**MY-AHA**
Contract # 689592

# My-AHA

**Deliverable <5.6>**

## Main Wave prototype on nutrition monitoring and advice through Smart TV & mobile devices

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***Abstract***

This deliverable describes the prototypes on nutrition monitoring and advice for Smart TV and mobile devices to be used in my-AHA project during the main wave. A description of the functionalities of the prototype for Smart TV and mobile application are presented.

The Smart TV Nutrition app is kept as simple as possible with only read-only functionalities in food diary viewing and recipe search.

The mobile Android application allows users to monitor and plan their meals. The app includes a food diary and an automatic meal planner to help users planning their own meals. It also offers personalized nutritional advices based on the information on the food diary.

This deliverable is considered confidential due to IPR reasons.

Disclaimer



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# Executive summary

A nutrition monitoring and intervention strategy was developed in my-AHA and reported in D3.9 which is the basis for the creation of the prototype on nutrition monitoring and advice hereby described.

The nutrition system of my-AHA allows users to log their food intake and receive nutritional advices. Along the project prototypes for Smart TV and mobile devices will be developed to be used in the alpha and main wave of my-AHA.

A first prototype was developed and tested during the alpha wave and previously described in D5.3 “alpha wave prototype on nutrition monitoring and advice through Smart TV & mobile devices”. More functionalities were included in the main wave prototype and the previous were improved considering the users feedback during the alpha wave.

A description of the functionalities of the main wave prototype for Smart TV and mobile application are presented. The Smart TV Nutrition app is kept as simple as possible with only read-only functionalities in food diary viewing and recipe search. Recipes can be opened and displayed on screen to be used as guidance during cooking and navigation is possible by using the remote control.

The mobile Android application allows users to monitor and plan their meals. The app includes a food diary and an automatic meal planner to help users planning their own meals. It also offers personalized nutritional advices based on the information on the food diary.

During the main wave, English, German, Spanish and Italian nutritional databases will be available and the users will be able to test the prototype for mobile devices (smartphones).

This deliverable is considered confidential due to IPR reasons.

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# Table of Contents

# List of figures and/or list of tables



# Abbreviations

My-AHA – my Active and Healthy Ageing

DRV – Dietary Reference Value

# 1 Introduction

The purpose of this deliverable is to present the prototypes on nutrition monitoring and advice for Smart TV and mobile devices of my-AHA to be used during the main wave of the project [1]. A description of the functionalities of the prototype for Smart TV and mobile application are presented.

The Smart TV Nutrition app is kept as simple as possible with only read-only functionalities in food diary viewing and recipe search. Recipes can be opened and displayed on screen to be used as guidance during cooking. Navigation is possible by using the remote control (arrows up/down, left/right, OK button and back button).

A first prototype was developed and tested during the alpha wave and previously described in D5.3 “alpha wave prototype on nutrition monitoring and advice through Smart TV & mobile devices”. More functionalities were included in the main wave prototype and the previous were improved considering the users feedback during the alpha wave.

The mobile Android application allows users to monitor and plan their meals. The app includes a food diary and an automatic meal planner to help users planning their own meals. It also offers personalized nutritional advices based on the information on the food diary.

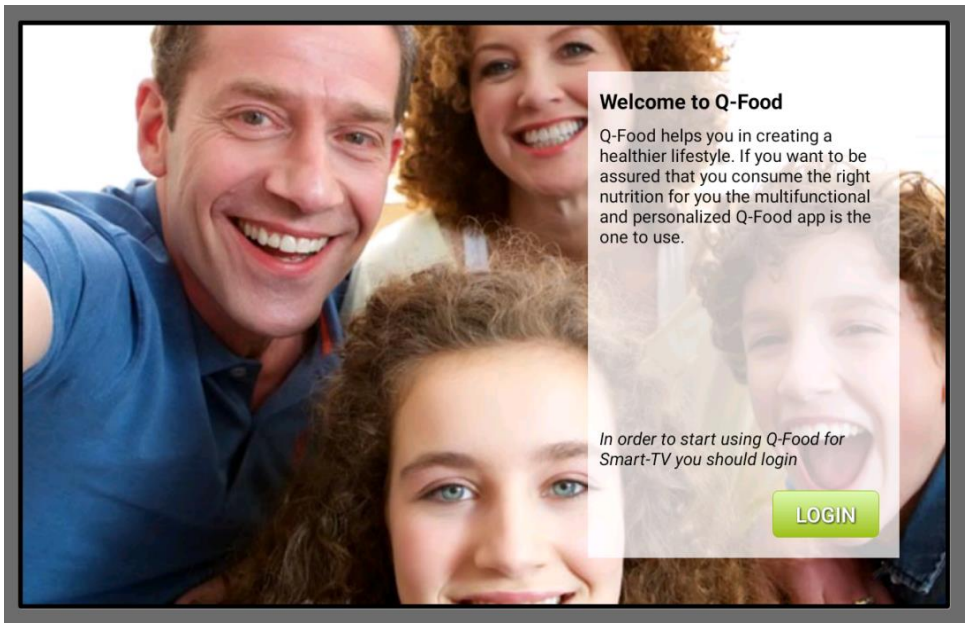
# 2 Main Wave Prototype for Smart TV

A description of the prototype functionalities for the Smart TV app to be used in the main wave is given in the next sections.

