

Ingredients for health & wellbeing: Innovations, trends and R&D advances



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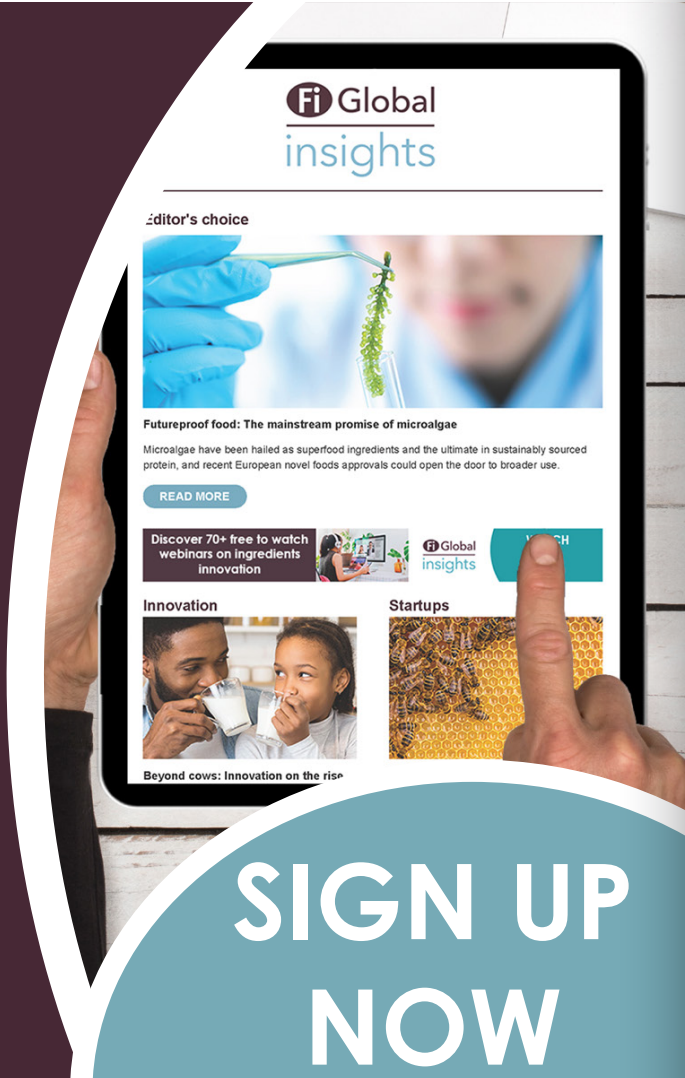
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The evolving nutrient landscape

The nutrient palette is forever evolving with new compounds, new botanicals, new blends, and new delivery platforms. Some research and development (R&D) happens in the lab, some of it happens in commercial food kitchens, some of it in the field, some of it in the minds of nutrition and food scientists.

A century ago, few outside the academic inner circle of Polish biochemist Dr Casimir Funk really knew what vitamins or minerals were. Today, we have an ever-widening range, including phosphatidylserine (PS), eicosapentaenoic acid (EPA), Coenzyme Q10, L-carnitine, creatine, adaptogens, *Lactobacillus reuteri*, neo-agaro-oligosaccharides, astaxanthin, cannabidiol (CBD), collagen, L-tyrosine, vitamin K, lion's mane, melatonin, L-theanine, methylsulfonylmethane (MSM), ketone esters and palmitoylethanolamide.

One hundred years is a long time in nutrient evolution.

In 2022, it is novel and green – but not greenwashed – nutrients that often make or break a start-up or any new product in the nutraceutical sector.

A health ingredient can breathe new life into an old range, renovating it and bringing it to a new audience, taking into account the health and nutrition preferences of demographics from Centennials to Boomers.

Cognitive health

Let's start at the top – of the body at least – the brain.

Interest in cognitive health is high with recent FMCG Gurus data showing 38% of respondents globally planned to address brain health issues in the coming 12 months.¹ Regionally, that number is highest in the Asia Pacific at 44% and lowest in Europe at 34%.

