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# MIG-HEALTH APPS

Mobile Health Apps for Migrants

<https://apps4health.eu/>

Module 6 - Teaching session (6.1)

Nutrition and relevant Health Apps



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# Teaching Session: Content

1. [General Nutrition Knowledge](#)
2. [Main Principles of Healthy Diets](#)
3. [The relationship between Nutrition and Health](#)
4. [Goal Setting](#)
5. [Health Apps related to Nutrition and their Usefulness](#)
6. [Discussion and Evaluation](#)



### Objectives

- ✓ To equip participants with the knowledge needed to make informed decisions about adopting healthy dietary habits and maintaining optimal health.
- ✓ To equip participants with the knowledge required to leverage nutrition apps for achieving nutrition-related goals.



[Source: Image by nuraghies on Freepik](#)

## 6 Nutrition and relevant Health Apps



### Competences

- ✓ Participants will be equipped with the skills required to leverage nutrition apps for achieving nutrition-related goals.
- ✓ Participants' skills will be enhanced in order to make informed decisions about app selection, utilization, and integration into participants' everyday-nutrition, if they wish so.



[Image by vectorjuice on Freepik](#)



## 6.1.1 General Nutrition Knowledge

### Objectives

- To acquire general nutrition knowledge.
- To introduce fundamental terminology related to nutrition (e.g., energy, macronutrients, micronutrients etc.)
- To investigate the effects of macronutrients and micronutrients on human body.
- To learn about foods high in specific nutrients.



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## Nutritional challenges migrants face

- Various nutritional challenges during and after migration.
- Factors affecting the diet of immigrants:
  - ✓ Social factors (*e.g., lack of time, social networks, stress etc.*)
  - ✓ Economic constraints and food affordability
  - ✓ Housing conditions
  - ✓ Cultural issues (*e.g., language barriers, religion, customs, taste preferences, health care practices and beliefs*)
  - ✓ Political factors (*e.g., government support, food assistance programs*)



## Nutrients

- The foods we eat provide the **nutrients** – substances necessary for the growth, repair, and maintenance of body tissues (e.g., muscles etc.) and for the regulation of vital processes (e.g., breathing etc.).
- Foods are complex mixtures of different ingredients, providing varying amounts of the nutrients the body needs.
- The body cannot produce most of the nutrients it needs so we must receive adequate amounts from our diet to meet our individual nutritional needs.





## Energy and Calories

- Food provides the **energy** our bodies require to function.
- The energy in food is measured in units called **calories**.
- Some of the main factors determining the number of calories a person needs daily are age, gender, weight, height, and level of physical activity.
- Storage of energy is crucial to survival for future use.
- There are two major classes of nutrients in food: **macronutrients** and **micronutrients**.



