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Executive Summary

The present deliverable entitled “Report on exploitation activities” presents the preparation of the Nutrishield business models and exploitation plans. This deliverable, finalized at the end of month 12 of the project (October 2019) is the first version of the series of deliverables on exploitation activities, more elaborated versions are to be submitted on M24, M36 and, the final version, on M42, at the end of the Nutrishield project. Therefore, the scope of the M12 deliverable is to pave the road for the effective collaboration of the Nutrishield consortium, setting the roadmap and describing the key steps and activities required to ensure the most effective exploitation strategy to be agreed by all partners. The activities focus on business models which hold commercial promises or support viable business models for the multiple stakeholders capable of benefiting from Nutrishield.

The specific steps for the exploitation strategy are:

- 1) The identification of projects results and exploitable products, also the correlation of such results and products.
- 2) The identification of the IP ownership of each exploitation result of the project. Correlation to a detailed “freedom to operate” study.
- 3) Building the value proposition using the business model canvas methodology
- 4) Elaboration of the project exploitation plan, which includes:
 - a. SWOT analysis
 - b. Market adoption analysis / observation of market trends
 - c. Patentability study
 - d. Decision on IP strategy / exploitation route
 - e. Methods for reaching each of the identified target group
 - f. Awareness raising plan to involve stakeholders
 - g. Identification of the resources required for the success of the exploitation strategy

The exploitation strategy is closely related to the communication and dissemination plan during the project duration, as well as the commercialization planning after the end of the project.

The completion of the Nutrishield exploitation strategy requires an evaluation of the NUTRISHIELD platform and subcomponents will be finalized near the end of the project, with respect to different targeted groups to investigate weaknesses and strengths and derive opportunities and threats. The viability analysis report, in particular, will come in conjunction with the testing and validation studies of the Nutrishield solution in WP7.

Table of Contents

1. Introduction.....	6
1.1. Purpose and Scope.....	6
1.2. Document Structure.....	6
2. Overview of the market trend	7
3. Alignment of the Nutrishield consortium.....	8
3.1. Objectives	9
3.2. The challenges.....	9
Based on the SWB experience, the alignment group identified the following challenges:	9
3.3. Identification of the Nutrishield target groups.....	9
3.4. True North approach.....	12
4. Nutrishield exploitable results	13
4.1. Nutrishield exploitation scenarios.....	15
5. Business Model Canvas and SWOT analysis.....	15
5.1. Nutrishield platform.....	16
5.2. Nutrishield human milk analyser	17
5.3. Nutrishield urine analyser	18
5.4. Nutrishield breath analyser.....	19
6. Nutrishield competitors	20
6.1. Nutrition-related software.....	20
6.1.1. MIXFIT.....	20
6.1.2. DAY TWO.....	21
6.1.3. ORIG3N	22
6.1.4. Care / of	24
6.1.5. Insider Tracker.....	25
6.1.6. Vitagene.....	26
6.1.7. habit.....	27
6.1.8. DANfit	28
6.1.9. Arivale.....	29
6.1.10. Puregenomics	30
6.1.11. Personalized Nutrition Solutions.....	30
6.1.12. Nutrigenomix.....	31

6.1.13.	Outcome of an analysis of 30 companies.....	32
6.2.	Milk analysers	32
6.2.1.	miris Human Milk Analyzer	32
6.2.2.	MilkoScan™ Mars - Analyzer for milk.....	33
6.2.3.	Bruker MIRA Infrared (IR) Milk Analyzer.....	33
6.2.4.	Ekomilk-AMP (ekomilk horizon)	33
6.2.5.	Lactoscan (milkotronic).....	33
7.	HM analyser & Nutrishield platform – Potential users' feedback.....	34
7.1.	The 1st Nutrishield workshop questionnaires	34
8.	Conclusions.....	44

Table of Figures

Figure 1.	Depiction of the Nutrishield holistic approach (graph developed by SWB).....	10
Figure 2.	Depiction of the Nutrishield holistic approach and relation to the Nutrishield subcomponent, each developed within one WP.....	11
Figure 3.	The questionnaire regarding the HM analyser	35
Figure 4	The questionnaire regarding the Nutrishield App	36

List of Tables

Table 1:	Nutrishield SWOT analysis.....	16
Table 2:	Nutrishield HM analyser SWOT analysis.....	17
Table 3:	Nutrishield urine analyser SWOT analysis	18
Table 4:	Nutrishield breath analyser SWOT analysis.....	19

Definitions, Acronyms and Abbreviations

Acronym	Title
App	Application (software)
HM	Human Milk
IR	Infrared

SWOT	Strengths, Weaknesses, Opportunities, Threats
Tx.x	Task
WPx	Work Package

1. Introduction

1.1. Purpose and Scope

The purpose of the first version of the Nutrishield exploitation strategy is to define the outline of the tools and methodologies to be used for the Nutrishield purposes.

As the project just crossed the 12 months milestone, the development of the several Nutrishield components is under developments and no operational technologies or components have been demonstrated yet. Therefore, the current version of the project exploitation strategy is not intended to be complete, but rather drive the developments bearing in mind a drafted exploitation strategy, towards common ground among the partners for the future of the exploitation of the new technologies. A more complete version of this document will be prepared by month 24 of the project.

1.2. Document Structure

The Sections of the deliverable are organised in the following manner.

- After the introductory Section 1, Section 2 depicts an outline of the market trends in the field of personalized nutrition in general
- Section 3 presents the activities driven by partner SWB (SweetBee) using the True North approach
- Section 4 lists the Nutrishield exploitable results
- Section 5 presents the preliminary versions of the Business Model Canvas and SWOT analysis tools
- Section 6 outlines some of the Nutrishield competitors
- Section 7 summarizes the results of the questionnaires from the 1st Nutrishield workshop

2. Overview of the market trend

This paragraph summarizes recent reports and finding regarding the current market and market trend of the field of personalized nutrition in general, and aspects similar to the Nutrishield approach in particular. Such an overview will be used for the future developments of the Nutrishield exploitation plans.

In short, personalized nutrition is believed to be “the next big growth opportunity in the healthier food and beverage industry”¹. According to the new-nutrition.com blog and business analysis company, large food companies have invested a total of 28.7B€ in startup focusing on personalized nutrition. The main motivation of such an investment is the current trend towards healthier way of living, as people become more and more aware that diet is a personal matter, where the “one size fits all” dietary recommendations are not anymore valid. This concept is also related to a current trend for the demand of further personalization in every aspects of the consumers lives (the “Power of Me”,² a prominent example here is the ever-expanding trend stream on demand media-services platforms and the AI-based recommendations they provide for programs to watch). Moreover, the personalized nutrition concept embraces the consumers as “they want to feel more empowered and confident to create their own healthy eating patterns”. Such an approach is part of a general trend towards a healthier way living, which also includes the rapidly growing trend for using wearable gadgets providing guidelines based on the user weight, height, sleep pattern, heart rate and activity. Another, smaller but growing trend involves consumers seek more in-depth services, such as personalized nutrition connected to DNA test (genetic profiles). Moreover, there are further trends in conjunction to personalized nutrition related to health status conditions, such as inflammation-related, gluten, lactose and dairy intolerance, Digestive wellness trend, etc.

In another article³, it is stated that: “personalized nutrition is part of a broader trend toward customization found in segments such as food service (including meal customization offered by the likes of Chipotle and The Counter), [...]. Millennials in particular have shown less affinity for mainstream offerings and are therefore likely to be more receptive to these disruptive and/or customized brands and services.” In the same article it is reported that the field is highly affected by the increased demand for organic or natural food products. A recent research in the USA found that “two-thirds of consumers currently report eating healthier than they have in the past, including purchasing natural food products in an effort to increase overall health and wellness (according to Consumer Reports, 83% of domestic consumers now regularly buy organic foods). With consumers becoming better informed about their dietary intake, demand for innovative health and wellness products is expected to maintain its present trajectory.” Another key point is that the personalized nutrition trend is already benefiting by the rapid decline of the cost of the genome sequencing, which recently dropped below the 1000€ barrier with further cost reduction to be foreseen. Such a development further enables the market penetration of personalized nutrition based on such sequencing. As demonstrated in the brief analysis of the competing to Nutrishield products below, a number of companies, mainly in the USA, already provide either meal planning solutions or personalized food supplements by analyzing not only the consumers habits, but also by customized genetics testing using test kit for samples collections which are then sent to the companies for analysis by means of standard courier services.

¹ 10 Key Trends in Food, Nutrition and Health 2017 is available at www.newnutrition.com.

² 2019 Wellness Trends, from the Global Wellness Summit, “Nutrition Gets Very Personalized”,

³ L.E.K. Consulting / Executive Insights, Volume XIX, Issue 22

As a clear indication of the growing market of personalized nutrition, a recent article⁴ (October 2019) analyzed the foreseen change of the market of personalized nutrition, personalized vitamins and supplements in particular, as the Swiss company Nestlé Health Science bought a 2-year-old startup Persona, active in the field of customized vitamins-pack subscription service, signaling the intention of the leading company to invest in the field and its massive potential (total U.S. vitamin and supplement market rose 4% to \$8.5 billion in the year). Moreover, Nestlé has initiated the “Nestlé Wellness Ambassador” program in Japan which combines DNA and blood testing with an Instagram-like component to recommend specially formulated supplements. Users send photos of their food and, with the help of artificial intelligence (AI), consumers are prescribed capsules for nutrient-rich teas or smoothies that are very similar to those used in the company’s capsule coffee machines. There are already 100,000 users in Japan.

It is emphasized here that the aforementioned trends are related mainly to retail nutrition, food supplements and wellness market which, according to another report, is expected to worth 45B€ by 2050.⁵ Vitamin dietary supplements held the largest share over other supplements owing to high market penetration of products in this segment. However, the Nutrishield approach and solutions mainly targets the young population, aiming to demonstrate the new technologies in the three specific Nutrishield case studies. Therefore, Nutrishield aims to penetrate a fraction of the aforementioned markets, capitalizing on a holistic solution under development surpassing current, short-term trends. A further elaboration on the Nutrishield exploitation strategy in relation to the current market trends will be delivered in the next, updated versions of this deliverable.

3. Alignment of the Nutrishield consortium

During the first six months of the project, several discussions took place among the Nutrishield partners to establish alignment on the partners expectations and foreseen steps towards the commercialization of the project partners. This activity was led by a non-official workgroup by following partners:

- SweetBee (SWB), namely Geert Egghe, a go-to-market expert who is working on nutritional APP, and Bryan Cassidy, an innovation expert
- Alpes Lasers (ALPES), the Nutrishield coordinator
- Harokopeio University (HUA), namely Prof. Demosthenes Panagiotakos, a clinical studies expert with a most complete view on the relevant research to be conducted within Nutrishield.

Further, a dedicated session was devoted on this activity during the 6M consortium meeting in Athens.

⁴ Forbes, “The Growing Personalized Nutrition Market Has A Big New Contender: Nestlé”, Oct 11, 2019 ([link](#))

⁵ Personalized Retail Nutrition & Wellness Market Worth \$50.0 Billion by 2025: Grand View Research, Inc. ([link](#))

3.1. Objectives

The main objective of first period of Nutrishield alignment group is to set the outline of what to be expected from the Nutrishield achievements and what are the foreseen results. In particular, this can be analysed as:

What

- A story
- A goal
- Boundaries
- Some first ideas

Results

- Focus – everyone working on the same things
- Trusting
- Consistency of purpose and learning together

3.2. The challenges

Based on the SWB experience, the alignment group identified the following challenges:

- 16 organizations, no shared big picture, lack of shared objectives
- Protocols not crystal clear, they need to be and fine-tuned according to international standards \
- No end target = any path with get you there
- Different expertise are available, but expertise in application might be missing
- We need to make something meaningful and unique
- We need a solid foundation not parts sewn together

The goal of the robust Nutrishield strategy is during the first period of the project (until month 18) is to ensure the aforementioned challenges are overcome early, to ensure that the final subcomponents development of the Nutrishield solution optimally address the market and societal needs.

3.3. Identification of the Nutrishield target groups

As Nutrishield develops a batch of novel tools, methodologies and ICT tools, the targeted groups of the several subcomponents varies. However, for the overall Nutrishield platform, it is crucial to identify the main targeted customers for the Nutrishield platform as a whole.

