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Market trends

Nutraceuticals: Taking centre stage in animal health

Interview

Avanish Agarwal
Founder, Nutriiya

WOMEN'S NUTRA MARKET BOOMING DEMAND, SCATTERED STRUCTURE

A fast growing segment within the nutra market is undoubtedly shifting beyond general wellness. Whether it is diagnosis driven or still shaped by fragmented demand remains uncertain.

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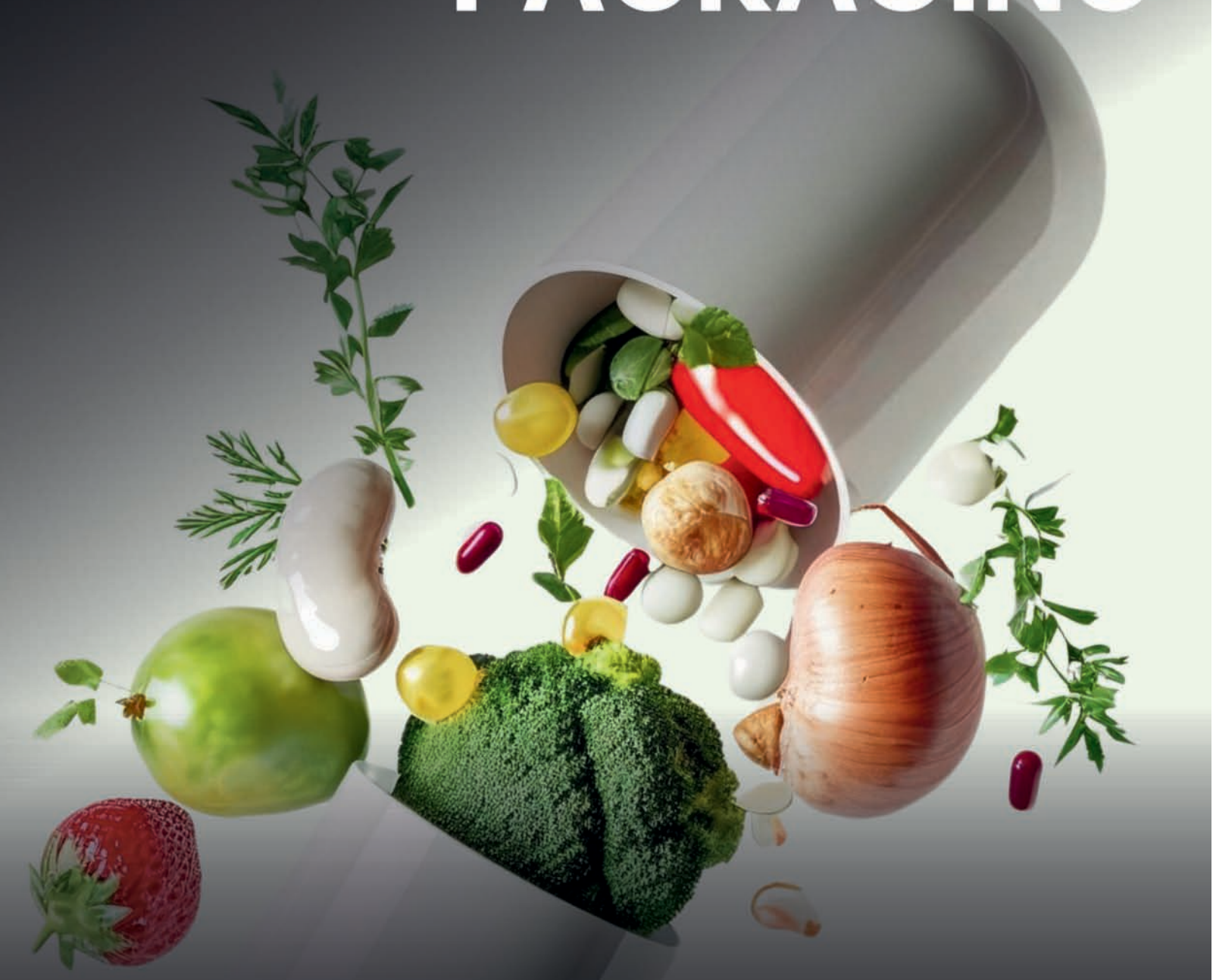

