

FEATURE

Eating with purpose: When taste is no longer enough

By Fernando Moncado Rivera

Functional foods open the door for innovation in a market that thought it had it all figured out.

It is the start of a stressful workday, but global superstar Jennifer Lopez is feeling relaxed as she chews her ashwaghandha gummies, takes a deep breath and chants “zennnn Jennn” as emails stream in and the phone rings off the hook.

The singer and actress recently appeared in a TV commercial promoting the gummies made from the evergreen shrub, which is supposed to contain properties that promote relaxation. She is the latest celebrity to endorse a product in the functional

food sector. Tennis player Novak Djokovic also recently backed functional food startup Waterdrop, a maker of micro-based water drinks, as an angel investor.

Functional foods are clearly having a moment. What you can get from food nowadays isn't limited to what you see on the nutritional facts label. A growing category of edible products is being designed to go far beyond being one of your five-a-day. These functional foods – which bring an “x-factor” to the table – have shown potential for strong growth and differentiation in a highly mature sector.

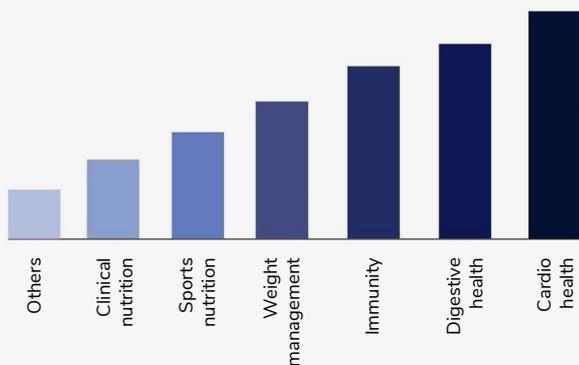
The past several years have seen a surge in demand for functional foods as consumers are more health-conscious post pandemic. People are also more aware of concepts such as adaptogens (foods that help balance the body and reduce stress), superfoods (high-nutrient ingredients), nootropics (improving cognitive functions), and other physical and cognitive-enhancing ingredients. They are not only sought after more than in the past but have also opened an avenue for brands to charge more and find growth in areas that may have become overly saturated, especially as large brands cede ground on innovation.

Functional foods themselves are not new. Possibly the most famous functional food brand in the world, Red Bull, is now better known for its extreme sports marketing and its dominance in motorsports. What is new is the growth of a sub-niche that claims to make the functional food sector healthier.

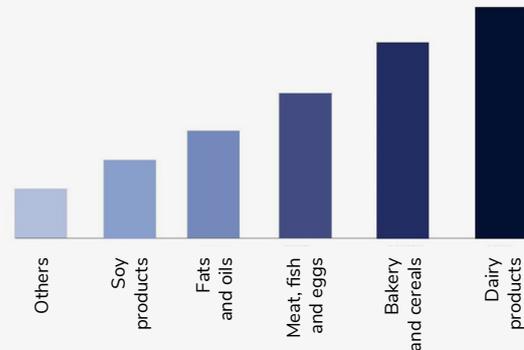
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DASHBOARD

Functional food market share, by application, 2020 (%)



Functional food market share, by product, 2020 (%)



Source: Precedence Research

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“[In the past] you had healthy products that were healthy, but a bit boring. Sometimes the zero-sugar variant was all you saw in the health space within certain brands. And then on the functional side a lot of that market was really unhealthy actually – high sugar, high caffeine – especially in the energy space,” says Nathan Clemes, CEO of Unrooted Drinks, which produces a range of functional shots, mostly based around the nutrient-rich baobab fruit.

While improving energy levels was the dominant functional trait 10 years ago, there is now a more sophisticated understanding of what energy is and what it can be used for, according to Clemes. Different ingredients will provide different kinds of energy – long-duration, short bursts, physical energy, energy to concentrate – and that more nuanced understanding is also extending into other functions like gut health and stress management.



People want to perform better at work, they want to be fitter physically, and they want to emulate the lifestyles they see on social media. These trends, according to Danny Lowe, CEO of functional chewing gum company Blockhead, are opening the door for food producers.

“Do you want to sort of wake up and brew a coffee and sort of stand around there for 15 minutes drinking that? Or do you want to take a ginger shot and just knock it back and you’re done within 30 seconds? And by the way, this is much better for you and it delivers that same energy uplift,” says Clemes.

Defining function

Differences in how to define functional foods also complicate looking at the market size worldwide. Technically, you could argue that something like a spirulina powder supplement would count as a functional food, but some would leave it out because it is meant to be added to something else to enhance it rather than be a self-contained beneficial product in a familiar format.

These discrepancies may also account for differences in how growth is projected for the sector, and even how big the market is now. Precedence Research and Grand View Research clock the market size at \$305.4bn and \$280.7bn in 2022 and 2021, respectively. Mordor Intelligence has the figure at \$186bn for 2023.

The past decade has seen more and more startups founded on a functional offering, many of which have come into prominence since the pandemic.

For Blockhead the scope has since also expanded far into other functionality like vitamins and CBD for calming and stress management.

Chewing gum, in addition to being a convenient and ubiquitous format, also has the advantage of being used for a type of function already. People have already been using gum for decades. It’s not too far of a leap for consumers to accept that it could bring some other functionality as well.

For a company like Moment, which produces soft drinks with a range of adaptogenic benefits, trends including the generational changes in the understanding of what is healthy – fruits are still high in sugar, for example, which is increasingly recognised as a negative ingredient – and changing attitudes towards alcohol consumption are opening space for a new kind of drink to boost health and get you in an energised mental space, according to CEO Aisha Chottani.

In the highly competitive market for soft drinks functional products are the most important source of growth today, according to Euromonitor. While water and traditional fizzy beverages remain the workhorse and profit centre of the industry, energy drinks or electrolyte-enhanced drinks are a large source of innovation, with brands delving deeper into other functionality like digestive health, relaxation and focus.

Vetting

From an investor’s point of view, due diligence for functional foods is much the same as it is for any other sector – investors need to vet the credibility of the management team, commercial plans, finances, and track record. What sets it apart, though, is the need to also vet the unique proposition of the product. Functional food products tend to sound novel enough – caffeinated chocolate or energising gummies – but then how do you convince your intended customer base that they work in the first place?