Nutritional interventions from ginseng and echinacea to magnesium, B vitamins and phosphatidylserine (PS) are winning exposure for their ability to battle ailments like depression, dementia as well as optimising brain function in areas from visual memory to mental fatigue.

This turn to brain nutrition is evidenced by a global nootropics market worth \$10 billion in 2021 and set to triple to \$30bn by 2028 according to Grand View Research – that's annual growth of 15%.²

A 2020 International Food Information Council (IFIC) survey found one third of health benefit-seeking US consumers looked for memory, focus and cognition benefits from the food and drink they buy.³



FMCG Gurus revealed 48% of those it polled globally were interested in 'mental wellbeing' with 'sleep health' at 32%. About 36% 'looked to improve mental sharpness and awareness' over the past two years.

"The value chain starts in the mind of the consumer – more so now than ever before," said Peter Wennström, founder of the Healthy Marketing Team, in a 2022 report⁴ which tracked the rise of mental wellbeing as a crucial nutrition outcome, leading to what HMT called, "the third phase of health".

(The first phase being the introduction of physical health-focused functional foods in the 1990s; the second seeing the more recent rise in concern for planetary health coupled with physical wellbeing.)

Wellness in an unwell world

The emphasis on mental wellness can be seen as a reaction to rising anxiety levels among the planet's population of 7.98 billion humans provoked by the Covid-19 pandemic, the climate emergency, rising geopolitical tension and wars, political polarisation and increased violence, inequality, work-based and societal alienation and even an increasingly mechanised and Artificial Intelligence-driven world.

A 2021 Lancet study⁵ found 60% of young people were very or extremely worried about the future.

Additionally, a Natural Marketing Institute (NMI) survey of US citizens in October 2020 found 40% were suffering negative emotional impacts provoked by the pandemic and its restrictions on life.⁶

In this climate, nutrients that can aid brain function and mood are gaining powerful traction.

"The focus in 2022 and beyond is going to be synergistic food blends and their multiple health benefits with immunity and mental support in the leading seat," wrote Wennström.

David Faulkner, associate director at Mintel Food and Drink, observed in a recent presentation,

"Consumers increasingly look for holistic wellness solutions that address both mind and body."⁷

More specifically, research is linking multiple nutrients to benefits like brain development, better memory and recall, motor skill development, spatial awareness, better sleep, greater calm, and better decision making.

Nootropic claim-making can even extend to increased confidence, better organisation, mental clarity, verbal accuracy, creativity, attention, working memory, cognitive processing, executive functioning, problem solving, decision making and less mental fatigue, brain fog and chances of developing dementia.



Brain health nutrition in focus

In this space, New Zealand startup Ārepa offers a patented blackcurrant extract, pine bark extract and L-theanine based 'nootropic brain drink' that claims it is 'for mental clarity'.

It also has cognitive function-promoting supplements and powders.

On its website's science section⁸, the company outlines its view of the nootropic space: "We knew when we started we would be met with scepticism due to people being falsely marketed to over the years from multinational companies selling caffeine and sugar as the ideal solution to peak cognitive performance."

The firm has a clinical trial underway at the University of Auckland's School of Psychology assessing neurocognitive performance and brainwave activity via EEG brainwave analysis for acute and chronic consumption of Ārepa.

Koios in Colorado previously marketed itself as "Rocket fuel for your brain and body" but has pivoted to a more scientific proposition and calmer statements like: "Boost your day and your mind with high-quality drinks and supplements."

It claims its blends possessing around 2,000 mg of bioactives can, "increase attention, mental capacity, memory, and cognition" and it references "clinical brain scans" that demonstrate its efficacy in provoking brain activity.⁹

Koios' formulations include lion's mane mushrooms (*Hericium erinaceus*) along with green tea, the choline Alpha-GPC, phosphatidylserine, amino acids L-theanine and L-tyrosine, the adaptogen ciwujia, electrolytes and medium chain triglycerides (MCTs).

