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Deliverable 8.9- EUFUC article 1

Project acronym:	Stance4Health
Project full title:	Smart Technologies for personAlised Nutrition and Consumer Engagement
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Website:	http://www.stance4health.com/

The project leading to this application has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 816303.

To support the public communication and outreach of the Stance4Health project, EUFIC will create two articles which will be published on its multilingual website www.eufic.org.

EUFIC's website gets million of visits every year, making it a great platform to spread the word about the Stance4Health project.

The article (see appendix for content) aimed to introduce the Stance4Health Project to EUFIC's readers and highlight the objectives, as well as the main outputs and validation studies that will be carried out in the upcoming years.

The article was designed with lay audiences in mind, avoiding complex jargon and providing relatable examples where appropriate. To maximise its reach, the article will be disseminated via the project website, newsletter and social media channels (e.g. Facebook, LinkedIn, Twitter; (@Stance4Health and @SciFoodHealth). Project partners will be encouraged to share it further through their social media channels, presentations and at various events.

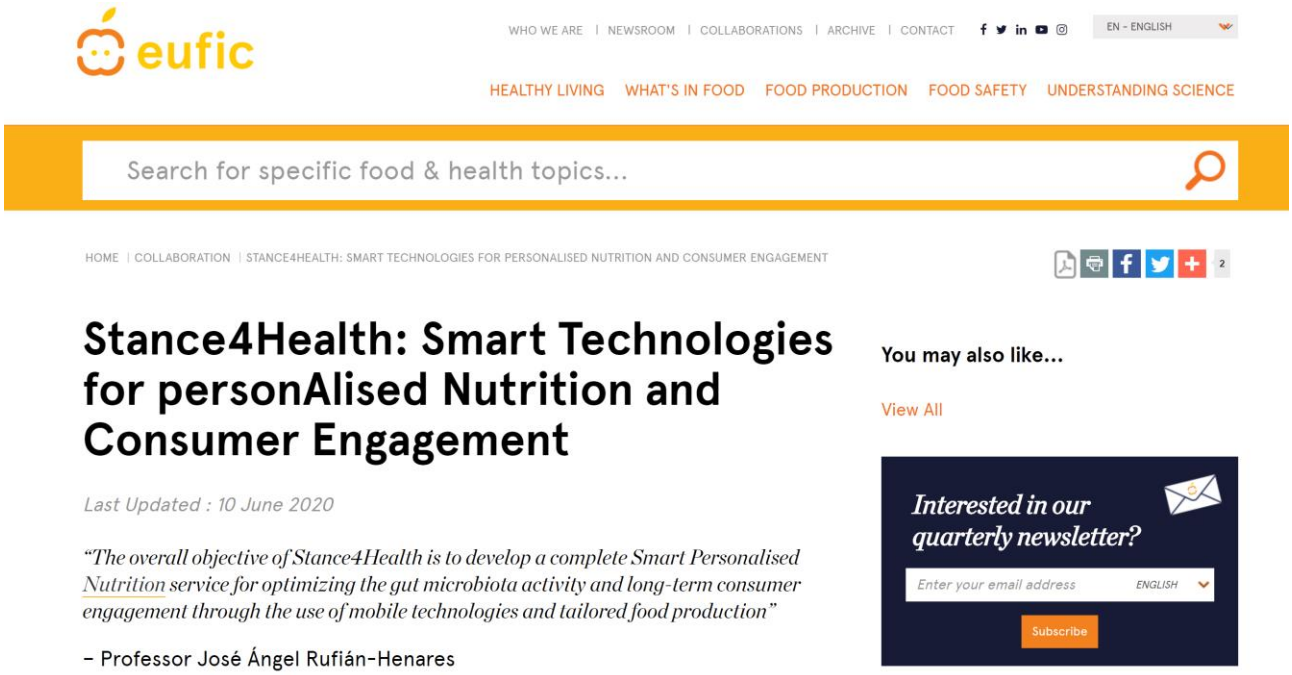


Figure 1. Stance4Health article on the EUFIC's website published on 10 June 2020.