“The functional foods space is only recently emerging and consumers are not fully familiar with all the propositions on the market. While it does present challenges to educate consumers, we also see this as an opportunity to establish – from the beginning – science-backed, informative and engaging dialogue with consumers to help them navigate this up-and-coming market,” says Lukasz Garbowski, investment director at Btomorrow Ventures, the corporate venturing arm of BAT.

“But this is a challenge, and part of our diligence process is to make sure that the product delivers as promised, and equally important, complies with the relevant health and regulatory standards.”

For startups, getting onto the shelves in the first place goes a long way to assuage consumer nerves. A big chain putting its imprimatur on your functional snack is a strong green light for shoppers.

“There’s a reason why there are not loads of brand new [functional] products going into big retailers because the retailer is incredibly rigorous in terms of your claims and your benefits and your functions and all that sort of thing. These products are becoming more and more mainstream and going through that rigour. I think has provided even more kind of confidence in general buying patterns,” says Lowe.

A good story can also come in handy. Unrooted Drinks bases a lot of its marketing on the 10,000-year legacy and versatility of the baobab fruit, which has been used for its purported energy, gut health and adaptogenic uses since time immemorial. When it came time to get investors on board, questions of efficacy were largely settled – though still an important part of due diligence. What small brands, in particular, have to show is consumer uptake and the potential for future growth

Risks remain

Burgeoning markets are not without risks. For functional foods, these can include consumer perception that not all products on the market will deliver on their selling point. The threat of

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competitors sully the sector's reputation is still something that brands need to watch out for. Stories in the news about CBD products in stores ending up containing none of the natural substance of the cannabis plant when tested, will have knock-on effects on the wider sector.

Where startups may not have the adequate knowledge or resources to scale up is where investors – especially the ones with the backing of a large corporate – can step in to help.

"I think from the corporate side of things, what's been brilliant is that they understand the market in which you're acting, so you don't need to spend time necessarily explaining the market, how it works, and, for us in particular, around retailers and things along those lines. They kind of get that immediately, so you can go straight to the crux of the matter," says Lowe. ●

INVESTOR AND STARTUP VIEWS



Lukasz Garbowski
Investment director
Btomorrow Ventures

The functional foods space is only recently emerging and consumers are not fully familiar with all the propositions on the market. While it does present challenges to educate consumers, we also see this as an opportunity to establish – from the beginning – science-backed, informative and engaging dialogue with consumers to help them navigate this up-and-coming market.



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Global Corporate Venturing

Address: PO Box 77202, London, SW17 1HJ

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A 2021 recipient of
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Founder: **James Mawson**
jmawson@globalventuring.com

Editor: **Majja Palmer**
mpalmer@globalventuring.com

Deputy editor: **Kim Moore**
kmoore@globalventuring.com

Analytics: **Kaloyan Andonov**
kandonov@globalventuring.com

Global University Venturing: **Thierry Heles**
theles@globaluniversityventuring.com

Managing director: **James Gunnell**
jgunnell@globalventuring.com

Head of partnerships and engagement:
Charlie Hayward chayward@globalventuring.com

Senior reporter: **Fernando Moncada Rivera**
fmoncदारivera@globalventuring.com

Reporter: **Roshini Bains**
rbains@globalventuring.com

Designer: **Poonum Chauhan**
poonum@ilovemoon.co.uk

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Agni

Agni

Based: US

Founded: 2019

Funding to date: N/A

Agni is a US startup that uses Indian ayurvedic treatments and Chinese medicines to develop foods and teas aimed at supporting women's reproductive health.

By also hiring a medical advisory board, the startup has developed medically reliable gluten free, non-GMO foods, which contribute to a sustainable supply chain. Its products include The Pregnancy Box, which contains holistic foods such as ginger cardamom tea and oatmeal chocolate chip cookies.

The company was founded in 2019 by Miram Cruz, chief operations officer, and Astrid Schanz-Garbassi, chief executive. Schanz-Garbassi co-founded US-based keto-friendly nutrition company Phi Nutrition and was a director of member experience at Stride Health for two years. The startup raised \$2.5m in a pre-seed round in 2021. Venture capital firm Greycroft led the round.



AuroraFood

Based: Singapore

Founded: 2019

Funding to date: N/A

AuroraFood is a Singapore-based developer of bioactive compounds which are added to cereals and berries. The compounds slow the action of the digestive enzymes in the intestines, which allows for sugars and starches to become more digestible.

The University of Singapore spinout provides diabetic-friendly food choices without compromising on sugar cravings and taste.

The spinout was founded in 2019 by Jing Gao, chief executive, and Xiaoxuan Jin, chief technology officer. Jin served two years as a researcher at COFCO Corporation Nutrition and Health Research Institute. Gao acquired a doctorate in food oral processing.

AuroraFood's funding is undisclosed, but it did close a seed funding round in 2020. The startup is backed by the China-based venture capital and accelerator firm Brinc.



Awake Chocolate

Based: Canada

Founded: 2012

Funding to date: \$3.7m

Awake Chocolate is a Canada-based producer of caffeine-infused milk chocolates that act as an alternative to energy drinks and coffee. The chocolates are made by combining chocolate and caffeine without artificial colours or flavours and include no gluten or trans fats.

The startup aims to provide a sweet snacking alternative which removes the bitter taste associated with caffeine but also promotes a healthier and relaxing lifestyle.

Matt Schnarr, chief customer officer; Dan Tzotzi, managing partner; and Adam Deremo, chief executive, founded Awake Chocolate in 2012. Deremo and Schnarr both worked at Pepsico.

Awake Chocolate closed a \$3.7m in a series A round led by BAT's CVC, Btomorrow Ventures. Brandproject, a Canada-based, early-stage venture fund also provided financing.



BuffX

Based: China

Founded: 2014

Funding to date: \$10.1m

China-based BuffX is the producer of gummy supplements targeted at Gen Z people in China. Its products target a variety of markets, such as haircare, digestion, liver health and eyecare.

The startup's bestseller, BuffX Sleep, a jelly sugar that contains gamma-aminobutyric acid, a chemical produced in the brain, which helps to aid sleep without comprising on taste. The BuffX supplements are mainly available online, with some products sold in pharmacies.

BuffX achieved \$922,000 in sales after the first two months of its launch.