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Women's nutra market: Booming demand, scattered structure

A fast growing segment within the nutra market is undoubtedly shifting beyond general wellness. Whether it will be diagnosis driven or stay shaped by fragmented demand remains uncertain

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FSSAI's ORS stance should caution GLP-1 nutrition brands

The ongoing avalanche of generic weight loss shots has triggered launches in the diabetes and obesity nutrition space, which need close scrutiny to avoid misleading/ mislabelling incidents

VIVEKA ROYCHOWDHURY
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From a regulatory standpoint, nutraceuticals currently exist in the twilight zone, between foods and medicines. And this grey zone has benefitted some brands. In India, nutraceutical regulations are evolving, and are in flux between the Food Safety and Standards Authority of India (FSSAI) and the Central Drugs Standard Control Organisation (CDSCO).

However there may be an end in sight finally to this uncertainty. FSSAI spokespeople at this year's Global NutraConnect Summit 2026, organised by Health Foods and Dietary Supplements Association (HADSA), indicated that they expect nutraceuticals to remain under their watch. There was a collective sigh of relief and applause from the audience.

But their celebrations may be premature. The FSSAI can be as tough as the CDSCO. Consider the FSSAI's evolving stand and crackdown on the misuse of the Oral Rehydration Solution (ORS) nomenclature.

The FSSAI's previous orders dated July 14, 2022 and February 2, 2024 had permitted the use of the term 'ORS' on food labels as part of the trademark with a prefix or suffix in the product name, subject to the declaration/warning: "The product is NOT an ORS formula as recommended by WHO."

But on October 15, 2025, FSSAI clarified that, upon further review, the use of the term 'ORS' in the trademarked name or in the naming of any food product otherwise-whether fruit-based, non-carbonated, or ready-to-drink beverages-even when accompanied by a prefix or suffix, constitutes a violation of the provisions of the Food Safety and Standards Act, 2006 and the regulations. The communication from FSSAI goes on to state that 'such practices are misleading to consumers by way of false, deceptive, ambiguous, and erroneous names/label declarations', and are in contravention of various sections of the Food Safety and Standards Act, 2006.

The impact on sales of brands that can no longer use the ORS branding is clear. As per PharmaTrac data, India's ORS sales value dipped 26 per cent, from Rs 115 crore last March to Rs 85 crore this March. This is a clear impact of FSSAI's regulations, as brands were forced to withdraw mislabelled products, and reformulate as per WHO's ORS guidelines. Legacy ORS brands will have to keep up with newer entrants, who have positioned their ORS-based brands as science-backed WHO-approved rehydration solutions.

The writing on the wall is clear. Comply or move out. The regulator has teeth and is not afraid to bite. The importance of regulating the nutraceutical sector increases as medicines for chronic health conditions need to be supported with specialised nutrition for better long term health outcomes.

For example, the recent avalanche of generic weight loss shots has triggered product launches in the diabetes and obesity nutrition space. As specialised nutrition becomes a vital part of various treatment regimes, stronger regulatory oversight to guard against mislabelling and misleading claims is crucial to protect consumer/patient safety.

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Nutrition will stop being about food groups and start being about metabolic response

Avanish Agarwal, Founder, Nutriiya in conversation with **Kalyani Sharma**, unpacks how AI is set to redefine the fundamentals of nutrition from shifting focus to individual metabolic responses and enabling real-time, data-driven interventions, to reshaping preventive healthcare, nutraceutical innovation, and personalised wellness at scale in India

As the industry moves towards the convergence of science and artificial intelligence, what fundamental shifts do you foresee in how nutrition is understood delivered and commercialised?

The biggest move I see is that nutrition will stop being about food groups and start being about metabolic response. We have spent decades convincing people "eat this and avoid that" without accounting for the fact that two people eating the same dal-chawal can have completely different glucose responses. AI makes it possible to move past those generalisations.

On the delivery side, I think we are heading to a world where your smartphone knows more about your nutritional state than your doctor does. Not because doctors are lacking but because the data was never accessible before. Continuous metabolic signals dietary patterns tracked over weeks instead of recalled in a 10minute consultation. That changes the entire equation.