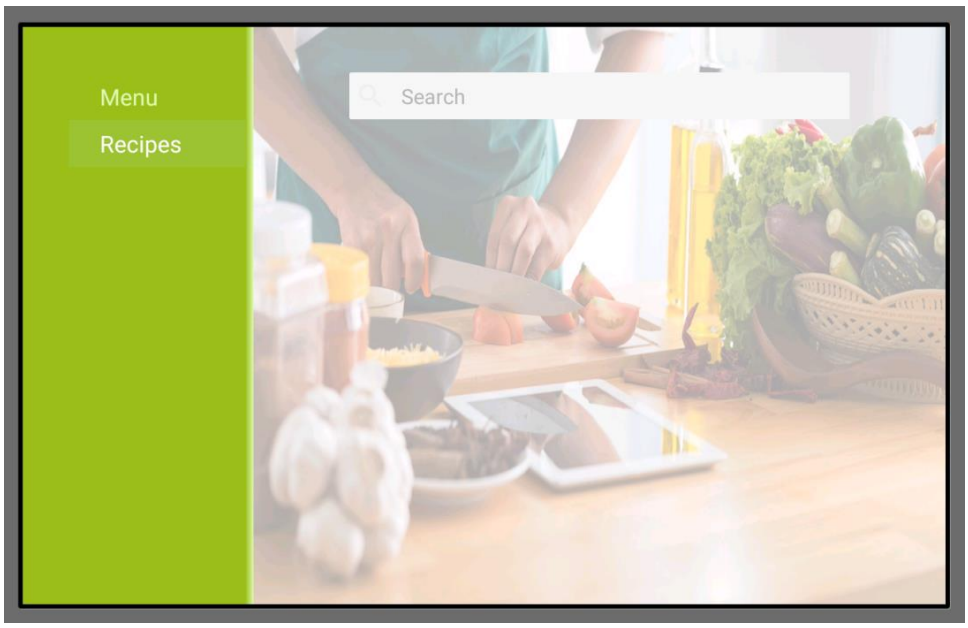
For the prototype there are 2 menu options:

1. Startup screen of Nutrition app on Smart TV

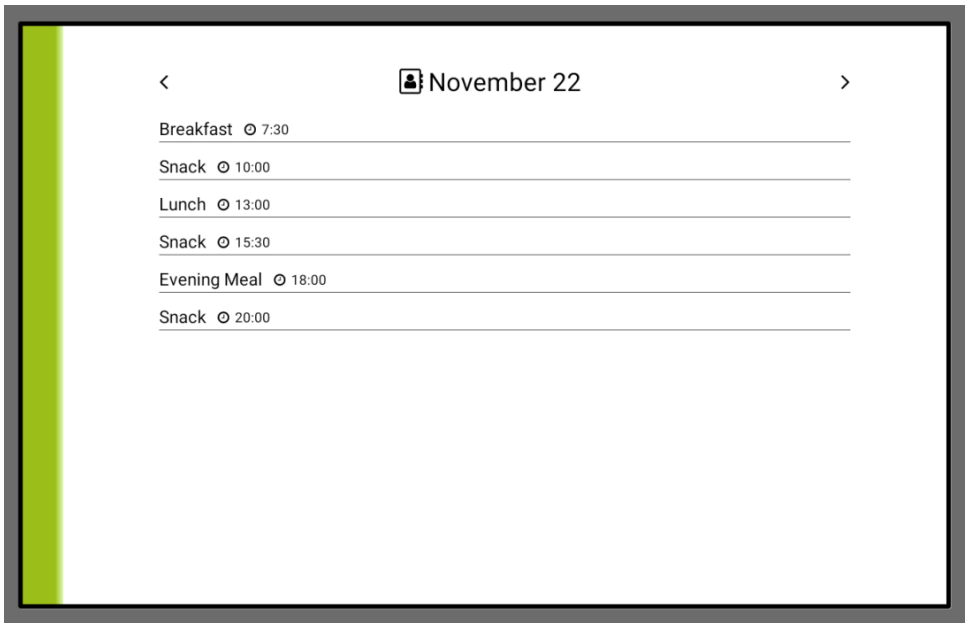

2. Welcome screen with login request

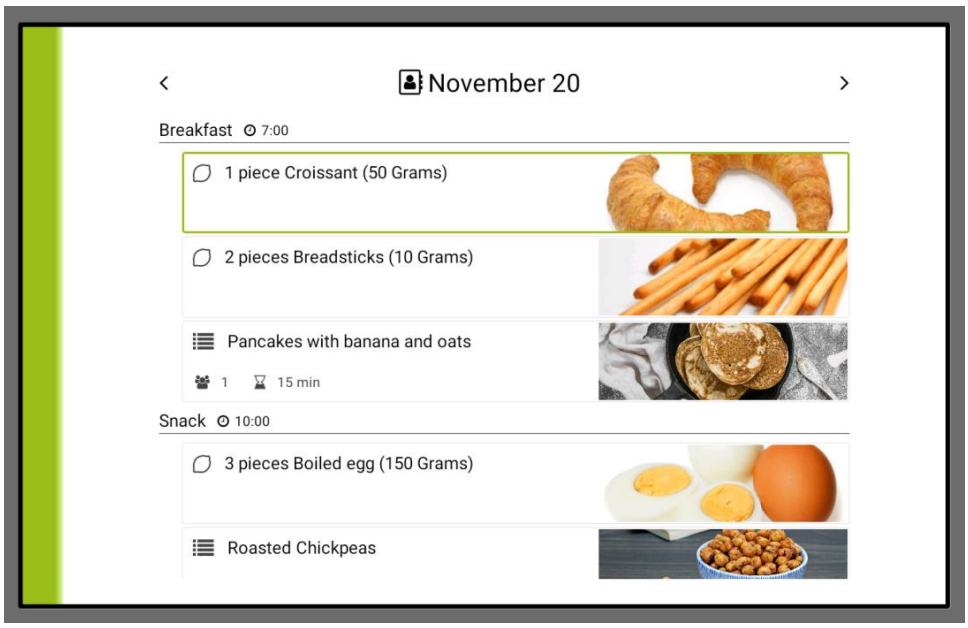



3. Navigation screens:
    a. Menu: here the food diary is shown, starting with today's menu. With arrows left/right the user can scroll to tomorrow and the days after. A recipe can be selected and viewed on screen.
    b. Recipes: user can search for a recipe via an on-screen keyboard. A recipe can be selected and viewed on screen.