BuffX has raised \$10.1m in funding. Investors include Sequoia, GGV and Black Ant. Its last funding occurred in 2021, when it raised \$8.7m in a series A round led by GGV, with participation from BA Capital.

NOURISHED

Nourished

Based: UK

Founded: 2018

Funding to date: \$13.5m

Nourished produces personalised gummies through 3D printing technology. The UK-based startup uses a science-backed questionnaire and algorithm, which makes recommendations of seven vitamins, super foods and nutrients that are best suited to consumers' lifestyles.

Nourished was founded by Melissa Snover, chief executive, in 2018. Snover worked in the food and gummy sector for 13 years. For four years she owned Goody Good Stuff, UK developer of vegetarian gummies. She was also managing director of The Magic Candy Factory, considered the world's first 3D printer for gummy candy.

Recently it raised \$2.5m in a seed funding round, which saw participation from Henkel X Ventures, the CVC of German chemicals producer Henkel. Other corporate investors include Colorcon Ventures, the subsidiary of UK-based biochemical supplier Colorcon.



Ozers

Based: France

Founded: 2021

Funding to date: \$927k

French foodtech startup Ozers specialises in plant-based sports nutrition products. Its products include energy bars, powders and shakes. The products contain microalgae.

Microalgae is thought to enhance athletes' endurance whilst also containing antioxidants and anti-inflammatory properties.

Former freelance boxer Maxence Damarey, food trend follower Oliver Dahan, and algae functional ingredient experts Alwyn Severien and Gaëtan Gohin founded Ozers in 2021. Damarey was a research and development e-commerce logistics intern at US sports equipment provider Decathlon before he became a freelance personal trainer and professional fighter.

Ozers has raised more than \$927,000. The company's investors include ProVeg Incubator, gaming software conglomerate Animoca Brands, and venture firms bpiFrance and Brinc.



Myair

Based: Israel

Founded: 2019

Funding to date: \$6m

Myair invents snacks to calm us down

By Roshini Bains

The Israel-based startup has created nutrition bars aimed at reducing stress and a smartwatch app that tracks stress levels.

What is the biggest growing silent killer in the world? Disease? Famine? Wrong.

In fact, chronic stress is slowly being considered one of the fastest-growing causes of death. The American Institute of Stress says that 120,000 people die every year due to work-related stress alone.

But it is unlikely to be listed as a cause of death because of its association with other serious health complications, such as cardiac arrest, cancer and suicide. To address the problem, the food market has begun experimenting with functional ingredients to help alleviate and manage stress symptoms.

Grand View Research reports the functional foods market is expected to reach \$586bn by 2030.

Myair is a startup that claims to have found the link between functional foods and stress management. The Israel-based company has developed plant-based nutrition bars that are formulated to combat cognitive and physiological responses to stress.

The bars include adaptogens, natural substances that help the body adapt to stress, in this case ingredients like passionflower and ginseng. These connect with receptors of the central nervous system to counteract the effects of stress. They help calm the body down, and reduces anxiety, promoting better sleep and sharpening focus, the company says.

Alongside the nutrition bars, Myair has created an app that tracks users' stress and provides insights, personal metrics and recommendations on what bars and other actions are needed to improve stress levels.

Rachel Yarcony, co-founder and chief executive, describes how



her experience at work led her to launch Myair. “I worked for Nestle and fell in love with the food industry,” she says. “I was the CEO of a division that sold junk food and then moved to work for Teva Pharmaceuticals.

“I started to suffer from stress. I couldn’t sleep at night and wanted to find a solution that did not come from drugs.”

Yarcony wanted to use a common human habit that would help alleviate stress. “It is difficult to create a new habit or behavioral change, especially with stress. The best way to create a new habit is to attach it to an old one that you love – and one habit we all love as humans is food.

“So, why not take food as a tool for behavioural change, to manage nutrition and personalise health management? That’s when Myair popped into my head,” Yarcony says.

The startup’s combination of functional foods and software is what makes it stand out from its competitors, she says. “We know functional molecules can affect our mood. So, based on that research, we created the nutrition bars, which we hope to infuse into beverages, cookies and healthy granola in the future.”

Users gain personalised insights based on the physiological and psychological data they put into the app. Generative AI allows users to gain data from a mind cognitive questionnaire.

Yarcony co-founded Myair in 2019 with Dovev Goldstein, chief product officer, and Yarcony. Dovev has 17 years of experience in the startup sector. He founded several businesses, including Vonetize, an Israeli, multi-channel TV platform, which listed on the Tel Aviv Stock Exchange in 2016, at a \$4.3m valuation.

Another notable functional food startup is Hey Frida, a producer of healthy snacks containing low glycemic compounds to support people with type 2 diabetes. The US startup received funding from Miami-based accelerator Pareto Holdings.

“People understand now more than ever how important taking care of themselves is. It is essential to everything, which means the food sector can certainly not crash,” Yarcony says.

Are functional foods a fairytale?

But the functional food sector faces a credibility problem. Everyday Health News reports many companies with no formal Food and Drug Administration approval claim their products are functional foods.

Ingredients in some of these food products have not been rigorously tested to prove functionality. Phrases such as “added adaptogens that relieve stress” are considered vague and misleading.

Examples of functional food startups that have inflated their potential include Juicero, a Silicon Valley-based seller of packaged diced fruits and a \$400m machine that squeezes the contents of fruits into a cup. Juicero was forced to shut down in 2017 after failing to build a profitable business.

So, can we trust what functional foods say on the package?

Yarcony says that consumers should place their trust in functional food startups as long as they have strong research to back up their claims.

“I am a sceptic myself and I believe you should never claim something that you didn’t research prior,” she says. “This is

why it was important for Myair to conduct so many research formulations of our technology. It is on us to make sure everything we say is research based to prove we can tackle stress effectively.”

Corporate backers and guidance

Myair has raised \$6m. Its last seed round was in 2021. Entree Capital, an Israel-based venture firm, led the round. Other Investors include Tel Aviv University’s venture capital firm TAU Ventures, Plug and Play, and Elah Fund.

Yarcony says the funding has been used to scale AI technology and increase market research in stress functional food properties. “There are two sides to our technology: the formulation and the personalisation of the AI, which we developed through our funding,” she says.