Commercially, I think the companies that will win are the ones that can connect a health insight to a product recommendation in real time. Not "buy this protein powder because a celebrity endorsed it," but "your body needs this specific micro-nutrient right now and here is the most bioavailable option." That is where the money moves.

What worries me honestly, is that most of the industry is still optimising for shelf space and label claims. The shift has to come from startups and smaller brands willing to let data dictate product design not the other way around.

Much of healthcare is still reactive in nature. From an industry standpoint, what structural changes are required to accelerate the transition towards preventive nutrition at scale?

Most "AI-powered" nutrition products I see are a GPT wrapper with a meal plan template behind it. You type in your goals, it spits out a generic 1800-calorie plan, and everyone calls it personalised. That is not innovation. That is a better search engine

The first thing that needs to change is incentive structures. Right now, the money in Indian healthcare flows towards treatment. Hospitals, pharma companies, insurance providers they all make more when people are sick. Nobody is getting paid to keep you healthy until we fix that, preventive nutrition will remain a niche conversation among the health-conscious urban crowd.

Insurance is a big lever here. If insurers start offering meaningful premium reductions for people who demonstrate consistent metabolic health markers, you suddenly have a financial reason for millions of people to care about their HbA1c before they are diagnosed diabetic.

The second structural problem is data. With 101 million diabetics, India has the scale yet we lack the integrated datasets that connect dietary habits to metabolic outcomes at a population level. constructing this kind of longitudinal data framework is expensive and boring, which is why nobody is doing it. But it is the foundation everything else has to sit on.

Third, and this one is uncomfortable for the nutrition industry to hear: we need to stop treating supplements as the answer to bad food systems. The real preventive play is food itself. If we can use AI to help people optimise what they already eat, that is ten times more powerful than selling them a pill.

At Nutriiya, we started here. Our app scans Indian food, real Indian food, and tells you what it is doing to your body. That is the type of intervention that achieves true scales because you are meeting people inside their existing behaviour rather than asking them to adopt a new one.

AI is increasingly being positioned as an enabler of next-generation wellness solutions. What distinguishes meaningful

innovation from hype in this space, particularly in the context of nutrition and nutraceuticals?

I will be blunt about this. Most "AI-powered" nutrition products I see are a GPT wrapper with a meal plan template behind it. You type in your goals, it spits out a generic 1800-calorie plan, and everyone calls it personalised. That is not innovation. That is a better search engine.

Meaningful innovation, to me, has three characteristics. First, it uses biological data, not just self-reported preferences. If your AI does not know what is happening inside the user's body, you are guessing with fancier tools. Second, it learns from the user over time. A recommendation that does not change after four weeks of use is not intelligent, it is a static programme with a chatbot on top. Third, and this is the one most companies skip: it has to work within the person's actual food culture. An Indian mother feeding a family of four does not need your algorithm to tell her to eat quinoa. She needs to know whether the ragi Mudde she already makes is doing what she thinks it is doing.

In nutraceuticals specifically, there is a lot of noise around "AI-formulated" supplements. I would love to see the training data behind those claims. In most cases, it is just a database lookup with better branding. The real opportunity is using AI to match individuals to formulations based on their metabolic profile, and then measuring whether it actually moved the needle. That feedback loop is where real innovation lives. Very few companies are closing that loop.

Personalised nutrition is often described as the future of preventive health. What scientific and technological advancements are still needed to make this truly scalable and evidence-based?

We are not as far along as the marketing suggests. And I say this as someone building in this space.

On the science side, we still do not have a comprehensive understanding of how the Indian gut microbiome interacts with Indian diets. Most of the microbiome research comes from Western populations eating Western food. When I look at studies on personalised nutrition, the reference datasets are from the US, the UK, Israel. India barely features. So we are extrapolating from biology that may not apply to our population. Bridging that gap before anyone can credibly claim they are offering "science-backed personalised nutrition" in India.

Technologically, the most significant barrier is the absence of cost-effective, non-invasive biosensing. At a price point of ?3,000–?6,000 for a single two-week sensor, current CGMs are far from a scalable solution. That is not scalable for a country where per-capita health expenditure is under Rs 5,000 per year we need sensors that are cheaper, last longer and ideally measure more than just glucose. At Nutriiya, we are working on breath-based metabolic sensing for exactly this reason. If we can get a Rs 500 reading that tells you your ketone levels, your metabolic rate, and your postprandial response, that changes the accessibility equation entirely.