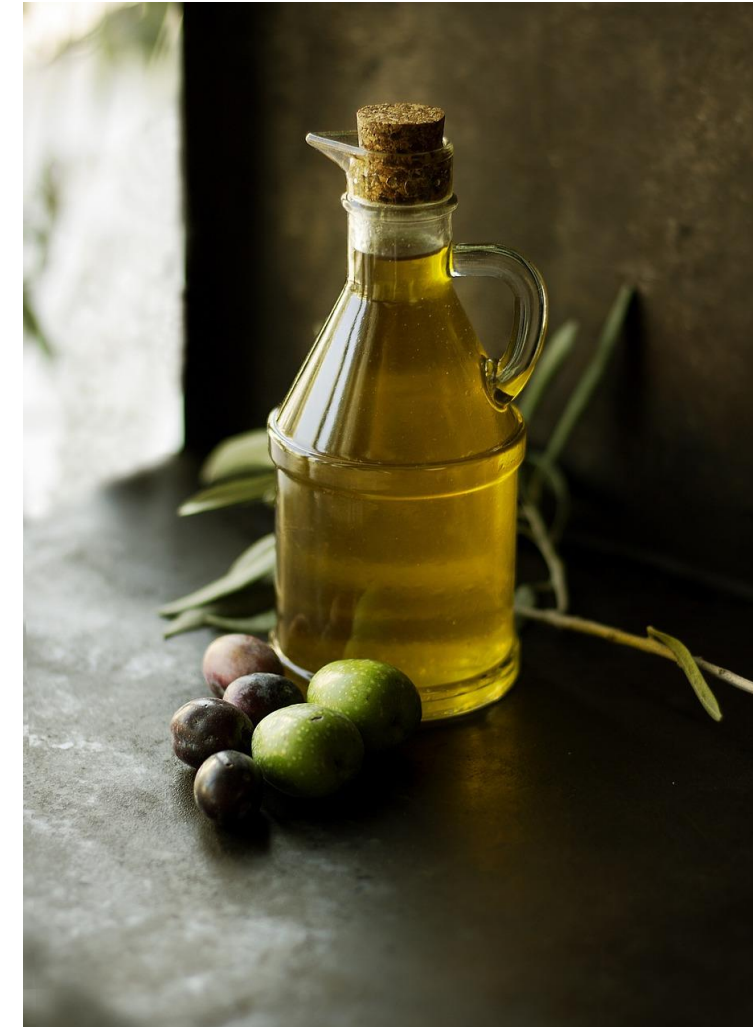
## Macronutrients

- **Macronutrients:** nutrients that provide energy (calories) and are required in large amounts to maintain proper body functions and carry out the activities of daily life.
- 3 classes of macronutrients:
  1. Carbohydrates
  2. Protein
  3. Fats



## Fat

- Fats provide the highest level of energy of any other nutrient (9 calories per gram).
- Fats protect the cells and internal organs, allow us to store calories to be prepared for times that food is scarce, and regulate body temperature.
- The fatty acids in fats can be divided into:
  - ✓ **unsaturated fatty acids** (including monounsaturated and polyunsaturated)
  - ✓ **saturated fatty acids**
- Dietary fats naturally found in foods of **plant and animal origin**.





## Carbohydrates

- Carbohydrates are the **main source of energy** for the body.
- Carbohydrates provide the calories needed for activity, growth, body functions, maintenance and renewal of body tissues.
- Generally, the vast amount of carbohydrates come from **plants**.



## Protein

- Protein provides **amino acids** that function as the “building blocks” of life in order to:
  - ✓ form, build and repair body tissues (e.g., muscles, skin, hair, bones etc.)
  - ✓ maintain a strong immune system by producing antibodies to fight diseases.
- Protein exists in foods from **both animal and plant sources**, which provide different combinations of amino acids.





## Micronutrients

- **Micronutrients:** nutrients also essential for body functions that the body needs in very small amounts.
- Lack of any vitamin in the diet can lead to serious health conditions.
- 2 classes of micronutrients:
  1. **Vitamins**
  2. **Minerals**





## Water

**Water** is not classified as either a macronutrient or micronutrient but is absolutely necessary for health and life.

- Water accounts for a large part of our body weight and it is the main component of body fluids. It transports nutrients and compounds in blood, controls body temperature, and gets rid of waste.
- We lose water daily and our body does not store it, so we need to replenish it through the foods and liquids we consume.





## 6.1.2

# Main Principles of Healthy Diets

## Objectives

- To acquire knowledge on the main principles of healthy diets.
- To introduce tips provided by the World Health Organization regarding how to follow a healthy diet.



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## Main principles of a healthy diet

Main characteristics of a healthy diet:

- ✓ consists of a variety of foods from different food groups (fruits, vegetables, legumes, dairy products and animal foods, staple foods, fats and oils)
- ✓ meets the individual nutritional needs for energy (calories) and nutrients
- ✓ is safe from toxins, mold and any harmful chemical
- ✓ is enjoyable and culturally acceptable
- ✓ is available and sufficient every day and all year round.



## Eating a variety of foods & meeting the individual nutritional needs

- No food contains all nutrients our body needs
- A healthy, nutritious diet consists of many different foods, preferably consumed throughout the day, and is sufficient in **quantity** and **quality** to meet individual needs for energy (calories) and other nutrients.
- **There is no “one-size fits all” diet** → Nutritional needs are specific to each person.
- **Balance and variety** in the diet equals ensuring that we get enough, but not too much, of the energy and nutrients we need.