“Everything we offer to the consumer is very science based, which is why we rely on our funding so our research can be thorough,” says Yarcony.

Myair has no corporate investors because the team felt that these entities would be better suited in later funding rounds. “We did not want corporate investors in our seed round because we wanted our product to be at its best before we pitch it to these companies who can make a real difference to how our technology is made and distributed,” she says.

Despite the lack of corporate investment, Myair obtained partnerships with conglomerates such as Garmin, a US-based technology company.

“We did a lot of research with Garmin around smartwatches and they openly acknowledged the solutions that we provided. So, this partnership has been important because we built our research first before forming into great partners,” says Yarcony. ●





Peak Mood Drinks

Based: UK
Founded: 2020
Funding to date: \$2.7m

UK-based Peak Mood Drinks has created mood enhancing beverages that aim to improve key brain function. The all-natural sparkling drink is infused with nootropics and adaptogens, which are believed to raise serotonin levels in the brain, leaving consumers feeling calm and relaxed.

The startup also specialises in coffee-based and cannabis-infused beverages.

Louis Syred and Ben Whales founded Peak Mood Drinks in 2020 to help boost mental wellbeing through functional foods. Syred was the creative director for three years at Naked Leaf, a UK-based CBD product supplier. Whales spent eight years at the luxury experience company GoodWood Group as a finance business partner and management accountant.

Peak Mood Drinks is valued at \$2.7m. Syred and Whales built their own network of private investors and advisors, who remain undisclosed.



Perkii

Based: Australia
Founded: 2016
Funding to date: \$4m

Australia-based Perkii produces a targeted release probiotic drink that controls stomach acids that harm living gut probiotics. The University of Queensland spinout manufacturers still and sparkling probiotic drinks, which are made with encapsulation technology that allow probiotics to survive the harsh stomach acid conditions to reach the gut.

Perkii's drinks are sold across 2,000 stores in Australia and New Zealand. They are made from natural fruit flavours that are low in calories.

The company was founded by Cameron Turner, co-creator; University of Queensland professor Bhesh Bhandari; and Anthony Davie, chief executive. Perkii raised \$3m in an equity round led by Uniseed, the Australia-based commercialisation fund, in 2018. It also received \$1m investment from Advanced Queensland Business Development Fund, Uniquet and Brisbane Angels.



Three Spirit Drinks

Based: UK
Founded: 2018
Funding to date: \$4.4m

Three Spirit Drinks is a UK-based maker of non-alcoholic functional drinks that contain social elixirs, liveners or nightcaps. They are filled with adaptogens and nootropics to alter mood. Made with natural, plant-based ingredients, the beverage formula is designed to enhance mood.

Tatiana Mercer, Meeta Gournay and Dash Lilley founded the startup in 2018. Lilley also serves as the head of products at Three Drinks Spirit. Gournay worked as an advisor for four years at Homer, a US-based kids learning platform. Mercer was the founder of BarChick, a bar recommendations platform.

The company has raised \$4.4m. It recently closed a \$3m series A round in 2021. The round was led by Circle Growth Partners, a packaged goods investment fund of the US financial technology company CircleUp.



Tru

Based: US
Founded: 2015
Funding to date: N/A

Tru is a startup that makes functional beverages, which are designed to improve energy and focus whilst also providing refreshment. The company's shots, drinks and tablets are infused with electrolytes and antioxidants.

The startup's aim is to produce an affordable, widely available drinks that remove many of the sugars that are commonly used in energy drinks.

The US-based startup was founded in 2015 by former professional hockey player and Jack McNamara and Yashwardhan Banthia, chief operating officer. McNamara, CEO, founded other beverage businesses, such as Kickstick, a US-based startup that targets the liquor industry.

In 2023 Tru closed a \$6.5m series A round led by Btomorrow Ventures, the CVC of UK-based cigarette company BAT. Other corporations that participated include US-based soft drink manufacturer Polar Beverages.



Waterdrop

Based: Austria
Founded: 2016
Funding to date: \$65.6m

Waterdrop is an Austrian maker of water-based microdrinks that claim to promote wellness, rejuvenation and hydration. Its product is a compressed small cube made from sugar-free raw materials that enrich the water with fruit and plant extracts that contain vitamins.

The startup aims to hydrate consumers whilst lowering carbon footprints through its 'Lucy Smart Cap' reusable bottles.

Founded in 2016 by Martin Donald Murray, chief executive, Waterdrop has since attracted the attention of celebrities and athletes, including tennis player Novak Djokovic, who participated as an angel investor.

The company has raised \$65.6m. Its most recent financing was in 2022 when it raised \$70m in a series B round led by Temasek. Other investors include Bitburger Ventures, the CVC of Germany-based Bitburger Brewery.



WUG Functional Gums

Based: Spain
Founded: 2014
Funding to date: N/A

WUG Functional Gums produces a chewing gum comprised of caffeine, ginseng and guarana. The company claims its gum increase concentration and resistance whilst reducing fatigue in less than five minutes. The Spain-based startup has also created a no-added sugar, gluten- and lactose-free chewing gum, which are vegan and keto friendly.

WUG Functional Gums was launched in 2014 by fitness and running fanatic Jose Luis Rojano Jorge. Jorge previously worked as a telecommunications engineer and area manager at Televes, a Spain-based telecommunications equipment provider.

The startup's total funding and investors are undisclosed. WUG Functional Gums has partnered with several football organisations to promote its functional gums. The football organisations include Catalan Football Federation, which agreed to hand out free samples of WUG's gum.

The term functional food can be difficult to define. Broadly speaking, it refers to any food and beverage items that claim to contain additives beneficial to people’s health. This can be done by adding new ingredients or increasing already existing ones.



Most food items claim to have some benefit for human health, so there is an inherent problem in defining the market and its size. Estimates differ notably.

The [Market Data Forecast](#) report puts the global market size at \$177bn as of 2022, with expectations that it will grow to \$276bn by the end of 2028. This implies a compound annual growth rate (CAGR) of 6.7% between 2023 and 2028.

[Grand View Research](#), has a higher estimate putting world market for functional food at \$281bn in 2021 with expectations of it expanding by a CAGR of 8.5% through to 2030. The rising demand for nutritional and fortifying food additives is expected to propel market growth over the forecast period.