Appendix: Full article as publ content

Stance4Health: Smart Technologies for personAlised Nutrition and Consumer Engagement

"The overall objective of Stance4Health is to develop a complete Smart Personalised Nutrition service for optimizing the gut microbiota activity and long-term consumer engagement through the use of mobile technologies and tailored food production"

- Professor José Ángel Rufián-Henares

Who is Stance4Health?

Stance4Health is a 4-year EU-funded research project involving 19 partners from 8 European countries. Its transdisciplinary team has a broad range of expertise, with partners from academia, non-government organisations, research hospitals and technological centres, as well as industry partners from the fields of food production, diagnostics, and software development. The project is coordinated by Professor José Ángel Rufián-Henares from the University of Granada.

Stance4Health partner map

The Stance4Health project has six specific objectives:

The first three objective form the foundation of the mobile application (i-Diet app) that will provide personalised dietary advice to meet an individuals nutritional needs and help optimise their gut microbiota.

1. **Design an algorithm to provide personalised dietary advice based on a person's gut microbiota**

In order for the app to provide personalised dietary advice, Stance4Health researches will develop an algorithm which aims to predict the effects of foods on the gut microbiota. In this way, the dietary recommendations will meet the nutritional needs of the individual and beneficially modify their gut microbiota. The algorithm will be created using data already available in the literature and new data generated along the project, such as how cooking methods and nutrients present in foods can impact the gut microbiota. The algorithm will be validated through the use of laboratory (or *in vitro*) diagnostic tools as well as in three different validation trials in adults and children.

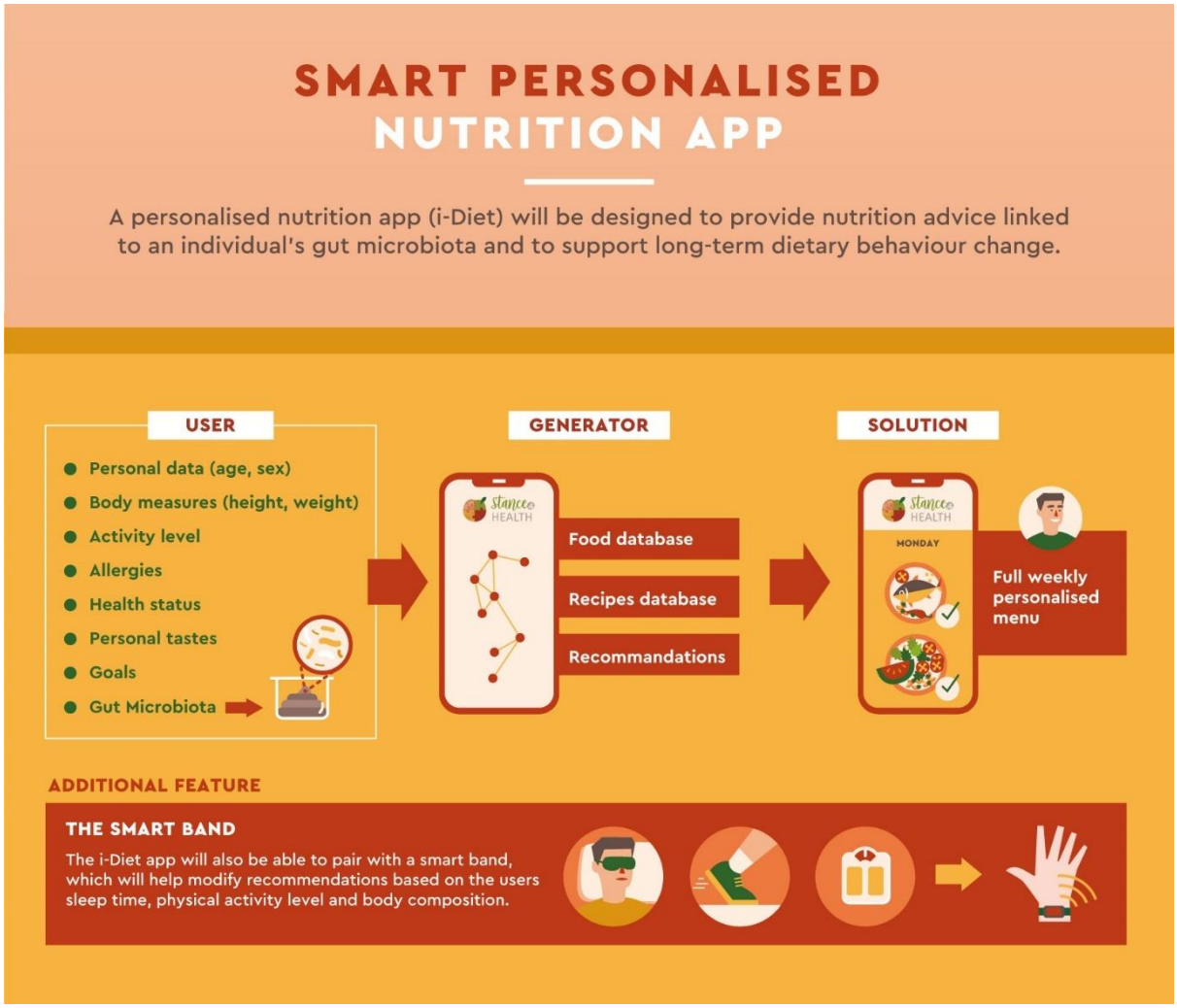
2. **Design a food composition database to integrate into the app**