## Eating a variety of foods & meeting the individual nutritional needs

- **Dietary acculturation** is a complex process leading migrants to adopt eating habits of the host country.
- The healthy aspects of the native diet (e.g., high consumption of fruit, vegetables, whole grains and nuts) seem to decrease over time among newly arrived migrants, while the consumption of foods rich in sugar, fat and salt increase.





## Tips for following a healthy diet

- ✓ Drink enough water every day (8-10 cups per day).
- ✓ **Balance calories in / out:** maintain energy balance to keep a healthy body weight.
- ✓ Eat fresh and unprocessed foods daily.
- ✓ Eat meat, poultry, eggs and fish regularly in small amounts.
- ✓ Consume (preferably low-fat) milk and dairy products regularly in small amounts.





## Tips for following a healthy diet

- ✓ Reduce the consumption of baked and fried foods, and pre-packaged snacks and foods (e.g. doughnuts, frozen pizza, margarines, fast food, cakes, cookies etc.) that contain **industrially-produced trans-fats**.
- ✓ Eat less sugar.
- ✓ Eat less salt.





### 6.1.3

## The relationship between Nutrition and Health

### Objectives

- To acknowledge the impact of nutrition on human health.
- To learn about the different types of malnutrition.
- To explore the implications of malnutrition.



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## Nutrition impacts our health

- Good nutrition and eating habits are **fundamental** for proper **growth** and **development, overall health** and the **prevention of diseases**.
- Inadequate diets and poor nutrition can lead to **malnutrition** and can result in a number of different and very serious health issues.
- Better nutrition is linked to:
  - ✓ improved infant, child and maternal health
  - ✓ stronger immune systems
  - ✓ safer pregnancy and childbirth
  - ✓ lower risk of non-communicable diseases (such as diabetes and cardiovascular disease)
  - ✓ and longevity.



## Nutrition impacts our health

- Migrants often arrive in the host country with nutritional deficiencies and this can be combined with an impaired initial nutritional status in the home country.



## Malnutrition and its forms

- Malnutrition refers to deficiencies, excesses, or imbalances in a person's intake of energy (calories) and/or nutrients.
- The term malnutrition addresses 3 broad groups:
  - 1. Undernutrition:** wasting (low weight-for-height, thin for height), stunting (low height-for-age, too short for age) and underweight (low weight-for-age, too thin for age);
  - 2. Micronutrient-related malnutrition:** micronutrient deficiencies (lack of important vitamins and minerals) or micronutrient excess; and
  - 3. Overweight, obesity and diet-related non-communicable diseases** (such as heart disease, stroke, diabetes and some cancers).

Malnutrition, in any form, threatens human life.



## Adjustments immigrants have to make upon arrival

- Navigating a dramatically different food and physical activity environment
- Change from a more traditional food environment to a more industrialized one