[Precedence Research](#) ups the ante even higher by valuing the global functional food market at \$305bn as of 2022 and forecasting it to reach around \$597bn by 2032, implying a CAGR of 6.93%.

Clearly, measuring methodologies and definitions of what constitutes functional food vary greatly among analysts. What they all seem to agree on, however, is that the functional food

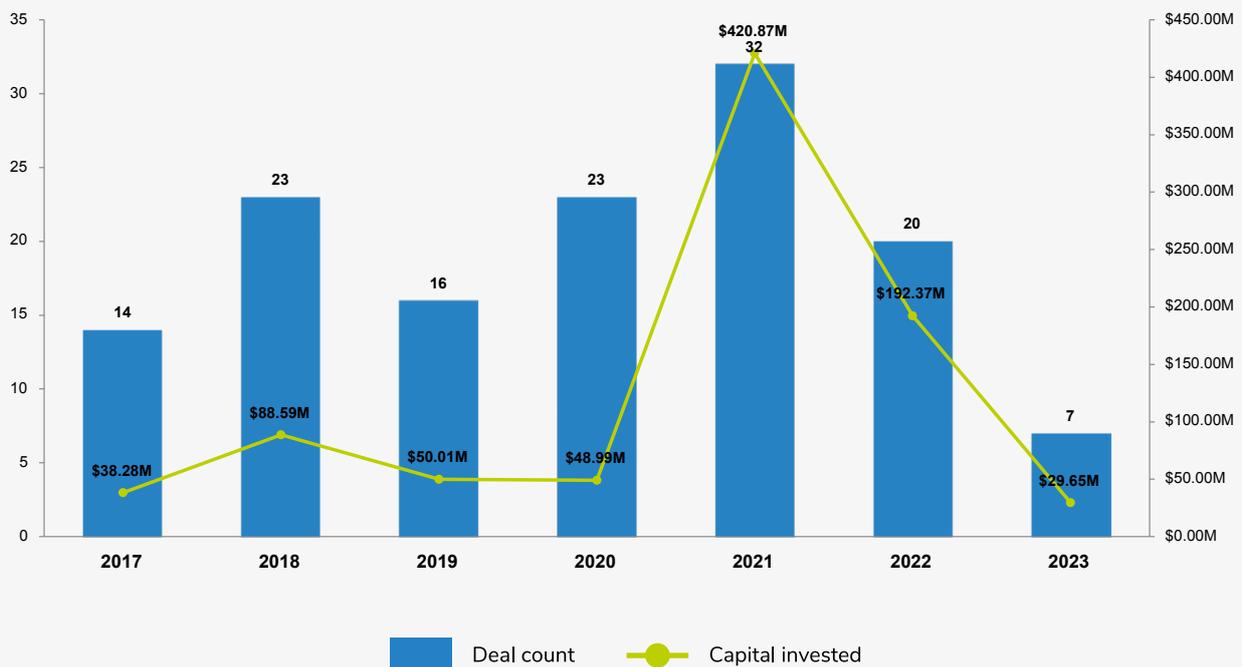
market is a multibillion global market with healthy high single-digit expected growth rates.

We tried to narrow the working definition of “functional food” as much as possible when looking at VC deals in that space. We have excluded cannabis and CBD-related products from this analysis as this is a separate market in its own right, and, being much bigger than the rest of the still nascent functional edibles area, would overshadow and obscure our analysis of it.

When looking at deal numbers and values, we have focused here mainly on drinks, sweets and gums. As this is a very new area, the number of relevant deals we have found on PitchBook’s database has been relatively modest. We counted 134 deals since 2017, with a peak in 2021. Total estimated dollar value of such deals — like deals in many sectors — similarly peaked in 2021 and have declined since.

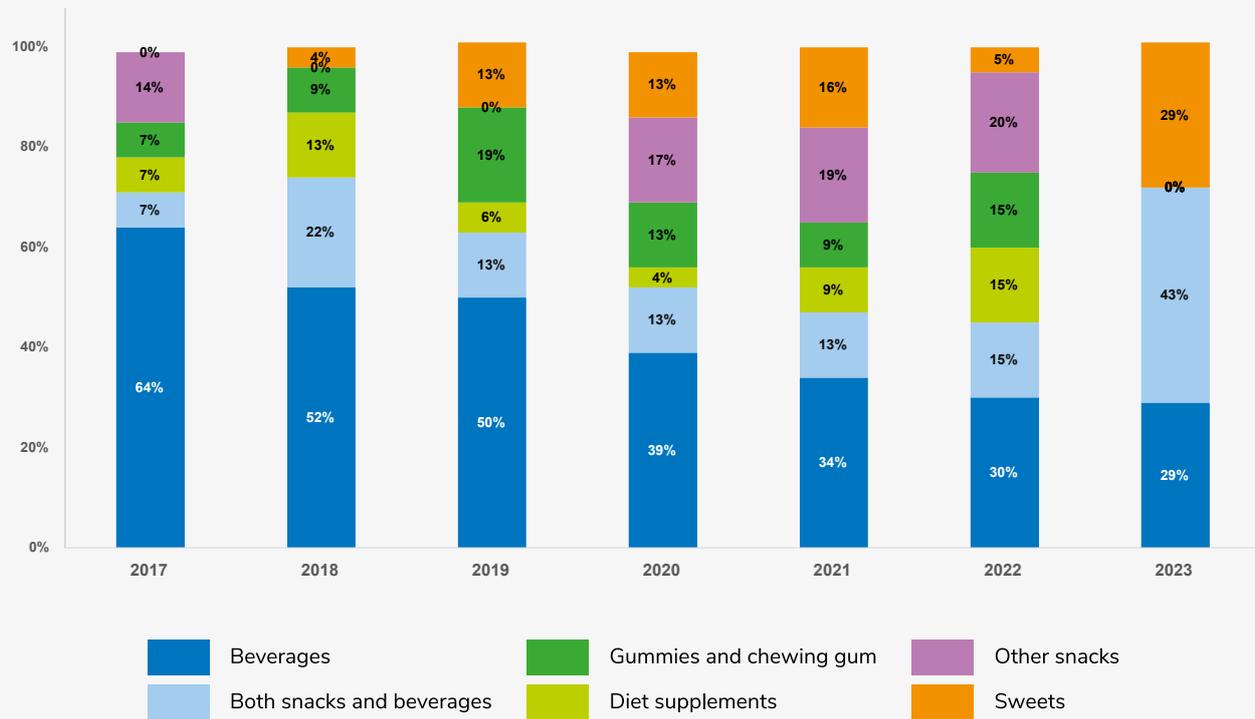
The majority of functional food VC deals have been in beverages, though their relative share has been declining since 2017 and giving way to startups developing diet supplements, sweets and other snacks.

