

# Vitafoods Europe 2024 Trend Guide

Product innovations, health trends, and nutrition science



## **Contents**

Which top startup trends are transforming the nutraceutical industry?
How brands can help consumers overcome health barriers in 2024
Innova Market Insights: How can brands deliver functional wellbeing through nutrition? 10
Mintel: Tackling metabolic syndrome through product innovation
Cosun Protein: Bringing taste and texture to active nutrition
Holland & Barrett on its 'customer-first, science-first' R&D strategy
Huel takes a holistic approach to addressing evolving nutritional needs
Science is key to unlocking the female sports nutrition market: Dr Susan Kleiner, Founder and Owner, Consultancy High Performance Nutrition 26
Tapping the potential of seaweed to deliver sustainable nutrition: Vincent Doumeizel, Senior Advisor to the United Nations Global Compact
Epigenetics is key to effective personalised nutrition: Dr Jordana Bell, Associate Professor in Epigenomics, King's College London 30
Revealed! Meet the finalists and winners of the Vitafoods Europe 2024 Startup Innovation Challenge
Innovation Tours at Vitafoods Europe 2024 by NutriMarketing



## Welcome to the Vitafoods Europe 2024 trend guide

This trend guide shines a spotlight on some of the most important innovations at Vitafoods Europe 2024, bringing together interviews with leading experts and market analysts.

It also looks at the finalists and winners of the Vitafoods Europe Startup Innovation Challenge, which celebrates innovative startups that are breaking new ground in nutraceutical ingredient development.

As the most important nutraceutical trade show held in Europe, it attracted over 25,000 nutraceutical and supplement industry experts from over 130 countries and offered an ideal opportunity to scout out the biggest trends and innovations shaping the future of the nutraceutical, supplement, health, and wellness industries.

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IMPORTANT
NUTRACEUTICAL
TRADE SHOW
HELD IN
EUROPE



# Which top startup trends are transforming the nutraceutical industry?

From digitalisation and data interpretation to DIY testing to assess health markers, three startup experts at Vitafoods Europe highlighted the trends that are set to transform the nutraceutical industry.

The panel included Imran Afzal, the R&D open innovation lead for the EU at Mondelez International; Aline Santa Izabel, startup ecosystem services lead at Health Data Sweden; and Nard Clabbers, founder of NCNC Nutrition Consultancy. The panel was hosted by Martyna Halas who leads the Vitafoods Europe Startup Innovation Challenge.

## Don't jump in at the deep end with data!

Panellists discussed how technology is impacting startups in the nutraceutical world. In particular, the space is seeing a lot of development with respect to digital innovation, which is largely pegged to consumer data.

"Data-driven innovations and digitalisation is something that is really shaping consumer industries, and that is what we are focused on at EDIH Health Data," said Santa Izabel. "It's a massive and fast-growing area but there is still room for plenty of development, particularly with respect to AI technology."

The importance of how data is compiled and processed was brought up by Nard Clabbers, who drew attention to the different wearable devices and apps that are all contributing to the growth of data. He also stressed that while there is already a lot of data on health markers and the nutritional value of food, the big challenge is how to combine the data to make it meaningful.

"You have to take the issue of data collection seriously from day one by dedicating the proper professional resources to it, like a chief data officer," said Clabbers. "The other thing is just start very small. There is so much possibility and you can reach people in so many intricate ways. But the thing to do is just start off very simply, with just a few data sets on specific consumers."

#### The evolution of DIY testing

The panellists agreed that since the pandemic, self-testing is something consumers are a lot more comfortable with, opening up the doors for nutraceutical businesses.

"There are a lot of DIY tests to analyse a lot of health markers," said Clabbers. "Being able to measure the effects of food on health is likely to be a real game changer for the industry. It's very difficult to feel the health effect of a specific food, so having an at-home measurement helps makes the consumer's nutritional health journey more interactive."

Santa Izabel agreed, adding that the problem is "trying to find ways of encouraging consumers to maintain their testing to help them understand the health benefits over the longer-term. They need to have this feedback because health is dynamic and not a constant".

Afzal from Mondelez International believed the problem is rooted in the fact that consumers want more immediate and tangible results. "Consumers might follow an app's instruction, but they want results and they want to see that their health and wellness is improving. Monetisation of this area is by providing people with feedback that they can understand and relate to," he said.

Clabbers also cautioned on the importance of not overwhelming consumers with dashboards that have too many markers. Often just a simple red or green light can help avoid this confusion and lead to greater satisfaction, he said.

"DATA-DRIVEN
INNOVATIONS AND
DIGITALISATION IS
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INDUSTRIES."

## Fermentation offers plenty of possibilities for startups

Regarding the topic of fermented nutraceutical products, Santa Izabel said that while there is a lot of innovation in this area – specifically with respect to precision fermentation – there are also more traditional products hitting the market.

Afzal said: "The possibilities of fermentation are limitless really, even though it's been around for thousands of years. And as we discover new targets and incorporate AI, the possibilities will only increase."

"There are four areas where startups are aggregating and the money seems to be flowing," he added. "Metabolic health for diabetes; immune health; digestive health; and, the one that really excites me, is cognitive health. Here at the [Vitafoods Europe] show, there are a rising number of companies that are providing cognitive health solutions backed by a growing body of science."

## The future spells nutraceutical payback

Turning to what opportunities might exist for startups in the future, Clabbers said he believes that improvements in health from nutraceutical products is likely to be linked to paybacks or reimbursements.

