

A study analyzing if a healthy diet improves the taste preference profile and flavor perception

Submission date 10/12/2021	Recruitment status No longer recruiting	<input checked="" type="checkbox"/> Prospectively registered <input type="checkbox"/> Protocol
Registration date 13/12/2021	Overall study status Completed	<input type="checkbox"/> Statistical analysis plan <input type="checkbox"/> Results
Last Edited 10/07/2024	Condition category Other	<input type="checkbox"/> Individual participant data <input type="checkbox"/> Record updated in last year

Plain English summary of protocol

Background and study aims

Taste and smell alterations represent an increasingly important problem in nutrition, and in public health. Currently, it is of enormous interest, not only to know the relationship between perception and preferences taste, smells and eating patterns and cardiometabolic and cognitive variables at a specific moment, but also to know their dynamic evolution, and what is more important, to know the factors that can improve taste and smell perception and preference patterns. Following the COVID-19 epidemic, some pharmacological interventions have been proposed to regain taste and olfactory ability in people who had lost it. However, our aim is to study if an intervention with a healthy diet can improve the perception of flavors (taste and smell), as well as change the preference for certain flavors (tastes and smell) in a general Mediterranean population after 6 months of intervention, compared to a control group.

Who can participate?

Men and women from the general population (aged 25-75 years)

What does the study involve?

Participants will be randomly allocated 1:1 to two groups (intervention and control group) using a computer algorithm: The intervention group consisting of 100 individuals will receive nutritional advice to follow a healthy diet (Mediterranean-based diet low in ultra-processed foods) for 6 months (with an individual session every month). No intervention will be carried out in the control group. The primary outcomes will be changes in flavor (taste and smell) preferences, taste perception, and odor perception from baseline to 6 months using standard tests. In addition, anthropometric, blood pressure, food intake, physical activity, sleep, chronotype, and some cognitive variables will be measured.

What are the possible benefits and risks of participating?

Participants will be informed that there are no benefits and risks expected.

Where is the study run from?

University of Valencia (Spain)

When is the study starting and how long is it expected to run for?
October 2021 to January 2025

Who is funding the study?
University of Valencia (Spain)

Who is the main contact?
Carolina Ortega-Azorín
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Contact information

Type(s)
Scientific

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Additional identifiers

EudraCT/CTIS number
Nil known

IRAS number

ClinicalTrials.gov number
Nil known

Secondary identifying numbers
PTN_1896892

Study information

Scientific Title
Effect of the intervention with a healthy diet on the flavor preference profile and improvement of taste and odor perception in a Mediterranean population: A randomized and controlled clinical trial

Acronym

TASTOR

Study objectives

The intervention with a healthy diet can improve the perception of flavors (taste and smell), as well as change the preference for certain flavors (tastes and smell) in a general Mediterranean population after 6 months of intervention, compared to a control group.

Ethics approval required

Old ethics approval format

Ethics approval(s)

Approved 09/11/2021, Institutional review board of Valencia University (human subjects) (Avda. Blasco Ibanez 13, Valencia, ZIP 46010, Spain; +34 963864109; vicerec.investigacio@uv.es), ref: PTN_1896892

Study design

Interventional randomized controlled trial

Primary study design

Interventional

Secondary study design

Randomised controlled trial

Study setting(s)

Other

Study type(s)

Quality of life

Participant information sheet

Not available in web format, please use contact details to request a participant information sheet

Health condition(s) or problem(s) studied

Improving flavor perception and preferences in the general population

Interventions

Participants (n=200) will be randomized 1:1 to 2 arms (intervention and control groups) using an online tool (compute program). One study arm (n=100 participants) will receive the intervention consisting of a healthy diet for 6 months. The other study arm, the control group (n=100 participants) will receive no intervention for 6 months, only the baseline visit and the final visit after 6 months. The intervention group will receive nutritional advice to follow a healthy diet (consisting of a Mediterranean-based dietary pattern low in ultra-processed foods) for 6 months by a registered dietitian. In addition, every months a face-to-face individual session for reinforcing the nutritional advice and increasing compliance with the healthy diet will be carried out

Intervention Type

Behavioural

Primary outcome measure

Measured at baseline and 6 months:

1. Flavor preferences (all the tastes and selected odors will be measured using the 9-item hedonic scales)
2. Taste perception: intensity rating test with prototypic tastants for (bitter, sweet, sour, umami, and salty) at different concentrations will be carried out in the laboratory
3. Odor perception tests using the "NHANES Odor Test" (US National Health and Nutrition Examination Survey) protocol

Secondary outcome measures

1. Anthropometric measures (by bioimpedance) at baseline and 6 months in both groups.
2. Blood pressure and heart rate parameters, at baseline and after 6 months in both groups by standard procedures
3. The level of adherence to the Mediterranean Diet through the 17-item questionnaire at baseline and at 6 months.
4. Food intake (by a FFC) at baseline and 6 months.
5. Physical activity measured using the short form of the Minnesota physical activity questionnaire at baseline.
6. Sleep characteristics measured using the Pittsburgh Sleep Quality Index questionnaire at baseline and at 6 months.
7. Chronotype at baseline, measured using the Horne and Östberg questionnaire.
8. Cognitive tests, measuring semantic and phonemic verbal capacity and average executive control, the Controlled Oral Word Association Test (COWAT), and the memory alteration test (T @ M) at baseline and after 6 months.
9. Quality of life (SF-36 or SF-12) at baseline and after 6 months.

Overall study start date

09/10/2021

Completion date

01/01/2025

Eligibility

Key inclusion criteria

1. Adults from the general population (50% women)
2. Age range of 25 to 75 years
3. Body mass index (BMI) of 25 to 35 kg/m²

Participant type(s)

Healthy volunteer

Age group

Adult

Lower age limit

25 Years

Upper age limit

75 Years

Sex

Both

Target number of participants

200

Key exclusion criteria

Those individuals who do not meet the inclusion criteria or who present the following conditions:

1. Allergy to the tastants or to any food recommended in the healthy dietary pattern
2. Pregnant or lactating women
3. Infectious diseases
4. Kidney or liver diseases
5. Cancer
6. Other relevant pathologies that could bias the study

Date of first enrolment

21/12/2021

Date of final enrolment

31/03/2024

Locations**Countries of recruitment**

Spain

Study participating centre**University of Valencia**

School of Medicine

Avda. Blasco Ibanez 15

Valencia

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Study participating centre**CIBER**

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Sponsor information

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Sponsor type

University/education

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ROR

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Funder(s)

Funder type

University/education

Funder Name

Universitat de València

Alternative Name(s)

University of Valencia, 85|86

Funding Body Type

Private sector organisation

Funding Body Subtype

Universities (academic only)

Location

Spain

Funder Name

Results and Publications

Publication and dissemination plan

Findings regarding the main hypothesis will be published in international journals related to the field. Communications in related scientific meetings are planned.

Intention to publish date

30/07/2025

Individual participant data (IPD) sharing plan

Data will not be available outside the core research group. Researchers who are interested in this study can contact the main investigator (Carolina.ortega@uv.es) if they have any questions regarding the data or are interested in further collaborations. The participants will receive written information about what the study involves and sign a consent form before entering the study. In the informed consent form, the participant is informed that the individual-level data will not be publicly available.

IPD sharing plan summary

Not expected to be made available