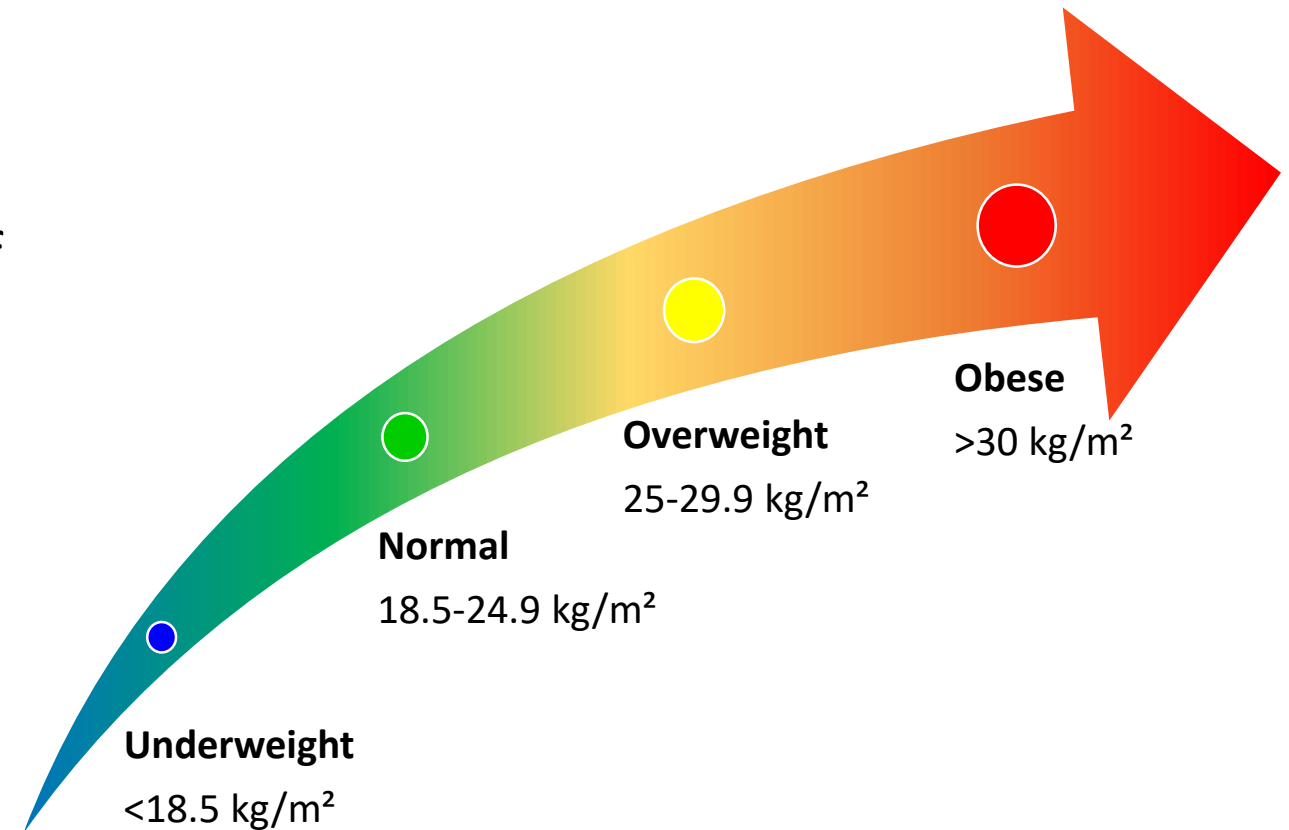
Food literacy is required  
to enable healthy choices





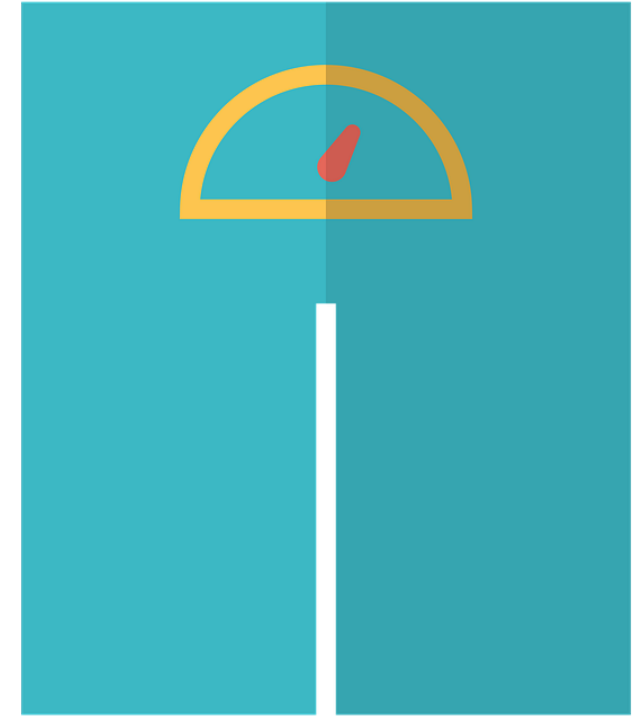
## Body Mass Index (BMI)

- **Body mass index (BMI)** is an index of weight-for-height.
- It is defined as a person's weight in kilograms divided by the square of his/her height in meters ( $\text{kg}/\text{m}^2$ ).



## Body Mass Index (BMI)

- While migrants in Western countries have usually a lower BMI on arrival than native-born people, their risk to be overweight or obese slowly rises with their duration of stay, to match that of natives.





## 6.1.4

# Goal Setting

## Objectives

- To learn about the importance of goal setting.
- To get familiar with the SMART goal technique.



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## Why is it necessary?