Complex blends are becoming a feature of the category.

UK-based Opti-Nutra's MindLabPro¹⁰ is a prime example with an extensive nootropic ingredient list that includes:

- Organic lion's mane mushroom (500 mg)
- N-Acetyl L-tyrosine (175 mg)
- PS from sunflower lecithin (100 mg)
- Maritime pine bark extract (75 mg)
- Vitamin B6 (2.5 mg)
- Vitamin B12 (7.5 mcg)
- Citicoline (250 mg)
- Bacopa monnieri (150 mg)
- L-theanine (100 mg)
- Rhodiola rosea (50 mg)
- Vitamin B9 (100 mcg)
- NutriCaps® tapioca capsule

South Korean firm Amorepacific has gained a patent for a more concentrated cognitive decline-battling blend containing green tea extracts gallic catechin gallate (GCG) and epigallocatechin gallate (EGCG).¹¹

Psychobiotics – probiotics that exploit the gut-brain axis and deliver brain health benefits – are also gaining popularity, with Pennsylvania-based NMI finding 63% of respondents in a 2020 US poll would take probiotics if they were proven to improve mood.¹²



Getting the drift? The challenge of delivering a 'feel-the-benefit' effect

'If they were proven' speaks to a challenge faced by probiotics and many other nutrients: research findings simply do not always translate into regulator-backed claims, which can create trust gaps among bands of consumers.

New Nutrition Business (NNB) editor and consultant Julian Mellentin has cautioned that the 'Mood & Mind' space remains *"tricky...ultra-high risk"*.¹³

Pepsi's nootropic relaxation drink, Driftwell, featuring 200 mg of L-theanine and 40 mg of magnesium in a 213 ml can demonstrates consumers are not saying yes to every nootropic offering – even from Big Soda.

Launched at the end of 2020, Pepsi is winding Driftwell back – discontinuing sales on its bespoke website¹⁴ and posting nothing on Instagram for four months, although the brand told us the drink remained on-sale in select locations.

"The challenge of delivering a product that both tastes good and delivers a feel-the-benefit effect, and is convenient, has been a major barrier to success in this category," said Mellentin.

"If you choose ingredients such as cordyceps mushrooms or tulsī, you have a major challenge of low consumer familiarity."

The best science-backed brain health nutrients

Not suffering from a lack of familiarity are caffeine and carbohydrates. These are also probably the stand-out brain health nutrients from a supported science and claims standpoint.

Carbohydrates have an EU-backed claim that the simple sugars, "contribute to the maintenance of normal brain function".

The European Food Safety Authority (EFSA) in 2015 approved four caffeine health claims including *"Caffeine helps to increase alertness"* and *"Caffeine helps to improve concentration"*.

Like the US Food and Drug Administration (FDA), EFSA found no safety concerns at levels of 400 mg per day for adults, less for other groups.

However, concerns held by many of the European Parliament's 705 members over how such claims might be utilised, especially in the marketing of energy drinks to under-18s, means the EFSA-approved claims remain in EU regulatory limbo.¹⁵

That hasn't stopped caffeine from becoming a near staple in sports nutrition products for its stimulatory properties among a cross-section of athletic pursuits, not to mention the wider nootropic category.



Phosphatidylserine (PS) has some support with FDA-backed but heavily qualified health claims around dementia and cognitive dysfunction in the elderly.

Food Standards Australia New Zealand (FSANZ) in 2020 agreed submissions from IFF Health (formerly Frutarom Health) and Enzymotec that soy-based PS forms could, “maintain and/or improve cognitive function and brain health.”

However, no PS claims are as yet permitted in the EU.

Better performing in the EU are B vitamins with biotin (B7), folate (B9), niacin (B3), thiamine (B1), pantothenic acid (B5), cobalamin (B12), pyridoxine (B6) and vitamin B12 – all are approved to claim support for “neurological and psychological functions”.¹⁶

Vitamin C, magnesium, iodine, iron, zinc and omega-3 EPA can make similar claims – even humble water has a brain health claim.¹⁷

Similar kinds of structure/function claims are available in the US.

