

## DIGITAL NUTRITION APPLICATIONS

Document produced in the framework of the partnership between

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### Introduction

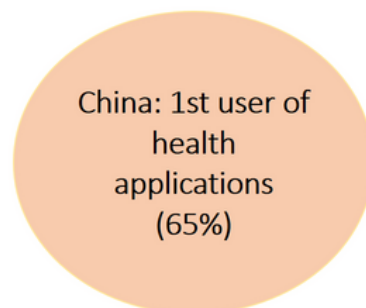
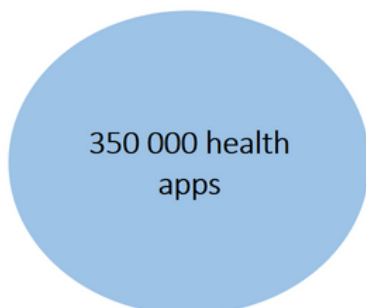
The number of people with eating disorders (ED) and obesity is constantly on the rise since the past few years, representing a real public health problem. Currently, all countries are facing significant difficulties in taking care of these pathologies, mainly due to a **saturation of healthcare facilities** but also to **many medical deserts** in the nutritional field. Thus, too often, eating disorders and obesity are diagnosed too late with an increased risk of severe forms. Recently, many digital applications focusing on nutrition have been developed and proposed to the general population and could theoretically help them in their nutritional follow-up.








**However, are these applications really effective for the general population?**

### Nutrition applications in numbers

Nutrition apps are a type of health applications. The increased use of smartphones has contributed to a wide expansion of the digital applications proposed. In order to better understand the potential impact of these applications, here are some figures:



# The different types of nutrition applications and their purposes

Types of nutrition apps	Purposes	
Calorie counter / Food diary	These applications allow the user to complete a food diary* thanks to databases which contain many food products, and then add up the calories over a meal or a day.	
Food composition	Via a search bar or by scanning the product's barcode, these applications provide detailed information on the composition of food (micro and macronutrients but also additives and preservatives). Some applications also give a score to the food product according to its composition.	
Nutritional support and advice	The user completes a food diary*, which will be analyzed by the apps which it turn gives advice according to the person's diet.	
Recipe generators or meal planner	These applications suggests a list of recipes and menus if you are out of ideas.	
Seasonal fruit and vegetable calendar	These applications contain databases which identify the fruits and vegetables in season in order to adapt one's diet. Some applications also provide information on the nutritional composition of each fruit and vegetable.	

\*a food diary is intended to track your diet over a period of time

## The disadvantages of nutrition applications

### No scientific validation

Many of these nutrition applications are **not scientifically validated** and do not base their advice on scientifically approved information. This leads to a risk of misinformation that can result in inappropriate or even dangerous eating habits for the user .

### Cognitive consequences

Numerous studies have shown that nutrition applications, and in particular calorie counting applications may contribute to the **development of obsessive eating behaviors**. Thus, without the support of a health professional, it is particularly dangerous to carry out and analyze your own food diary because this can create an increased risk of cognitive restriction and thus promote the onset of eating disorders and obesity.

### Emotional consequences

The scientific literature also underlines that nutrition applications may lead to **disappointment, guilt and even increased anxiety** amongst users when the goals set by the user or the application itself are not achieved (goals that are not scientifically validated and sometimes unattainable or even dangerous for health). Additionally, the use of these applications can lead to an **increased body dissatisfaction** and therefore an **increased risk of inappropriate eating habits**.

### Not adapted to individuals' needs

These nutrition applications are intended for the general population but the advice given is **rarely adapted to individual needs**, which vary according to numerous parameters such as age, physical activity, existing pathologies, eating habits, lifestyle, etc.

### Decreased motivation

Nutritional support and advice applications do not provide an appropriate dietary follow-up and their use is not always easy to integrate into daily life. Indeed, over time, we observe a **strong decrease in the motivation** to use these applications but also in the motivation to pursue clinical care.



### Lack of precision

Many nutrition applications and in particular calorie counting apps **lack accuracy** and they usually use unreliable algorithms that can mislead the user and lead him into inappropriate eating habits.

# The benefits of nutrition applications

## Quick and easy access to nutritional information

Applications are a great tool to make information **accessible worldwide**. Raising awareness amongst the general population can help people realize **the importance of a balanced diet** and how to achieve it.



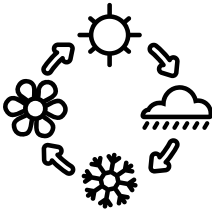
## Nutritional assessments are easier for the health professional

**When used with the support and monitoring of a healthcare professional**, these applications can be a real time-saver for said healthcare professional. Indeed, many nutrition applications can, in particular thanks to their large database, facilitate and optimize the implementation of a food diary and thus the nutritional assessment by a health professional.

## Complementary to clinical care

Studies have shown that nutrition applications could **work alongside clinical care, thereby optimizing results**. Indeed, by improving the motivation of the patient, and by offering greater autonomy, these applications can increase the efficiency of clinical care.

## Applications on seasonal fruits and vegetables



By informing the user about seasonal fruits and vegetables, the user can thus have a wide choice of products, a more diversified diet with a positive ecological impact, especially if the fruits and vegetables are produced locally.

## Conclusion

Nutrition applications therefore appear to be a particularly interesting **digital solution for large-scale** communication of information to the general population. However, at present, these applications lack the reliability to allow autonomous use in complete safety for the user.

These applications could also **support the clinical care of patients** and help to maintain the motivation of the user. In order to increase the effectiveness of these applications, it seems essential to **co-construct them with scientists** and health professionals and set up evaluation systems by by users and professionals.



**These applications are not intended to replace clinical care (by adietician or nutritionist) but can be complementary to it.**