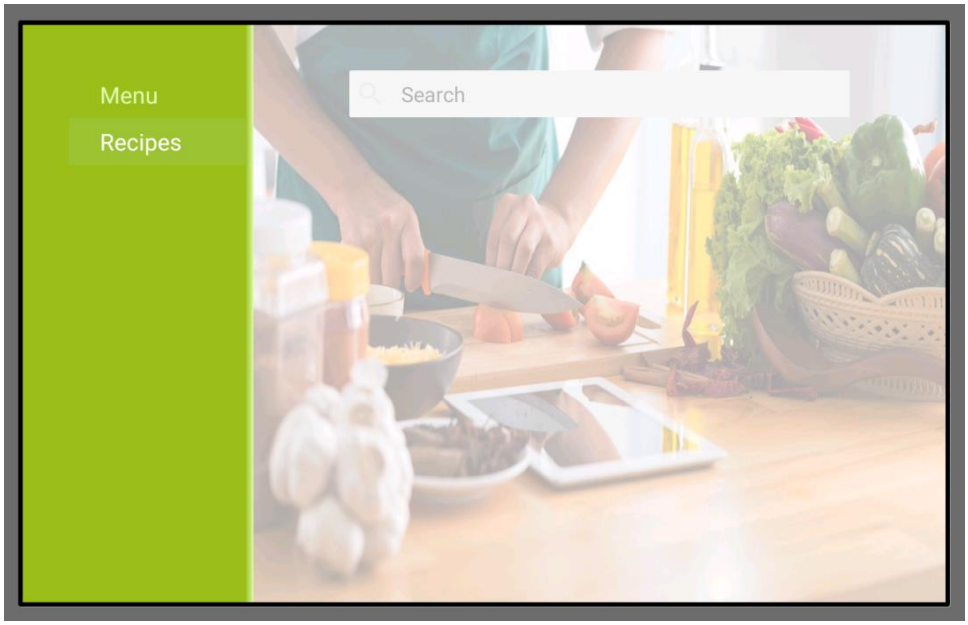


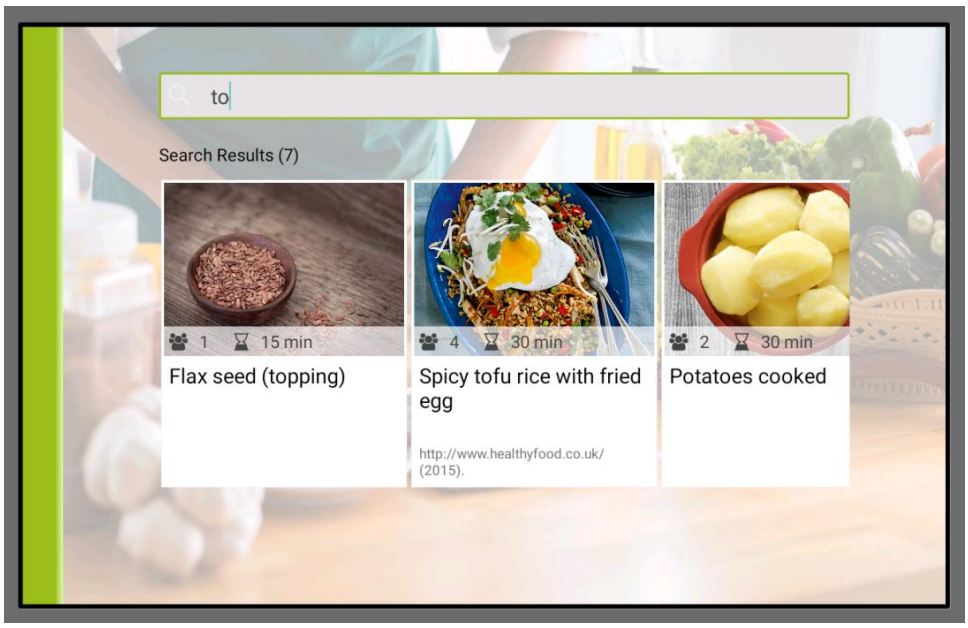

4. Selecting Menu: here the food diary is shown, starting with today's menu. This is a read-only application where content is taken from the Nutrition app. If there's no content, the diary is empty. In this case the diary needs to be filled with content within the Nutrition app on another device such as mobile phone or IPad. If the diary contains content it is shown as below. With arrows left/right the user can scroll to tomorrow and the days after. With the arrows up / down the user can navigate through the diary. Opening a recipe is done with the select button in the centre of the arrow buttons on the remote control.