"This area is attracting a lot of attention from investors because it offers real results and potential cost savings for businesses, particularly health and insurance practices," said Clabbers. "In South Africa, a health insurance company has already started to offer discounts to its customers who can provide evidence that they are buying their groceries from a store that specialises in healthier products."

He also drew on the example of Roche Diagnostics, which is providing diagnostic tools for pre-diabetes. Switching to a more nutritious diet could help prevent the onset of diabetes, in turn offering opportunities for nutraceutical brands.

## How brands can help consumers overcome health barriers in 2024



An attitude/behaviour gap exists when it comes to consumer health goals. However, it is not industry's responsibility to "fix" health problems but to encourage healthier practices, market analysts told an audience at Vitafoods Europe 2024.

Meanwhile, it is not the industry that needs to be convinced of a product's benefits but "the person in store taking two seconds to decide what to buy", said Mike Hughes, head of research and insight at FMCG Gurus.

Speaking at the Vitafoods Insights Theatre in Geneva earlier this month, Hughes outlined how consumers are being less proactive towards health in general; how they are increasingly focusing on day-to-day over long-term health; and identified some of the barriers they face when it comes to leading a healthy lifestyle.

## Consumers remain proactive about health – but for different reasons

While consumers remain proactive around health, this is increasingly being driven by aspirations towards healthy ageing rather than concerns around immunity in the wake of Covid-19 – a shift that may make attaining their goals more difficult, said Hughes.

They are also placing greater emphasis on day-today wellness, including how they feel and what they see in the mirror, over long-term health goals.

"Consumers are no longer driven by fear of severe illness," Hughes said, highlighting FMCG Gurus research showing that the proportion of consumers looking to address their immune health "has fallen considerably" in the past year.

Meanwhile, there has been a noticeable slowdown in the proportion of consumers who feel their health has improved, with just over one in five (21%) saying they believe this statement to be true.

## Emotional wellbeing set to 'significantly impact' consumers in future

More than four in five (81%) of global consumers say they believe addressing their emotional health is just as important as their physical health, according to FMCG Gurus research. However, just half of consumers say they are satisfied with their emotional wellbeing overall.

"In an era of uncertainty, consumers are placing just as much focus on their emotional wellbeing as they are their physical health," Hughes said.

Looking at which health areas consumers want to address over the next 12 months, those that stand out are mood and mental wellbeing (30%), energy (29%), digestive health (25%), and weight loss (24%), Hughes said.

"Emotional wellness is something that's going to significantly impact consumers for the considerable future," he added. "This is something where it's going to be back in the health priorities over the next 12 months and something that's going to also bring the barriers to establishing healthy living."

## The shift from intention to action: Consumer attitude/behaviour gaps

Consumers say they are looking to improve various aspects of their health, from exercising more and eating a healthier diet to building better sleep habits.

"Consumers are taking raising prices as an opportunity to step back and say, 'How can I make my diet healthier?' And that sometimes links with the psychology of budgeting: if you feel like you're doing it for another benefit or reason, as opposed to

[because] you have to, it feels like you're in control," Hughes said.

However, there is a gap between their stated aims and how they actually behave.

When evaluating the topic of holistic health, the industry must take into account these attitude/ behaviour gaps, Hughes warned, which he said will become even more apparent now that consumers are less driven by fear of illness.

"These attitude/behaviour gaps are going to become more prominent and most consumers will have the best intentions to improve their health," he added. "Whether they're able to stick to something long term is something that may be completely different."

## What are the barriers to making healthier choices?

FMCG Gurus asked consumers what challenges they faced when trying to lead a healthier lifestyle and found that the most pressing issue was cost.

"Irrespective of efforts to convince consumers otherwise, there's still a belief that healthy products cost a premium price," said Hughes.

High levels of uncertainty mean comfort eating is another aspect that will impact food and drink markets over the next few years. Hughes highlighted a recent emotional wellness survey carried out by FMCG Gurus which asked consumers which products they turned to when feeling stressed.

"I can tell you functional food and drink wasn't on top of that list," he said. "Instead, it was chocolate, confectionery, and alcohol."

Time scarcity is another "major issue" for consumers, who often feel that they are too busy to monitor their micronutrient intake.

Hughes said there was a fine balance to be struck between healthiness and tastiness – and one that is not always clear in the minds of consumers.

There is still a perception that better-for-you products are less tasty – and this works in reverse, too: if products appear too much like confectionery, for example, then they will be perceived as being less healthy.

## How can brands help consumers overcome these health barriers in 2024?

Making messaging around health and wellness simpler and more subtle could help overcome these barriers, Hughes suggested.

"We need to really simplify the message... so it's not just convincing the industry but also the people who are buying the products," he added.

Another message is that brands should focus on incremental improvement over fundamental change.

"One of the biggest problems associated with a healthy lifestyle is that it's associated with compromise and sacrifice, and that's something that consumers don't particularly want," Hughes said.

Timing was also key, he explained, pointing to an opportunity for brands to target moments "when consumers are more health-orientated".

He said: "You have to target [these] categories and occasions rather than saying, actually, consumers are going to buy health [products] 100% of the time – because that's simply not the case."

Hughes added: "Brands must encourage consumers to get the basics right before they start to embrace new innovation... And the industry must recognise that the goal is to assist consumers rather than to do the work for them."

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## How can brands deliver functional wellbeing through nutrition?

