

INTERNATIONAL CONFERENCE ON SUSTAINABLE FOODS
Achieving the Sustainable Development Goals

July 24th - 25th 2024
Bragança - Portugal


PROmedLIFE

**Novel food products for PROMotion of
MEDiterranean LIFEstyle and healthy diet**



This project is part of the PRIMA programme
supported by the European Union

Partners

5 MEDITERRANEAN COUNTRIES



12 PARTNERS



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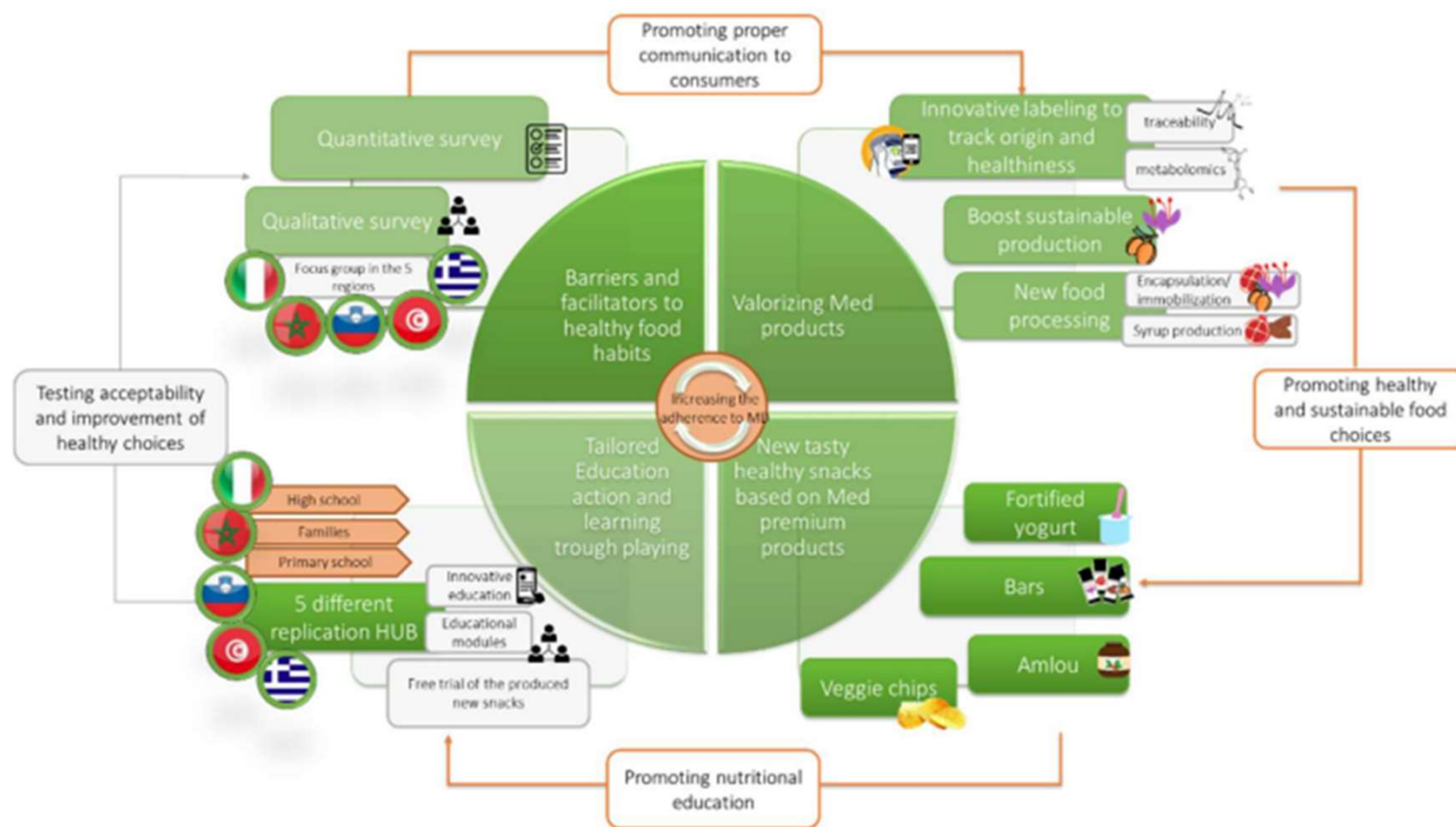
2 UNIVERSITIES
5 RESEARCH AND TECHNOLOGY INSTITUTES
5 SMEs