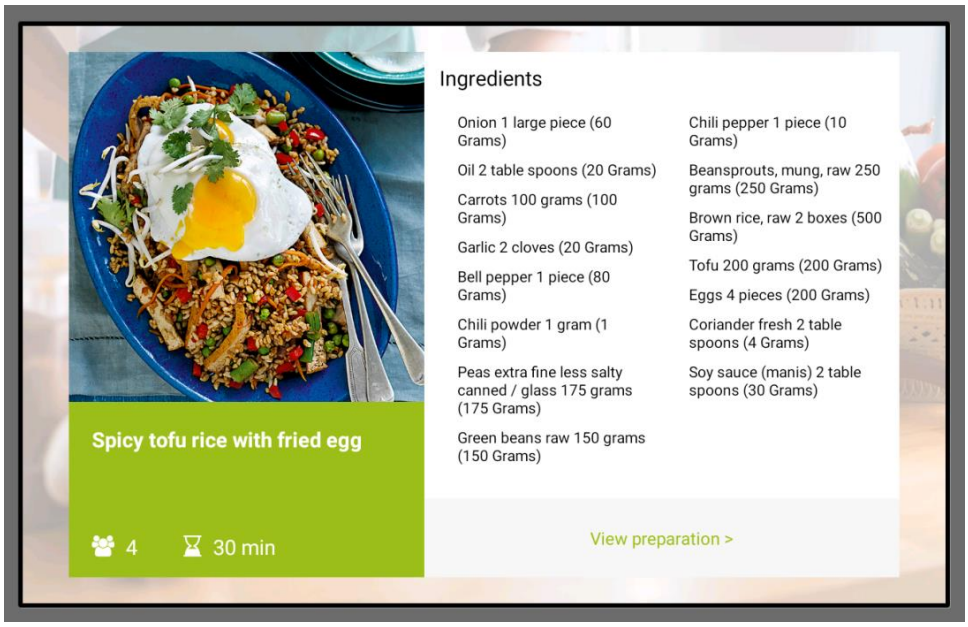



5. Selecting Recipes: user can search for a recipe via an on-screen keyboard. A recipe can be selected and viewed on screen. First a page is shown with the ingredient listing, with the right arrow a next page can be viewed with the preparation (text and movie if available)



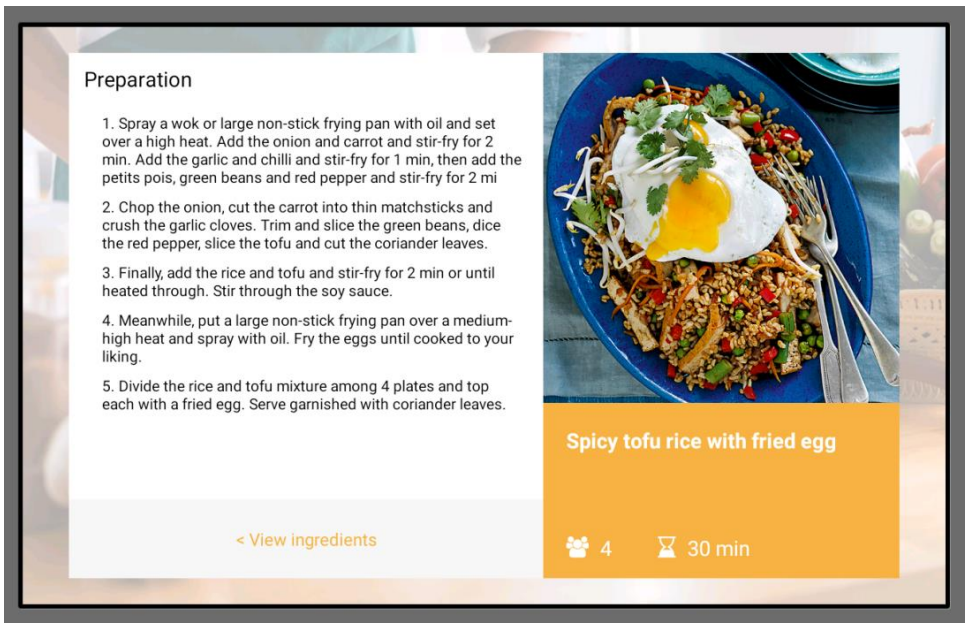



View Ingredient listing:




View Preparation steps:


Preparation
1. Spray a wok or large non-stick frying pan with oil and set over a high heat. Add the onion and carrot and stir-fry for 2 min. Add the garlic and chilli and stir-fry for 1 min, then add the petits pois, green beans and red pepper and stir-fry for 2 mi
2. Chop the onion, cut the carrot into thin matchsticks and crush the garlic cloves. Trim and slice the green beans, dice the red pepper, slice the tofu and cut the coriander leaves.
3. Finally, add the rice and tofu and stir-fry for 2 min or until heated through. Stir through the soy sauce.
4. Meanwhile, put a large non-stick frying pan over a medium-high heat and spray with oil. Fry the eggs until cooked to your liking.
5. Divide the rice and tofu mixture among 4 plates and top each with a fried egg. Serve garnished with coriander leaves.
< View ingredients
Spicy tofu rice with fried egg
4
30 min

# 3 Main Wave Prototype for mobile devices

In alternative to the web portal, the users can also use the nutrition service in their smartphones through the Nutrition application and the data will be synchronized between the two systems.

The prototype of this application to be used during the main wave of my-AHA will be presented in this section. The interfaces of the Nutrition application were developed by FhP whereas the nutritional contents, like ingredients list, food composition databases and advices, come from VitalinQ service.

## 3.1 Login

The first time the user opens the Nutrition application in the mobile device, he is prompt to the webpage of VitalinQ to login or to register into the system. From this point forward, the login details are saved in the application and the user does not need to insert them again.

The main dashboard of the Nutrition application is depicted in Figure 1. From here, the user can access his profile settings, log information in the food journal and also see nutritional advices.