Situation:	When treating young patients
Motivation:	Useful advice to improve health
Outcome:	Personalized nutritional recommendations during care and after care based on biomarkers
When:	biomarker data is available
For who:	Caregivers , people working with caregivers



By determining the final Nutrishield customers, the identification of the Nutrishield uniqueness is defined as:

Nutrishield uniqueness = working with care-givers
Closing the loop (dynamic advice and measurement)

As when identification of the benefits of the Nutrishield platform:

**Personalized nutritional recommendations
during care and after-care based on biomarkers
Continuous learning and improvement**

The aforementioned considerations, allowed the Nutrishield consortium to depict the overall Nutrishield pictures in the following figure (developed by SWB):

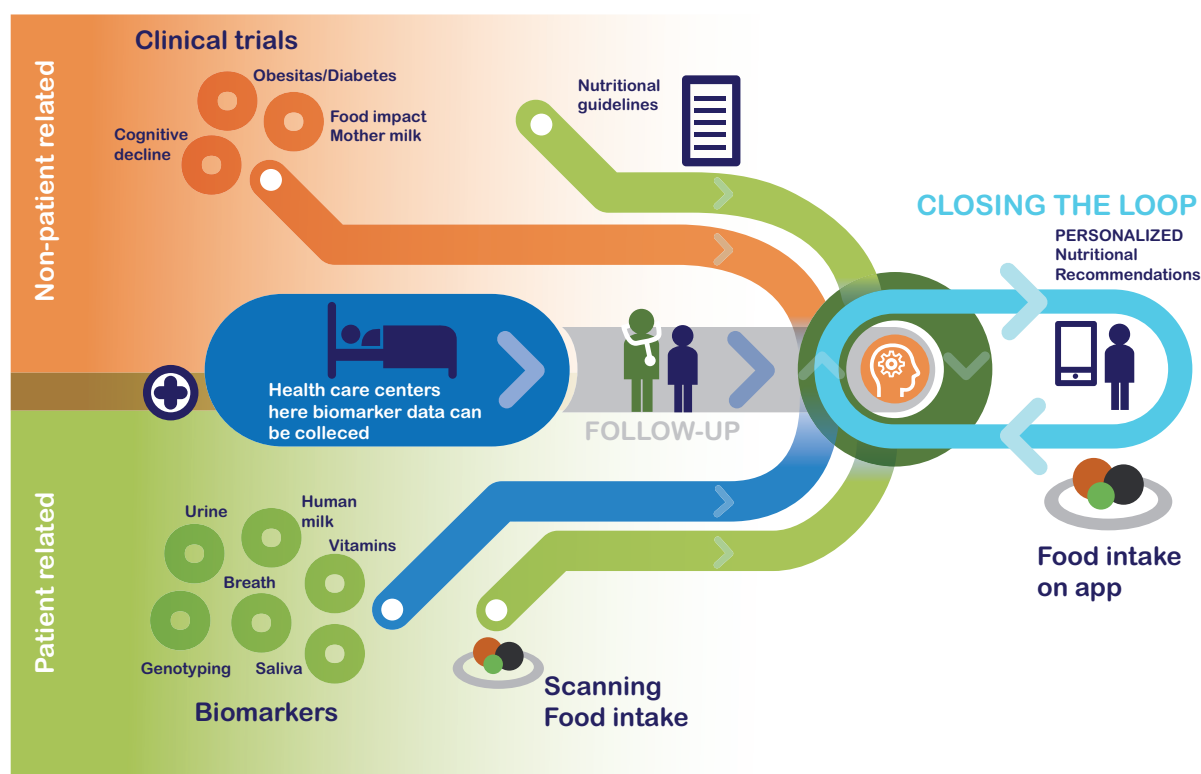


Figure 1. Depiction of the Nutrishield holistic approach (graph developed by SWB)

Which is connected to the Nutrishield advances, as follows:

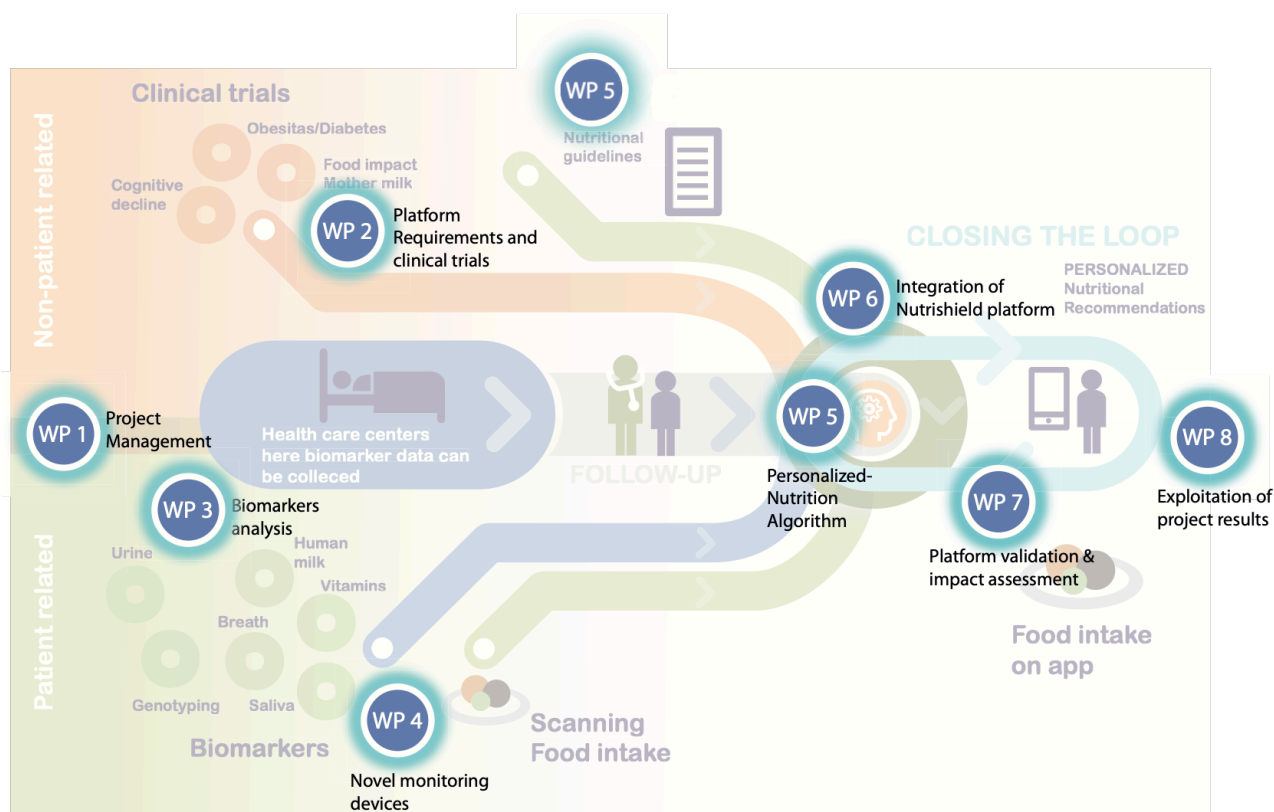


Figure 2. Depiction of the Nutrishield holistic approach and relation to the Nutrishield subcomponent, each developed within one WP

3.4. True North approach

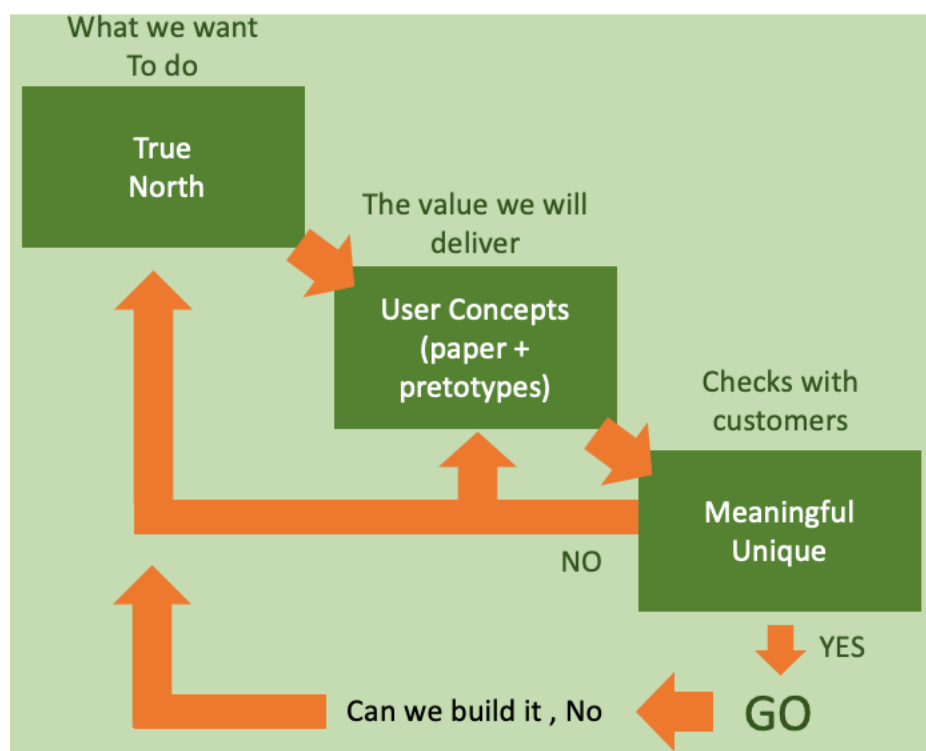
The Nutrishield steering committee alignment group applied the True North approach to Nutrishield. True North is a business development tool, presented next:

TRUE	Truly Simple	A headline that is suggestive of the mission.	A DYNAMIC nutritional advice platform linking food and care
N	Narrative.	WHY this is VERY IMPORTANT . The Story should be so clear, people will understand the why, want to get started and know enough to get the "how" right...	Millions of patients are treated in hospitals, clinics, all of these patients eat. The food they eat could and should be a bigger part of their care and treatment (short-term and long-term)
O	Objective	Finish the sentence with ONE mission, "We need ideas for _____"	To create a platform for personalized nutritional information. The platform will be validated through tests in the following areas : 1/. Lactating mothers and their infant children 2/. Obese Children 3/. Cognitive development of children
R	Restrictions	We are not interested in	Extra work load for doctors There needs to be a use case for data collected Replacing the role of caregivers Creating something for direct use by consumers (out of scope)
T	Tactical Constraints	Design, time, resources, investment, regulations, people, etc., etc.	Before building, get user feedback We need to create working prototypes within the scope of this project to show the potential in many different areas
H	Here is the place to start	Areas to look for ideas to accomplish the mission including any relevant live project work that is already going on.	Paper concept testing Prototyping (Fake it before making it) Build / Test 3 concepts with caregivers. Is this meaningful / unique ?

The reasons of using such a tool are summarized next:

- It focuses on something important. Making food part of the cure and care
- It will use the data we collect now
- Built step by step (lower risk and learning as we go)
- And will fill the needs of the EC- a platform to build on

The discussion among the Nutrishield partners (12M meeting, also several teleconferences) is intended to lead to a "get it right, before building it right approach" driving the consortium towards the development of products that indeed provide solutions to existing needs, therefore exhibiting commercialization potential. This preliminary True North approach presented here aims at guiding the Nutrishield developments towards the instruments, services and methodologies that are meaningful/unique, as follows:



4. Nutrishield exploitable results

As the first step of the Nutrishield exploitation strategy, we identify here the project exploitable results and cart their potential Unique Selling Points (USPs).

Exploitable Result No. 1	Nutrishield platform				
Description:	A platform/approach aiming to combine data of different kind aiming for personalized nutrition planning. The data to be processed include: genetic information, microbiome analysis, measurement of biomarkers in urine and/or breath and/or human milk, phenotyping measurements, and more.				
Relation to WP:	5 & 6	Developed by:	HUA, EPFL, CU, VER, INTRA, SWB, OSR, HULAFE, RU, SVI	Targeted TRL:	7

Exploitable Result No. 2	Nutrishield App				
Description:	The Nutrishield App integrates the Nutrishield algorithm and the Nutrishield platforms in a mobile device app for (i) The users				

	(ii) The practitioners				
Relation to WP:	6	Developed by:	SWB, INTRA, VER, CU, EPFL, HUA, HULAFE	Targeted TRL:	7

Exploitable Result No. 3	Nutrishield personalized nutrition algorithm				
Description:	The Nutrishield personalized nutrition algorithm includes the: <ul style="list-style-type: none"> - Dietary Assessment Plan - the optimization Nutrishield algorithm (combination of genome analysis results, baseline anthropometric, clinical, biochemical and dietary data, recorded biomarkers) 				
Relation to WP:	5	Developed by:	HUA, SWB, EPFL, VER, CU, OSR, HULAFE	Targeted TRL:	7

Exploitable Result No. 4	Nutrishield human milk analyser				
Description:	A laser-based milk analyser for the measurement of analytes of interest in human milk: Total protein/Casein/ α -Lactalbumin/Lactoferrin				
Relation to WP:	4	Developed by:	QRT, TUW, HULAFE	Targeted TRL:	7

Exploitable Result No. 5	Nutrishield urine analyser				
Description:	A urine analyser for the measurement of analytes of interest (biomarkers) in urine: Phosphate, Creatinine and pH				
Relation to WP:	4	Developed by:	QRT, TUW, CSEM, HULAFE	Targeted TRL:	7

Exploitable Result No. 6	Nutrishield breath analyser				
Description:	A laser-based breath analyser for the detection and measurement of analytes of interest in the breath: acetone and methane				
Relation to WP:	4	Developed by:	Argos	Targeted TRL:	7

Exploitable Result No. 7	Nutrishield mid-IR lasers				
Description:	<p>A set of mid-IR emitting lasers, tailor-designed to meet the specification of the Nutrishield laser-based analysers (human milk, urine, breath):</p> <p>A set of DFB QCL lasers emitting at specific wavelengths, combined by means of a beam combiner, and driving electronics</p> <p>A tunable external cavity mid-IR emitting laser emitting at a specific wavelengths range, and driving electronics</p> <p>A set of ICL lasers emitting at specific wavelengths, combined by means of a beam combiner, and driving electronics</p>				
Relation to WP:	4	Developed by:	ALPES	Targeted TRL:	7

The above draft list is a depiction of the Nutrishield exploitation results will be elaborated further in the next versions of the Nutrishield exploitation strategy deliverable.

4.1. Nutrishield exploitation scenarios

Following this activity, several exploitation scenarios will be defined, mainly divided in two categories:

- Exploit the Nutrishield platform as a whole
- Exploit the Nutrishield components (e.g. urine, human milk or breath analyser, Nutrishield app, etc.) separately or in small combination

Each option holds benefits and disadvantages, to be identified at a later stage of the project developments.

5. Business Model Canvas and SWOT analysis

The Nutrishield Business Model Canvas is presented next for the Nutrishield approach as a whole. Further elaboration for other potential exploitation scenarios are also included for the exploitation of some of the Nutrishield components. Together, we present the preliminary version of the SWOT analysis, describing the Strengths, Weaknesses, Opportunities and Threats to be faced towards future commercialization of the technology.