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Key objectives



Assessment of the causes of the discrepancy between consumer awareness of healthy eating and its practice

→ activities to increase consumers' awareness tailored explicitly to the countries involved, considering aspects like local traditions and habits

sustainable food choice motives

general food-related questions

physical activity and socio-demographic questions

food insecurity Experience Scale – FIES

attitudes toward healthfulness of foods

QUANTITATIVE SURVEY:

food choice motives

picky eating

- in the five countries from representative samples of the national adult populations (18-79 yo) in terms of age, gender, and geographical area (N=800)
- in Italian, French, Arab, Slovenian, and Greek + English

drivers and barriers to the MD



evaluation the adherence to the MD

attitude towards the MD

clinical questions (e.g., presence of food allergies or intolerances)

Results

Biggi et al., Drivers and barriers influencing the adherence to the Mediterranean Diet: A comparative study across five countries, Nutrients, in press

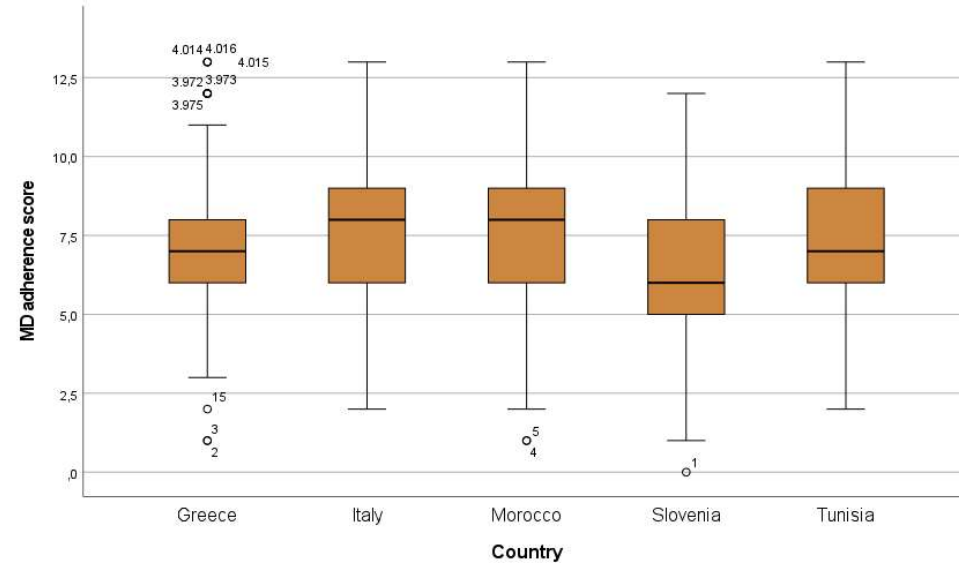
Method: survey on 4,025 consumers (approx. 800 per country) representative in terms of age, gender, and geographical area (external agency, theory-based questionnaire in five languages)

Aim: to identify the factors affecting the adoption of the MD (main barriers and drivers)

Factors: (sustainable) food choice motives, attitude towards healthy eating and MD, adherence to the MD (MEDAS questionnaire), drivers and barriers to adopt MD, picky eating, anthropometric and socio-demographic variables

Results:

- **Medium-to-low adherence to the MD** in all countries (SLO lower, ITA and MOR higher)
- **Predictors:** Attitude towards healthfulness of foods (++) , Attitude towards the adoption of the MD (+) , Picky eating (-) , food choice motives: (+) health, natural content, weight control, (-) price, convenience
- **Barriers:** Restrictiveness (e.g. insufficient food variety, difficult recipes, ALL), taste (MOR, SL), affordability (IT)
- **Drivers:** applicability - tastier and more sustainable than other diets (ALL), health (SLO)



Improve the understanding and deepen the results from the quantitative research evaluating the gap between consumer awareness of healthy eating and its practice, including the adherence to the MD and healthy eating and use of local food products

factors incentivising and preventing the adherence to the MD

snacking



QUALITATIVE SURVEY:

- three Focus Groups per country have been performed in Italy, Slovenia, Morocco, Tunisia, Greece

- a common questionnaire/guideline in the respective native language (Italian, Slovenian, Arab/French, Greek)

sustainability

beliefs

familiarity

healthy eating

perception of local foods

perception of products with geographical indication

general questions regarding food purchases and general habits

Promedlife snacks acceptability

Results

Method: we carried out three FGs per country, based on a **protocol** agreed with the partners (recruiting participants, conducting the focus group, guide for moderator, data analysis, and reporting)

Themes investigated: food choice drivers (focus on sustainability), involvement of participants in healthy eating and local food (including snacking, products with geographical indications – GIs, etc.), the adherence to the Mediterranean Diet (MD), preference for vegetable products and formats

Results:

- Overall n = 137 participants involved (GRE = 25, ITA = 29, MOR = 30, SLO = 23, TUN = 30)
- Preference for food in fresh format (health), strong link with local and traditional food (healthier, tastier and more sustainable), quite familiar with GIs (esp. Greece and Italy), aware of the MD but not convinced to follow a MD (barriers price, time), preferred vegs tomato, carrots, zucchini, eggplant and pumpkin



Smart Farming technologies for saffron production

Crocus sativus Moroccan ecotype corms (180) sourced from Morocco were utilized for hydroponic cultivation.

Corms underwent a 12-week pre-conditioning phase at 25°C in darkness before being transferred to ROOT IT propagator trays.

Flowering typically began after approximately 5 weeks of growth.

Stigma collection involved weighing, freezing in liquid nitrogen, and storing at -80°C.

A similar procedure was applied to *C. sativus* Italian ecotype corms (180), with a 1.5-month delay.

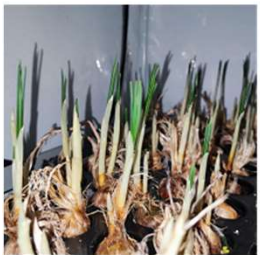
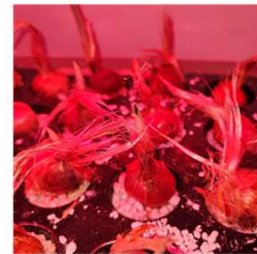
1° week: root emission



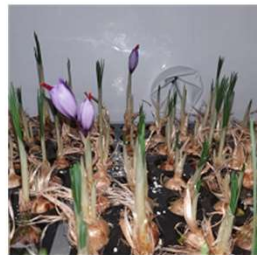
2° week: sprouting



3° week: leaf emergency



4° week: leaf active production



5° week: flowering



Innovative varieties for enhanced argan oil quality and production

3 experiments were installed in different sites :

- Northern Morocco (Larache) → **Sub humid region**
- Centre of Morocco (Meknes) → **Dry climate and extreme T**
- Southern west of Morocco (Agadir) → **Arid region**

Argan oil from different sites is under analyses for physicochemical quality, characterization and traceability assessment

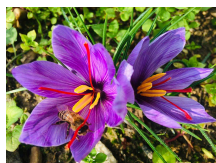


ProMedlife Snacks



Standardization of the production of the spreadable cream AMLOU according to European guidelines