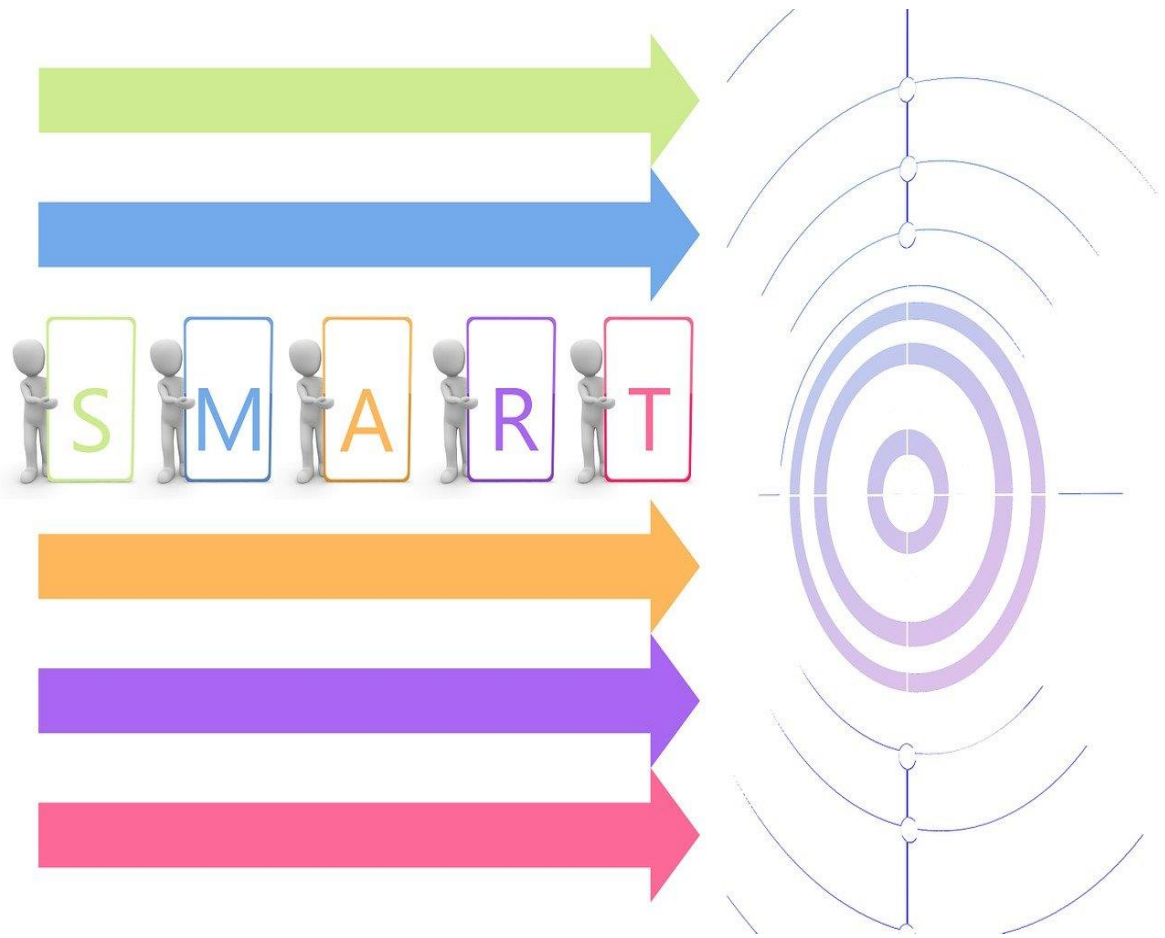
- Goal setting is a key intervention for those looking to make behavioral changes, such as changes in eating habits.
- Visualizing what we need to do to reach our goals may make it more likely that we will **actually** succeed **these goals**.
- Goals are a form of motivation they provide direction and a sense of personal fulfillment, and they also help track progress.





Setting **SMART** nutrition goals has been found to be helpful in assisting people to make positive and long-term lifestyle changes

# Technique: "SMART" goal setting



- Specific
- Measurable
- Achievable-Attainable
- Relevant
- Timely





## 6.1.5

# Health Apps related to Nutrition and their Usefulness

## Objectives

- To identify reasons for using Nutrition Apps.
- To become familiar with the most common types of Nutrition Apps.
- To learn about potential features of Nutrition Apps.



