

Executive summary



Elena Gromoboeva, Global Dietary Supplements Lead, Brain Health, dsm-firmenich

What are consumers biggest health concerns? dsm-firmenich's Global Health Concerns Study 2023 revealed that maintaining energy levels ranks as the top health concern.¹



Energy levels /



Mental & emotional health



Mental performance

"The brain health market is constantly growing and evolving, with more consumers looking for innovative ways to support total mind and body wellness. But where is the next big innovation opportunity in this space?

Within this dynamic arena, one major category is emerging – nootropic supplements, also known as "brain boosters" or "cognitive enhancers".

The conversation and curiosity around cognitive enhancers continue to grow. Multiple factors – including fast–paced lifestyles, rising stress and fatigue, performance culture and digital–age challenges – contribute to this.

Together, these are fueling a societal shift towards prioritizing mental wellbeing, cognitive performance enhancement and a proactive approach to brain health. Not only has this ignited an intense interest in nootropics as a pathway to unlocking cognitive potential and nurturing brain health throughout life, but also created a new world of innovation possibilities.

Nonetheless, true innovation in the brain health space doesn't just unfold; it's cultivated mindfully. The seeds of inspiration for the next generation of brain health solutions are sown by listening to the voice of the consumer, their needs and desires. We've leveraged digital intelligence to do just that and uncover insights that will help you unlock the next generation of brain health solutions."

^{1.} DSM Global Consumer Health Survey, 2023.



Six insights to unleash brilliance in your brain health portfolio

on Increased personalization

Create nootropic solutions that appeal to a wider range of consumers, from athletes and gamers to working professionals, and offer personalization in addressing distinct cognitive needs.

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Dive into the nootropic stacking trend whereby consumers are strategically combining different ingredients to target multiple cognitive functions simultaneously for enhanced cognitive performance.

Mhere nature meets science

Unlock the powerful combination of botanicals and vitamins to create brain health solutions that are supported by robust scientific evidence and developed with phytonutrients that appeal to consumers.

04 Thinking beyond cognitive boosters

Meet growing demand for holistic solutions addressing mood, stress, sleep and more, with nootropic+ supplements that support overall wellbeing.

os Sparking brilliance with ingredients

Tap into the whitespace in the nootropic market with science-backed ingredients and unique combinations that bolster product health claims and attract more consumers.

of Crafting appealing solutions for a winning edge

Build consumer trust and encourage long-term supplement use by prioritizing sensory experience, like pleasant flavors and convenient dosages, while exploring diverse supplement formats.

O1 Increased personalization

01 Increased personalization

Nootropic solutions are especially embraced by some specific consumer types, like athletes, professionals, gamers and students — each with distinct cognitive needs and ingredient preferences (Figure 1).

But nootropics are gaining mainstream attention too. In fact, solutions incorporating nootropics could support individuals with universal concerns linked to brain health, like energy, productivity and sleep quality, or consumers struggling with stress and anxiety.

More niche audiences, like peri-menopausal and menopausal women struggling with symptoms of fatigue, brain fog, memory issues and sleep, could also become more receptive to nootropics as awareness of their benefits and acceptance grows. In summary? Consumers within the nootropics sphere are a dynamic group motivated by many different factors, including mental performance, cognitive enhancement and mental wellbeing – and the scope for innovation is promising.

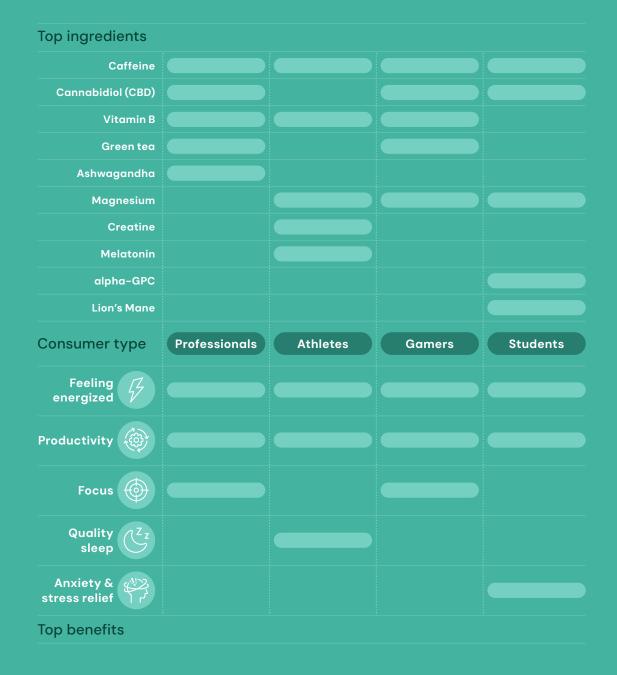


Figure 1. Leading nootropics users are guided by specific ingredients and health advantages. These are the top ingredients and health benefits that professionals, athletes, gamers and students seek from nootropics solutions.²