Consumers increasingly want to be proactive in preventing health issues, and see nutrition as playing a key role in this pursuit. Nicole Jansen, from Innova Market Insights, explored what manufacturers can do to tap new opportunities.



Nicole Jansen Team Manager Insights & Innovation Innova Market Insights

A growing emphasis on personal wellbeing is creating new possibilities for ingredient and product innovation. While immunity-boosting and functional ingredients took centre stage at Vitafoods Europe 2024, understanding which ingredients to use, and how to target core consumers, is still a challenge.

In her presentation, Nicole Jansen, who leads the insights and innovation team at Innova Market Insights, examined where this consumer demand is coming from, how manufacturers are reacting to this demand, and identified possible strategies for market success. She also shared her expertise in working closely with customers to find insights that lead to informed strategic decisions.

#### Key drivers of consumer demand

"I really think that the pandemic had a strong impact on the consumer in terms of health, and that we can still see the consequences," said Jansen. "Before the pandemic, consumers were already looking at health, but ever since, health has been taken to the next level and is seen more holistically by the consumer. Consumers are increasingly aware that things like getting enough sleep, or how gut health can have a significant impact on their overall health."

Jansen also noted the influence of social media on consumer attitudes. Across numerous platforms, opinions on food and health are being shared. This, she said, is driving people to try out new things.

The most successful manufacturers are those that have tapped into these trends, and fostered innovation across numerous categories. "This is not just happening in sports nutrition for example," said Jansen. "Even in indulgent categories, we can find products like chocolate with mood health claims. Products promoting gut health are also playing a huge role."

#### Strategies for market success

Jansen identified two broad market strategies in this innovation space. The first is to consider immune health as a broad trend, and develop products that address this holistically. The second is to break the sector down in order to identify specific functionalities. "So within immune health, we can find products that claim to be positive for brain health, for your focus, or for your gut health," she said. "This enables brands to target specific consumers."

In terms of functional ingredients, protein is still hugely popular. "Protein has super-positive health connotations," said Jansen. "Consumers are also looking for specific vitamins and minerals, and things like fruit, vegetables, and botanicals are also closely associated with health. Lavender, for example, is known to have a calming effect, and to help with sleep. These are functionalities that are easily understood."

#### Holistic approaches to maintaining health

During her presentation, Jansen emphasised the fact that consumers are increasingly taking a holistic approach to maintain health and boosting their immunity. This means that nutrition must be seen in the context of growing interest in physical, emotional, and mental wellbeing.

"The goal of this presentation really is to encourage people to be open to innovation, and to really identify their specific target group," she said. "It is easy to be overwhelmed by what others doing. I would advise brands to figure out who their target group is, and think about how they can best communicate with them. There is a big difference between Boomers and Gen Zs, for example."

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## Tackling metabolic syndrome through product innovation

Consumers are increasingly looking for solutions to help with glucose control. At Vitafoods Europe 2024, Rick Miller, associate director of specialised nutrition at Mintel, explored the claims and diets that are currently trending, and what untapped opportunities exist for supplement manufacturers.



Rick Miller Associate Director Specialised Nutrition Mintel

Miller has extensive expertise in dietetics and performance nutrition from a 15-year clinical career in hospitals, as well as working with professional teams and athletes up to Olympic level. He is experienced within fast-moving consumer goods (FMCG), foods for special medical purposes (FSMP) and supplementation sectors, supporting new product development (NPD), regulatory affairs, and scientific communication to multiple global brands.

## What is metabolic syndrome, and what is the impact on human health?

"Metabolic syndrome is a physiological state known as insulin resistance and it is truly a global public health concern. This is due to its trifecta of various health issues – high blood pressure, elevated blood lipids, and abdominal obesity (large waistline). The state of insulin resistance can also lead to type 2 diabetes.

"As such, the World Health Organization estimates that by 2030, the proportion of total global deaths due to chronic diseases such as metabolic syndrome is expected to increase to 70%, up from 61% in 2005, and the global burden of disease to 56%, up from 49%. Estimating the global economic burden of metabolic syndrome is difficult but is likely to be approaching the region of trillions in cost if not already."

## What are some of the root causes behind the global prevalence of this condition?

"Defining the exact cause of metabolic syndrome is challenging. We know that the leading risk factor is the presence of obesity [...] as defined by body mass index, but there are cases of individuals who fall within the normal weight range and also present with metabolic syndrome.

"This has led to lifestyle factors being identified as potential risk factors in the development of the condition, such as individual nutrients in food (sugar, fat), food categories (ultra-processed foods) and lifestyle factors (stress, poor sleep). Certain ethnic groups, such as those of a south-east Asian descent, may also be at elevated risk."

### What have been some of the challenges to effectively addressing this health threat?

"A key challenge is the multi-etiological nature of metabolic syndrome, and the fact that individuals do not simply need to be overweight or obese to develop it. This makes it an incredibly challenging issue for public health authorities worldwide to address."

### How would you assess consumer awareness of metabolic syndrome?

"Consumer awareness of the term metabolic syndrome itself is patchy. However, part of the proposed treatment strategy of metabolic syndrome is the restriction of dietary sugars and total carbohydrate intake.

"These dietary approaches are being increasingly popular through social media channels. Good examples would be lower carbohydrate diets such as ketogenic diets, and even 'all-meat' carnivore diets. The terms 'insulin resistance' and 'pre-diabetes' are certainly in the vernacular of consumers from across the markets we track at Mintel."