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## Rising number of available Nutrition Apps

- Due to their large number and free availability → tricky to understand what these apps are offering and how they compare with each other.
- According to users, nutrition apps **may be used for a variety of different goals:**

- gaining/loosing weight
- in need of assistance with medical or health-related decision making
- curing/managing a condition
- executing a treatment plan
- eating healthier
- self-monitoring
- being more mindful/finding balance
- increasing knowledge
- finding triggers
- even other aspects of life (e.g. maximizing work/sport performance)



## Most common types of Nutrition Apps

- Calorie Trackers/Food Tracking/Food Diary Programs
- Macronutrient and Micronutrient tracking
- Diet-condition-specifics
  - e.g. vegan, carb counting for people with Type 2 diabetes, weight loss, low-sodium diet, pregnancy & lactation nutrition, paediatric nutrition etc.



- Restaurant and Grocery Finders
- Food Allergy or Food Intolerances
- Hydration
- Grocery and Money Saving
- Nutrition Counselling and Education
- Mindfulness/Intuitive Eating
- Recipe Builders or Meal Planning



## Potential features of Nutrition Apps

Most Nutrition Apps have **4 categories of recording**:  
dietary intake, phenotype, physical activity, and others (e.g. personal reminders)

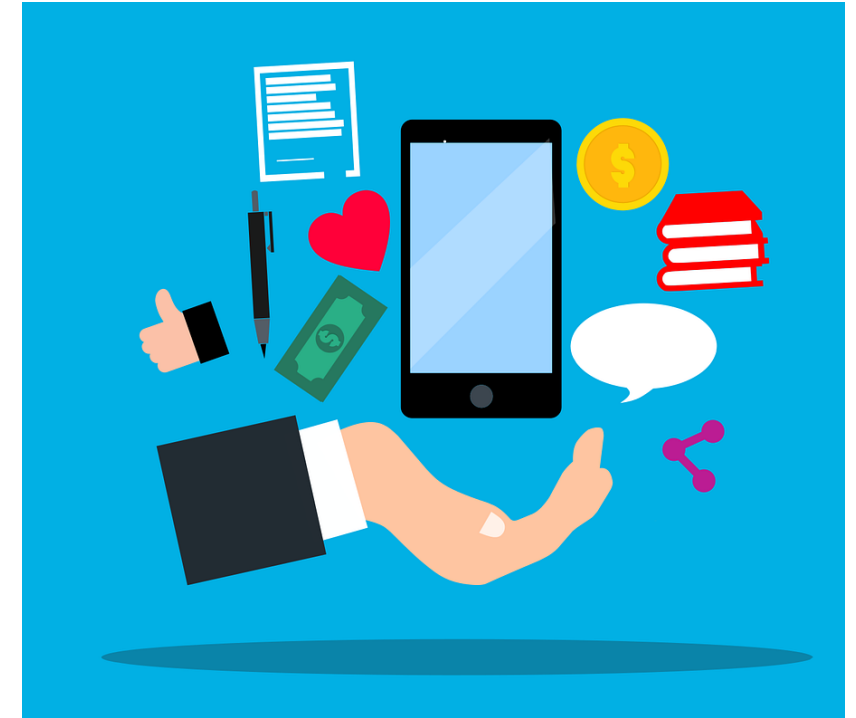
- Most apps require **manual initiation of data recording** by opening the app and clicking on the right options.
- Manual input of consumed foods to provide feedback.
- Most common phenotype inputs: current weight, height, gender, and age.
- Possibility of saving *daily notes* and creating *personal reminders* (e.g. to remind of snacks during the day).





## Potential features of Nutrition Apps

- Internal forums, similar to blogs: post of questions and recipes, sharing information.
- Proposing diet challenges to users, e.g. “fill half of the plate with vegetables.”
- Require information about **health conditions** (blood pressure, glucose data etc).
- Reporting physical activity → activity name and duration.



## Usefulness of Nutrition Apps

- ✓ Help in managing health conditions (e.g. diabetes) or reaching personal goals.
- ✓ Change, evaluate and monitor eating behavior and diet-related health risk factors.
- ✓ Provide autonomy, help people take charge of their nutrition choices.
- ✓ Improve healthy eating perception and nutrition knowledge.
- ✓ Build motivation.