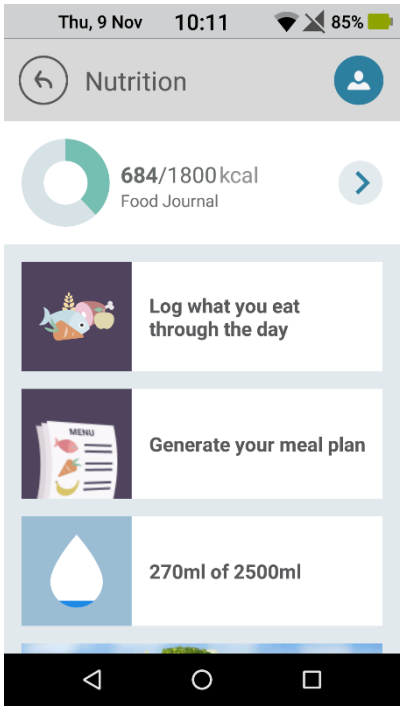



**Figure 1: Nutrition application dashboard.**

## 3.2 Settings

In the profile settings, the user can update his personal information as well as include diet preferences and food restrictions (Figure 2).

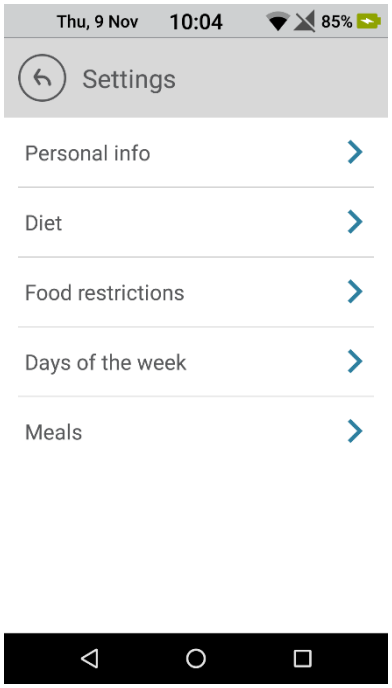



**Figure 2: Profile settings screen.**

### 3.2.1 Personal info

In the personal information screen, the user can update his date of birth, gender as well as height and weight (Figure 3). Some of this information will be necessary to calculate the nutritional requirements of the user.

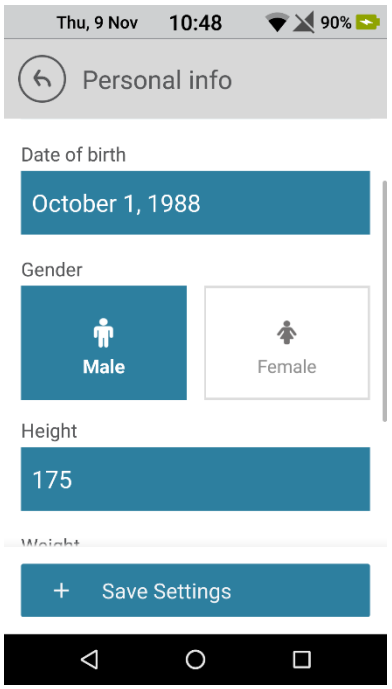



**Figure 3: Personal info screen.**

### 3.2.2 Dietary preferences

Here the user has the possibility to save his dietary preferences or lifestyle choices, such as for example choosing a vegetarian diet (Figure 4).

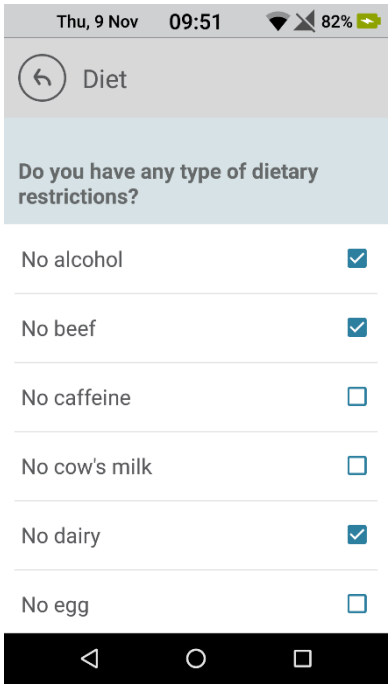



**Figure 4: Dietary preferences screen.**

### 3.2.3 Food restrictions

In this option, the user can save the food he does not like, is allergic to, or wants to avoid, like egg, or wheat (Figure 5).

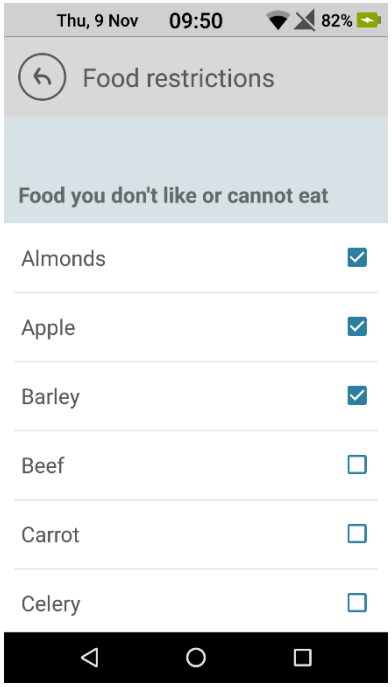



**Figure 5: Food restrictions screen.**

## 3.3 Food Journal

The food journal is used, as the name suggests, to keep a diary of the food the user has eaten during each day (Figure 6). Throughout the day the user can insert the food he/she has consumed and have a clear picture of his/her food intake what is his/her nutrition status.