"METABOLIC SYNDROME IS A **PHYSIOLOGICAL** STATE KNOWN **AS INSULIN RESISTANCE AND** IT IS TRULY A GLOBAL PUBLIC **HEALTH CONCERN.**"

#### What key ingredients and claims are trending at the moment?

"Sugar reduction, low/no sugar and 'keto' claims are very much the key trending claims at the moment in association with metabolic syndrome. There are some brands and categories, however, where such claims don't or cannot make sense without compromising on taste and texture, such as baked goods, cereals, bars, and biscuits.

"Here, increasing fibre content or experimenting and switching to wholegrain varieties of cereal products can provide the basis for a low glycaemic index claim, which has some use in treating metabolic syndrome.

"In terms of other ingredients, brands in the functional food and drink categories are experimenting with more novel compounds such as chromium, or even tackling peripheral health issues associated with metabolic syndrome, such as sleep quality."

### What untapped opportunities do you see in this innovation space?

"The sports nutrition and active lifestyle sector has been heavily targeted in the wake of ultraprocessed food vilification due to the fact that many of these products are based on sugar or a derivative. However, given daily physical activity and exercise has a major impact on alleviating metabolic syndrome, tying the two fields together is a relatively under-explored area in terms of new product development.

"Some brands have experimented by tying into the active lifestyle [or] performance keto products. such as supplementary ketones for use during exercise but this is very niche."

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## Bringing taste and texture to active nutrition

Tendra is a unique fava bean protein isolate that delivers taste, texture, and mouthfeel to a range of products. The company behind the innovation, Cosun Protein, demonstrated to attendees of Vitafoods Europe 2024 how the ingredient can help formulators in the active nutrition space transform their products.



Michiel Pronk Sales Manager Cosun Protein

Michiel Pronk, sales manager at Cosun Protein, spoke with Vitafoods Insights about the impressive properties of its fava bean protein isolate Tendra – from both a sensory and a formulation perspective – and how this innovation could help advance plantbased in the sports nutrition segment.

## Tell us a little bit about your Tendra product and what makes it unique?

"Tendra is a highly functional and taste-neutral plant-based protein, sourced from fava beans that are cultivated in Europe. We extract the protein using a proprietary processing method, and end up with a protein isolate that delivers not only on neutral taste and texture, but also offers high solubility and excellent emulsification properties."

## Why are taste and texture growing issues in active nutrition?

"The key reason is market growth. Plant-based sports nutrition has gained in popularity over the last couple of years, and consumers in general are increasingly incorporating plant-based protein sources. Adding protein to your diet is now mainstream – you only need to look at the number of products highlighting high protein content on supermarket shelves.



"So, this trend of mainstreaming protein has inevitably influenced the sports nutrition segment. You still get pure protein shakes targeted at serious athletes, but there is now a wider range of products, targeted at a wider range of consumers. And in order to reach these mainstream consumers, your products need to taste good."

## What have been the key challenges to tapping this potential market growth?

"We believe that the biggest limiting factor for reaching mainstream consumers in the active nutrition space is taste. A lot of plant-based protein shakes and other similar products simply don't taste good. We have also noticed that many plant proteins – because of their poor solubility – can lead to sensory defects in products such as graininess and a lack of smoothness.

"Furthermore, because plant proteins in general possess lower emulsifying and foaming functionality than milk proteins, this can also limit their effectiveness and therefore applicability in many active nutrition formulations."

#### What does Tendra offer this specific market segment?

"We really see ourselves as a viable third way for formulators. On the market today, you have your whey-based protein shakes, and then you have your traditional plant-based protein shakes, sourced from soy, pea and rice. We consider ourselves as being in the middle, offering something that is plant-based, but which is also much closer to being milk-based in terms of flavour, creamy sensation, things like that. And for formulators, it is important to note that Tendra also offers high solubility and excellent emulsification properties.

"Another thing to consider is that consumers are increasingly conscious of issues such as sustainability. Fava beans produce less  $CO^2$  per kilogramme of protein than other crops including wheat, pea, and soy. Fava beans are also one of the world's most powerful nitrogen fixers. Once they have flowered and produced beans, the plant releases nitrogen into the soil.

"We think that it is this combination of factors that makes Tendra unique. In addition, the fava bean, from which Tendra is sourced, contains a relatively high amount of lysine – adding fava bean to your diet can therefore improve your overall lysine intake."





## Holland & Barrett on its 'customer-first, science-first' R&D strategy



Holland & Barrett takes a co-ordinated approach to new product development, embracing new technologies and new ways of reaching consumers, from AI to TikTok, said Alex Glover, nutrition development lead for R&D at the retailer.

Holland & Barrett International is a leading health and wellness retailer and the largest in Europe, supplying its customers with a wide range of vitamins, minerals, health supplements, specialist foods, and natural beauty products. Alex Glover, nutrition development lead for R&D at Holland & Barrett, shared his insights into this fast-moving sector.

"Our approach is very much customer first, and science first," he said. "If there is a customer trend, then we want to react in a way that is evidence-based, and for our solutions to be informed by science. This is important for building trust. There is growing scepticism and hesitancy among consumers when it comes to health and wellness, and I think this is good."

Holland & Barrett has an entire team dedicated to trends and insights. New product development involves numerous teams working together, in order to take consumer insights and cutting-edge science from the concept board to the shelf. "We are constantly asking ourselves what problem we are trying to solve," said Glover. "Another important question is: how can we make it easy for consumers to implement this product in their life?"