5.1. Nutrishield platform

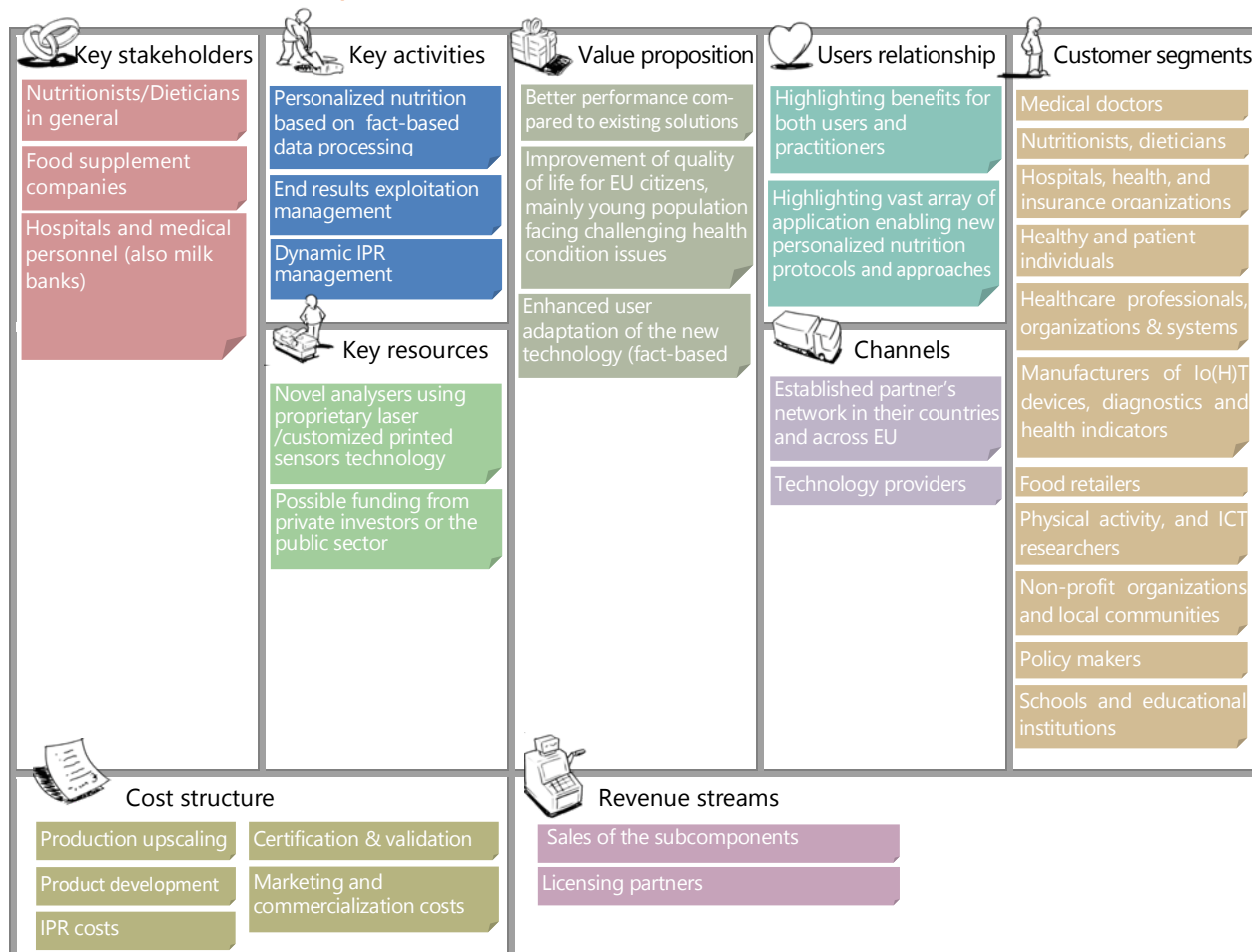


Table 1: Nutrishield SWOT analysis

	POSITIVE	NEGATIVE
INTERNAL	Strengths <ol style="list-style-type: none"> 1. Fact-based personalised nutrition enhances the user acceptance and reliability of the Nutrishield platform 2. Use of data provided by easy-to-operate analysers 3. Holistic approach enables the identification of not-yet known correlations. 4. Creation of a unique database creation 5. Modular architecture with flexible addition of diverse subsystems 	Weaknesses <ol style="list-style-type: none"> 1. Use of expensive techniques (e.g. genomic sequencing) 2. Requirement to record and process a big amount of data to increase the platform accuracy 3. GDPR issues and other data privacy issues must be dealt with caution
EXTERNAL	Opportunities <ol style="list-style-type: none"> 1. Expansion of the approach to more nutrition-related markets (further to the young population targeted) 2. Modular approach enables the use of several subcomponents in other health-related fields 3. Strong educative tool for users (nutrition culture improvement towards health expansion), health care institutions and food industries. 	Threats <ol style="list-style-type: none"> 1. A dynamic market attracts many big players in the field, thus, intensifying competition 2. Platforms such as social networks would like to integrate or absorb personalized nutrition approaches 3. Challenging approach for elderly people not domesticated completely with the technology trend.

5.2. Nutrishield human milk analyser

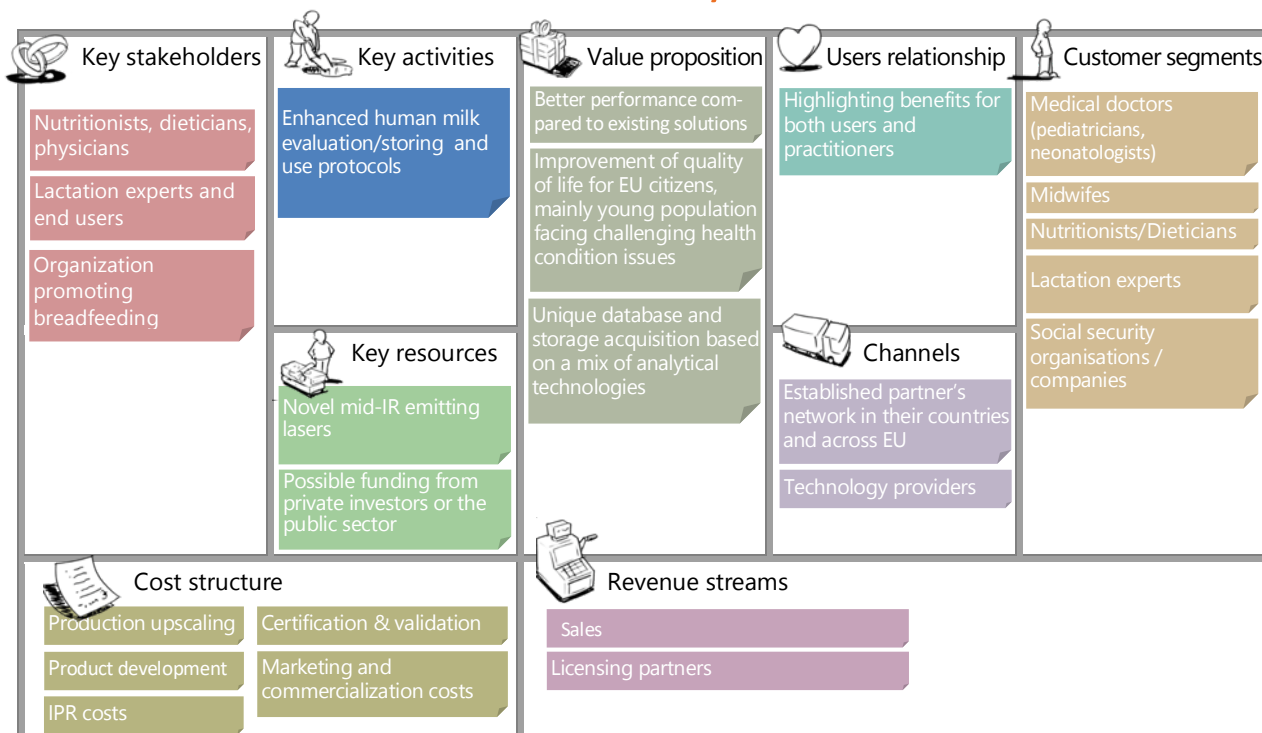


Table 2: Nutrishield HM analyser SWOT analysis

	POSITIVE	NEGATIVE
INTERNAL	Strengths <ol style="list-style-type: none"> 1. Table-top equipment of high performance 2. Easy and user-friendly operation 3. Fast operation can render the measurements a routine operation 4. Small sample volume needed 5. No consumables 	Weaknesses <ol style="list-style-type: none"> 1. High cost at launch 2. Low confidence on the new technology from the practitioners / not familiar with the new device 3. Device cleaning protocols and procedures
EXTERNAL	Opportunities <ol style="list-style-type: none"> 1. Foreseen expansion of the analyser capabilities 2. Portable device of expanded connectivity in the future 3. The HM analyser can serve as the base for the development of other analysers of liquid samples 	Threats <ol style="list-style-type: none"> 1. Competing technologies emerge

5.3. Nutrishield urine analyser

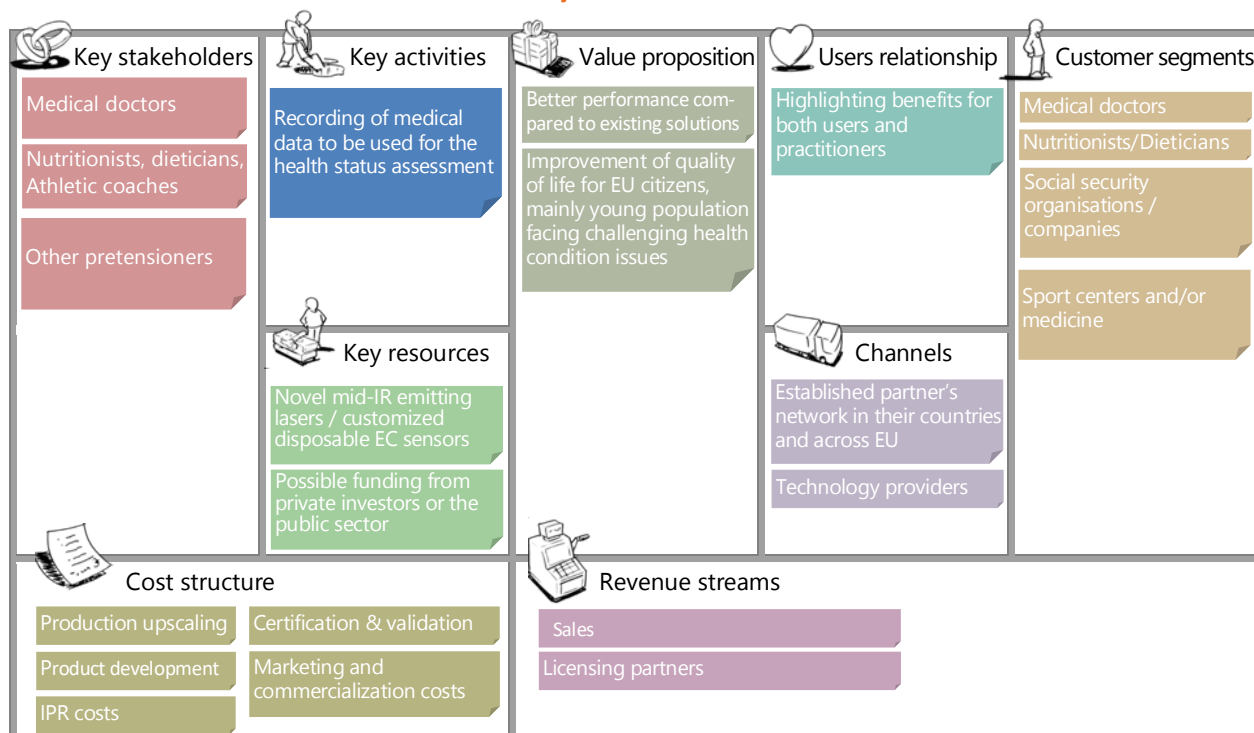


Table 3: Nutrishield urine analyser SWOT analysis

	POSITIVE	NEGATIVE
INTERNAL	Strengths <ol style="list-style-type: none"> 1. Table-top equipment of high performance 2. Easy and user-friendly operation 3. Fast response ideal for routine analysis 4. Absent or minimal sample preparation 5. No consumables (laser-based sensors) / Low cost EC sensors (auxiliary module) 6. Novel Biomarkers identification associated with childhood obesity related diseases 	Weaknesses <ol style="list-style-type: none"> 1. High cost at launch 2. Low confidence on the new technology from the practitioners / Practitioners not familiar with the new device 3. Device cleaning protocols and procedures
EXTERNAL	Opportunities <ol style="list-style-type: none"> 1. Foreseen expansion of the analyser capabilities 2. Portable device of expanded connectivity in the future 3. The urine analyser can serve as the base for the development of other analysers of similar instrumentation. 	Threats <ol style="list-style-type: none"> 1. Competing technologies emerge