VC-backed functional food deals 2017–2023



Source: PitchBook

Functional food deals by category (%)



Source: PitchBook

Functional drinks startups raised some of the largest funding rounds, like the \$68m series B round by water-based beverages producer Waterdrop. Waterdrop makes cubes of concentrated fruit and plant extracts that can be added to water, and it has received backing from Germany-based venture firm Simon Capital alongside tennis player Novak Đoković and Singapore’s sovereign wealth fund Temasek.

Given functional foods is a fairly nascent market, most of the startup funding deals we have seen are for early-stage rounds, although we have seen some trending towards later-stage deals this year and last year. Median deal sizes and median valuations in this area are also low with some spikes notably this year. However, given the very small sample size, these should be treated with some caution.

Btomorrow Ventures, the corporate venturing arm of BAT, has been the top investor in our narrowly defined functional food category along with other corporate peers like SnackFutures Ventures – venturing arm of food producer Mondelez, and eighteen 94 Capital, the venturing unit of cereal maker Kellogg’s, among others.¹

Other CVCs were relatively less active in this space but often invested in the same startups, Henkel Tech Ventures and ADM Ventures, for example, co-invested in \$11m series A round raised by Nourished. Nourished is the developer of patented 3D technology to create personalised vitamin-induced gummies.

Geographically, most of the VC-backed functional food deals have taken place in the US and the UK.

Fear, perception and consumer behaviour

Consumer perception plays a big role in the demand for functional foods. Consumer attitudes, subjective norms, perceived behavioural control and health consciousness contributed

significantly to purchase intention towards dietary supplements, according to a recent [study](#).

Heightened concerns about health, caused by the Covid-19 pandemic, may be contributing to growing interest in functional food. There were several documented cases of panic buying of dietary supplements during the pandemic.

This behaviour translates across to functional food, say experts from [Precedence Research](#). The primary motivations for people buying function foods, according to the report, are cardio and digestive health, improving immunity and weight management. Their estimated relative market shares surpass significantly other uses like sport and clinical nutrition.

Demand side

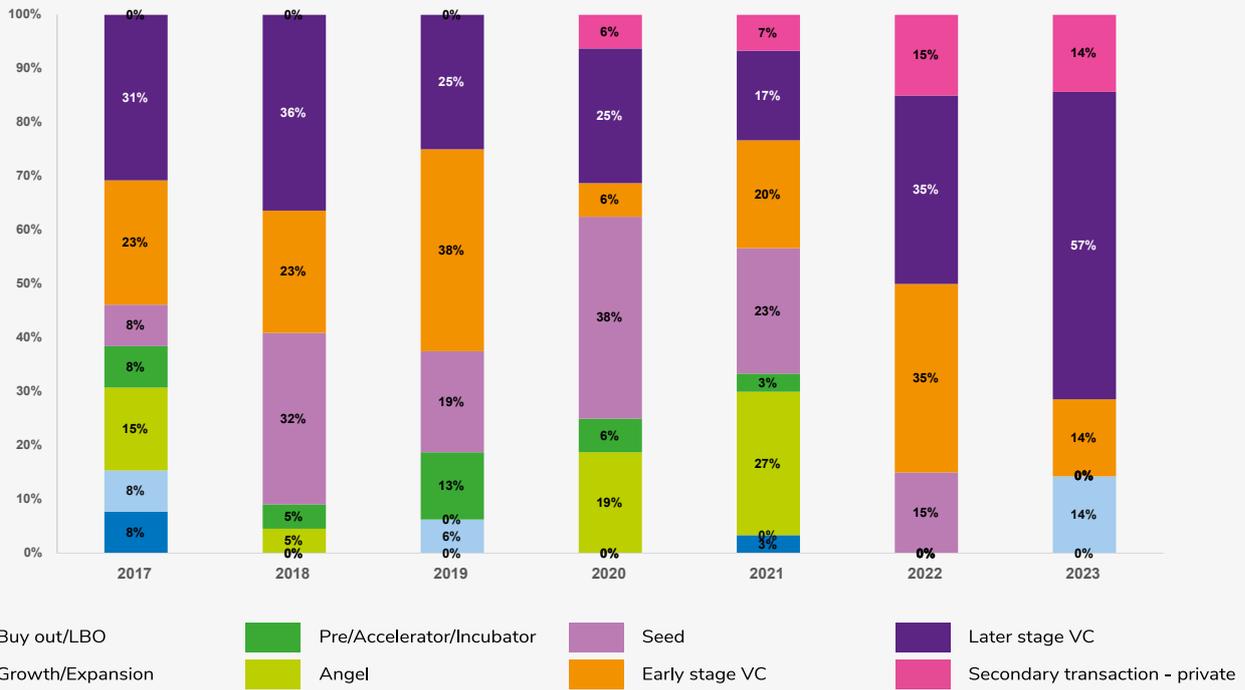
Increased consumer awareness of health benefits and hectic lifestyles are the major driving force behind the demand for nutrient-rich food in the US and across the globe. The Grand View Research report notes that this has to do in part with ageing populations in developed markets that are striving to maintaining good health and avoid rising medical costs. It is the growing interest in the connection between well-being and healthier eating that is fuelling demand for functional foods.

However, the trend is by no means limited to developed economies only. The Asia Pacific region was pointed as the largest market for functional food in the year 2022 by the [Precedence Research](#). The market growth of functional food in the region has been enabled by rising disposable incomes, alongside a burgeoning population ever so concerned with fitness and health, while consuming a higher proportion of processed food.