^{2.} DSM proprietary data from 2022–2023 social listening report conducted by Brandwatch.



Seize the opportunity

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Tailor nootropic supplements to individual personal needs, their brain health concerns and cognitive goals.

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Tap into the whitespace by considering emerging nootropic users and educate them about the benefits of cognitive enhancers.

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Cognitive needs don't just differ between consumers, they change throughout the day for each and every individual too. How about creating a product designed for AM or PM use? The AM solution could enhance alertness, energy and productivity while the PM product could help to promote relaxation and better sleep.

Ready to start your personalized Nootropics journey?

Get in touch to discover how we can help you tailor solutions to perfectly align with your customers' needs.

02 Nootropic "stacking"



02 Nootropic "stacking"

Increasingly, nootropics consumers are drawn to personalized solutions and are therefore more likely to experiment with different nootropic compounds, dosages and products to find the right fit for their unique requirements.

Within this space, the concept of "stacking" has gained popularity. It involves the strategic combination of different nootropic ingredients to address multiple cognitive functions simultaneously. This has given rise to a trend where enthusiastic nootropics users take pleasure in generating their own "stacks", creating combinations of ingredients and products to achieve specific goals or benefits. In fact, some individuals even invite others to "rate my stack", highlighting the growing interest in this aspect of cognitive enhancement.

Ask-the-Expert:

How can brain health brands tap into the nootropics "stacking" trend?



Martin Dos RamosGlobal Vice President Dietary Supplements dsm-firmenich

"In an era where consumers are increasingly seeking evidence-based solutions, my biggest tip is to develop nootropic stacks backed by scientific research. Such an approach not only elevates a product's efficacy but also establishes a strong foundation of trust and credibility between brands and consumers.

By highlighting the scientific rationale behind your selected combinations and dosages, you not only demonstrate a commitment to delivering real cognitive benefits but also empower consumers to make informed choices for their brain health."

Seize the opportunity

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Why not educate consumers about the concept of "stacking" as part of your communications strategy? Provide guidance on how to create effective and safe stacks by offering dosage recommendations, usage guidelines and potential interactions between cognitive-enhancing compounds.

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Make it easier for consumers by creating preformulated stacks tailored to specific cognitive goals – allowing consumers to create their own personalized nootropic solutions based on their needs and preferences.

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Want to take it a step further? Create bundled offerings that combine complementary nootropic stacks to address a broader range of cognitive needs.

Tap into the stacking trend

Discover the power of combining ingredients for enhanced cognitive performance.