5.4. Nutrishield breath analyser

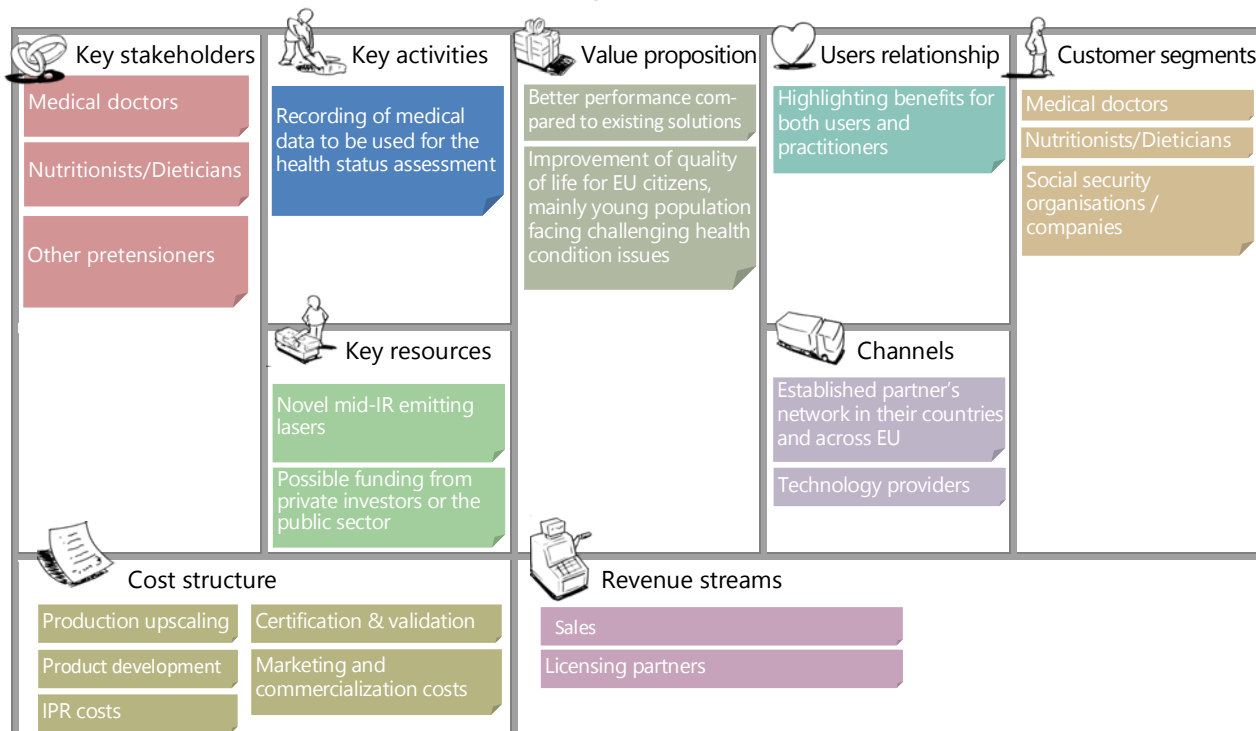


Table 4: Nutrishield breath analyser SWOT analysis

	POSITIVE	NEGATIVE
INTERNAL	Strengths <ol style="list-style-type: none"> 1. Portable equipment 2. Noninvasive, easy and user-friendly operation 3. Fast operation can render the measurements a routine operation 4. In situ measurement, no need to store the sample to the laboratory for measurement 5. High level of accuracy combined with convenient breath sampling 6. Consumables-free 	Weaknesses <ol style="list-style-type: none"> 1. High cost at launch 2. Practitioners not familiar with the new device 3. Low confidence on the new technology from the practitioners 4. Performance inferior to other laboratory-based technologies (e.g. mass spec)
EXTERNAL	Opportunities <ol style="list-style-type: none"> 1. Foreseen expansion of the analyser capabilities 2. Portable device of expanded connectivity in the future 3. The urine analyser can serve as the base for the development of other analysers of breath biomarkers 	Threats <ol style="list-style-type: none"> 1. Competing technologies emerge for the portable, in situ breath analysis (e.g. portable mass spec)

6. Nutrishield competitors

This section maps the competitors of the Nutrishield solution and subcomponents. In this deliverable, an initial list of the Nutrishield competitors is presented and analysed. The list is expected to grow and elaborated as the project advances.

6.1. Nutrition-related software

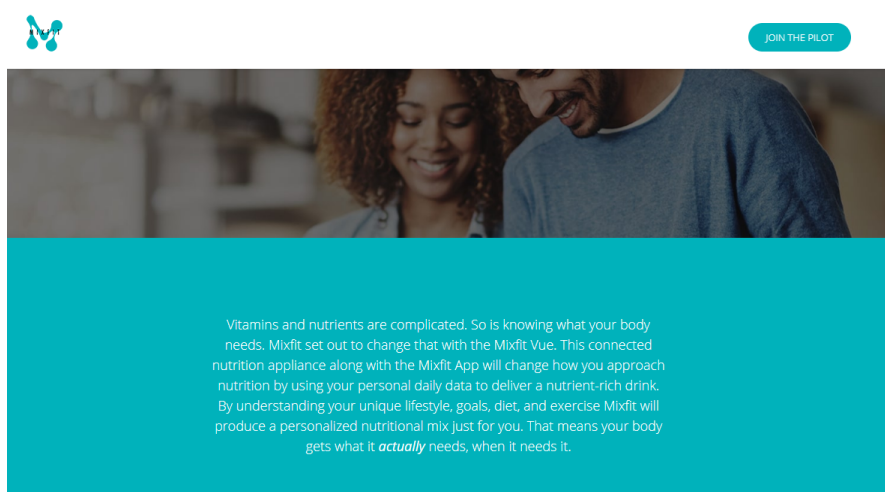
6.1.1. MIXFIT

Website: <https://gomixfit.com/>

Advertised as a “Science-based, personalized nutrition: the path to physical and emotional betterment”, Mixfit is an app “Mixfit Intelligent Nutrition Assistant” that provides a customized real-time supplement delivery based on the profile, diet, and activity level of each person. According to the company, the AI-based system integrated to the Mifit platform, named MINA – Mixfit's Intelligent Nutrition Assistant, was trained by nutritionists, data scientists and third-party research. . and a connected. The system monitors the health status using health data from existing personal digital devices (wearables and other diagnostic devices).

Moreover, Mixfit incorporates a web-enabled smart countertop appliance that syncs with the Mixfit app. The appliance use personal data that can be input daily to deliver a nutrient-rich drink, designed for each individual user. By sharing inputs about lifestyle, health goals, diet and physical fitness, Mixfit is able to produce a personalized nutrition mix that is truly unique. Simply add the vitamin mix to the countertop appliance and voila – a customized beverage is dispensed in a favorite mug or on-the-go cup. The Mixfit program features a convenient 28-day delivery of personalized vitamin sachets, which arrive at subscribers’ doorsteps.”

The formulation for the supplements includes: Vitamin A, C, D2, E, K1, B6, B12, Thiamin, Riboflavin, Niacin, Folate, Biotin, Pantothenic Acid, Calcium, Iron, Phosphorus, Iodine, Magnesium, Zinc, Manganese, Potassium, Inulin, and Pea Protein. Along with that, there are two flavors: Orange Guava and Cranberry Tea





Short description: App that records data from wearables and recorded habits to provide personalized nutrition suggestions, coupled to device (table to appliance) that offers food supplements in the form of drinking.

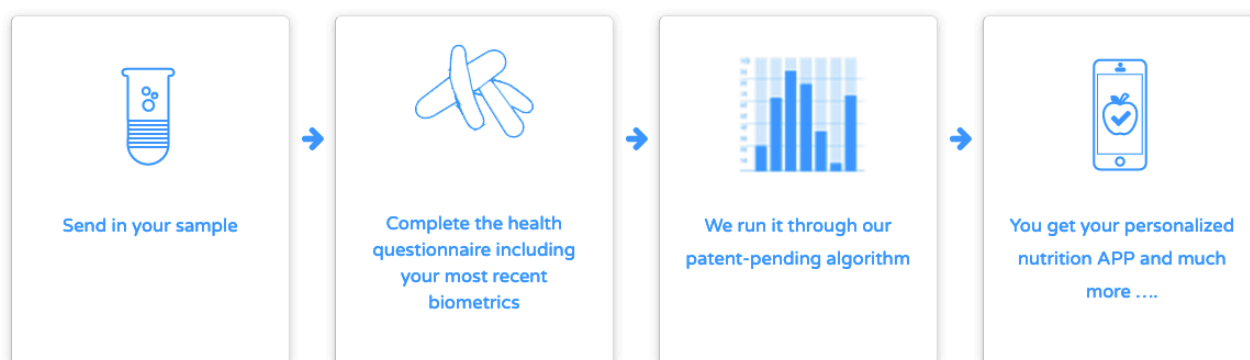
Relation to Nutrishield: No advanced analysers, no recording of full nutrition habits, no focus on children, more a life style product/solution.

6.1.2. DAY TWO

Website: <https://www.daytwo.com/en/>

Blood sugar control solution by applying a personalized algorithm diet. The solution includes the analysis of the microbiota of the person, the scheme is depicted in the following schematic:

How it works



The mobile app delivers personalized nutrition advice by providing a “Better and Worse Food List”.

DayTwo: Tailored diets based on your gut microbiome

By Adi Menayang

14-Aug-2017 - Last updated on 22-Sep-2017 at 13:26 GMT



When a customer signs up and sends their stool sample, they will receive a personalized dietary plan. *“It sounds gross, but for now that’s the only way we can look at your gut microbiome,”* said DayTwo CEO and co-founder Lihi Segal.

Based on science exclusively licensed from research by professors Eran Segal and Eran Elinav from the Weizmann Institute of Science in Israel, the company has multiple published sciences analysing its methods and technology.

The main premise is that some people gain weight or experience a blood sugar spike more easily than other despite eating the same food—and it’s all because of gut microbiome diversity.

As of last month, **the service is now available in beta version** for general customers, and the company announced back in February that it will **collaborate with personal care giant Johnson & Johnson** on personalized clinical nutrition for diabetes.

Short description: Food intake suggestions through a mobile app, focusing on the correlation of microbiome & nutrition

Relation to Nutrishield: focuses mainly on the effect of microbiome effect, focuses on control of blood sugar levels.

6.1.3. ORIG3N

Website: <https://orig3n.com/>

The solution features several DNA test options stating that “fitness starts in your DNA” while “Every body responds differently to nutrition”. The company seeks to provide optimization of the diet of each person based on his or her DNA profile. A DNA test compares the DNA of the individual to DNA code sequences against a giant library of traits and conditions, these are code sequences of thousands of things from lactose

intolerances to aptitude for learning. The ORIG3N fitness test, for example, looks at 24 different gene sequences that may influence the fitness potential for the individual from muscle endurance to recovery.

ORIG3N

SHOP
HOW IT WORKS
BLOG
COMPANY
MY ACCOUNT
HELP

 0

Understand yourself at a whole new level.

With Orig3n DNA tests, you can confirm things you always suspected about yourself, and discover things you never knew.

SHOP DNA TESTS

Total Sweet Tooth
Gene: SLC2A2
Test: NUTRITION

Endurance Athlete
Gene: VEGF
Test: FITNESS

Risk-taker
Gene: DRD4 - CT
Test: BEHAVIOR

Empathetic
Gene: OXTR - CC
Test: BEHAVIOR

Celeste

Ana

Get a snapshot of your genes.

A DNA test compares a sample of your genetic material against known genetic sequences, based on established scientific and medical research. Our CLIA certified on-site lab analyzes these comparisons to generate your personalized profile.



Look behind the science.

Your genetic material, called DNA, looks like a long twisted ladder.



Find out what a DNA Test can — and can't — do.



Provide clues about your body and mind.

It's nice to get a little more insight into why you might be the person you are. Have the gene for perfect pitch? No wonder you've always been a karaoke rock star!



Determine who you are.

The genetic code for a particular trait is only one influence among many. So if your genes predispose you to lower-than-average muscle strength, that doesn't prevent you from training to build strength. Consistent, dedicated effort may help you build great strength over time.

Short description: DNA test to provide diet and fitness program optimization

Relation to Nutrishield: only focuses on DNA sequencing

6.1.4. Care / of

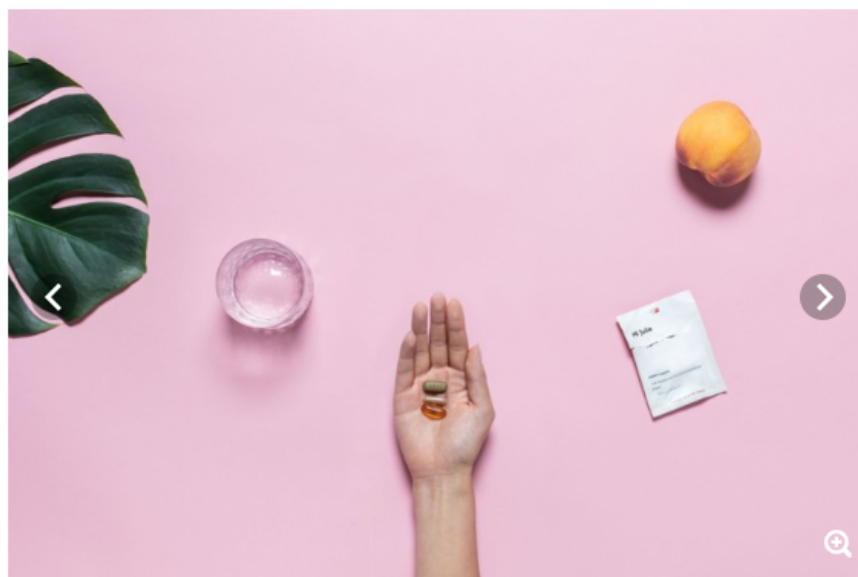
Website: <https://takecareof.com/>

The solution provides personalized supplements (vitamins, protein and more) personalized for each customers. The platform mainly process data recorded by means of a quiz (web-interface). The company mails the food supplements to its customers. A mobile-app intends to allow the individual to stick to the personalized plan.

Of: Vitamin subscription with personalized packets

By Adi Menayang

14-Aug-2017 - Last updated on 22-Sep-2017 at 13:26 GMT



Akash Shah and Craig Elbert, the founders of **Care/Of**, wanted to make the supplement shopping process easier for consumers by creating a questionnaire that can streamline what nutrients a customer may need among the myriad of options available on store shelves.

After taking the intake assessment, customers can opt in for a monthly subscription of all the supplements they are recommended, which are delivered in 30 single serve packets personalized with their names.

Shah and Elbert designed Care/Of so that not only is the shopping process more manageable, but also **understanding the active ingredient**, the science behind it, and where it came from. Each active ingredient has its own profile page including a short summary and links to studies about it that have been published in peer-reviewed journals.