**WARNING**

**Cautious interpretation is required:**  
Almost no app has a decision engine capable of providing specific personalized diet advice





## 6.1.6

# Discussion and Evaluation

## Objectives

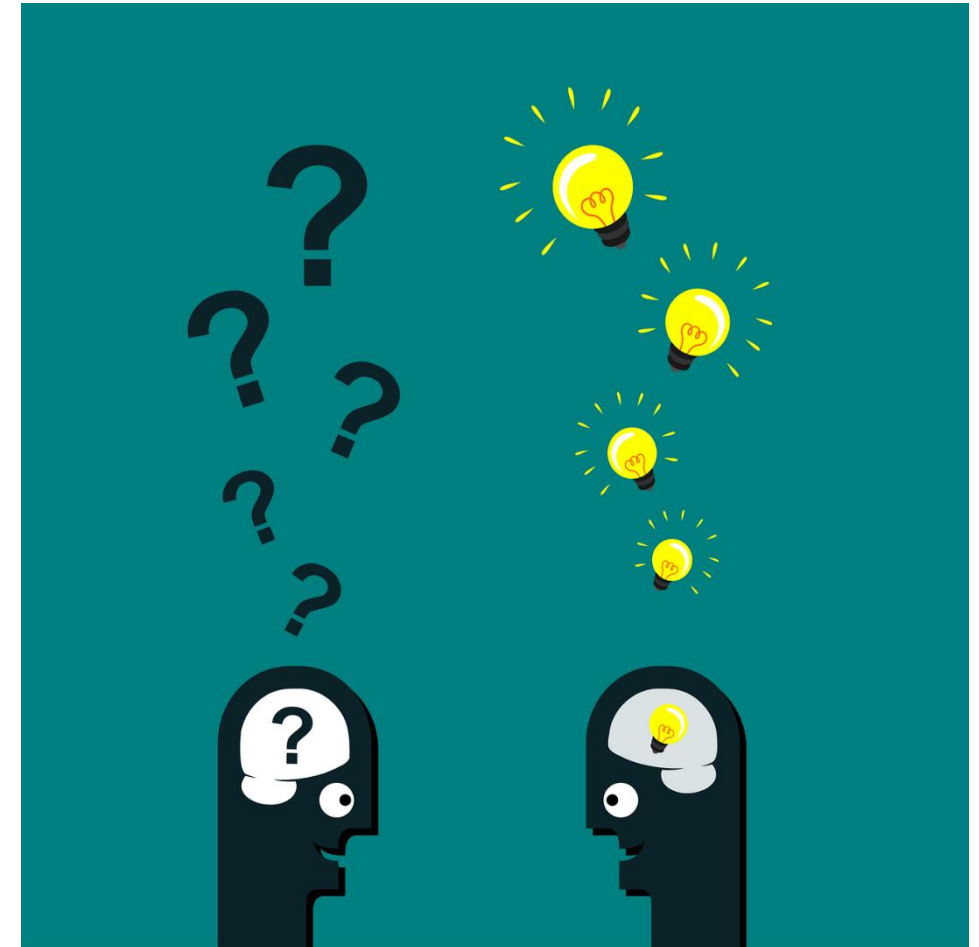
- To resolve and clarify misunderstandings that emerged from all previous theoretical information.
- To ensure in depth comprehension of the module's contents.
- To evaluate the module.



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## Discussion

- *Questions?*
- *Clarifications?*
- *Comments?*



## Evaluation Questionnaire

The content of the module was stimulating and interesting *(1 minimum, 5 maximum)*

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The content of the module was clear, understandable and easy to follow *(1 minimum, 5 maximum)*

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The trainer was well prepared *(1 minimum, 5 maximum)*

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## Evaluation Questionnaire

The module enhanced my knowledge of the subject matter *(1 minimum, 5 maximum)*

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I would recommend this module to others *(1 minimum, 5 maximum)*

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I am satisfied with the module overall *(1 minimum, 5 maximum)*

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# MIG-HEALTH APPS

Mobile Health Apps for Migrants

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You have completed the teaching  
session of this module!