VEGGIE CHIPS: Low temperature - short time drying - microtexturisation



Fortified SOUR MILK

Dates BARS without sugar supplementation using reduced heat treatment



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Education

NUTRIENTS

- ✓ Definition of nutrients, macro- and micronutrients
- ✓ Macronutrients: carbohydrates, lipids and

FOODS

- ✓ The 5 food groups (+ water)
- ✓ The meaning of diet and proper eating habits
- ✓ The Mediterranean Diet and the Food Pyramid

BALANCED MEALS

- ✓ The five meals in a day
- ✓ The healthy plate
- ✓ Eating outside
- ✓ Grocery shopping, labelling

HEALTHY AND SUSTAINABLE DIETS

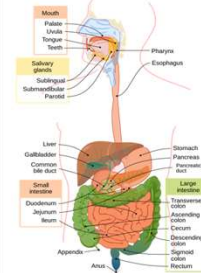
- ✓ The healthy and sustainable diet
- ✓ The seasonality of foods
- ✓ The double pyramid model



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Lessons

MACRONUTRIENTS The energy content of macronutrients



Macronutrient	Energy content
Carbohydrates	17 kJ/g – 4 kcal/g
Fats	37 kJ/g – 9 kcal/g
Proteins	17 kJ/g – 4 kcal/g
Dietary fiber	8 kJ/g – 2 kcal/g

kJ=kilojoule
kcal=kilocalorie
4,186 kJ = 1 kcal



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Quiz



EXPLORING NUTRIENTS AND THEIR FEATURES

1st game set

GAME RULES: associate each statement (left column) with the corresponding category (right column). Each statement is associated with only one category and vice versa.

1. They are digested and absorbed in the first part of the intestine.
2. They should not exceed 30% of total daily energy intake.
3. The main sources are vegetable oils, particularly sunflower oil, and dried fruit.
4. They do not provide energy but are essential for the proper functioning of the body.
5. They perform important structural, synthesis and transport functions in the body.
6. The main dietary sources are fish, soya oil and especially fish-derived oils.
7. The combination of grains and legumes results in a meal with an adequate composition in _____.
8. It naturally contains sugars but also other important nutrients.
9. 45-60% of total daily energy intake should come from _____.
10. The main sources are extra virgin olive oil and nuts.
11. In addition to calcium, it is essential for bone growth in childhood and adolescence.
12. They are required in large amounts and provide energy.

- a. OMEGA-3
- b. VITAMIN D
- c. MACRONUTRIENTS
- d. FREE SUGARS
- e. ESSENTIAL AMINO ACIDS
- f. AVAILABLE CARBOHYDRATES
- g. PROTEINS
- h. OMEGA-6
- i. MONOUNSATURATED FATS
- j. CARBOHYDRATES
- k. VITAMINS AND MINERALS
- l. FRUIT

Examples

Take-home messages

HEALTHY EATING PLATE

Use healthy oils (like olive and canola oils) for roasting, on salads, and at the table. Limit butter. Avoid trans fat.

Drink water, tea, or coffee (with little or no sugar). Limit milk/dairy butter. Avoid sugary drinks.

The more veggies – and the greater the variety – the better. Potatoes and French fries don't count.

Choose fish, poultry, beans, and nuts. Limit red meat and cheese: avoid bacon, cold cuts, and other processed meats.

STAY ACTIVE!

Harvard T.H. Chan School of Public Health, The Nutrition Source, www.hsph.harvard.edu/nutritionsource/

Harvard Medical School, Harvard Health Publications, www.health.harvard.edu

It is not essential that all main meals are perfectly proportioned. The key is to aim for a daily or at least weekly balance. For example, if lunch exceeds in grain content, dinner may contain more protein, and vice versa when considering consecutive days.