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Digestive health (and beyond)

More and more people are tuning into what nutrition can do for digestive health – and how the gut can affect other parts of the body like immune function, the brain, the skin, heart health, vaginal health, inflammation, immune function, blood. Hence terminology like the gut-brain axis and gut-skin axis, or even calling the gut the body's second brain.

According to FMCG Gurus, 56% of people globally plan to address digestive health in the next 12 months. This is highest in Latin America at 63% and lowest in Europe at 53%.¹⁸

The NMI found in a 2021 survey that 76% of Americans agreed, "gut health is important to the health of the whole body" – up from 68% in 2020.¹⁹

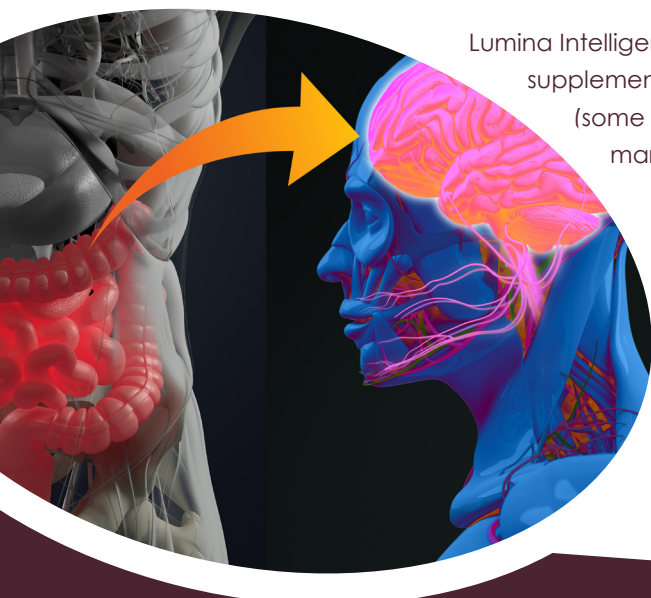
In the same survey, the proportion of US consumers self-managing digestive issues rose from 23% in 2018 to 37% in 2020 to 51% in 2021. While some of this self-management is medical or lifestyle oriented, nutrition is also an increasingly significant tool.

Three out of four consumers concerned with preventing digestive issues sought out foods and drinks that could also bolster immune function. One in four sought out supplements to support their digestive health, the NMI poll revealed.

Despite rarely possessing claims outside of a handful of countries like Brazil, Japan, Switzerland and Canada, prebiotics, probiotics, postbiotics and synbiotics dominate the digestive health space, boosted by the gut microbiome's push beyond its research base to a genuinely broader public awareness that is partially driven by mainstream media attention.²⁰

Type #microbiome into Instagram and peruse 550,000+ posts. Youtube is awash with microbiome education content, much of it with reference to prebiotics and probiotics, and sometimes extending beyond the gut microbiome to the skin microbiome or the vaginal microbiome.

Chicago-based market analyst SPINS recorded 6% prebiotic and probiotic growth over the past 12 months via Amazon.²¹



Lumina Intelligence data shows that 72% of about 3,000 occasions probiotic supplements are sold online in 25 countries include digestive health marketing (some of these occasions being the same product sold in different markets).²²

Fermented foods like kefir, kombucha and probiotic-fortified spoonable and drinkable probiotic yoghurts are in this mix.

So are newer formats like fortified hard seltzers and waters, snacks like crisps along with gummies, powders and other supplement formats.

Prebiotic forms include:

- β -Glucan
- Fructo-oligosaccharides (FOS)
- Inulin
- Galacto-oligosaccharides (GOS)
- Polydextrose
- Lactulose
- Human milk oligosaccharides (HMOS)
- Resistant starch (RS)
- Xylo-oligosaccharides (XOS)



Women's health

In the women's health space, probiotic-based formulations are gaining traction in areas like vaginal health and skin health.