The other missing piece is an Indian food composition database that is actually usable by algorithms. The existing ICMR-NIN data has not been updated comprehensively, and it does not capture regional variations, cooking methods, or the difference between your grandmother's sambar and the restaurant version. We have had to build parts of this ourselves at Nutriiya, and it is painstaking work.

With AI potentially evolving into a 'personal nutrition coach,' how do you see this impacting traditional stakeholders such as nutritionists, healthcare providers, and nutraceutical companies?

I do not think AI replaces nutritionists. I think it replaces bad nutritional advice, and there is a lot of that going around.

A good nutritionist does things AI cannot do right now. They read between the lines when a client says "I have been eating well" but their food diary tells a different story. They understand that someone dealing with a family crisis is not going to meal prep on Sunday. They bring empathy, which sounds fluffy until you realise that adherence is the number one problem in nutrition, and adherence is an emotional problem, not an informational one.

What AI can do is take the drudge work off their plate. Tracking calorie counting, nutrient gap analysis, meal logging all of that can be automated, which frees up the nutritionist to do the work that actually matters: behaviour change, motivation, accountability.

For healthcare providers, I think AI-driven nutrition data becomes another vital sign. Imagine a cardiologist seeing not just your lipid panel, but your 90-day dietary pattern and metabolic trends before your appointment. That changes the entire consultation.

For nutraceutical companies, the impact is more disruptive. AI coaches will start telling users, "You do not need that vitamin D supplement. You are getting enough from your diet. for example, "Your iron absorption is low, and the formulation you are taking is not helping." That kind of transparency is going to force nutraceutical brands to either prove efficacy with data or lose credibility. The ones who partner with platforms like ours to validate their products in real-world conditions will have a significant edge. The ones who keep relying on label claims and influencer endorsements are going to struggle.

Nutriiya operates at the intersection of AI and personalised nutrition. From a B2B perspective, how can such platforms collaborate with nutraceutical brands to drive innovation, product relevance, and measurable health outcomes?

We have already started these models, so I'm speaking from what we've seen on the ground not just what looks good on paper. The most obvious collaboration model is what I call "precision recommendation." Take a brand like Meno Veda, which we are in discussions with. They make Ayurvedic formulations specifically for menopause, things like Shatavari and Ashwagandha-based supplements for hot flashes, mood swings, bone health, sleep issues. They know their formulations work. What they do not know is which woman walking into a pharmacy in Pune actually needs their Akira product versus their Amaya product versus both. Right now, that decision is made by a quiz on their website or a quick consultation. By leveraging Nutriiya, that same user provides weeks of data on her meals, sleep patterns, and energy levels. Our AI doesn't have to guess it identifies that her diet is deficient in calcium and magnesium, notes the evening dip in her protein intake, and correlates these with her reported fatigue and joint pain. This allows us to bypass generic "menopause bundles" and match her with the specific Meno Veda formulation her biological data actually demands. It is a precision-driven distribution model that tradi-

tional shelf placement or social media advertising simply cannot replicate.

The second layer is product validation. This is where it gets interesting for a brand like Meno Veda that already invests in clinical testing. They do pre-clinical and clinical evaluations on their formulations, which puts them ahead of most brands. By their very nature, clinical trials are limited in scale, typically involving only 50 to 200 participants in highly controlled environments. A platform like Nutriiya completely shifts that paradigm, allowing us to monitor the impact when 5,000 or 10,000 real women across Indian households integrate these supplements into their daily routines. We can finally answer the question that matters are their energy levels actually improving after four weeks in the real world? Are the women who were flagged for bone density concerns showing better dietary calcium absorption? Is the Brahmi-based formulation actually helping with the brain fog that perimenopausal women report? That kind of real-world outcomes data at scale is something no clinical trial can give you, and it becomes a massive differentiator for any brand willing to measure itself honestly.

We are already building this kind of partnership with Kilo beaters in the fitness nutrition space. Their products are listed in our app, users who need them get matched to them, and both sides collect data on what is actually working. The model with a menopause-focused brand like Meno Veda would follow the same structure but with even more depth, because menopause is not a one-size problem and the supplementation needs shift as women move from perimenopause to post menopause.