## Tech in the health and wellness sector

The Summit touched upon the implementation of technology in the health and wellness sector. "Al [artificial intelligence] is certainly an interesting possibility," said Glover. "I'm not a part of the tech team, but I am aware that there are lots of ongoing initiatives into how we can leverage this technology in order to better translate science papers. It can be very easy to get drowned in science papers when you are trying to find answers."

Glover noted that Holland & Barrett has started conducting in-store blood testing. This is an example of how the implementation of technology can open up new avenues and services for consumers, and shows how businesses can move away from just being product-led businesses.

"A key question is always whether these technologies can add value or benefit," said Glover. "It is also important to note how they resonate with the customer, and what the benefit is for them."

#### **Engaging with consumers**

Glover noted that consumers want to be informed, and have access to far more information than ever before. A key challenge of course is that not all these sources of information are trustworthy. This underlines the importance of building trust, and being able to reach your target customer in a crowded field.

"There is so much information out there," said Glover. "We often see people receiving advice from so-called experts outside their sphere of expertise."

The challenge for businesses like Holland & Barrett, said Glover, is not only to champion evidence-based nutrition and science, but to create content that resonates with consumers. "You need to reach people through media that they understand," he said.

"This might be social media platforms such as Instagram and TikTok. Evidence-based science can still be funny and engaging, and some scientists are starting to do this, by tweeting their research, and not just publishing it in academic papers that consumers are not going to read. This is the biggest gap – the creation of bite-size content that is easily consumable and talks to consumers in a language they understand."



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## Huel takes a holistic approach to addressing evolving nutritional needs



Consumers want nutritional products that are ethical and have a minimal environmental impact – but they also expect convenience and taste. James Collier, from Huel, examined how companies in the fast-changing innovation space can meet these demands.

Huel is a leading innovator in the no-prep meal space, delivering products including powders, protein shakes and bars designed to meet the complete nutritional needs of consumers. The company's products are made from ingredients such as oats, rice protein, pea protein, and flax seed.

"We have a really good R&D department," said James Collier, co-founder and nutritionist at Huel. "This covers several different disciplines, including the technical team, NPD team and procurement team buying the ingredients, to a small blue-sky team looking at innovation. We try to keep ahead of the science in terms of continually improving the quality, texture, and flavour of our products."

Collier also highlighted exciting new ingredient innovations, such as the cellular agriculture space, and noted the importance of keeping on top of such developments. "The challenge here is cost," he said. "We want to support the amazing stuff that is going on, but of course we still need to be price competitive."

## Huel aims to use 'wholesome, nutritious' ingredients

The Huel concept originated from founder Julian Hearn, who, after a series of successful ventures, wanted to create something that had a positive impact on the world. "At the time, Julian was experimenting with diet plans," explained Collier. "He was finding the food prep side of things a pain except for one thing – protein shakes. This gave him the inspiration to try to put all nutrient needs in one shake."

Collier came on board as the nutritionist and, for one year, worked on developing the original recipe. "I'm sometimes slightly uncomfortable with being seen as being in the tech space," he said. "We are primarily about delivering wholesome, nutritious food. Our ingredients are either ground oats or flax seed, or extracted from whole foods, with naturally occurring or added vitamins."

#### Food trends come and go; the fundamentals of optimal nutrition remain

Since its launch in 2015, the company has grown quickly, overcoming the usual startup headaches and successfully securing seed funding. "We are still a relatively small company, with about 280 employees, or 'Hueligans' as we call them," said Collier. "As technology advances, and as consumer preferences change, the key thing is just to stay ahead."

Another important thing for companies in this innovation space to remember, said Collier, is the importance of prioritising good nutrition. Food trends come and go, but the fundamentals of delivering optimal nutrition remain.

"Food should be food, and we always want to make sure that we are providing optimal products for optimal health," he said. "A paper was recently published in *Frontiers of Nutrition* in 2022, which looked at key blood markers in subjects who consumed only Huel for four weeks. In addition, an independent research team is looking at the satiety effects of Huel products. And we are addressing some of the concerns about ultra-processed foods."

## Viewing food in a realistic way

Collier wants to encourage a different view of food. "People shouldn't be looking at food from a utopian perspective, but rather addressing all issues simultaneously in a realistic way," he said. "This means looking after their physical health, their performance if they are exercising, mental health issues and sustainable nutrition."

Other key issues include animal ethics and human rights. Huel is working with Tony's Chocolonely open supply chain, which aims to end modern slavery and the use of child labour in the cocoa industry.

"This is a form of innovation that shows want can be done to improve the conditions of others," said Collier.

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## Science is key to unlocking the female sports nutrition market

Demand for evidence-based sports nutrition products, developed specifically for female athletes, is growing. At Vitafoods Europe, Dr Susan Kleiner discussed how brands can tap into this market and meet consumer needs.



Dr Susan Kleiner Founder and Owner High Performance Nutrition

Founder and owner of the consultancy High Performance Nutrition, Dr Susan Kleiner has been blazing trails in the sports nutrition innovation space for decades, working with elite athletes to improve performance and connecting cutting-edge research with product development.

"I've been doing this for a while now, and I love it," she said. "I completed my PhD in 1987 when the practice of sports nutrition was still really being pioneered. My area of focus was nutrition and muscle, strength and power, and at that time, my research was conducted almost exclusively with men."