Increasing numbers of studies are showing the ability of probiotic strains like *Lactobacillus reuteri* to reduce the impacts of ailments like bacterial vaginitis and vaginosis that can affect 10% to 30% of women in developed world nations, and 50% in regions like sub-Saharan Africa.²³

Probiotic researchers like Dr Gregor Reid, professor of surgery and microbiology and immunology at Western University in London, Ontario, assert that vaginosis and vaginitis are not in fact diseases but vaginal microflora dysbiosis involving an overgrowth of *Gardnerella vaginalis* and therefore appropriate for prebiotic and probiotic oral or vaginal intervention – not just medical prescriptions.

"Studies have shown that several probiotics, including oral *Lactobacillus acidophilus*, intravaginal *L. acidophilus*, *L. rhamnosus* GR-1, and *L. fermentum* RC-14, can increase the number of vaginal lactobacilli and return the vaginal microbiome to normal," said a 2021 review published in the *Journal of the American Academy of Physician Associates (JAAPA)*.²⁴

Other probiotics that have proved effective in this area include *L. reuteri* RC-14 and *L. paracasei* F-19. Products like Optibac 'For Women Probiotics' claim to be, "specifically researched and scientifically proven to reach the vagina alive where it supports the vagina and urinary tract".²⁵

Pre-natal and post-natal nutrition

Prebiotics and probiotics have an established position in supplements and formulas for pregnant and breastfeeding women, again strengthened by microbiome research including the maternal microbiome and baby microbiome.

"Patent activity shows a drive towards mimicking the maternal microbiota, the collective microorganisms in the mother's body - at sites such as the gut or breastmilk," said Mintel patent analyst in Food & Drink/Beauty & Personal Care, Parimaladevi Palanisamy in a recent maternal nutrition patent insights report.²⁶

A recent study, for example, found, "Bifidobacterium breve UCC2003 modulates maternal body adaptations, placental structure and nutrient transporter capacity, with implications for foetal metabolism and growth."²⁷

Omega-3 form DHA (docosahexaenoic acid) is another well-backed pre-natal and post-natal nutrient for foetus and infant brain development at levels of 450 mg/day, according to EU-authorized health claims.²⁸

The strength of this kind of science – along with nerve and eye development – is enough to see DHA become a near-staple nutrient in infant formulas across the globe.

In 2019, the EU mandated DHA in both infant formula and follow-on formula at a level of between 20 mg and 50 mg per 100 kcal (about 0.5-1% of fatty acids).²⁹

Prebiotics like human milk oligosaccharides (HMOs), the third most voluminous component of human milk, are gaining in importance.

A 2021 review of HMO effects on the infant gut microbiota found, "HMOs don't merely affect infants, but also have an influence on adults",³⁰ for instance, by increasing Bifidobacterium and Actinobacteria levels.

Calcium, magnesium, iron, iodine folic acid (vitamin B9) and vitamin C and vitamin D remain essential components of pre-natal and post-natal supplements to reduce the chances of birth defects, strengthen immune function and more, and are commonly recommended by governments around the world during pregnancy.



Skin nutrition

FMCG Gurus data showed 32% of respondents (including men) aimed to address their skin health in the coming year, much higher at 39% in Latin America.³¹

Nutricosmetics have been performing well with the likes of collagen, methylsulfonylmethane (MSM) and other mostly skin-focused nutrients including probiotics and botanicals like green tea.

A 2020 consumer poll conducted by the Ingredient Transparency Center (ITC) in the US, Germany and the UK showed skin, hair and nail health were by far the most commonly sought collagen health benefit (43%) followed by joint health (22%) and bone health (21%).³² Almost 90% had heard of collagen and 30% were extremely or very familiar with it.