In order for Stance4Health researchers to monitor the nutritional composition of the diet, a food composition database with information on raw, cooked and typical daily dishes from Germany, Greece and Spain (where the validation trials will take place) will be created. In addition, barcode scanning of foods sold in Spanish retailers will help reduce the burden on users to track their food intake.

3. **Design a user-friendly personalised nutrition app (i-Diet app)**

The i-Diet app will be designed in a user-friendly way to help promote effective behaviour change. It will include a personalised menu log which provides tailored recipes to meet the personalised nutritional needs of the user, as defined by the algorithm. If recipe modifications are made, the menu will recalculate the meal composition and provide tips to redirect users to healthy habits. This feature will also help monitor participants adherence to their personalised advice.

The i-Diet app will also be able to connect with a wireless smart band which will allow users and the research team to track physical activity levels, sleep time and body composition.



Features of the Stance4Health i-Diet app

The remaining three objectives focus on the creation of personalised food and supplements, understanding the factors which influence consumer engagement around personalised nutrition, and putting all the new technologies to the test in validation studies.

4. Designing personalised foods and nutritional supplements

Stance4Health researchers will create personalised foods and nutritional supplements which aim to modify the gut microbiota and promote health. The project will create different cereal-based foods with different doses of newly selected tannin extracts. A range of tannin extracts from different sources (e.g. Italian chestnut, Peruvian tata pods, Turkish gallnut and Argentinean quebracho) will be tested for their ability to modify the gut microbiota using laboratory experiments. The selected extract will then be integrated into a cereal product (e.g. biscuit, pasta or cereal bar) and tested in a human intervention trial. In addition to the food products, a nutraceutical called AlcaLip will also be evaluated for its effect on health during the human intervention trial on sports practising adults.

Process for the design and testing of personalised food products

5. Citizens engagement

Like all dietary recommendations, personalised advice will only benefit someone if it is followed. Therefore, it is crucial for Stance4Health researchers to consider the different factors that might influence the uptake of personalised dietary advice. To do this they will carry out consumer research using a European wide survey. This research will provide insight into how food preferences, lifestyle and socio-economic status influence healthy eating patterns.