O3 Where nature meets science



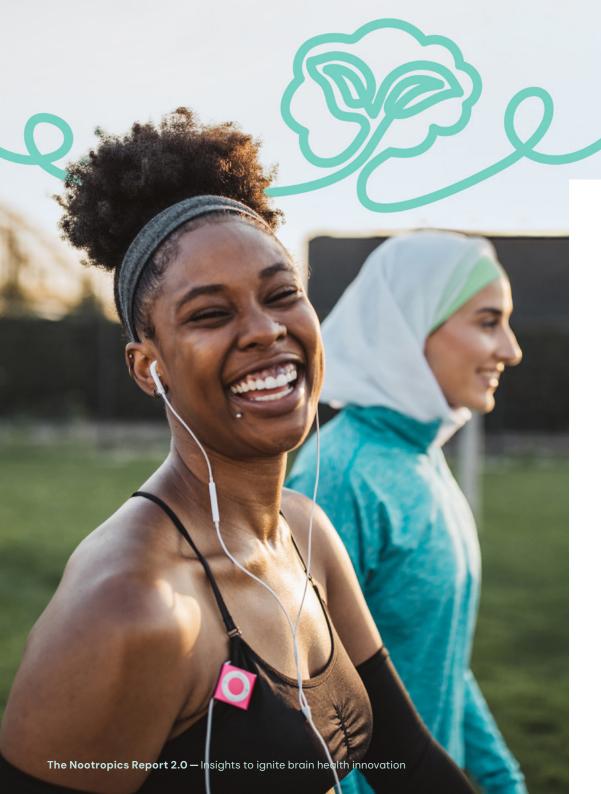
03 Where nature meets science

What do consumers *really* want from brain health solutions? Our insights say it's products backed by robust scientific evidence and developed using phytonutrients. Take a look at sleep support as an example. Consumers want sleep aid products to be 100% natural, botanical, green and clean — and importantly, work effectively.³

Growing scientific research continues to uncover the potential of various natural compounds in positively influencing brain health and cognitive function, driving curiosity among innovators and consumers. With this in mind, powerful combinations of ingredients like botanicals (natural) plus vitamins (science) could be the key to next-generation solutions in the market.

dsm-firmenich offers science-backed, nature-powered solutions for brain health innovation – and unique combinations could provide different benefits, like B vitamins and botanicals for cognitive performance or omega–3 and botanicals for mental wellbeing. Take a look at our *life's*® omega–3 solutions for instance. An advanced, pure algae-based portfolio that delivers all the benefits of omega–3 to consumers in a sustainable way, *life's*® allows brands to innovate with a clear mind.





Seize the opportunity

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Reassure consumers that formulations contain only authentic and natural ingredients, and that products do not have a negative impact on the planet. Streamlined ingredient lists and free-from claims can help to achieve this.

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Thinking about including botanicals in your next formulation, but not sure how? Co-innovate with a company that has expertise in the field.

Want to get to market even faster?

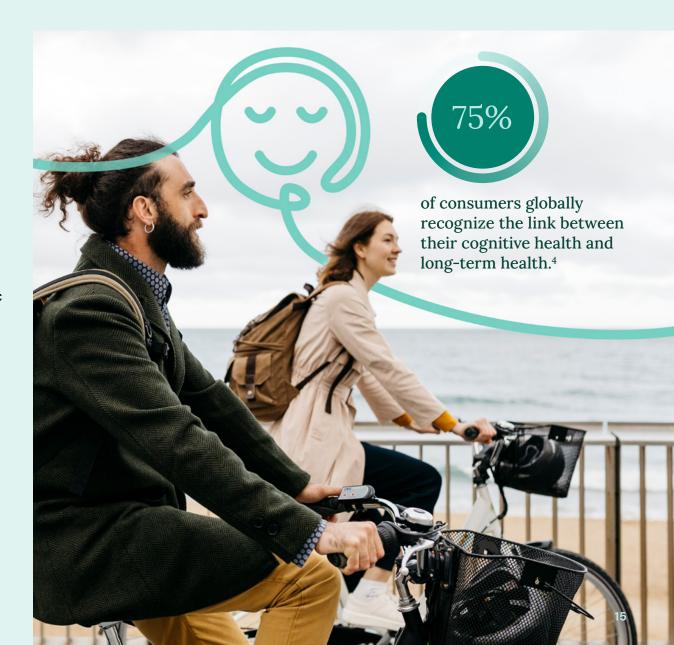
We have a comprehensive portfolio of Premix and Market-ready Solutions with pre-defined ingredient combinations offering high awareness and proven science in the brain health space.

O4 Thinking beyond cognitive boosters

04 Thinking beyond cognitive boosters

More and more consumers are recognizing that emotional wellness is just as crucial as physical health for their overall wellbeing. This realization comes at a time when high levels of uncertainty and the demands of modern lifestyles are negatively impacting consumers' emotional wellness.

Feelings of stress and anxiety have become prevalent, along with poor sleep hygiene and an inability to relax. Consequently, more consumers are actively seeking ways to address these aspects of their health to support holistic wellbeing. To meet the rising demand for nootropic products that do more to help consumers thrive, brands need to re-think innovation in this space with nootropic+ solutions that go beyond cognitive enhancers alone.





of global consumers say their sleep health has deteriorated in the last two years.



of consumers wake up at least once during the night.



of consumers are interested in food, drink and supplement products positioned as sleep aids or claiming to improve sleeping patterns.



of consumers across the world recognize that cognitive health facilitates long-term health and quality of life?