#### Where's the information?

In the 1990s, Kleiner began to familiarise herself with the world of bodybuilding, a fairly niche sport. She became aware that while largely dominated by men, women were also participating. Kleiner noted, however, a significant gap in available nutritional information for these women, as well as a lack of rigorous academic research.

In 1994, Kleiner moved to Washington State, where she became even more involved in female athletic nutritional needs. In the early 2000s, she began working with the Women's National Basketball Association team the Seattle Storm, as well as the local female soccer team, the Seattle Reign. In these areas of sports as well, Kleiner found a paucity of nutritional information specifically targeted at women and girls.

"There was just nothing," she said. "Any nutritional product out there that was targeted at women tended to be about being smaller and skinnier. The message was that women shouldn't have strength, power, speed, and endurance. My business partner at the time coined the term 'Pink it and Shrink it' as the key message coming out of the industry."

## The importance of communication

Since then, a key focus of Kleiner's work has been to raise the profile of female sports nutrition needs, and to communicate these needs to industry. Another important element has been to underline the importance of rigorous research into female sports nutrition, which to date has been lacking.

"I think in the last five years though, we have really seen an elevation of the science," she said. "Work that has been going on for years is finally being published, providing foundational guidance on how studies into female biology should be conducted. More women are getting involved in industry and decision-making positions. It is slowly starting to change."

## Why evidence-based data is so critical

At Vitafoods Europe, Kleiner touched upon her personal and professional journey, and looked at the untapped potential in the female sports nutrition market. Capitalising on this requires investment in evidence-based nutrition. "There is so much opportunity out there, but people need to put their money where their mouth is," she said. "They need to do the research."

One key area of focus, for example, is better understanding the menstrual cycle, and what happens to women's bodies as they move into the peri-menopausal and menopausal stages of life. Kleiner noted that the peaks and valleys of the hormonal cycle affect every system of the body.

"We need to speak with both elite athletes and active women," she said. "We need to find ways of helping them to understand their bodies, and deliver appropriate sources of energy. And to do this we need evidence-based studies and performance data. If a woman is looking for something to improve her training or performance, there is still very little out there that has evidence."

This, said Kleiner, should be seen as a golden opportunity. A focus on female performance-related research will give any brand a critical competitive advantage in tapping into this market.

"Talk to consumers, and find out what they need," she said. "Think about developing products that are easy and wholesome, but don't try to throw the kitchen sink into one product. One ingredient like creatine, for example, can be massively multifunctional. You couldn't have a more open template for creative design."



## Tapping the potential of seaweed to deliver sustainable nutrition

The cultivation of seaweed could help to sustainably feed a growing global population, replace fertilisers, and restore biodiversity to the oceans. At this year's Vitafoods Europe Future of Nutrition Summit, Vincent Doumeizel, senior advisor to the United Nations Global Compact, outlined the critical role that industry can play in helping make this a reality.



Vincent Doumeizel, Senior Advisor to the United Nations Global Compact

Conventional food systems alone simply cannot meet demand from a growing global population without causing irreparable environmental damage. Crop yields are not increasing sufficiently, while arable land is shrinking.

"We need to increase the performance of food production systems without continuing to contribute to climate change, water scarcity, biodiversity loss and social injustice," said Doumeizel. "It has been calculated that we will need to produce as much food over the next 50 years as has ever been produced by mankind over the past 12,000 years."

#### Looking to the ocean

Doumeizel began his career over 20 years ago in Africa, working for the French government to support international aid. He has since focused on tackling global hunger and dedicated his career to finding ways of improving food systems. In addition to his work at the UN Global Compact, Doumeizel is director of the food programme at Lloyd's Register Foundation.

"I realised that there is no solution on land – the only solution is to look to the ocean," he said. "Oceans cover 70% of the planet, yet contribute just 2% of our food. We need to build something regenerative here, and to do this we need to start at the foundations – plankton and seaweed."

Doumeizel noted that seaweed extracts are already widely used as flavourings, texturing agents, and gelling agents, and that they are packed with nutrients such as vitamin C, vitamin D, zinc, iodine, and protein. There are also lots of bioactive compounds still to be fully investigated.

"Seaweed also has huge potential for use in animal feed, designing new types of fertiliser, and making bio-plastics," he said. "It can help restore ocean biodiversity and sequester more carbon than any land forest. Some seaweeds can grow up to 40 cm a day, and up to 60 m high."

#### **Building a robust seaweed industry**

In order to fully tap this potential, stakeholders will need to work together to establish a robust and sustainable seaweed cultivation industry. How this can be achieved was a central element of Doumeizel's presentation at the Vitafoods Europe Future of Nutrition Summit 2024.

Doumeizel highlighted the fact that industry is a key driver of change. "If there is no demand for seaweed ingredients, then a viable industry simply won't emerge," he said. "We need to raise awareness, learn how to grow seaweed properly, and learn how to extract ingredients in a sustainable way. We need to avoid solvents and other chemicals. We need to support science."

#### Bringing seaweed stakeholders together

Doumeizel has already helped to foster interest from industry and policy makers – for example, through encouraging schemes to grow and harvest seaweed on offshore wind farms. The success of such actions led Doumeizel and his colleagues at the UN Global Compact to publish the Seaweed Manifesto. This call to action highlights many of the key benefits, market potential, and obstacles that must still be overcome.

Doumeizel is also currently heading up the Global Seaweed Coalition, hosted by the UN Global Compact and supported by a grant from Lloyd's Register Foundation. This is the first global platform of its kind to advocate for a strong seaweed industry.