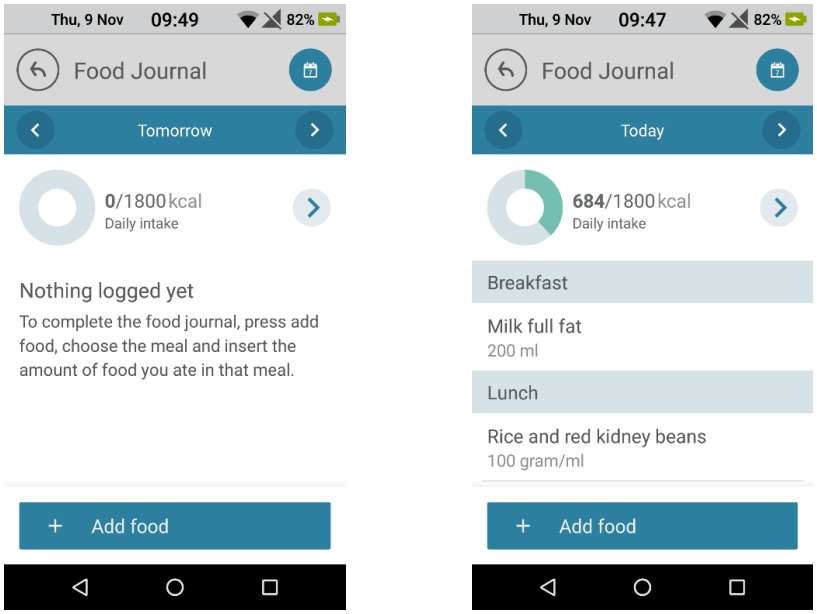



**Figure 6: Food journal screen.**

To complete the food journal for each day, the user should first press "Add food", choose the meal which he wants to populate and search the ingredient to insert. Then, a list of ingredients should appear for the user to choose and insert the quantity eaten. The process of insertion of ingredients in the food journal is described in Figure 7. Users can add to the food diary ingredients from the database or their own custom recipes.

In addition to text entry, users can also use the speech-to-text option to search for products to add to the food journal. A button in the view for logging food allows users to bring up the speech-to-text feature to search the database.

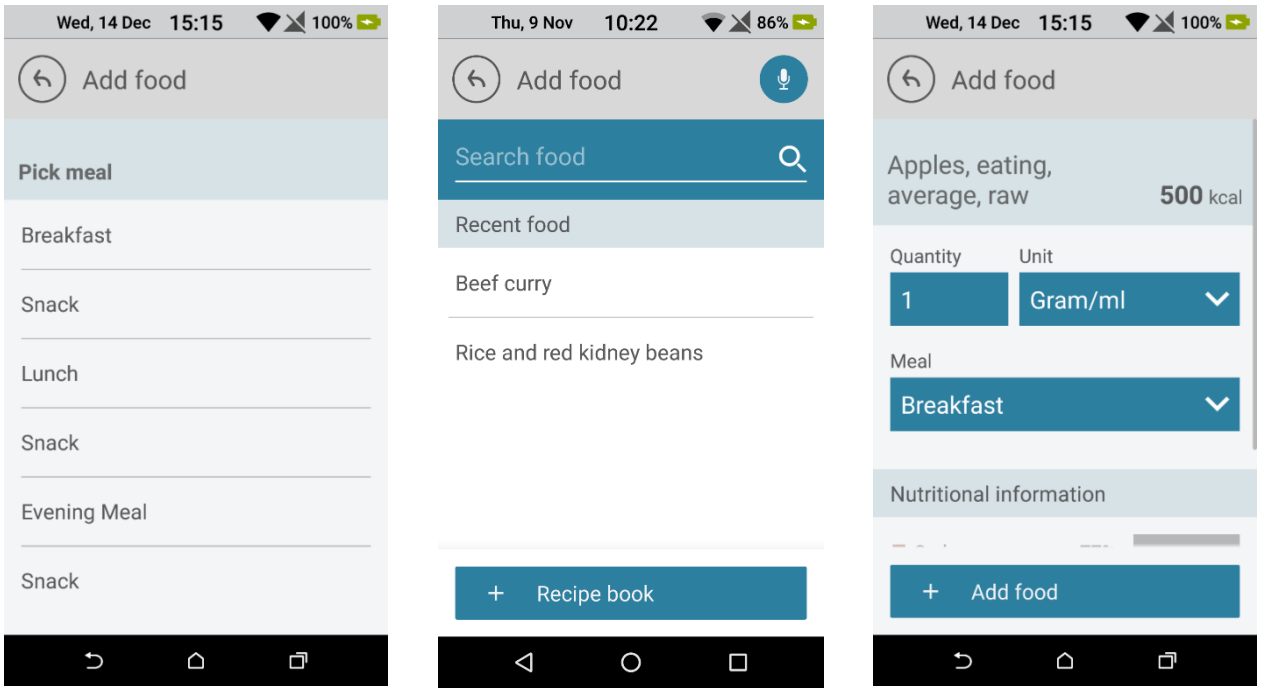



**Figure 7: Ingredient insertion in food journal screens.**

After inserting the item in the food journal, the user can access the nutritional information of this item by pressing on it. It is also possible to update the quantity or delete the item. Information about the amount of energy or macronutrients (carbohydrates, lipids or proteins) is given as well as fluid intake and other important micronutrients such as calcium or vitamins. To facilitate the interpretation of the nutritional state of the user, the amounts of nutrients for each food ingested as well as the recommended value are presented in this view. When a nutrient value is over the recommended value, there is a visual indication highlighting this fact, Figure 8.