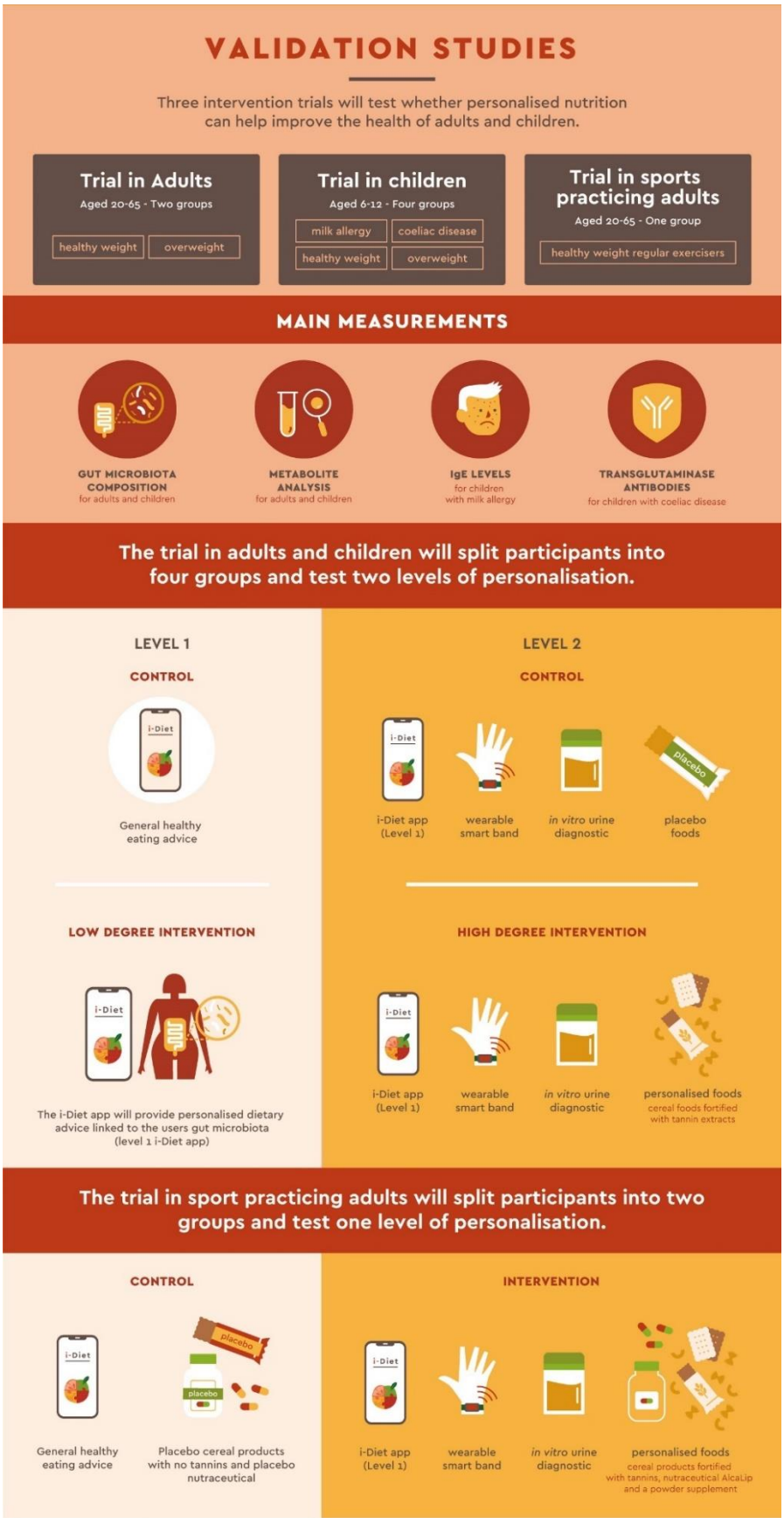
Key questions the consumer research hopes to answer

6. Putting the technologies to the test

To test the effectiveness of the i-Diet app and personalised foods and supplements, Stance4Health researchers will perform three intervention trials:

1. In adults (healthy weight and overweight). This trial will be performed in Germany and Spain.
2. In sport practicing adults. This trial will be performed in Spain.
3. In children (healthy weight, obesity, coeliac disease and milk allergy). This trial will be performed in Greece.

All participants will provide stool samples at the beginning of each trial to determine their gut micro-biota. This data will then be integrated into the i-Diet app and the newly designed algorithm will provide personalised dietary advice to the intervention groups.



Outline of the three validation trials the Stance4Health project will complete

Looking to the Future

The global adoption of a Western-style diet has caused a shift in dietary intake resulting in an increased prevalence of non-communicable diseases such as obesity, type 2 diabetes, cardiovascular disease and cancer. The Stance4Health project aims to address this shift by developing a complete smart personalised nutrition service using a mobile application combined with tailored food production. In turn, tailored foods aim to optimise the gut microbiota activity, while the use of modern mobile technologies helps to ensure long-term behaviour change. The novel tools and services developed throughout the project have the potential to directly impact more than 67 million European adults and 8 million children by the year 2022.

For more information on the Stance4Health project visit www.stance4health.com