The third model is co-development, and this is where I think a Nutriiya Meno Veda type partnership could really break new ground. Menopause in India is massively under-studied from a nutritional standpoint. If we can show Meno Veda, through aggregated and anonymised data from our platform, that 40 per cent of perimenopausal women in Mumbai between 40 and 50 are deficient in B12 and their current supplementation is not correcting it, or that women in South India have a different micronutrient gap profile than women in the North because of dietary differences, that is a product development insight they cannot get from any other source. They could formulate region-specific or symptom-stage-specific products based on what Indian women actually need, not what a textbook says they should need.

The brands that treat platforms like ours as a data partnership rather than just another sales channel are the ones that will build products people actually need. And in a category like menopause, where 75 per cent of women experience symptoms and most suffer in silence because the solutions are too generic, getting this right is not just a business opportunity. It is a responsibility.

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WOMEN'S NUTRA MARKET BOOMING DEMAND, SCATTERED STRUCTURE

A fast growing segment within the nutra market is undoubtedly shifting beyond general wellness. Whether it is diagnosis driven or still shaped by fragmented demand remains uncertain.

By Neha Aathavale

India is undoubtedly witnessing a loud boom in nutraceutical supplements, almost like a tree branching out in different directions. Within this, women's health nutraceuticals in India are also expanding at pace, steadily carving out their own space within the broader market. However, whether this growth is gradually being pruned into a defined structure or continuing to branch out unpredictably remains unclear.

This expansion is not occurring in isolation. It sits within a broader shift underway in India's wellness economy. The Indian women's wellness nutraceutical segment is in the middle of a clear transition in 2026, moving from generic nutrition products toward more targeted, science-backed solutions. driven by increasing attention to hormonal health, preventive care, and life-stage specific needs. On the surface, this points to a category that is steadily maturing and beginning to find clearer contours.

Yet, beneath this visible expansion, the underlying structure of demand remains less defined. The key question, therefore, is not just how fast the category is expanding, but what is shaping this expansion. Is women's health emerging as a diagnosis-influenced nutraceutical market sector, or is it still a commercially fragmented space shaped by clinical guidance, self-medication, and digital influence?

From wellness to why

To understand this, the first layer to unpack is what is actually driving the growth of women's health nutraceuticals in the first place, and how consumer intent itself is being reshaped.

What is powering this growth is not a single driver, but a layering of health concerns, lifestyle shifts, and changing expectations from nutrition itself. Women's health nutraceuticals are increasingly moving into a space where nutrition is no longer seen as general maintenance, but as a response system for specific conditions, life stages, and physiological stress signals.

Sagar Pawar, Partner at KPMG India, points out that this expansion is also being reinforced by a dual structural reality: rising awareness on one side, and persistent nutritional gaps on the other. "The growth in women's health supplements is being driven both by the rising health awareness and underlying nutritional deficiencies," he explains, adding that increased self-education and disposable incomes are enabling women to actively seek solutions for previously under-addressed conditions such as PCOS and menopause, while lifestyle-related deficiencies continue to remain widespread.

Women are no longer just asking how to look better or lose weight. They are looking at longevity and quality of life and not wanting to compromise on either

GURMEET KAUR
Co-Founder & Director,
Ubalance Naturals

The digital ecosystem has also played a crucial role. With nutritionists, healthcare professionals, and credible health content becoming more accessible online, consumers today are far more informed and proactive. This has created multiple entry points into the category

PRANSHUL AGGARWAL
Founder,
LivLively

Generally speaking, the problem of the nutraceutical industry is associated with its lack of uniformity and transparency

BHAKTI SAMANT
Chief Dietician,
Kokilaben Dhirubhai Ambani Hospital, Mumbai

This shift is being shaped by a high prevalence of hormonal imbalances, rising health awareness, and a growing preference for preventive routines over curative care.