Natural sleep support

Many consumers are demonstrating concerns related to their sleep hygiene in particular – linked to increased technology use, worry and stress.³

Mood enhancement

More consumers across the world are recognizing that cognitive health (covering energy levels, mental wellness and alertness) facilitates long-term health and quality of life.³ This increasing emphasis on proactive wellness and self-care to support long-lasting holistic health has heightened demand for supplements that address stress, anxiety and mood management.

Seize the opportunity

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What if you could develop a nootropic solution that aligned with broader wellness trends? Don't limit your focus to cognitive enhancement and performance innovation alone. Consumers are interested in all aspects of brain health, including emotional wellbeing.

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Stress the importance of long-term health maintenance – and *why* brain health solutions beyond cognitive boosters can help. Perhaps you could position products around long-term health as well as maximizing performance!

Let's talk to discuss your next nootropic innovation that meets the growing demand for holistic solutions.

O5 Sparking brilliance with ingredients

05 Sparking brilliance with ingredients

Caffeine is the most well-known and used nootropic ingredient globally, typically consumed to supercharge energy and boost cognitive function.

However, more and more people are waving goodbye to coffee or at least reducing their intake. Wondering *why*? Consumers are waking up to the side effects of caffeine, including its negative impact on sleep and anxiety.

There are many different ingredients available for innovation in the brain health space. Some to watch in particular include magnesium, ashwagandha, B vitamins, omega-3s, lutein, lemon balm and ginkgo. But how can brands choose the best ingredient for product development, and which are resonating most with consumers? Through our social listening platform, we've identified the ingredients dominating the nootropics conversation (Figure 2). Cannabidiol (CBD), magnesium and melatonin surface as key ingredients linked to stress management, anxiety and sleep. Whereas vitamin B and D are mentioned most in relation to energy and general health.

Ingredients dominating the conversation:

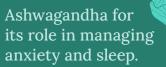


CBD, magnesium and melatonin are top ingredients linked to stress management, anxiety and sleep.



Vitamin B and D mentioned most in relation to energy and general health.

Emerging ingredients:



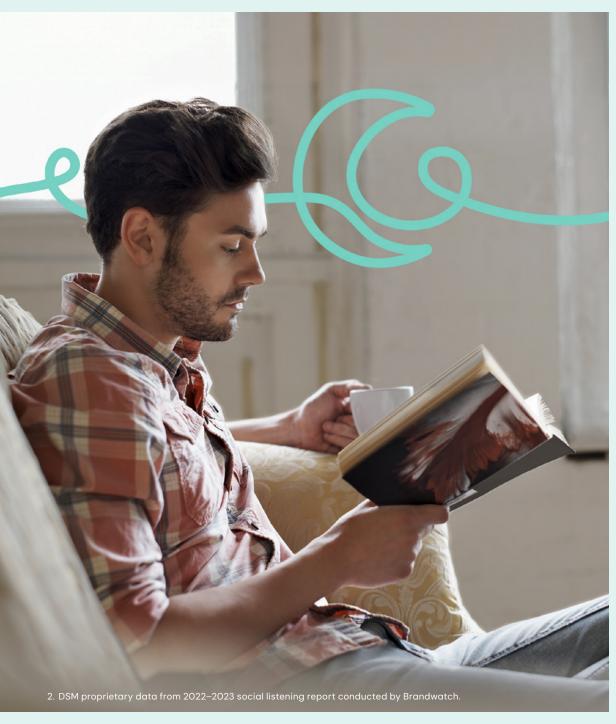


Mushrooms (Cordyceps and Lion's Mane) for potential to boost energy and improve cognition.



Figure 2. Our social listening shows that these ingredients are linked to brain health benefits.





dsm-firmenich's proprietary data also indicates the emergence of other ingredients for brain health, including ashwagandha for its role in managing anxiety and sleep, and mushrooms, like Cordyceps and Lion's Mane, for their potential to boost energy and improve cognition. Our findings also indicate growing consumer interest in CBD as an ingredient for mental wellbeing, anxiety and sleep.² Although the scope of emerging ingredients extends beyond our findings, with substances like lemon balm also demonstrating promise in alleviating stress and promoting mental wellbeing.