Contents for parents



WEEKLY PLAN

MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY	SUNDAY
Pasta with tomato sauce	Vegetable soup with pasta and legumes	Pasta with shellfish	Gnocchi with tomato sauce	Pasta with vegetables	Barley with vegetables	White meat with roast potatoes
White meat			Eggs	Fish with tomato sauce	Eggs	
Vegetables	Salad	Vegetables	Vegetables	Vegetables	Vegetables	Vegetables
Bread	Bread	Bread	Bread	Bread	Bread	Bread
Fresh fruit	Fresh fruit	Fresh fruit	Fresh fruit	Fresh fruit	Fresh fruit	

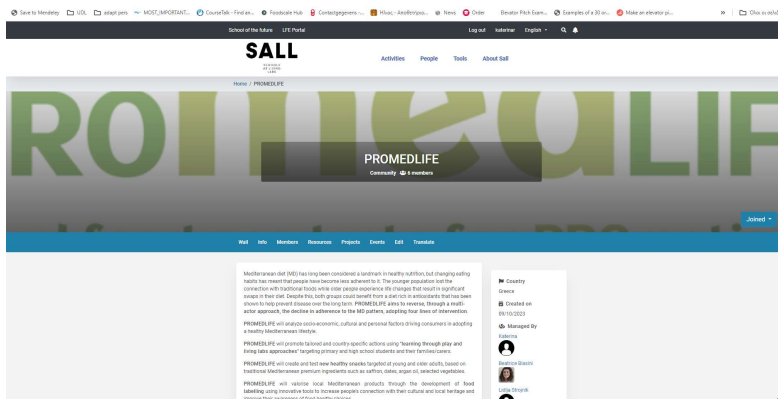
Ideas for balanced LUNCHES and DINNERS

MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY	SUNDAY
Vegetable soup with rice	Cous cous with vegetables	Vegetables soup with spelt	Pasta with preserved fish	Omelette with eggs and pasta	Pizza with tomato and mozzarella	Pasta and legumes
Seasoned cheese	Red meat	Fresh cheese	Legumes	Vegetables	Salad	Salad
Salad	Vegetables	Salad	Vegetables	Fresh fruit		Fresh fruit
Bread	Bread	Bread	Bread	Bread		Bread

DAILY
Season your meals with 3 tablespoons of olive oil throughout the day (once a week 10 g of oil can be replaced by 10 g of butter).
Sprinkle 1 tablespoon of parmesan cheese on first courses to make them tastier.