Trials have shown doses between 5-10 g collagen are effective in wrinkle reduction, improving hair, reducing collagen fragmentation and improving skin hydration to name a few specific benefits.³³

But few authorised health claims exist as for most skin health nutrients, leaving many products in a regulatory grey zone, especially when product marketing crosses over into the often more lax cosmetics regulatory landscape.



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Sports and e-gaming nutrition

Sports nutrition, always a big part of the nutrition world, has expanded with the rapid rise of e-sports and electronic gaming.

What's more, not all gamers are Y Gen kids, Millennials and Centennials – according to the Entertainment Software Association, the average American gamer is 33 years old, evenly split between male and female, and 31% are themselves parents.³⁴

To improve their performance, e-gamers are consuming functional drinks like Bang, Gamer Fuel, A Shot of Genius, Amino Energy, GFuel and A-Shoc.

Gamers are big sharers of nutritional information and creative builders of what are known among gamers as 'nutrition stacks'. Nutrition stacks are basically combinations of supplements and nutrients that gamers stack together in the endless search for the most beneficial performance-enhancing formulations.

Those that deliver go quickly viral within enormous, global gaming communities on social media platforms, messaging apps and in-game comms.

These can include nutrients as diverse as energy drink staples like B vitamins, glucuronolactone, caffeine and taurine along with omega-3s, amino acids, vitamins and minerals and botanical extracts like lutein and Panax ginseng.

Other bespoke nutrition stack favourites include MCTs, L-theanine, creatine, L-glutamine, ginkgo biloba, CoQ10, zeaxanthin, citicoline, L-Tyrosine, guayusa, PS, pine bark extract and rhodiola.

With these nutrients gamers hope to gain benefits like:

- Heightened concentration
- Boosted short term memory
- Improving reflex and reaction time
- Faster thinking and learning
- Reduced physical pain and anxiety
- More energy
- Superior vision including eye tracking
- Depth perception
- Colour dissemination
- Visual memory

But the area is clearly still emerging, with a 2020 FMCG Gurus poll of European gamers who played at least 15 hours per week finding only about one in four regularly took food supplements and other nutritional products to improve their gaming experience.³⁵

About three quarters said they would be willing to use supplements to protect their vision and 65% said they would be willing to use supplements to improve performance.



Physical sports

In physical world sports – what some call the ‘meatspace’ as opposed to cyberspace – caffeine and carbohydrates remain prominent in a field with many nutrients including ketone esters, B vitamins, L-carnitine, creatine, guarana, whey, amino acids and more.

In the EU, EFSA has backed two sports-relevant caffeine claims that, like the caffeine-cognition claims mentioned above, have not made law books due to a European Parliament veto over marketing concerns.³⁶ The claims are:

- *“Caffeine contributes to an increase in endurance performance”*
- *“Caffeine contributes to an increase in endurance capacity”*

Protein forms like whey have become staples of muscle building formulas despite similarly suffering EFSA claim rejections, as have the likes of branched chain amino acids (BCAAs) and creatine and caffeine in pre-workout blends.

Creatine, in particular, benefits from EU-approved claims that it can increase, “physical performance during short-term, high intensity, repeated exercise bouts”.³⁷

Patent watch

As summarised by Mintel, a Nektium Pharma patent links a blend of *Cyperus esculentus* (chufa, also known as tiger nut), mangiferin (or norathyriol, its metabolite), mango leaf extract, honey bush tea or coffee leaf extracts with enhanced sports performance and brain activity by enhancing alertness, attention, concentration and memory without the known drawbacks of caffeine.³⁸

Nutrition 21 LLC has a patent for inositol-stabilised arginine silicate complexes and free inositol for improving cognitive function in video gamers.³⁹

Clutch Cognition has a patent application for a blend of sage, green oat and ginseng root extracts and L-theanine targeting mental activities such as e-sports or chess.⁴⁰

In more regular sports, Laila Impex has a patent for mango extracts plus combinations of *Acacia nilotica*, *Cassia auriculata*, *Sphaeranthus indicus*, *Punica granatum* and *Rubia cordifolia*, as a natural energy enhancer and booster of muscle strength, muscle mass and mental alertness.⁴¹

Immunity

It has become necessary to speak of the immunity market in two terms: pre-Covid-19 and post-Covid-19.