Seize the opportunity

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With more people bidding farewell to caffeine, have you considered offering a non-caffeinated nootropic solution that provides the same – or even better – benefits, without the caffeine <u>crash?</u>

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Proprietary data is needed to build science-backed benefits for novel ingredients or unique ingredient combinations. So, why not contribute to research in the field to bolster product health claims and appeal to more consumers?

Ready to spark brilliance in the Nootropics market?

Tap into the whitespace with unique combinations of science-backed ingredients.

06 Crafting appealing solutions for a winning edge

O6 Crafting appealing solutions for a winning edge



Prioritizing consumers' sensory experiences helps to foster positive associations, build trust and encourage long-term supplement use.

The recipe for sensory success is pleasant flavors and textures, ease of consumption, convenient dosages and novel formats that can be easily incorporated into daily routines. However, crafting sensory excellence is not always as easy as it seems. The challenge? Most ingredients in the brain health realm do not promote the best sensory experience. Botanicals can be bitter and omega–3 and B vitamins are needed in high dosages, affecting taste and limiting format options for example.

When it comes to product formats, consumers are open to almost any format that offers convenience, efficacy and an enjoyable experience. Traditional capsules and tablets still dominate the dietary supplements category due to their familiarity and ease of consumption. However, with pill fatigue setting in for some and interest in unique formats growing, don't be afraid to venture into new territories and experiment with formats, like powders, gummies, ready-to-drink beverages and functional foods too.

Seize the opportunity

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Thought about powders? Our proprietary research found that conversations regarding powder formats increased the most during the period of the social listening study, rising by 47%.²

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Nootropic products in powder-based formats are a favored choice as they can be taken on- the-go, easily mixed into beverages or smoothies, allowing for personalized dosing and flavors.

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Want to pique the curiosity of consumers? Expand your offering to include novel product formats – like gummies, strips, or shots. Not only would this provide consumers with diverse options for consuming nootropic supplements but also offers a convenient and tasty way to consume cognitive boosting supplements... encouraging sustained supplement intake over time.



^{2.} DSM proprietary data from 2022–2023 social listening report conducted by Brandwatch.

Ask-the-Expert:

How do I overcome formulation challenges associated with brain health ingredients – like botanicals?



Andrea Bulbarello
Global Director
Application Center and Market-ready
Solutions at dsm-firmenich

"dsm-firmenich's best-in-class flavor masking and sensory capabilities can help customers take sensory experiences to the next level. We can support you with the development of ingredient formulations that are effective, on-trend, taste good and work in multiple enjoyable formats to elevate consumer experience.

Phytonutrient quality, in particular, can pose some challenges during product development. Also known as adulteration, low quality or substitute ingredients are commonly used instead of botanicals in the natural supplements and herbal products industry. This is done to reduce production costs or increase the quantity of the final product – often at the expense of quality and effectiveness. We take immense pride in the rigorous qualification process that our genuine phytonutrients undergo, adhering to stringent criteria for quality, traceability and reliability, to ensure authenticity and identity of botanicals in their purest form. This means you can overcome adulteration hurdles to create safe, high-quality finished products that deliver the desired health benefits."

Unlock a new world of nootropic possibilities with dsm-firmenich



Penny Antonopoulos,Senior Director, Marketing &
Business Development — North America
Health, Nutrition & Care

"The nootropics space is a growing category within the wider brain health dietary supplements market that offers an abundance of opportunities. Further still, the conversation around nootropics is evolving beyond cognitive enhancement alone to unlock the full potential of the brain; expanding into the realms of sleep, mood and stress too.

dsm-firmenich is bringing progress to life in the brain health arena by championing nootropics innovation, from progressing research behind novel compounds to selecting and combining unique ingredients and supporting diverse formats. We're here with you every step of the way, from concept to consumer. Our high-quality products, end-to-end expert services and customized solutions can give you the competitive edge and help you connect with consumers quickly, confidently and seamlessly.

Partner with us to benefit from our ingredient excellence, scientific research, formulation brilliance and insider knowledge of trends and market opportunities in the brain health nootropics space."



We're committed to smarter brain health solutions...

Did you know that we've partnered with Indena to pioneer a new "Age of Nature" through market-inspired botanical solutions for human health? The co-innovation agreement will see us develop science-backed, next-generation botanical solutions for brain health and generate new scientific evidence for combinations of essential nutrients and botanicals.

Partner with dsm-firmenich to bring the next generation of brain health solutions to life.

Partner with dsm-firmenich