This evolution is also reflected in the size and segmentation of the market. The Indian women's health and beauty supplements market stood at $4.41 billion in 2024 and is projected to reach $6.98 billion by 2030,

Adding onto it, Gurmeet Kaur, Co-Founder and Director of Ubalance Naturals, highlights, this change is first visible in how women are reframing health itself. "Women are no longer just asking how to look better or lose weight," she notes, adding that the focus has shifted towards "longevity and quality of life and not wanting to compromise on either." What is changing, she says, is not only

intent but also the depth of questioning. "Why do I feel exhausted even after eight hours of sleep? Why is my energy dipping? Why are my moods all over the place?" These questions, she points out, reflect a clear movement away from aesthetic health towards functional understanding, where the body is being seen less as an appearance system and more as a performance system.

This shift is also reshaping how health is being interpreted inside nutrition frameworks. Instead of isolated symptoms, there is now greater emphasis on interconnected biological pathways, where gut health, liver function, stress response, and nutrient absorption are viewed as part of one continuous system. Within this framing, hormonal imbalance is increasingly understood not as a standalone condition but as a downstream outcome of multiple internal disruptions, reinforcing a move from surface-level correction to system-level support.

Even among well-informed clients, supplementation is often seen as a short-term fix rather than a long-term physiological process

ARCHANA MALLADI
Senior Nutritionist, Nutrition In Sync

At the same time, extending what Pawar noted earlier about the widening of intent and self-awareness among women, the shift is also visible in how women are entering the category. As Pranshul Aggarwal, Founder of LivLively, explains, the growth in demand is being shaped by overlapping lifestyle and health realities rather than a single trigger. He adds that this where many women now begin supplementation as part of everyday self-care, without necessarily waiting for a formal diagnosis. This reflects a broader shift where awareness itself is becoming an entry point, not just medical necessity.

At a broader demand level, this behavioural shift is reinforced by life-stage awareness and preventive health thinking. Mintel data indicates that consumers aged 25–34 are increasingly focused on preventing early health issues, while older cohorts are more focused on delaying ageing and maintaining long-term health. This layering of intent across age groups is quietly becoming one of the strongest forces shaping how women's health products are being positioned, consumed, and repeated over time.

The recent entry of large pharma and women's health players indicate a gradual shift toward a more structured and organised market in near future

SAGAR PAWAR
Partner & Lead, Lifesciences & Medical Devices, Deal Advisory – M&A Consulting, KPMG India

Many doors, no single path

While these shifts explain what is driving growth, they do not fully explain how women are actually entering the category, or why the same health concerns are taking such different routes into the system.

At the consumer level, this entry is far from uniform. As Aggarwal explains, the pathway into women's health supplements depends on both awareness and the nature of the concern itself. "This has created multiple entry points into the category," he notes, adding that "many consumers now begin supplements as part of daily self-care, for issues like fatigue or iron deficiency, without waiting for a formal diagnosis." At the same time, he points out that for more complex conditions, there is still a clear reliance on medical guidance. "For specific or complex conditions, there is a tendency to consult a doctor or undergo diagnostic tests before opting for targeted supplementation," he says, highlighting the coexistence of self-led and clinically guided entry routes.

The gap is less about scientific capability and more about execution. While India has strong expertise in chemistry, challenges persist in translating that into consistent manufacturing quality, standardisation, and testing

GAURAV SONI
Founder and Managing Director, Botanic Healthcare

This dual pathway becomes even more visible within clinical practice. Samant explains, there is still a clear divide in how supplements are being used. "While some individuals may receive recommendations based on clinical necessity and biochemical assessments, an enormous amount of other individuals self-medicate using dietary supplements," she notes. According to her, this behaviour is often influenced by "peer reviews, social networks, or aggressive marketing directed straight at consumers."

This inconsistency at entry naturally extends into how supplements are used. Mal-

ladi, points out that the issue is not just access, but application. "Supplements are among the most misused tools in hormonal health," she notes, adding that problems around incorrect form, dosage, and combination are common, with many consumers choosing what is available rather than what is clinically appropriate.

At a structural level, this lack of uniformity is not incidental but deeply rooted. Pawar observes, women's health has historically been managed through symptom-based, fragmented care pathways, where supplementation sits between clinical advice and consumer behaviour rather than within a unified system.

These gaps become even more pronounced when it comes to adherence. Even when supplements are clinically recommended, long-term consistency remains a challenge. "Most people discontinue their consumption upon improvement in symptoms or absence thereof, due to expense, difficulty of daily consumption, and lack of guidelines on duration of therapy," Samant explains, pointing out that conditions like PCOS, anemia, and hormonal imbalance require sustained intervention, which is often missing in real-world behaviour.