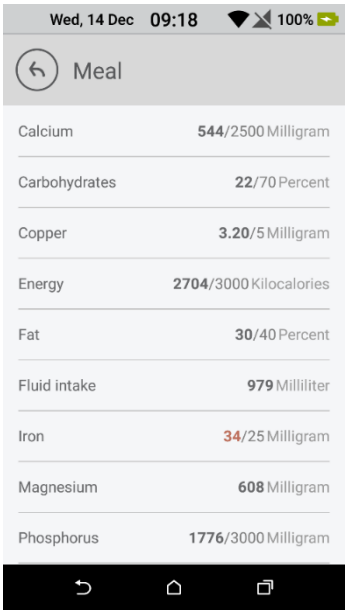
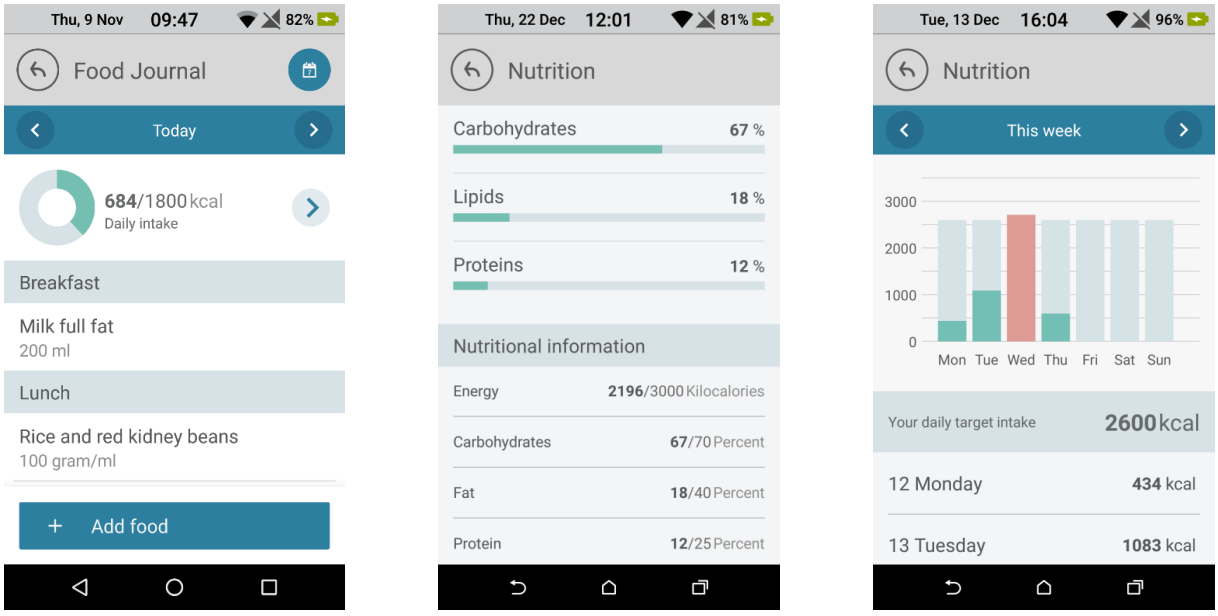



**Figure 8: Nutritional information detail of an ingredient.**

Along the day, as the user inserts the ingredients for each meal in the food journal Figure 9a), the amount of calories of the daily intake are updated and the user can access further information on total amount of nutrients eaten throughout the day, as showed in Figure 9b). In addition, it is possible for the user to navigate along the days in the food journal. This information also is summarized by week and is accessible through the top right button, Figure 9c). In case the amount of food declared overcomes the recommended daily allowances, the values will be highlighted in red.

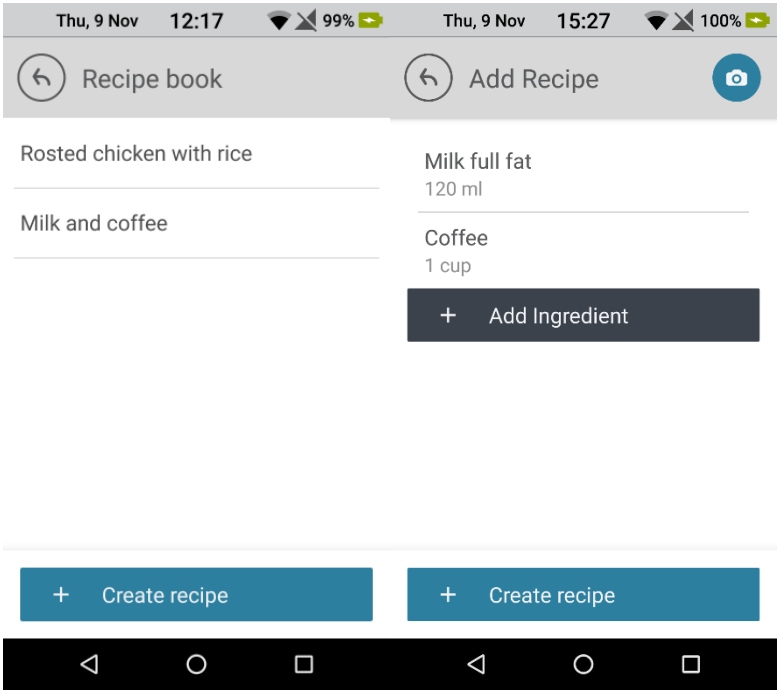



a) b) c)