The functional foods market is growing also due to increased research and development for new, healthy food and drink options. Consumer goods companies today are developing

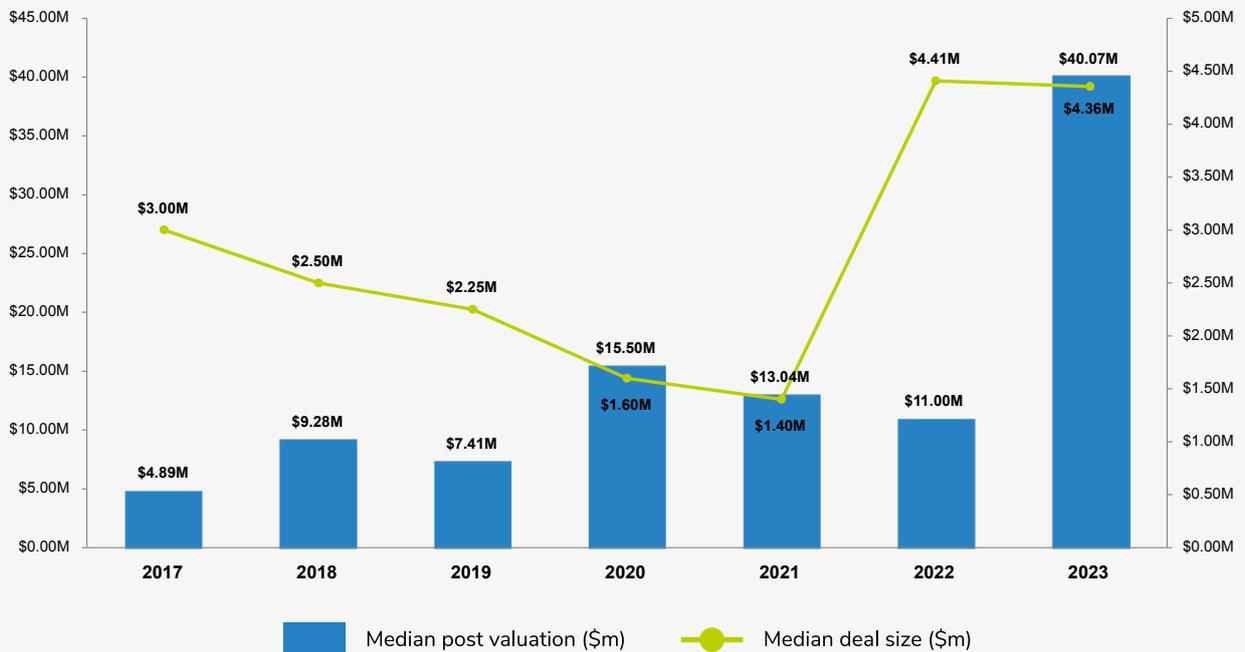
¹ Please note that our analysis only includes deals available on PitchBook and excludes potential follow-on investments that syndicates may have made without publicising them. 9

Functional food deals by stage (%)



Source: PitchBook

Functional food deals by stage (%)



Source: PitchBook

nutrition bars and various functional snacks (chocolates, candies, chewings gums etc.) to cater not only to fitness enthusiasts but also to a broader consumer base increasingly looking for convenient nutrition. This explains the growing global demand for functional meals.

Supply side

On the supply side, developments in food technology are making functional foods easier to produce. Functional food manufacturers

make use of technologies such as vacuum impregnation, encapsulation (especially in probiotics) and edible coating.

This is also evident in VC deals. Earlier this year Tyson Ventures, the venturing arm of meat producer Tyson, backed the \$85m series E round of Myco Technologies. The company uses mycelium from mushrooms as a way enhance the flavours and nutritional values of a variety of foods. For example, they can suppress bitter, metallic, sour and astringent flavours in food and drink.

Other more common nutritional additives used by the food industry include fibres, omega-3 fatty acids, vitamins, minerals, etc.

The Coca-Cola Company's Vitaminwater, for example, [introduced](#) two new soft drink options in 2021: 'Look,' with blueberry hibiscus flavour, and 'Gutsy,' with watermelon and peach flavours, enriched with vitamins.

Yoghurt producer Danone, which has been making gut-friendly drinkable Activia yoghurts for some time, [introduced](#) a new version last year, with added zinc as well as vitamins C, D, and E to boost immune system health.

The fact that established brands are repositioning their products in this way is a sign of growing influence that the functional food idea is having on the industry.

Taste hurdle

By far the most significant commercialisation hurdle for any functional food items is taste. Functional ingredients don't always inherently taste so good, so flavouring is a key to the sales success of functional food, notes [Nutritional Outlook](#) magazine.

Consumers strongly associate certain flavours like citrus, ginger, lavender, and mint with well-being, says Brittany Lisanti, a project manager at International Flavors and Fragrances (IFF), cited by Nutritional Outlook. What is more, flavours appear to be also moving to more natural profiles, with non-GMO, organic and sustainability certifications.

The same is true for colourants (also known as colour additives). About a third of consumers dislike foods and drinks with new and experimental colours because such colours are perceived as unnatural, found a survey by [FMCG Gurus](#).

Products and ingredient insights

Dairy products dominated the global functional food market in 2022, when it comes to revenues, followed by bakery and cereals, according to Precedence Research. The bakery and cereals segment was projected to grow at a CAGR of nearly 8%, driven by demand for fortified snacks and cereal bars, such as nutrition, energy and protein bars.

Today, the most common functional ingredients in foods are omega-3 in fish oils, probiotics in yogurts and dietary fibre. The former is used to reduce risks of cardiovascular diseases, while the latter two are meant to enhance the intestinal flora and lower cholesterol and regulate blood sugar, among other things.