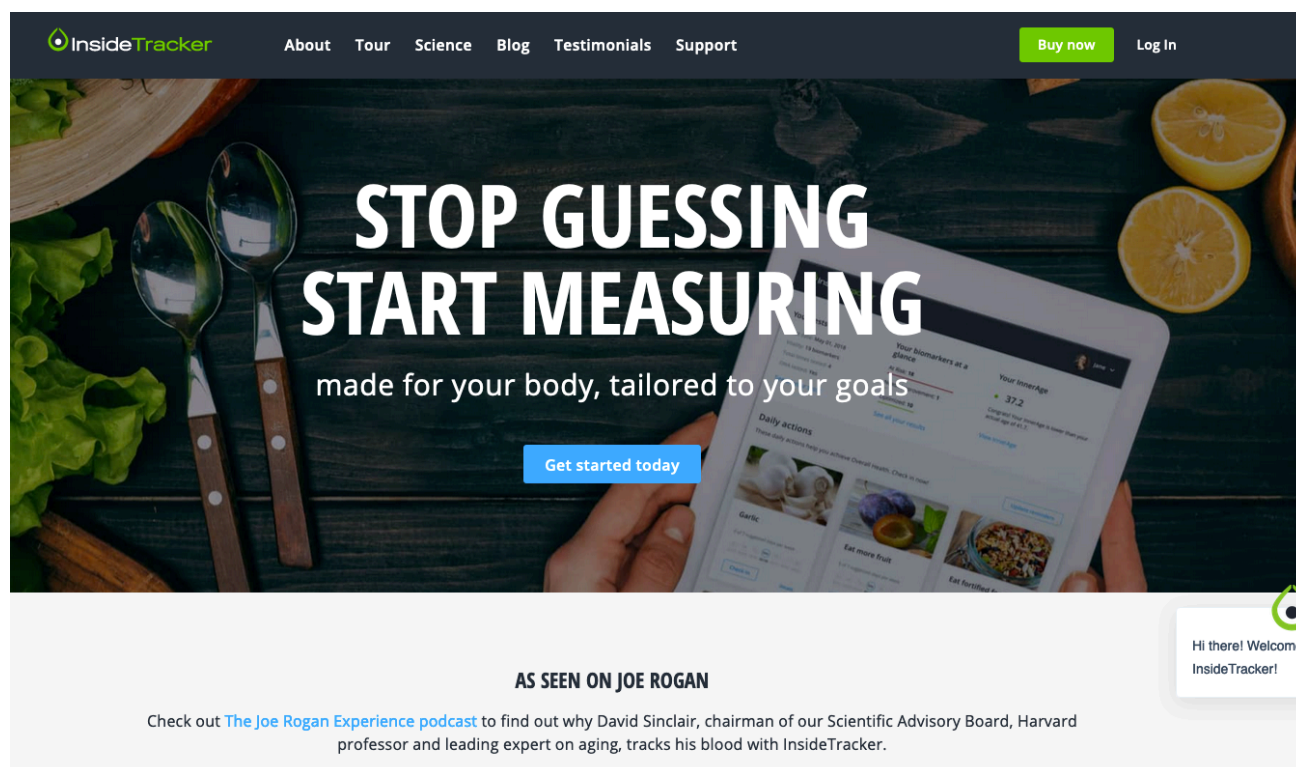
Short description: A platform for personalized nutrition supplements

Relation to Nutrishield: only provides a personalized supplements plan.

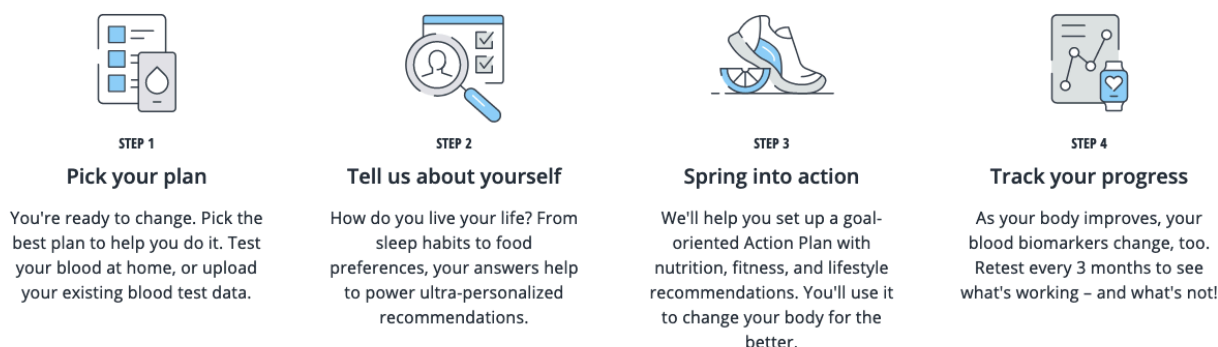
6.1.5. Insider Tracker

Website: <https://www.insidetracker.com/>

InsideTracker “helps you optimize your body, using science and technology to deliver ultra-personalized guidance”. The platform guides the persons diet by analyzing blood, DNA and lifestyle habits. The company emphasizes on the use of scientific approaches for “bringing personalized nutrition and wellness to the world with a powerful, evidence-based digital platform”.



HOW DOES IT WORK?



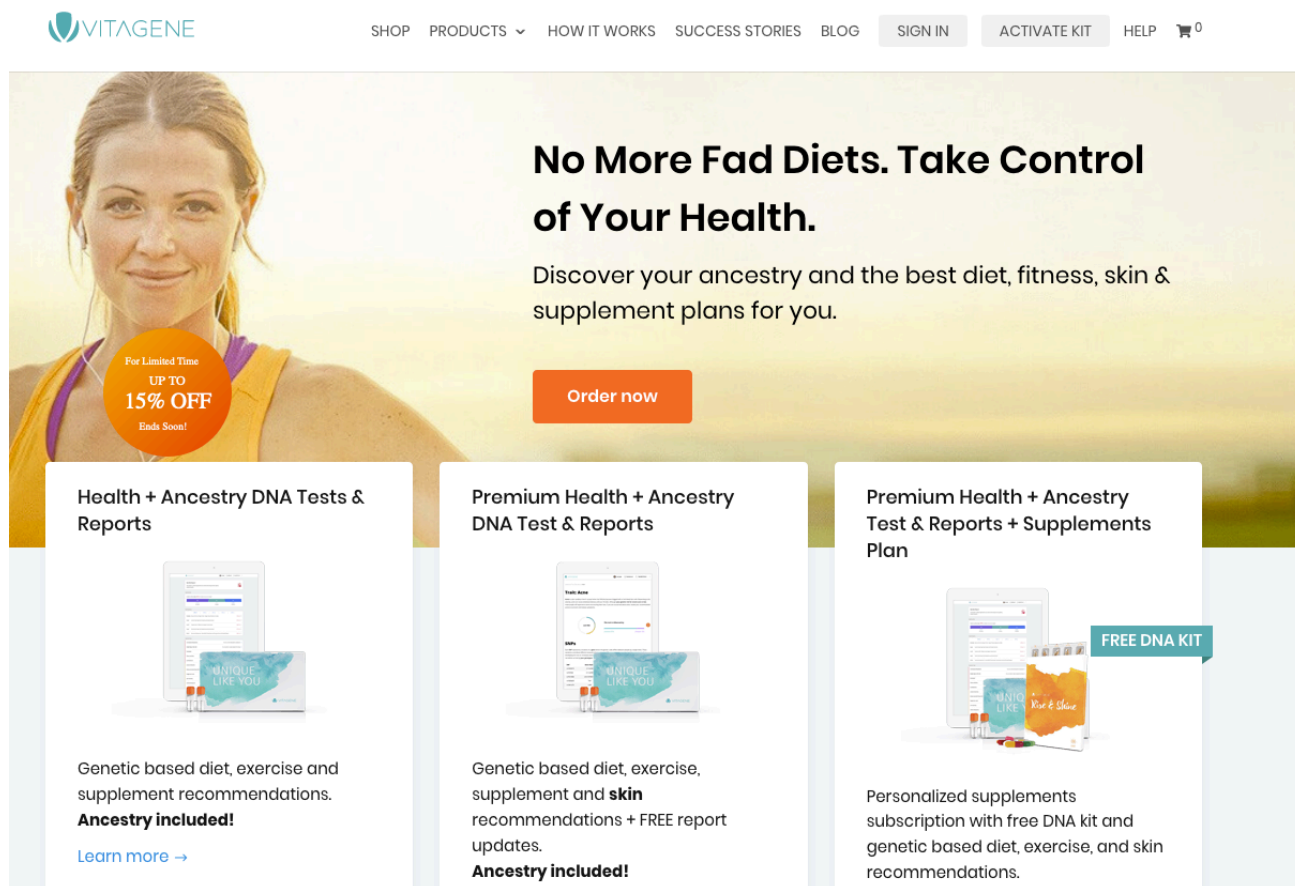
Short description: Platform for science-based personalized nutrition

Relation to Nutrishield: focuses mainly on the use of biomarkers found in blood.

6.1.6. Vitagene

Website: <https://vitagene.com/>

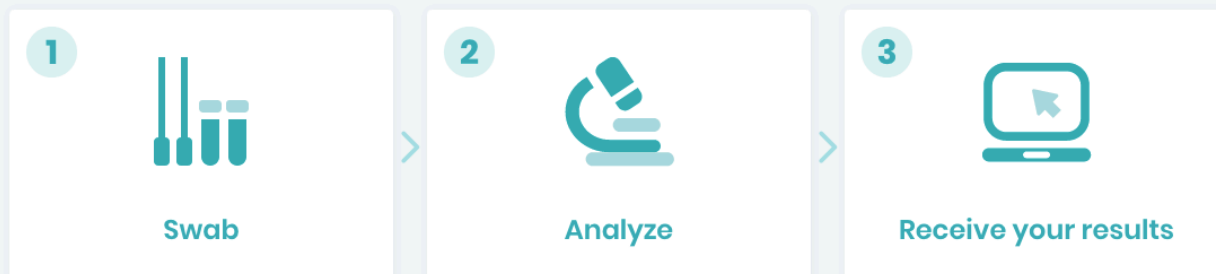
The company conducts DNA health test kits aiming to provide supplements, diet and exercise plan aiming to combine genes, lifestyle and personal goals of the individual to create customized nutritional plans. Each DNA kit results in a personalized report based on science (not trends).



The screenshot shows the Vitagene website homepage. At the top, there is a navigation bar with the Vitagene logo and links for SHOP, PRODUCTS, HOW IT WORKS, SUCCESS STORIES, BLOG, SIGN IN, ACTIVATE KIT, and HELP. A shopping cart icon shows 0 items. The main hero section features a woman's face on the left and the headline "No More Fad Diets. Take Control of Your Health." on the right. Below the headline, it says "Discover your ancestry and the best diet, fitness, skin & supplement plans for you." and an "Order now" button. A circular badge on the left says "For Limited Time UP TO 15% OFF Ends Soon!". Below the hero section, there are three product cards:

- Health + Ancestry DNA Tests & Reports**: Includes a laptop displaying a report and a DNA kit. Text: "Genetic based diet, exercise and supplement recommendations. **Ancestry included!** Learn more →"
- Premium Health + Ancestry DNA Test & Reports**: Includes a laptop displaying a report and a DNA kit. Text: "Genetic based diet, exercise, supplement and **skin** recommendations + FREE report updates. **Ancestry included!**"
- Premium Health + Ancestry Test & Reports + Supplements Plan**: Includes a laptop displaying a report, a DNA kit, and a box of supplements. Text: "Personalized supplements subscription with free DNA kit and genetic based diet, exercise, and skin recommendations." A badge says "FREE DNA KIT".

How DNA Health Tests Work



DNA health testing usually involves sending a saliva sample which is sent to our CLIA-certified lab for a comprehensive analysis. With Vitagene, you can either use our DNA kit to submit a new sample or upload an existing DNA file. The results from your DNA test are compiled into an actionable, user-friendly health reports detailing ways you can personalize your nutrition, exercise and supplement plans.

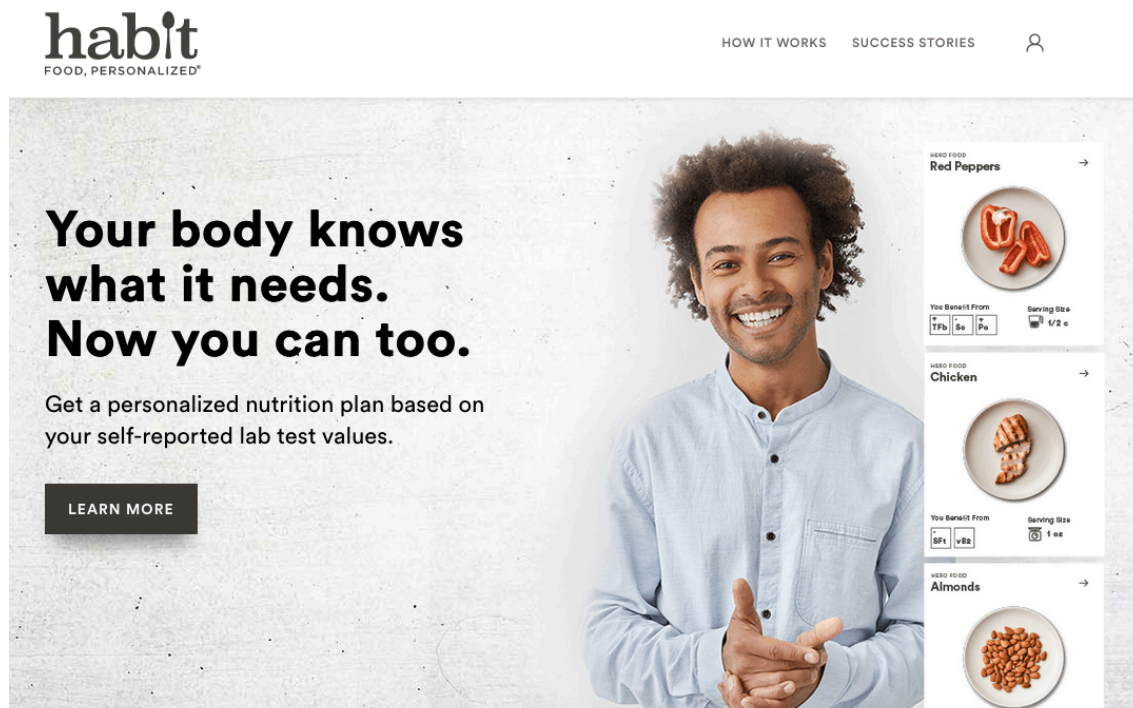
Short description: Personalized nutrition based on DNA tests

Relation to Nutrishield: focuses only on DNA tests

6.1.7. habit

Website: <https://habit.com/>

Habit provides evidence-based nutrition recommendations look based on cholesterol levels, activity level and personal wellness goal, aiming to understand what the body needs.



habit
FOOD, PERSONALIZED™

HOW IT WORKS SUCCESS STORIES

Your body knows what it needs. Now you can too.

Get a personalized nutrition plan based on your self-reported lab test values.