Education

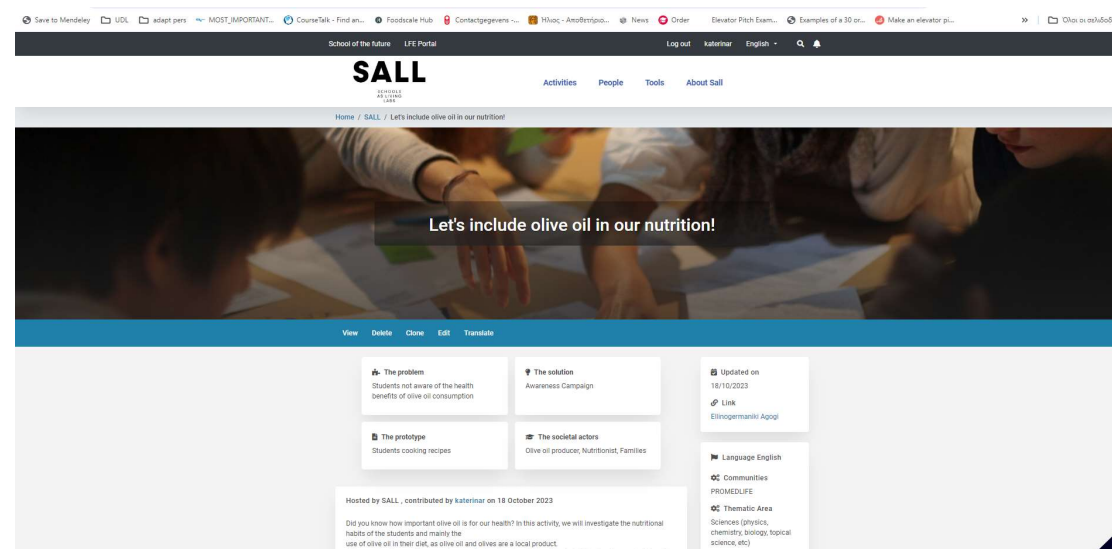
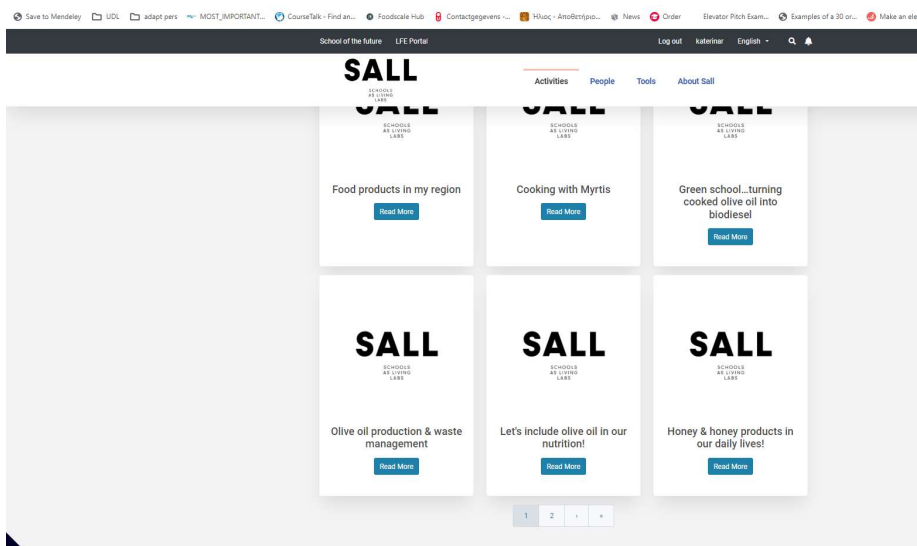


International teachers' professional development courses

<https://esia.ea.gr/futurefoods-summer-school/>

Scenarios freely downloadable on SALL platform

<https://www.schoolofthefuture.eu/en/community/>



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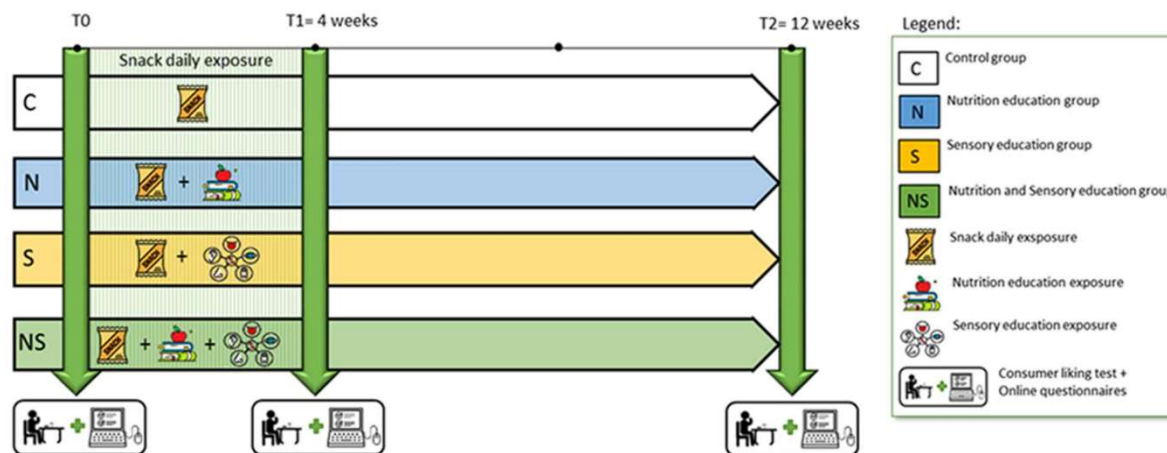
Test the effect of education on young people

Acceptability test



Intervention study

200 students per country



Intervention Studies

Liking tests and questionnaires

[KIDMED QUESTIONNAIRE]

Let's think about your diet over the last 30 days.

