you take into account your weight with what you eat?

Emotional Eating (9-item version: clearly labeled emotions)

11. Do you have a desire to eat when you are irritated?
12. Do you have a desire to eat when you are depressed or discouraged?
13. Do you have a desire to eat when you are cross?
14. Do you have a desire to eat when you are approaching something unpleasant to happen?
15. Do you have a desire to eat when you are anxious, worried or tense?
16. Do you have a desire to eat when things are going against you or when things have gone wrong?
17. Do you have a desire to eat when you are frightened?
18. Do you have a desire to eat when you are disappointed?
19. Do you have a desire to eat when you are emotionally upset?

External Eating

20. If food tastes good to you, do you eat more than usual?
21. If food smells and looks good, do you eat more than usual?
22. If you see or smell something delicious, do you have a desire to eat it?
23. If you have something delicious to eat, do you eat it straight away?
24. If you walk past the baker do you have the desire to buy something delicious?
25. If you walk past a snackbar or a cafe, do you have the desire to buy something delicious?
26. If you see others eating, do you also have the desire to eat?
27. Can you resist eating delicious foods?
28. Do you eat more than usual, when you see others eating?
29. When preparing a meal are you inclined to eat something?

Appendix G: Depression, Anxiety, Stress Scale (DASS)

This questionnaire will be filled out in CastorEDC.

DASS 21 NAME _____ DATE _____

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Please read each statement and circle a number 0, 1, 2 or 3 which indicates how much the statement applied to you over the past week. There are no right or wrong answers. Do not spend too much time on any statement.
The rating scale is as follows:

0 Did not apply to me at all - NEVER
1 Applied to me to some degree, or some of the time - SOMETIMES
2 Applied to me to a considerable degree, or a good part of time - OFTEN
3 Applied to me very much, or most of the time - ALMOST ALWAYS

		N	S	O	AA	FOR OFFICE USE D	A	S
1	I found it hard to wind down	0	1	2	3			
2	I was aware of dryness of my mouth	0	1	2	3			
3	I couldn't seem to experience any positive feeling at all	0	1	2	3			
4	I experienced breathing difficulty (eg, excessively rapid breathing, breathlessness in the absence of physical exertion)	0	1	2	3			
5	I found it difficult to work up the initiative to do things	0	1	2	3			
6	I tended to over-react to situations	0	1	2	3			
7	I experienced trembling (eg, in the hands)	0	1	2	3			
8	I felt that I was using a lot of nervous energy	0	1	2	3			
9	I was worried about situations in which I might panic and make a fool of myself	0	1	2	3			
10	I felt that I had nothing to look forward to	0	1	2	3			
11	I found myself getting agitated	0	1	2	3			
12	I found it difficult to relax	0	1	2	3			
13	I felt down-hearted and blue	0	1	2	3			
14	I was intolerant of anything that kept me from getting on with what I was doing	0	1	2	3			
15	I felt I was close to panic	0	1	2	3			
16	I was unable to become enthusiastic about anything	0	1	2	3			
17	I felt I wasn't worth much as a person	0	1	2	3			
18	I felt that I was rather touchy	0	1	2	3			
19	I was aware of the action of my heart in the absence of physicalexertion (eg, sense of heart rate increase, heart missing a beat)	0	1	2	3			
20	I felt scared without any good reason	0	1	2	3			
21	I felt that life was meaningless	0	1	2	3			
					TOTALS			

DASS Severity Ratings

The DASS is a **quantitative** measure of distress along the 3 axes of depression, anxiety[1] and stress[2]. It is not a categorical measure of clinical diagnoses.

Emotional syndromes like depression and anxiety are intrinsically dimensional - they vary along a continuum of severity (independent of the specific diagnosis). Hence the selection of a single cut-off score to represent clinical severity is necessarily arbitrary. A scale such as the DASS can lead to a useful assessment of **disturbance**, for example individuals who may fall short of a clinical cut-off for a specific diagnosis can be correctly recognised as experiencing considerable symptoms and as being at high risk of further problems.

However for clinical purposes it can be helpful to have 'labels' to characterise degree of severity relative to the population. Thus the following cut-off scores have been developed for defining mild/moderate/severe/ extremely severe scores for each DASS scale.

Note: the severity labels are used to describe the full range of scores in the population, so 'mild' for example means that the person is above the population mean but probably still way below the typical severity of someone seeking help (ie it does not mean a mild level of disorder.

The individual DASS scores do not define appropriate interventions. They should be used in conjunction with all clinical information available to you in determining appropriate treatment for any individual.

[1]Symptoms of psychological arousal
[2]The more cognitive, subjective symptoms of anxiety

DASS 21 SCORE

DEPRESSION SCORE	ANXIETY SCORE	STRESS SCORE

	Depression	Anxiety	Stress
Normal	0 - 4	0 - 3	0 - 7
Mild	5 - 6	4 - 5	8 - 9
Moderate	7 - 10	6 - 7	10 - 12
Severe	11 - 13	8 - 9	13 - 16
Extremely Severe	14 +	10 +	17 +

Appendix H: Warwick Edinburgh Mental WellBeing-Scale (WEMWBS) (adjusted)

This questionnaire will be filled out in CastorEDC.

Please answer the following questions on a scale from 1-7: “not at all” – “absolutely”.

1. I have been feeling optimistic about the future
2. I have been feeling useful
3. I have been feeling relaxed
4. I have been feeling interested in other people
5. I have been feeling challenged
6. I have found it easy to be at peace with my life circumstances
7. I have been able to live a full life
8. I have had energy to spare
9. I have been dealing with problems well
10. I have been thinking clearly
11. I have been feeling good about myself
12. I have been feeling stressed
13. I have been feeling close to other people
14. I have been feeling confident
15. I have been able to make up my own mind about things
16. I have been feeling loved
17. I have been interested in new things
18. I have been feeling cheerful
19. I think my life is meaningful
20. Others (partner, family members, close friends) have helped me deal with everyday life well
21. I have been feeling bored

Appendix I: Ecological Momentary Assessments

These questionnaires will be answered in the OnePlanet Research app.

General EMA

- Right now I feel:
    - Sad – Cheerful (0-100 VAS)
    - Relaxed – Stressed (0-100 VAS)
    - Fatigued – Energized (0-100 VAS)
    - Hungry – Satiated (0-100 VAS)
- Over the past hour I have been:
    - With others (never – all the time VAS)
    - Physically active (never – all the time VAS)
    - Cognitively active (never – all the time VAS)
- I am currently at:
    - Work vs home vs other: ... (multiple choice)

Morning EMA (extra questions)

- What time did you go to sleep yesterday? (time of day)
- What time did you get up today (time of day)
- How would you rate your sleep quality over the past night? (0-100 VAS)

Evening EMA (extra reminders)

- Please do not forget to take off your watch and turn off the SnackBox before going to bed.

Appendix J: Evaluation questionnaire

This questionnaire will be filled out in CastorEDC.

Open questions:

- Did you have the feeling that your snacking behaviour in the baseline week was different as you usual snacking behaviour? And if yes, how and what caused that?
- Did you have the feeling that your snacking behaviour in the feedback week was different as you usual snacking behaviour? And if yes, how and what caused that?
- What did you think of the frequency of the feedback you received (3 times a day)?
- What did you think of the phrasing used in the feedback you received?
- Did you taste any difference in the snacks / drinks over the two weeks?
- Did you use the 10-euro shopping card at your supermarket during the study? And if yes, for what?