LEARN MORE

HERO FOOD Red Peppers

You Benefit From: TFs, Se, Po

Serving Size: 1/2 c

HERO FOOD Chicken

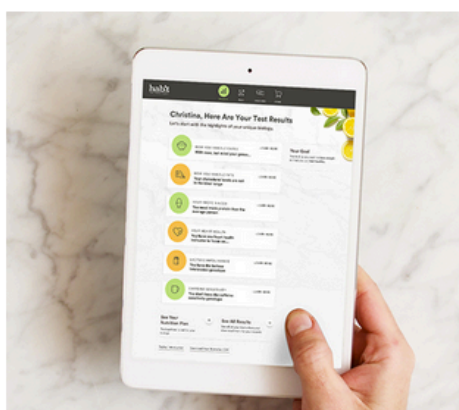
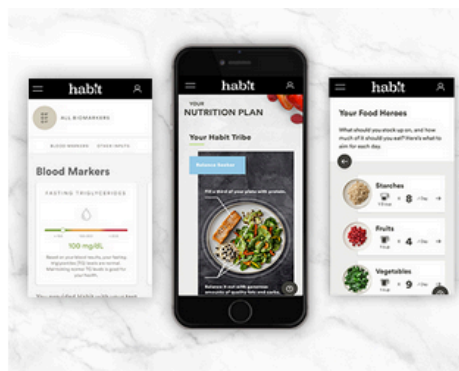
You Benefit From: Bf, vSe

Serving Size: 1 oz

HERO FOOD Almonds

STEP 1
**ANSWER A FEW
QUESTIONS ABOUT
YOUR HEALTH**

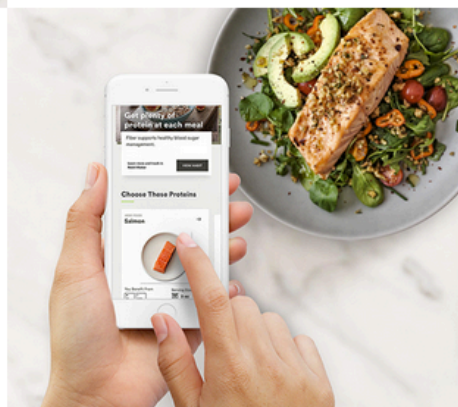
Our evidence-based recommendations look at your cholesterol levels, activity level and personal wellness goal, to understand what your body needs.


STEP 2
GET YOUR RESULTS

Learn how your body handles carbs, fat, protein, and more. Know right away where you're doing well and where you have opportunities to optimize your health with nutrition.

STEP 3
**SEE YOUR
NUTRITION PLAN**

It includes your ideal plate, daily food guide, top-ranked foods in each food group, and personalized recipes.



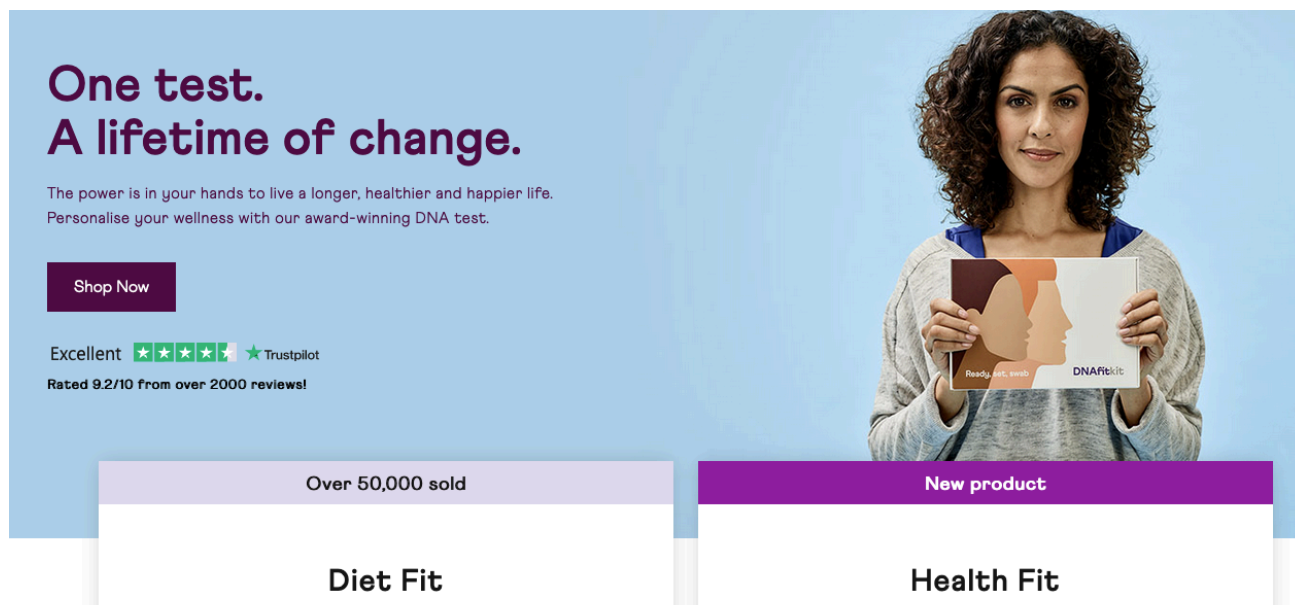
Short description: the app analyses data entered by means of a questionnaire, as well blood tests values (LDL Cholesterol, HDL Cholesterol, Total Cholesterol, Fasting Triglycerides) conducted by the user independently

Relation to Nutrishield: only process data from questionnaire and cholesterol levels.

6.1.8. DANfit

Website: <http://www.personalizednutritionsolutions.org/>


Personalized diet and nutrition by DNA analysis.



**One test.
A lifetime of change.**

The power is in your hands to live a longer, healthier and happier life.
Personalise your wellness with our award-winning DNA test.

Shop Now

Excellent  ★★★★★ Trustpilot
Rated 9.2/10 from over 2000 reviews!

Over 50,000 sold

Diet Fit

New product

Health Fit

Short description: process of DNA profile

Relation to Nutrishield: focuses on DNA analysis

6.1.9. Arivale

Website: <https://www.nutraingredients-usa.com/Article/2017/08/15/13-personalized-nutrition-companies-on-the-market-today?page=11>

The company pairs a human wellness coach that will help subscribers create health goals, and design a road with clear actions to get started. Users send in a blood sample with a proprietary test kit for the company to analyse for 80 different health markers, data of which goes into the health plan.



NUTRA
ingredients-usa.com

FREE NEWSLETTER Your e-mail address **Subscribe**

News Trends Health Resources Events Insights Search

Subscribe to our FREE newsletter Your e-mail address **Subscribe**

Arivale: Setting up subscribers with personal wellness coaches

By Adi Menayang 
14-Aug-2017 - Last updated on 22-Sep-2017 at 13:26 GMT

Dubbed **start-up of the year** by **GeekWire**, **Arivale** has raised \$50 million since its founding in July 2015. The company pairs a human wellness coach that will help subscribers create health goals, and design a road with clear actions to get started.

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VIRGINIA DARE EXTRACT CO. INC. | DOWNLOAD TECHNICAL / WHITE PAPER
Beyond the Bar: Innovations & Flavor Solutions in Snacking Platforms

INDENA: THE BOTANICAL INGREDIENT OF HEALTH FOOD INDUSTRY | DOWNLOAD APPLICATION NOTE
Phytosome: the biomimetic delivery system

SABINSA | DOWNLOAD DATA SHEET
CAN CURCUMIN GET ANY HOTTER?

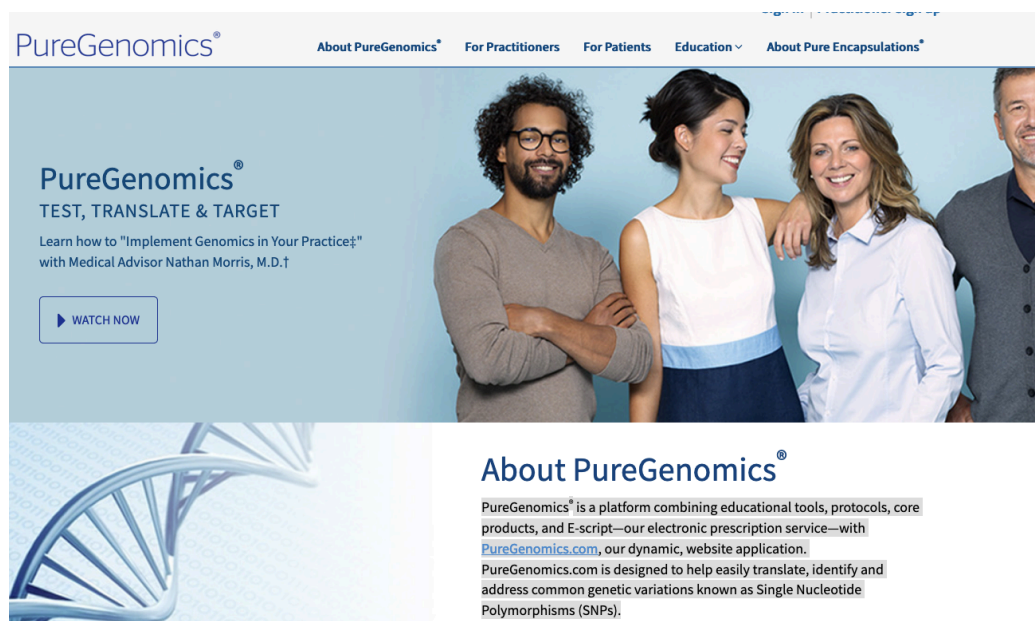
Short description: assisted personalized nutrition

Relation to Nutrishield: not an app interface, analyses blood samples only

6.1.10. Puregenomics

Website: <https://www.puregenomics.com/default.aspx>

PureGenomics® is a platform combining educational tools, protocols, core products, and E-script—our electronic prescription service—with PureGenomics.com, our dynamic, website application. PureGenomics.com is designed to help easily translate, identify and address common genetic variations known as Single Nucleotide Polymorphisms (SNPs).

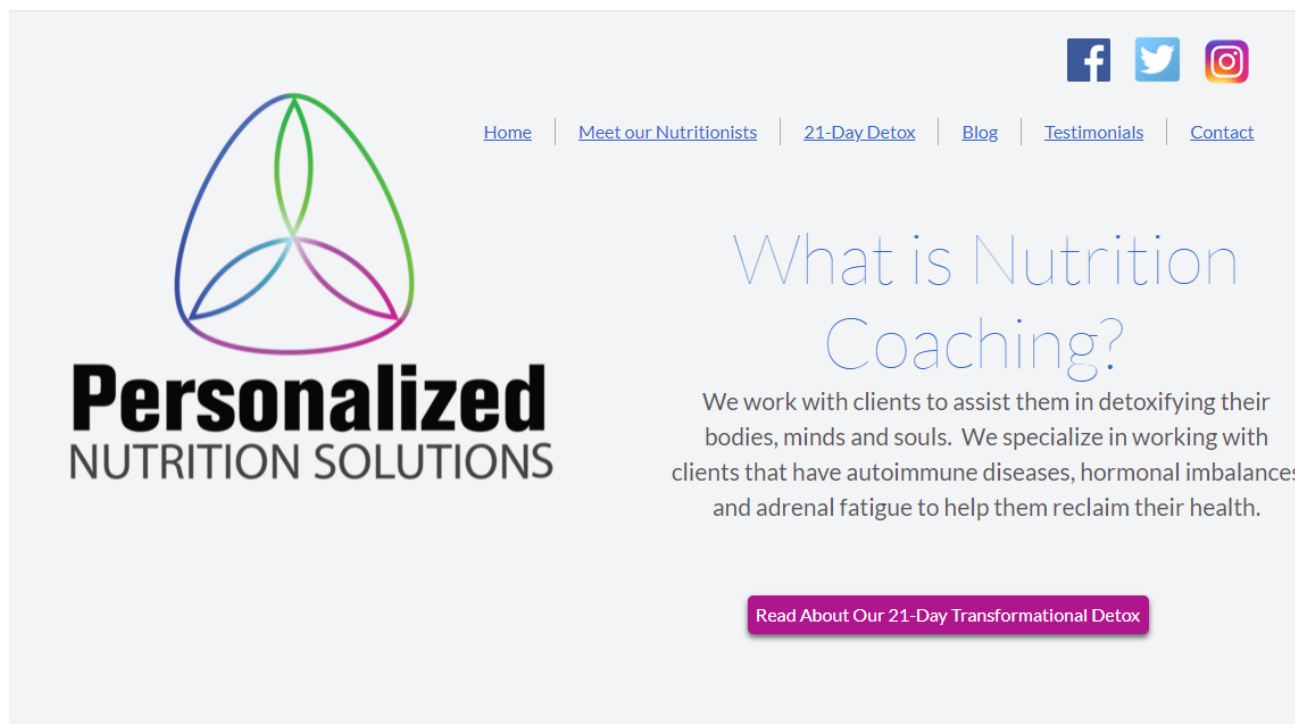


Short description: personalized nutrition supplements

Relation to Nutrishield: marginal

6.1.11. Personalized Nutrition Solutions

Website: <http://www.personalizednutritionsolutions.org/>



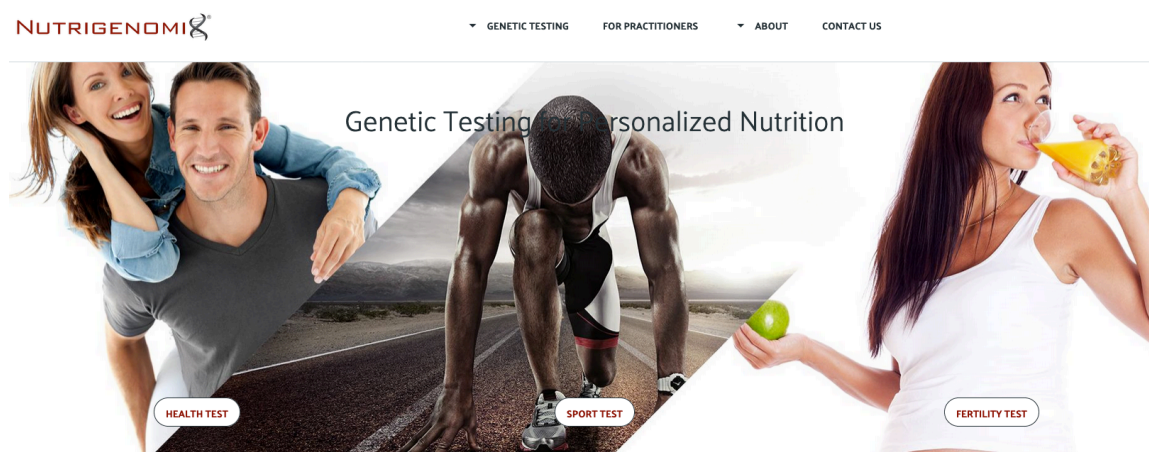
Short description: A US-based nutrition coaching service by nutritionists

Relation to Nutrishield: small, no software or application-based aid

6.1.12. Nutrigenomix

Website: <https://www.nutrigenomix.com/>

Nutrigenomix conducts genetic tests for personalized nutrition and fitness test



Short description: genetic testing for personalized nutrition

Relation to Nutrishield: only genomics data

6.1.13. Outcome of an analysis of 30 companies

The list of solutions available in the market presented is part of an analysis of 30 companies conducted by Nutrishield partner SWB. While the analysis involved products in the field of personalized nutrition, emphasis was given to identify solutions for personalized nutritional recommendations during care and after-care based on biomarkers. The synopsis of the analysis are:

An analysis of 30 companies	How unique Nutrishield is?
1. A lot focused on DNA analysis	1. Fact based with better science
2. Some things in habit building	2. Dynamic Biomarker measurement + nutrition
3. Weak or poor science almost everywhere	3. Dynamic follow-up (what happens if..)
4. No link between measurement and habits	4. After Care
5. Weak links to caregivers	5. Linked to care givers
6. If Biomarkers used, one static measurement then personalized for life	
7. Nothing with dynamic links to biomarkers	

The conclusions highlight that the uniqueness of the Nutrishield approach.