"Anyone can join us, from small seaweed producers to major multinational manufacturers and everyone in between," said Doumeizel. "There is so much potential in the North and South Atlantic, around Australia, New Zealand, and South Africa, as well the Nordic countries, Canada and Greenland. There is also potential for some tropical seaweed activity around Indonesia and the Philippines, and Africa and India will be key players too."



## **Epigenetics is key to effective personalised nutrition**

Gene regulation by epigenetics could help to explain why we each respond to food differently. At Vitafoods Europe 2024, Dr Jordana Bell explained how new research results might feed into the design of personalised dietary interventions to improve cardio-metabolic health.



Dr Jordana Bell Associate Professor in Epigenomics King's College London

Epigenetics – the study of how our genetic background, behaviour, and environment can impact gene function – has become increasingly influential in the study of "lifestyle" health factors such as nutrition, exercise, and stress.

Current questions, for example, include the extent to which we can identify and even influence epigenetic variation, and what this might mean in terms of treating conditions such as agerelated cardio-metabolic disease. This group of common but often preventable conditions includes heart attack, stroke, diabetes, and non-alcoholic fatty liver disease.

## The influence of diet on the human epigenome

Bell is an associate professor in epigenomics at King's College London (KCL). "My research interests focus on the epigenome, or the biological mechanisms that regulate the function of our genes," she explained. "In particular, I study factors that trigger changes in our epigenome, and the relevance these epigenetic changes might hold for human health and disease."

Over the past five years, Bell's work has centred on characterising the influence of diet on the human epigenome, both in fasting and non-fasting states, and across different populations. She leads and participates in multiple international research consortia, notably the transnational DIMENSION consortium.

"The DIMENSION consortium is a collaboration of six academic research partners across Europe," said Bell. "The aim is to study how diet influences epigenetic regulation of gene function, and its impacts on subsequent cardio-metabolic health outcomes."

Diet is a major risk factor for cardio-metabolic health but can be challenging to study in part because metabolic response to diet is highly individualised. The consortium's research team has sought to determine whether food intake triggers changes at the molecular level. This might explain some of the inter-individual variation in metabolic response to diet.

## Individual metabolic responses to food

At Vitafoods Europe, Bell discussed DIMENSION's results exploring the human molecular trajectories that underlie the dynamic metabolic response to food, and their potential impact on cardio-metabolic health.

For example, the team looked at changes in regulation of gene function triggered in 255 European participants after having food. They identified that some of the key genes important for body metabolism responses differed between fasting and after having food.

"Our recent work explored how the human epigenome and gene function change in the period immediately before and after food intake," she explained. "Our results show clear epigenetic and functional genetic changes after food intake, where some signals also relate to cardio-metabolic disease risk factors. Therefore, dynamic changes in epigenetic regulation of gene function can capture some of the inter-individual variation in metabolic response to diet."

## Potential for personalised nutrition programmes

This research, Bell believes, has potential to advance personalised strategies for prevention of cardiometabolic disease, including the development of personalised nutrition programmes. The results might also be used to guide the design of diet interventions to improve cardio-metabolic health.

"Gene regulation by epigenetics is one biological mechanism that may explain some of the reasons why we each respond to food differently," she added. "Our results provide insights into why individuals may have different body responses after having food and chronic disease risks."

Bell's presentation at Vitafoods Europe was organised in collaboration with the European Society of Preventive Medicine (ESPM). An Oxford-based, not-for-profit organisation, the ESPM focuses on prevention, healthy ageing, and longevity science across the life course, working with multiple stakeholders at the intersection of basic research, clinical medicine, education, and public health policy.



## Meet the finalists and winners Vitafoods of the Vitafoods Europe 2024 Startup Innovation Challenge



## **Most Innovative Finished Nutraceutical Product**



#### Flavolife Srl



Flavolife Srl develops medical foods containing a patented and proprietary mix of flavonoids, which can help treat toxicity induced by chemo and radio therapies in cancer patients.

www.flavolife.com



#### ciscarex



Ciscarex develops a patented and trademarked novel vitamin called Vitamin A5; a dietary supplement that helps mediate important pathways within the nervous system.

ciscarex.com



### Circular Fiber



Circular Fiber produces The Fiber Bars, which are made using Karshof, upcycled artichoke-derived flour that is high in fiber.

www.circularfiber.it



### mandu-care GmbH



Mandu-care produces Moltea, a prebiotic one-shot drink that contains enzymatic-derived lactulose to help empower the gut and prevent constipation. www.moltea.de



### Nuhpro srls



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www.nuhpro.com



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www.rawga.co.kr





#### **Edonia**

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www.edonia.com



#### Avea Life

Avea Life develops a plant-based collagen precursor called Colgevity™ with three additional components (Calcium AKG, Astaxanthin, and vitamin C from Acerola cherry) to stimulate the body to produce its own collagen. avea-life.com





AVFA

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fermedics.com

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#### Gova

Gova develops natural, healthy white sugar that reduces cravings, has satiating properties, and does not spike blood sugar levels. gova.fi





## Most Innovative Service, Technology, or Digital Solution Supporting the **Nutraceutical Industry**

#### **Ani Biome**

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universal-omics.com



#### Gaston

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#### **Naeo Nutrition**

Naeo Nutrition creates smart supplement dispenser jars with subscriptionbased vitamin gummies, designed to remind consumers to take their supplements daily whilst fighting one-off packaging.

www.naeo.co.uk/pages/smart-jar





#### Reso Health Ltd.

Reso Health develops a proprietary vending technology that turns health data into personalised health products in real time, helping individuals achieve their wellbeing goals and sustain performance.

www.resohealth.com



## **Apex Compliance**

Apex Compliance addresses the need for accurate marketing in the nutritional sector through their Al-driven platform. This technology streamlines the compliance process, enabling companies to focus on product innovation and consumer health.

apexcomplianceprogram.com













### Most Innovative Service, Technology, or Digital Solution Supporting the Nutraceutical Industry



### Most Innovative Sustainable Solution - Jury's choice award





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## **Innovation Tours,** in co-operation with **NutriMarketing**





The Innovation Tours allowed visitors to easily discover new products and suppliers at Vitafoods Europe 2024.