Nutrients like vitamin C, vitamin D, zinc, prebiotics, probiotics, melatonin, echinacea and black elderberry have all been significantly boosted by the pandemic driving people to seek self-care options around immunity.

According to a 2021 ITC survey of US, UK and German prebiotic supplement users, immune function is now the number one reason US citizens consume prebiotics, surpassing gut health for the first time.⁴²

A 2021 systematic review of 58 mostly randomised controlled trials involving prebiotics, synbiotics and short-chain fatty acids (SCFAs) found prebiotics and synbiotics were associated with reduced incidence of respiratory tract infections (RTIs) compared to placebo, especially in infants and children, with weaker evidence in adults.⁴³ Doses ranged from 2.5 g to 50 g/day, mostly of FOS and GOS.

In the US, Nutrition Business Journal found immunity-focused food supplements surged 51.2% to \$5.2bn in 2020.⁴⁴

The entire US supplements market added a record \$7.08bn to reach \$56bn in 2020 – about three times its regular annual growth in the past five years, as Covid-19 drove consumers to supplements linked to better immune function.

FMCG Gurus data shows 66% of people globally plan to address immunity in the next 12 months – highest in Latin America at 70%, lowest in Europe at 64%.

According to NMI, self-management of immunity rose from 10% in 2018 to 42% in 2021, with the Covid-19 pandemic playing an essential role in that hike.⁴⁵

Healthy ageing

Healthy ageing is a broad concept that can encompass everything from mobility (muscle health, bone health, joint health) to cognitive health to heart health, eyesight and circulation.

These areas are increasingly the subject of patents, especially among botanical extracts and blends, from start-ups to food giants like Nestlé and Danone.

Anti-ageing encompasses battling effects of dementia and its more extreme forms like Parkinson's and Alzheimer's disease.

Danone-Nutricia recently won a patent for a formulation claiming to improve memory in the elderly comprised of:

- Vitamin C, vitamin E and selenium
- DHA and EPA omega-3s
- Uridine-5'-monophosphate (UMP)

The formulation was inspired by a 2017 rat study⁴⁶ that showed phospholipids and synaptic proteins in the brain were enhanced with a similar blend.

Patent watch

Again citing Mintel's patent watch, capsinoid compounds feature in an Ajinomoto patent for improving physical or mental dysfunction associated with ageing, such as decreased motivation, cognitive function or depression, and ageing-related diseases caused by chronic inflammation in the brain.⁴⁷

Nestlé may add to its Celltrient range with a recent patent application for N-acetyl cysteine and nicotinamide riboside for improved brain function; preventing or treating neurological diseases; or recovery after injury or surgery, in a food or beverage product or supplement, including an oral nutritional supplement (ONS) or food for special medical purposes (FSMP).⁴⁸

Hoboomlife Bio-Technology has a patent for a combination of p-nicotinamide mononucleotide (NMN), coenzyme Q10 and α -lipoic acid targeting vascular endothelium repair and reduction in cerebrovascular diseases.⁴⁹

Botanicals

Taken as a whole, it could be said there is almost no bodily function that botanicals cannot address. However, scientific support for botanicals is often the weakest of all nutrients, at least by modern nutrition science methods that often downgrade the validity and relevance of tradition-of-use data that can date back centuries.

The list of human-useful botanicals is long: Panax ginseng, red sage, mushroom extracts, L-theanine, L-tyrosine, ginger, caffeine, cinnamon, barley, almond, oat, quinoa, ashwagandha, kava, yerba mate, grape seed extract, turmeric, schisandra, cactus, kombucha, guarana, coconut, stevia, spirulina, liquorice, elderberry, pea, flax, CBD, chamomile, bilberry, and valerian. There are others.