Further to the Nutrishield platform, initial listing of some of the Nutrishield components are given below

6.2. Milk analysers

Nutrishield develops laser-based human milk analysers, tailor-designed to meet the specific needs of the practitioners, including the need of human milk banks. Up to today, such measurements are conducted by means of laboratory analysis. To our knowledge, no specific human milk analyser can be found in the market. As a reference, we list here some commercial milk (non-human) analysers aiming the livestock and dairy industry, thus, differentiating significantly to Nutrishield, and how their specifications compare to Nutrishield. It is postulated that such milk analysis equipment can be modified to cover similar to Nutrishield requirements.

6.2.1. miris Human Milk Analyzer

<https://www.mirissolutions.com/our-products>



Miris has developed a portfolio of instruments and consumables that is tailored to ensure that the complete workflow related to analysis of breast milk is optimised to provide the most accurate and reproducible results. In a single run the Miris HMA quantitatively measures the concentration of fat, carbohydrate, protein, total solids, and energy of human milk. It is intended to be a compact, robust instrument without moving parts and it is easy to handle with a broad application area. The analytical technique used in Miris HMA is a combination of established mid-infrared (mid-IR) transmission spectroscopy principles and a patented innovation. The analysis takes place

using small sample handling (3 ml)within 60 seconds.

The capabilities of the analyzer are limited by the use of near-IR and not mid-IR spectrum.

6.2.2. MilkoScan™ Mars - Analyzer for milk

<https://www.gerber-instruments.com/en/suppliers/foss/milk-analysis/milkoscan-mars>.



The MilkoScan Mars allows you to control and standardise milk or cream products for optimal use of raw material and consistent quality products. The analyzer measures fat, protein, lactose, total solids, solids non-fat, freezing point. It is intended to be used mainly by the dairy industry, aiming to prevent adulteration.

The analyzer is actually a FTIR spectrometer.

6.2.3. Bruker MIRA Infrared (IR) Milk Analyzer



Bruker MIRA can analyze important parameters like fat, protein, total solids and lactose fast, allowing the customers to quickly carry out required and optimized process adjustments. The high-pressure homogeniser ensures evenly homogenised samples for high repeatability and accuracy. Optionally, the MIRA milk analyser can also determine the freezing point.

While being based in IR spectroscopy in FTIR configuration, the MIRA analyzer uses thermal sources and moving parts for the light analysis (interferometer), which significantly limits the accuracy, speed, robustness and size of the instruments. The Nutrishield analyser, on the contrary, will use mid-IR laser sources (QCLs) which constitutes a major advantage.

6.2.4. Ekomilk-AMP (ekomilk horizon)

<https://ekomilkhorizon.com/products/milk-analyzers/ekomilk-horizon-unlimited&id=P0067>



Min-lab aims the livestock market for accurate mastitis and milk quality control for smart farming, food security, animal health care and high-quality of food production and supplies. Principle of operation (main): somatic cell count. Other functionalities: estimation of milk parameters such as fat, protein, density, solids-non-fat (SNF)

This does not make use of the mid infrared spectral region, and cannot detect the substances targeted by Nutrishield at the required accuracy.

6.2.5. Lactoscan (milkotronic)



<https://www.milkotronic.com/>

Milk analyser for the estimation of the fat content in the 0-25% regime, SNF, density, lactose, protein (2% – 15%) etc. Principle of operation: ultrasonic stirrer.

This does not make use of the mid infrared spectral region, and cannot detect the substances targeted by Nutrishield.

7. HM analyser & Nutrishield platform – Potential users' feedback

Targeting the development of new technologies and equipment to be used by medical doctors, nutritionist, nursing staff and other practitioners, Nutrishield seeks to employ, at the degree that this is possible, feedback from potential end users. Such information will allow the Nutrishield consortium to both adapt the new developments to the recorded needs, and, better design the project exploitation strategies. In this line, a number of workshops will be organized, aiming to attract experts and practitioners in the field under studies.

The first Nutrishield workshop took place along the 12 months consortium meeting, hosted by HULAFE at Valencia, Spain, on September 26th, 2019. Being the partner conducting the research (clinical studies) targeting infants and lactating mother, the title of the workshop was:

“Optimized nutrition for infants and lactating mothers”

A more elaborated description of this event is presented in the deliverables on project dissemination and communication activities. The workshop gathered a total of more than 35 participants (plus more than 30 on line attendees), mainly practitioners in field related to Nutrishield. Being a great opportunity to interact with potential end users outside the consortium, two questionnaires were provided to the attendees aiming to record their opinion on the Nutrishield developments.

7.1. The 1st Nutrishield workshop questionnaires

The two questionnaires regarded the HM analyser under development and the Nutrishield app under development.

Disclaimer: The questionnaire is anonymous; No recording or processing of personal data will take place.



Workshop on:

Optimized nutrition for infants and lactating mothers

Hosted by the Health Research Institute La Fe, Hospital La Fe (HULAFE), September 26, 2019

Questionnaire

The answers range from 1 (not likely) to 5 (very likely).

In case you don't want to answer one of the questions, please leave the field empty.

How likely would you use, or suggest the use of a table-top human milk analyser?

1 (not likely)	2	3	4	5 (very likely)
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Do you believe that such a tool can assist health professionals to optimize the nutrition for infants and lactating mothers and optimize milk processing/storage conditions in human milk banks?

1 (no)	2	3	4	5 (very much)
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Would access to the concentration of individual milk proteins in comparison to the total protein concentration help to improve human milk fortification in human milk banks?

1 (not useful)	2	3	4	5 (very useful)
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

How important are the cost of the analyzer vs. analysis time vs. milk volume used for analytical purposes?

Cost

1 (not important)	2	3	4	5 (very important)
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Analysis time

1 (not important)	2	3	4	5 (very important)
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Milk volume used for analytical purposes

1 (not important)	2	3	4	5 (very important)
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

You are (optional):

Medical doctor	Nutritionist	Nursing stuff	Other health professional	Other
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Would you like to provide additional comments or suggestions?

Figure 3. The questionnaire regarding the HM analyser

Disclaimer: The questionnaire is anonymous, No recording or processing of personal data will take place.



Workshop on:

Optimized nutrition for infants and lactating mothers

Hosted by the Health Research Institute La Fe, Hospital La Fe (HULAFE), September 26, 2019

Questionnaire

In case you don't want to answer one of the questions, please leave the field empty.

How useful would you rate the features below coming from the Mobile App and supporting Platform?

Allow a user to record dietary habits by uploading pictures?

1 (not useful)	2	3	4	5 (very useful)
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Allow a user to record dietary habits by selecting foods from a drop-down menu

1 (not useful)	2	3	4	5 (very useful)
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

allow a user to record dietary habits by scanning QR codes of packaged meals?

1 (not useful)	2	3	4	5 (very useful)
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Allow a user to receive the nutrition plan to follow?

1 (not useful)	2	3	4	5 (very useful)
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Warn a user if a "to be consumed food" would lead to a clear violation of the nutrition plan?

1 (not useful)	2	3	4	5 (very useful)
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Provide reminders to a user about useful lifestyle habits?

1 (not useful)	2	3	4	5 (very useful)
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Allow a user to record lifestyle habit?

1 (not useful)	2	3	4	5 (very useful)
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Help a user keep track of how well they follow a given nutrition plan?

1 (not useful)	2	3	4	5 (very useful)
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

You are (optional):

Medical doctor	Nutritionist	Nursing stuff	Other health professional	Other
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Would you like to provide additional comments of suggestions?

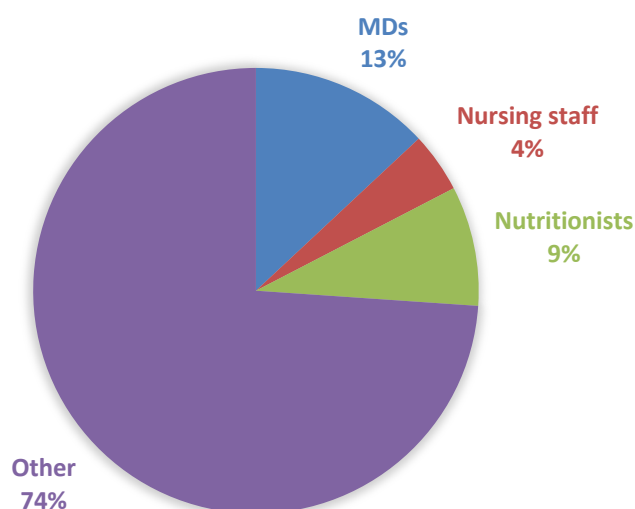
Figure 4 The questionnaire regarding the Nutrishield App

Next, we present the results:

HM analyser					
total questionnaires: 25					
	Not useful/important		Very useful/important		
	1	2	3	4	5
How likely would you use, or suggest the use of a table-top human milk analyser	8%	0%	16%	20%	56%
Do you believe that such a tool can assist health professionals to optimize the nutrition for infants and lactating mothers and optimize milk processing/storage conditions in human milk banks?	0%	0%	0%	19%	81%
Would access to the concentration of individual milk proteins in comparison to the total protein concentration help to improve human milk fortification in human milk banks?	0%	0%	19%	23%	58%
Cost - How important are the cost of the analyzer vs. analysis time vs. milk volume used for analytical purposes?	4%	13%	4%	33%	46%
Analysis time - How important are the cost of the analyzer vs. analysis time vs. milk volume used for analytical purposes?	0%	8%	25%	33%	33%
Milk volume used for analytical purposes - How important are the cost of the analyzer vs. analysis time vs. milk volume used for analytical purposes?	0%	4%	26%	22%	48%

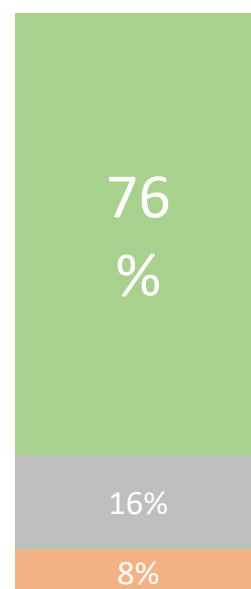
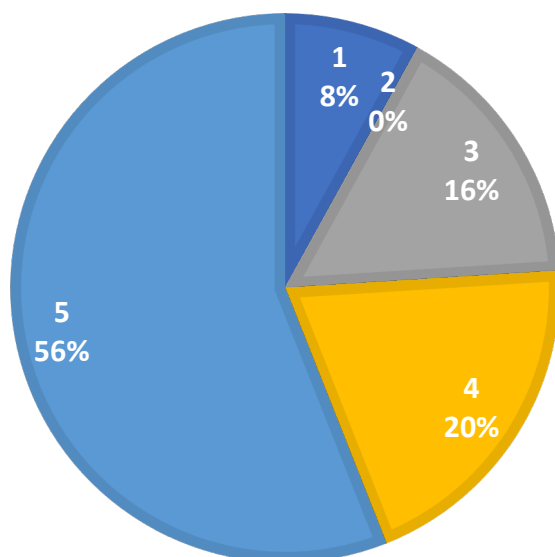
Nutrishield App					
total questionnaires: 25					
	Not useful/important		Very useful/important		
	1	2	3	4	5
Allow a user to record dietary habits by uploading pictures?	0%	8%	15%	23%	54%
Allow a user to record dietary habits by selecting foods from a drop-down menu	0%	4%	16%	40%	40%
allow a user to record dietary habits by scanning QR codes of packaged meals?	0%	8%	8%	32%	52%
Allow a user to receive the nutrition plan to follow?	0%	0%	12%	24%	64%
Warn a user if a “to be consumed food” would lead to a clear violation of the nutrition plan?	0%	17%	13%	25%	46%
Provide reminders to a user about useful lifestyle habits?	0%	4%	16%	52%	28%

Regarding the background of the persons that filled the anonymized questionnaires:

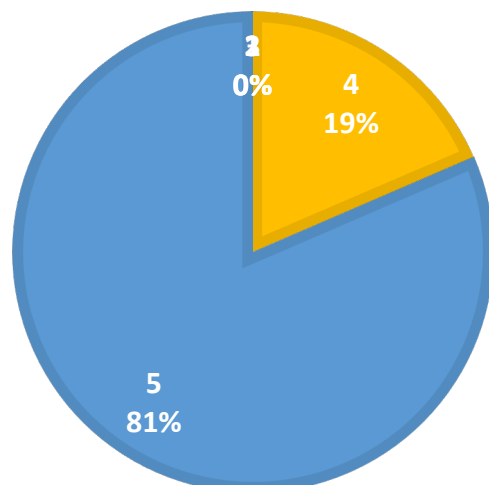


The results reveal that both technologies are found to be of interest for the attendees. A more elaboration of the key results are presented next where the graphs on the right present the positive opinions (score 4 or 5) versus negative opinions (scored 1 or 2):

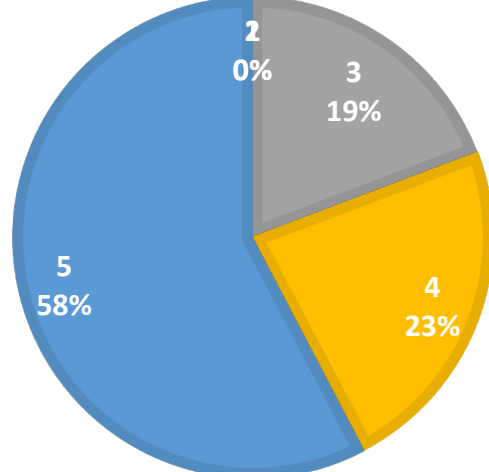
HOW LIKELY WOULD YOU USE, OR SUGGEST THE USE OF A TABLE-TOP HUMAN MILK ANALYSER



DO YOU BELIEVE THAT SUCH A TOOL CAN ASSIST HEALTH PROFESSIONALS TO OPTIMIZE THE NUTRITION FOR INFANTS AND LACTATING MOTHERS AND OPTIMIZE MILK PROCESSING/STORAGE CONDITIONS IN HUMAN MILK BANKS?