Malladi reinforces this from a behavioural lens. "Most clients stop within four to six weeks, assume the product didn't work, and move on to the next recommendation," she says, noting that hormonal interventions typically require at least three months to show measurable change. She also flags over-supplementation as a growing concern, where individuals stack multiple products without understanding interactions or absorption conflicts, often weakening overall efficacy.

Taken together, these patterns reveal a category that is expanding faster than it is aligning. Across both clinical and consumer ecosystems, supplementation is increasingly being adopted, but not always within a structured framework of diagnosis, duration, or compliance. The result is a space shaped simultaneously by medical advice, self-directed experimentation, and digital influence, often without clear alignment between the three.

Scaling without structure?

As the branches multiply and grow in different directions, the question shifts to the shape of the tree itself. Is the industry moving towards coherence, or simply scaling within fragmentation?

At a structural level, the category has historically leaned towards the latter. As Pawar observes, the women's health supplements market has long operated in a fragmented form, especially outside basic vitamins and minerals. "Historically, the women's health supplements market has been largely fragmented," he notes, pointing out that much of its evolution has been driven by scattered product development rather than a unified system of care. However, he adds that this is beginning to change. "The recent entry of large pharma and women's health players indicate a gradual shift toward a more structured and organised market in near future."

This shift is most visible in the emergence of condition-led segments. Categories such as PCOS, fertility, menopause, and anemia are increasingly being positioned within broader clinical pathways, rather than as standalone wellness solutions. Yet even here, alignment remains partial, as clinical practice, consumer behaviour, and product development continue to evolve at different speeds.

Beneath this visible movement towards structure, however, deeper operational challenges persist. As Gaurav Soni, Founder and Managing Director of Botanic Healthcare, explains, consistency in nutraceuticals is still heavily constrained at the manufacturing level. "The chemical profile of a plant can vary significantly depending on geography, soil conditions, and harvest timing," he notes, adding that without tight control over sourcing, maintaining batch-to-batch consistency becomes difficult.

He points to examples such as KSM-66 Ashwagandha, where region-specific sourcing from Rajasthan enables standardisation through strict raw material selection, underscoring how precision begins at the source itself.

Standardisation, however, extends beyond sourcing into infrastructure. Soni highlights that defining measurable quality benchmarks and building the testing systems to validate them remains a challenge in India, particularly due to cost and accessibility constraints. "While India has strong expertise in chemistry, challenges persist in translating that into consistent manufacturing quality, standardisation, and testing," he explains, emphasising that the gap lies less in scientific capability and more in execution discipline across the value chain.

Even as the industry attempts to address these gaps, formulation philosophy itself is evolving. As Soni notes, the shift is moving away from ingredient-heavy complexity towards precision. "Earlier, complexity was equated with efficacy, with formulations often combining dozens of ingredients in high doses. That approach is steadily being replaced," he says, adding that the focus is now on "bio-intelligent molecules and targeted intervention rather than overloading the system."

Yet, translating this precision into real-world outcomes remains uneven. As Malladi points out, "there's often a visible distance between the protocol a client needs and the one they can realistically follow," highlighting constraints such as limited access to diagnostics, entrenched dietary habits, and the realities of shared household consumption.

She further notes that even when structured protocols exist, perception continues to shape behaviour. "Even among well-informed clients, supplementation is often seen as a short-term fix rather than a long-term physiological process," she says, pointing to a persistent mismatch between clinical timelines and consumer expectations.

Taken together, these layers suggest a category that is evolving, but not yet fully aligned. While shifts towards clinical integration and precision are visible, the system continues to operate across loosely connected layers where demand, diagnosis, and usage do not always converge. What emerges is a market still in the process of finding its shape.

Conclusion

At the end, what emerges, then, is not a market that lacks direction, but one that is still negotiating it. Women's health nutraceuticals in India are no longer a loose collection of wellness products, yet they are not fully a clinically anchored system either. They sit on a fence, where diagnosis, self-care, and digital influence intersect, but do not always align. The real shift will not be defined by how many products enter the market, but by whether these layers begin to connect. Until then, the category may continue to grow, but its structure will remain a work in progress, still being shaped even as it scales.