Adaptogens like ginseng and schisandra and some mushroom extracts have centuries of use in Traditional Chinese Medicine (TCM) and Ayurvedic herbal medicine as supplements but advances in extraction and formulation mean these potent botanicals are now present in beverages, in functional beverages.



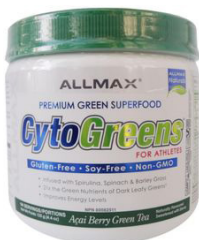
Spotlight on category innovations

Gut microbiome



In Spain, Nestlé launched B Active milk-based drink with galacto-oligosaccharides (GOS). It says the product is high in fibre, "as it contains GOS, non-digestible soluble fibre that intestinal flora use as food and obtained through an enzyme process that converts naturally occurring lactose to GOS."

Sports nutrition

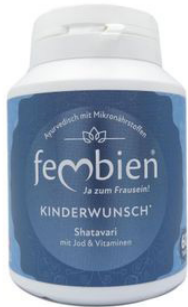


In Canada, Allmax Naturals CytoGreens relaunched its premium green superfood for athletes. It's sweetened with stevia, infused with spirulina, spinach and barley grass, and ultra-fine premium Japanese matcha green tea. It claims to enhance performance, recovery and help the body recycle energy more efficiently while exercising.



In Switzerland, Müller's Sports Factory brand launched a Protein 90 Shake, which blends five proteins (soy, milk, whey, collagen hydrolysate and egg) to maintain and build muscle mass.

Women's health



Austrian brand Fembien launched a pregnancy planning food supplement containing the Ayurvedic extract, shatavari, as well as iodine, vitamins, and folic acid which is said to support maternal tissue growth during pregnancy.



German manufacturer Dirk Rossmann makes a juice for pregnant and nursing mothers under its Mamas Babydream brand. The apple and berry juice contains folic acid for womb growth, iron to support normal blood formation, zinc for normal hair and nails and vitamin C and B6 for immunity and energy metabolism.

Cognitive health



In Canada, Daydream Drinks launched a cucumber and lime-flavoured sparkling water infused with hemp oil and botanical adaptogens. The sugar-free beverage is made with natural flavours and contains hemp oil, schisandra, moringa and ginseng.



French brand Ikalia+ Sport & Nutrition launched an energy and concentration bar made with goji berries, physalis and peanuts that can be eaten before and during sports activities. It contains magnesium, which contributes to normal psychological function, and iron, which contributes to normal cognitive function. Both minerals also contribute to a normal energy metabolism and reduce fatigue. The packaging says the product conforms to anti-doping norms.

Source: All product images & information from Mintel GNPD

Key takeaways

- The **microbiome** as a marketing tool is here to stay and researchers are finding an ever-broadening array of links between nutritional interventions, microbiome health and other bodily functions from immunity to inflammation to cognitive function to skin health.
- **Botanicals** rarely win health claims, but traditional use data is powerful and resonates with consumers seeking natural solutions for health issues and to optimise health. The research base is expanding however, provoking the odd claim win, and this is likely to increase in the short to medium term. Formulation advances mean herbal extracts can move into a broader range of food and beverage matrices.
- As we learn more about nutrients, it is increasingly clear how **versatile** they are in terms of affecting physiological systems and organs, which themselves are interacting in ways never before known – i.e., the gut-brain axis. This is powerful science but beware confusing consumers with overly complex and omnipresent narratives about what ingredients can do. Simplifying messaging is important in a digital age sagging with information saturation.
- Much can be learnt from active nutrient blenders like **e-gamers**. This is a sample group seeking a wide variety of benefits where efficacy is quickly determined and rapidly shared among avid gaming communities.
- Novel and efficacious nutrients are important for product success, but if the **provenance story** is shaky on ethical sourcing or quality grounds, no amount of greenwashing will save the day in the long-term.

The information provided here was compiled with due care and up to date to the best of our knowledge on publication.



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