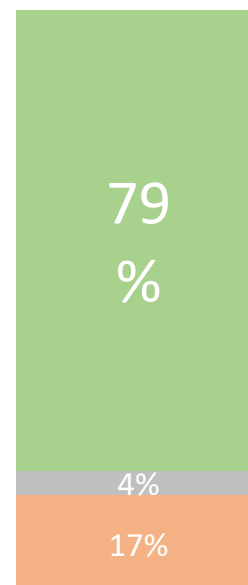
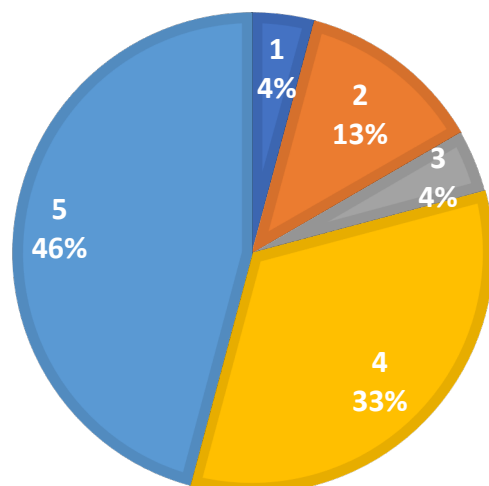

10
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WOULD ACCESS TO THE CONCENTRATION OF INDIVIDUAL MILK PROTEINS IN COMPARISON TO THE TOTAL PROTEIN CONCENTRATION HELP TO IMPROVE HUMAN MILK FORTIFICATION IN HUMAN MILK BANKS?

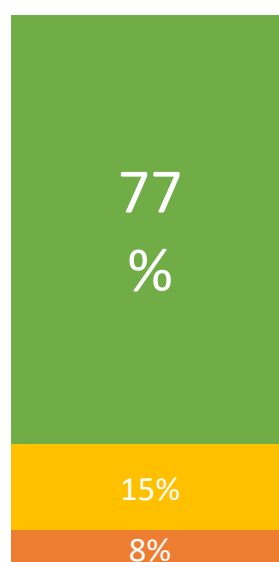
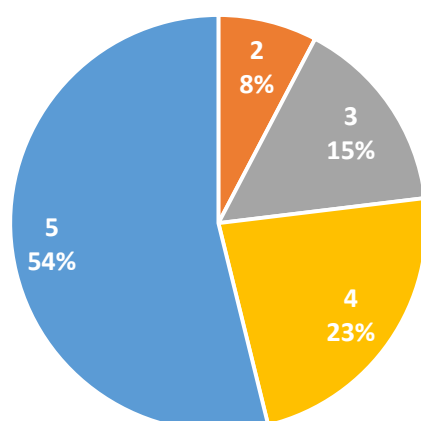

81
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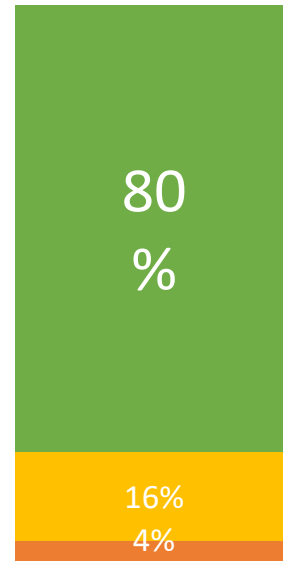
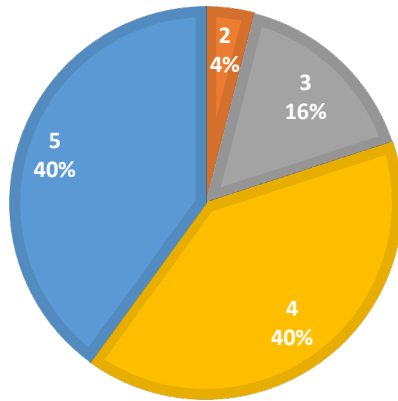
COST - HOW IMPORTANT ARE THE COST OF THE ANALYZER VS. ANALYSIS TIME VS. MILK VOLUME USED FOR ANALYTICAL PURPOSES?



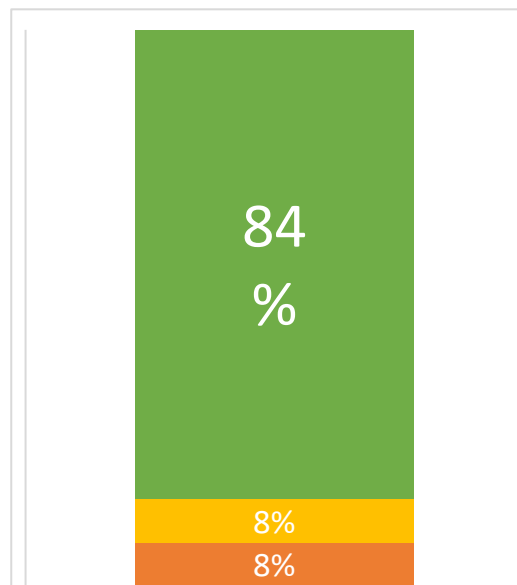
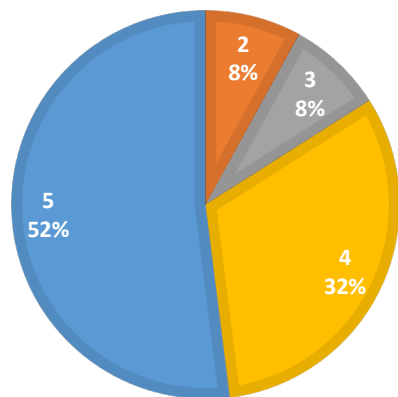
Allow a user to record dietary habits by uploading pictures?



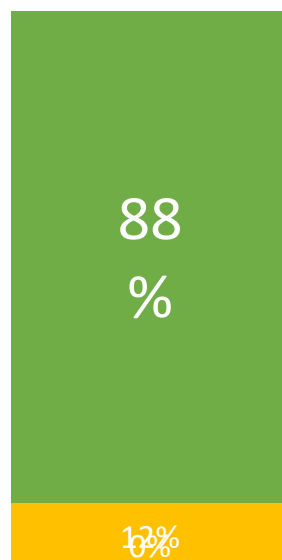
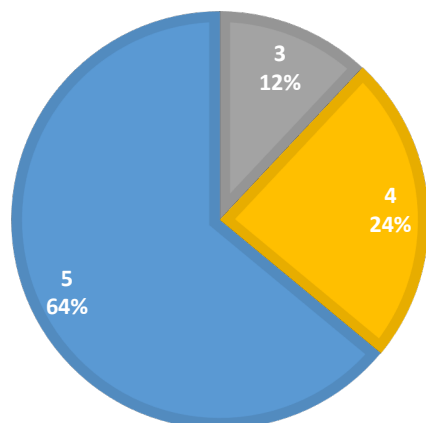
ALLOW A USER TO RECORD DIETARY HABITS BY SELECTING FOODS FROM A DROP-DOWN MENU



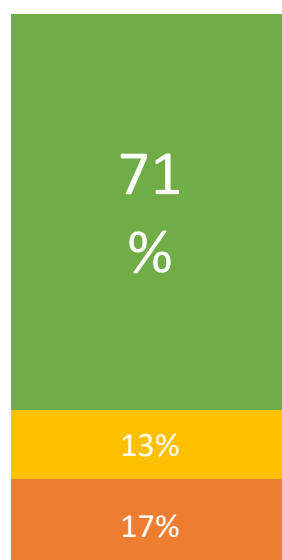
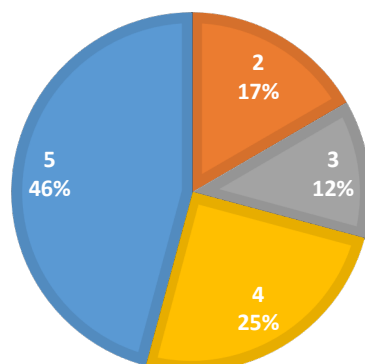
ALLOW A USER TO RECORD DIETARY HABITS BY SCANNING QR CODES OF PACKAGED MEALS?



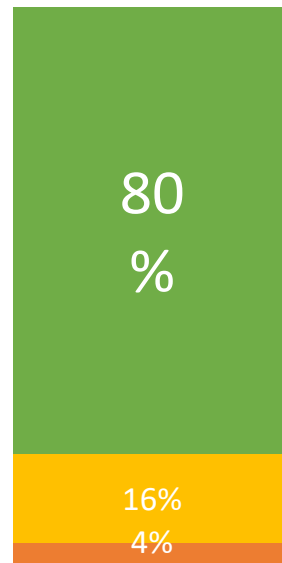
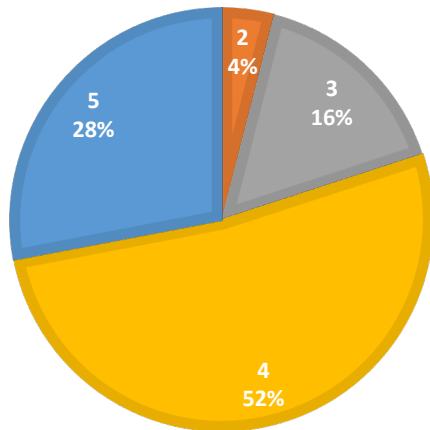
ALLOW A USER TO RECEIVE THE NUTRITION PLAN TO FOLLOW?



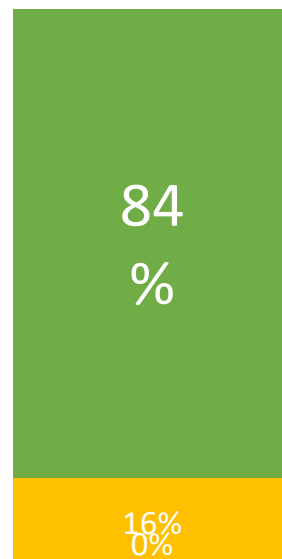
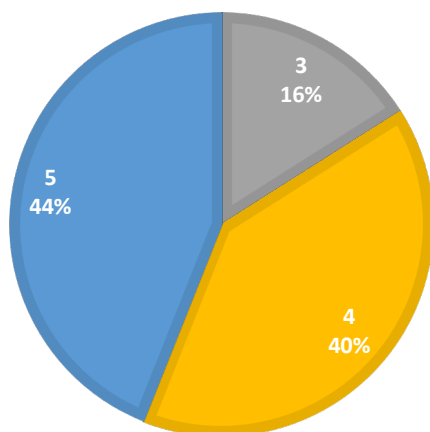
WARN A USER IF A “TO BE CONSUMED FOOD” WOULD LEAD TO A CLEAR VIOLATION OF THE NUTRITION PLAN?



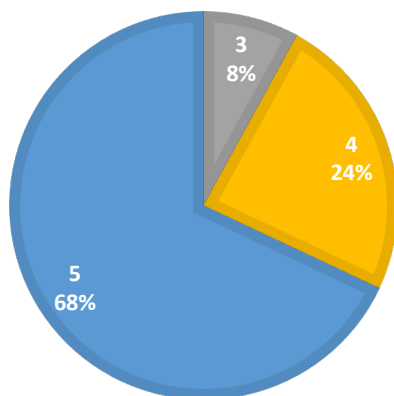
**PROVIDE REMINDERS TO A USER
ABOUT USEFUL LIFESTYLE HABITS?**



**ALLOW A USER TO RECORD
LIFESTYLE HABIT?**



HELP A USER KEEP TRACK OF HOW WELL THEY FOLLOW A GIVEN NUTRITION PLAN?



92
%

8%

8. Conclusions

This deliverable presented the first, preliminary version of the Nutrishield exploitation strategy, aiming to pave the way towards the development of a more mature document at month 24, i.e. at the mid of the Nutrishield developments. The purpose of such a draft is to provide guidelines for the future elaboration of the exploitation plans and allow for early involvement of the planning concepts into the next developments. Therefore, the emphasis was on the first screening of the competition of the Nutrishield platform and subcomponents and the recording and processing of valuable potential end users' feedback. Moreover, preliminary version of the SWOT analysis have been presented

This version outlines parts of the holistic innovation management activities to be conducted next and reflects the initial plans and goals of the Nutrishield partners that will be constantly updated as the project progresses.