The tours were led by industry experts from Nutrimarketing over the three days of the show.

The tours highlighted how key suppliers are responding to market trends.

### **Sports and Active Nutrition Innovation Tour**

With the Olympic Games being held in Paris this year, there is no doubt that sport and sport nutrition will be top of the agenda in 2024. People already associate sport with being healthy - according to FMCG Gurus, 59% of global consumers say the best way to measure their healthiness is via their level of fitness and physical activity – and this could well rise in 2024 thanks to the impact of the hugely influential Olympic Games. In any case, market figures show that the long-term potential of the sports and active nutrition market is looking bright. The market was valued at US\$ \$43.7 billion in 2023, according to Allied Market Research and it is expected to reach over US\$78bn by 2032, growing at a CAGR of 6.7% from 2023 to 2032.

#### This Innovation Tour featured products by the following Vitafoods Europe 2024 exhibitors:

- Ingood By Olga
- Cosun Protein
- PB Leiner
- Leiber
- Friesland Campina
- Lehvoss

- Gelita
- Fine Foods and Pharmaceuticals
- Activ'Inside
- Symrise
- ADM

### **Cognitive and Emotional Health Innovation Tour**

Nootropics, adaptogens, psychobiotics, and polyunsaturated fatty acids are just some of the main ingredients driving the trend for cognitive health and emotional wellbeing. With consumers making a link between their mental wellbeing and their overall health, demand for products with a mental health positioning is set to rise as the trend for holistic health gains traction. In fact, global sales of cognitive health supplements are expected to experience significant growth over the next 10 years, with a projected value of US\$16.8 billion by 2033, up from US\$ 9bn in 2023.

#### This Innovation Tour featured products by the following Vitafoods Europe 2024 exhibitors:

- PB Leiner
- Friesland Campina
- Glac Biotech
- IMCD
- Novastell
- Monteloeder

- Roelmi HPC
- Lubrizol
- Nektium
- Indena
- Shankar

#### Immune and Gut Health Innovation Tour

The legacy of the Covid-19 pandemic and a growing awareness of the link between the gut microbiome and immune health are the main reasons behind the rise in consumer interest in products with an immune and a gut health positioning. With an estimated 70 - 80% of immune cells residing in the gut, there is a very close link between the intestinal microbiome and the immune system. According to market research by FMCG Gurus, 53% of global consumers plan to address their immune health in the next 12 months and 49% are prioritising their digestive health.

#### This Innovation Tour featured products by the following Vitafoods Europe 2024 exhibitors:

- Paradise Fruits Health
- Kemin
- Glac Biotech
- Bionap
- Vidya Berkem

- Laboratoires
- Lehvoss
- Activ'Inside
- Ainia
- Symrise

#### Healthy Ageing and Metabolic Health Innovation Tour

Europe has one of the highest life expectancies on Earth but many people do not remain in good health in their senior years. Improving the healthspan – not just the lifespan – is therefore the new priority. It is not just about living longer but about improving the quality of life throughout old age. For many people, food and diet are the most intuitive ways to achieve this healthy ageing goal. According to Innova Market Insights, one-third of consumers globally say that weight management and a balanced diet are the most important levers for healthy ageing.

## This Innovation Tour featured products by the following Vitafoods Europe 2024 exhibitors:

IngrediaNutribio

• Dr Paul Lohmann

- Monteloeder
- Aroma NZ
- Mibelle

- Rousselot
- Vaneeghen
- Circul Egg
- Nexira
- Puredia

#### **Sustainability Innovation Tour**

Almost half (49%) of global consumers say they have changed their diet in the past two years to adopt a more sustainable lifestyle, according to FMCG Gurus research. People are interested in the footprint of the products they buy and on-pack sustainability claims, such as organic and carbon neutral, have huge appeal. However, consumers are also looking further down the supply chain for farm-to-fork sustainability, questioning how their products are made and asking brands to support greener farming methods, such as regenerative and biodynamic agriculture.

## This Innovation Tour featured products by the following Vitafoods Europe 2024 exhibitors:

- Marinova
- Alvinesa Natural Ingredients
- Roelmi
- Elementa
- Lonza

- Layn Natural ingredients
- Large Lucas Health Ingredients
- Jbichem
- Nexira
- Ainia



## VFI Webinar Calendar

The Vitafoods Insights Webinar Series covers key nutraceutical market topics, offering attendees the opportunity to get up to speed on market trends, consumer insights, and ingredient innovations to create effective formulations.

Our editorial webinars feature live discussions and Q&A with industry experts. The sessions will cover case studies, market reports, consumer research, regulatory updates, sourcing tips, technology breakthroughs, and relevant startups.





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