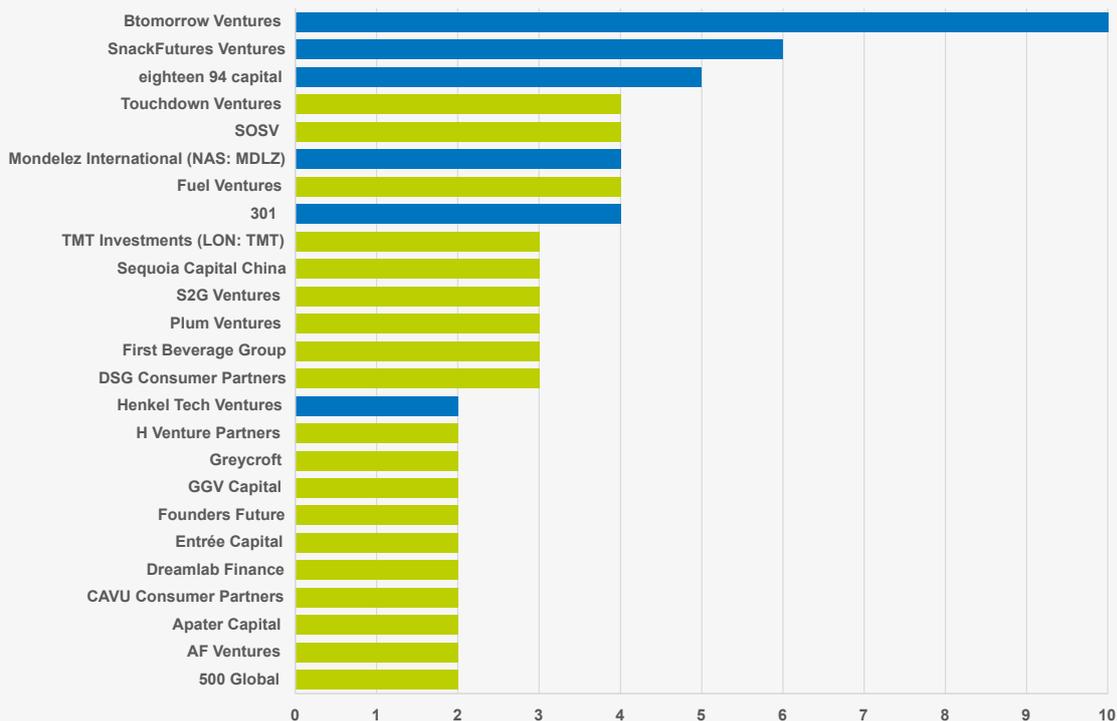
Aside from omega-3 and probiotics, other major ingredients segments within functional food include dietary fibres, vitamin-enhanced foods and carotenoids.

Dietary fibre is naturally found in fruits, vegetables, whole grains and legumes and it is most often commonly associated with relieving constipation. Its health benefits also extend to cholesterol reduction, blood sugar control, maintaining a healthy body weight and reducing risk of coronary disease and diabetes. It is the combination of all these benefits that are likely to drive demand for dietary fibre, according to Grand View Research.

Common dietary habits in the developed world tend to leave people deficient in fibre. Children and adults require anywhere from 25 to 35 grams of fibre per day to maintain good health, but most Americans get only about 15 grams a day, according to [Harvard's School of Public Health](#).

Vitamin-fortified foods are a rapidly growing segment of the functional food market. This segment is anticipated to grow at an estimated CAGR of 9.7%, says Grand View Research. Functional

Top investors in functional food deals (2017-2023)



Source: PitchBook

ingredients from this segment include vitamin A (retinols and other), vitamin B (folic acid), vitamin C (ascorbic acid) and vitamin D (cholecalciferol).

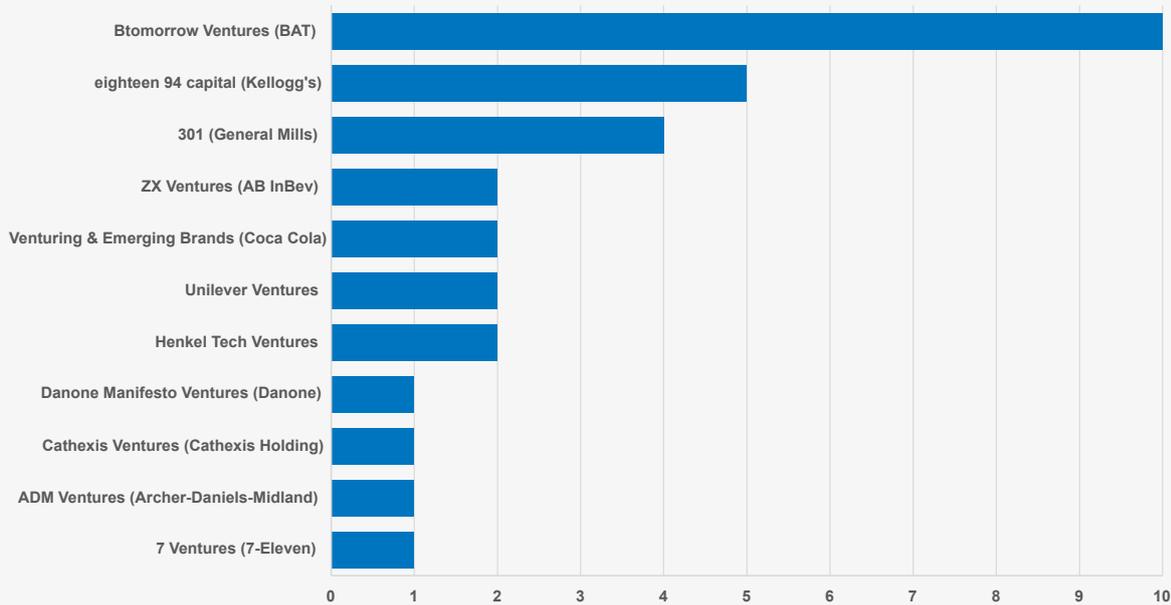
The demand for vitamin-based functional foods has increased due to heightened consumer interest in dietary supplements for preventive healthcare purposes and general increased health awareness.

Carotenoids constitute another ingredient segment which is expected to grow at 7.2% from 2022 to 2030, according to Grand View Research. Carotenoids refer to any of a class of mainly yellow, orange, or red fat-soluble pigments, including

carotene, which give colour to plant parts such as ripe tomatoes and autumn leaves. There is also [scientific evidence](#) suggesting their consumption can play a part in reducing the risk of eye disorders, cancer and diabetes.

Carotenoids are also extremely flexible, as they are found in foods as sources of vitamin A, natural colours, antioxidants and health-promoting substances, says a recent [scientific paper](#) from the Journal of Food Bioactives, outlining their uses and applications. Carotenoids come in a variety of forms in the market, including lutein, beta-carotene, lycopene, astaxanthin, zeaxanthin, canthaxanthin and annatto. ●

Top corporate investors in functional food deals (2017–2023)



Source: PitchBook

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