**Figure 9: Nutritional information of one day and weekly report.**

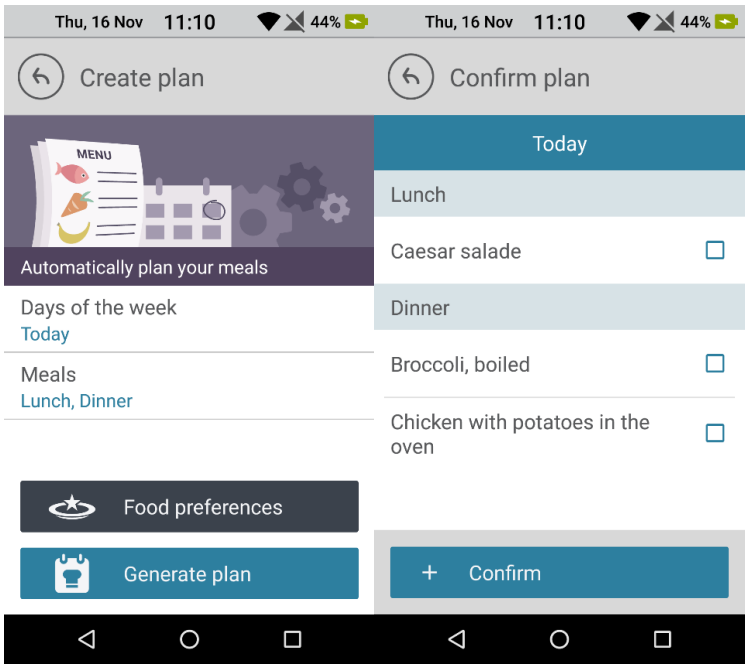
### 3.3.1 Custom recipes

Custom recipes are a mean to combine different ingredients under the same name. This will help with the process of logging food since it will allow users to create recipes for combinations of ingredients they typically eat together. Custom recipes can be created from the log food screen, and consist of a name picked by the user, a number of servings, and a list of ingredients. Users can add as much ingredients as they want. There is also an optional field for adding a photo of the dish.



## 3.4 Automatic meal plan creation

To help people plan their meals, the nutrition application is also capable of making meal recommendations based on their nutritional needs and food preferences. Users can create a meal plan for the entire week, or just select the days or meals for which they want to receive recommendation. After generating a new meal recommendation, users can choose which recommendations they want to add to the food diary. Since meal recommendation work as any other recipe in the food diary, they can also be edited or removed from the plan if they wish.




## 3.5 Water intake

In addition to food logging and meal plan creation, users can use the nutrition application for managing their water intake to facilitate the logging of water. Three default values are provided: a cup (200ml), a small bottle (330ml), and a larger bottle (500ml). Entering a custom value is also possible. Water intake will appear right on the application dashboard.

## 3.6 Nutritional Advices

In the main dashboard of the Nutrition application the user also receives nutritional advices, either general advices on how to follow a healthy diet, or more personal advices, depending on the information that the user inserts along the day (Figure 10). The content of the nutritional advices follow the outline defined in deliverable D3.9.

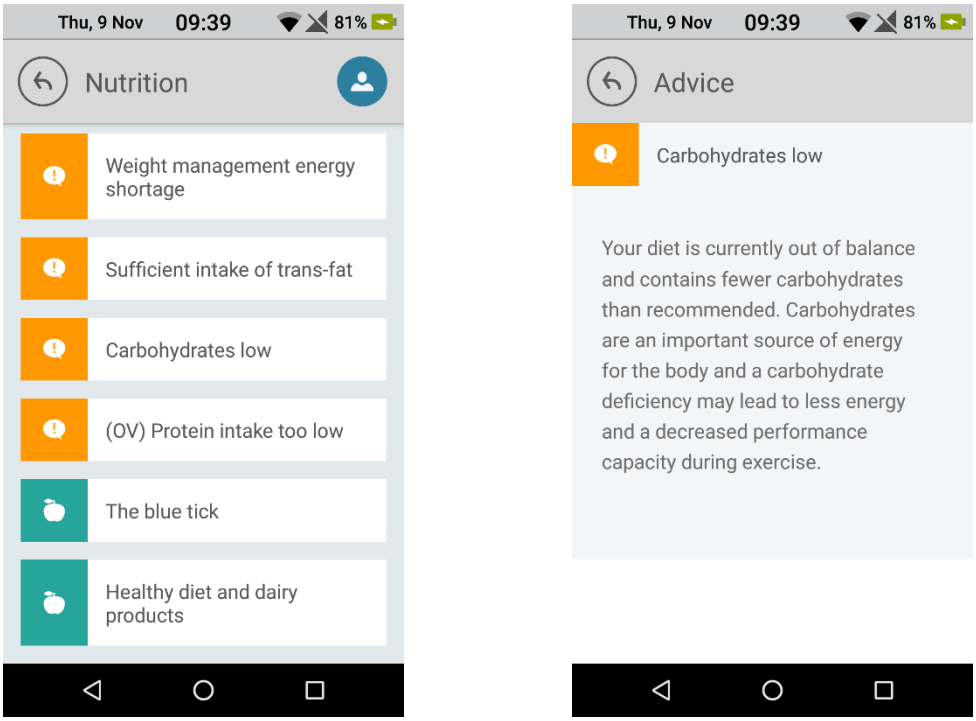



**Figure 10: Nutritional advices.**

# 4 Conclusion and Outlook

The nutrition system of my-AHA allows users to log their food intake, plan theirs meals and receive nutritional advices. The main wave prototypes for Smart TV and mobile devices were here reported.

A first prototype was developed and tested during the alpha wave and previously described in D5.3 “alpha wave prototype on nutrition monitoring and advice through Smart TV & mobile devices”. More functionalities were included in the main wave prototype for mobile devices and the previous were improved considering the users feedback during the alpha wave.

The available functionalities of the Nutrition application for mobile devices were developed for older adults. Through simple and intuitive interfaces, the older adults can use the application to make their food logging along the day and verify if their food intake is in accordance with their nutritional requirements. To help people plan their meals, the nutrition application is also capable of making meal recommendations based on their nutritional needs and food preferences. Users can also use the nutrition application for managing their water intake to facilitate the logging of water. Moreover, the nutritional advices are available with the aim of informing users about healthy habits and provide support to maintaining or improving their healthy diet.

During the main wave, English, German, Spanish and Italian nutritional databases will be available and the users will be able to test the prototype for mobile devices (smartphones).

# References

[1] http://www.my-AHA.eu