- I take a fruit every day Yes No
- I have a second fruit every day Yes No
- I have fresh or cooked vegetables regularly once per day Yes No
- I have fresh or cooked vegetables more than once per day Yes No
- I consume fish regularly (at least 2–3 times per week) Yes No
- I go to a fast-food (hamburger) restaurant more than once per week Yes No
- I like pulses and eat them more than once per week Yes No
- I consume pasta or rice almost every day (5 or more times per week) Yes No
- I usually consume whole grain pasta or rice Yes No
- For breakfast, I eat cereal, bread or rusk Yes No
- The cereals, breads, and rusks I eat for breakfast are usually whole grain Yes No
- I consume nuts regularly (at least 2–3 times per week) Yes No
- We use olive oil at home Yes No
- I usually skip breakfast Yes No
- I have a dairy product for breakfast (yoghurt, milk, etc.) Yes No
- I have commercially baked goods or pastries for breakfast Yes No
- I take two yoghurts and/or some cheese (40 g) daily Yes No
- I take sweets and candy several times every day Yes No

The following questions are about physical activity.

Physical activity is any activity that gets your heart rate up and can leave you breathless. You can do physical activity by playing sports, as part of school activities, playing with friends, or walking to school. Other examples of physical activity include running, brisk walking, skating or biking, dancing, skateboarding, swimming, playing soccer, basketball, football, surfing, etc.

- **In the past 7 days, how many days did you do physical activity totalling at least 60 minutes per day?**

0 days
 1
 2
 3
 4
 5
 6
 7 days

- **Out of school hours: how often do you usually exercise in your free time to the point of breathlessness or sweating?**

- Daily
- 4 to 6 times a week
- 3 times a week
- 2 times a week
- Once a week
- Once a month
- Less than once a month
- Never

- **Based on the foods included and excluded in your diet, do you consider yourself...**
 - Omnivore (general diet, both plants and animals are included)
 - Vegetarian-Fisherian (meat and poultry are excluded; dairy, eggs and fish are included)
 - Ovo-lactic Vegetarian (meat, poultry and fish are excluded; dairy products and eggs are included).
 - Lactic vegetarian (meat, poultry, fish, and eggs are excluded; dairy products such as milk, cheese, yogurt, and butter are included).
 - Ovo vegetarian (meat, poultry, fish, and dairy products are excluded; eggs are included).
 - Pescetarian (meat, poultry, dairy and eggs are excluded; fish is included).
 - Vegan (meat, poultry, fish, eggs and dairy products are excluded)
 - Flexitarian (a plant-based diet with occasional inclusion of animal products)
 - Other (specify): _____

Examples

Intervention Studies

Sensory educational resources

2 OTHER SENSATIONS IN THE MOUTH

→ Taste 1 sample at a time in alphabetical order.



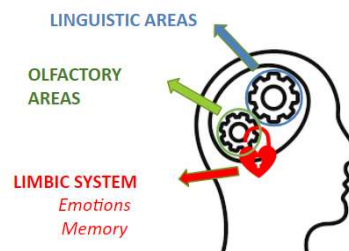
→ Write on the card the sensations you perceive in your mouth or the products with which you associate them



The tactile sensations...



NAMING ODORS IS A COMPLEX TASK



Examples

2 LOOK, LISTEN, and... EAT!



H



The first intervention study in Italy



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MEDiterranean LIFeStyle and healthy diet



Social Networks

 @promedlifeproject_eu

 @promelife_eu

Web Site <https://promedlifeproject.eu>

 PROMedLIFE Tunisia

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Thank you for you kind attention!



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