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Reimagining nutra labelling: When 'healthy' needs proof

Dr Rashida Vapiwala, Founder and CEO, LabelBlind opines that nutra companies which will define the next decade are those that treat honest, substantiated labelling as a business priority from day one of product development

This growing reliance on nutraceuticals and dietary supplements is unfolding alongside a rise in lifestyle-related health concerns. India is already home to over 101 million people living with diabetes (11.4 per cent), while 35.5 per cent of the population is affected by hypertension, reflecting the scale at which diet-linked risks are shaping public health outcomes. In response, consumers are increasingly turning to supplements, herbal formulations, and functional nutrition products as preventive health solutions.

With more consumers self-prescribing supplements based on digital content, peer recommendations, and wellness trends, the reliance on label claims has become even more pronounced.

The pharmacy shelf and online wellness marketplace have become a battleground of promises. A bottle of multivitamins claims to 'boost immunity.' A herbal supplement assures 'better digestion and detox.' A protein powder positions itself as "clinically proven for strength and recovery." For the average Indian consumer, these front-of-pack claims are often the fastest and most trusted route to a purchase decision.

How many of these claims actually hold up to regulatory scrutiny? And more importantly, what does it mean for the future of nutraceutical innovation when the answer is uncomfortable?

That answer is already beginning to emerge from industry-wide data.

Is the problem built into the system?

These patterns point to a deeper structural issue. The compliance failures seen across the nutraceutical and supplement sector are less about individual negligence and more about how the industry has historically approached product development. Regulatory review has typically been a last-mile activity, something addressed after a product is formulated, named, and packaged, rather than being woven into the process from the very beginning.

When claims outpace compliance

A comprehensive independent study analysing 5,058 labelling claims across 586 products, 227 brands, and 18 categories found that 33.6 per cent of claims were either non-compliant (21.3 per cent) or lacked independent verification (12.3 per cent). Within nutraceuticals, the risk is often higher given the overlap between food, medicine, and wellness positioning. In effect, nearly one in three claims fails to meet regulatory expectations, with over 50 per cent of health-related claims falling short of standards set by the Food Safety and Standards Authority of India (FSSAI), the Advertising Standards Council of India (ASCI), and the Consumer Protection Act, 2019, while a further portion could not be independently verified.

The categories with the highest non-compliance rates are the ones consumers increasingly rely on for preventive care. Immunity boosters, herbal extracts, protein supplements, omega-3 capsules, and digestive health formulations show some of the most concerning gaps. These are products consumed with a strong expectation of health benefit, and that expectation makes accuracy in labelling even more critical.

Claims around ingredients such as ashwagandha for stress reduction, biotin for

hair growth, or probiotics for gut health are often marketed with implied therapeutic benefits that may not always meet regulatory thresholds.

The volume of claims printed on each product amplifies this risk considerably. Nutraceutical products often carry dense clusters of functional, clinical, and lifestyle claims on a single label, making internal validation more complex. At that volume, even a well-intentioned review process becomes prone to oversight, inconsistency, and error.

In many cases, a single supplement label carries multiple layered claims spanning performance, immunity, and long-term wellness, increasing the risk of overlap, exaggeration, or non-compliance.

The problem deepens as the industry pushes further into personalised nutrition, bioactive ingredients, and condition-specific formulations, where the science underpinning each claim is more specialised and the regulatory expectations are significantly higher.

Products targeted at fitness enthusiasts, ageing populations, and children require particular scrutiny. Supplements positioned for growth, cognition, or performance often influence long-term consumption habits. Overstated or unsubstantiated claims in these segments carry a higher burden of responsibility, extending beyond compliance into consumer safety and trust.

Stricter enforcement on claims and labelling

Compliant data reflects this increased scrutiny. Nutraceuticals and health supplements are increasingly appearing in regulatory and advertising violation reports, with a large share of breaches linked to exaggerated or unverified health claims. Many of these are withdrawn only after intervention, pointing to a persistent gap between intent and internal validation.

This disconnect is now drawing a stronger regulatory response. Over the past year, India's regulatory framework for health supplements and nutraceuticals has shifted from passive oversight to active enforcement. FSSAI has moved to curb vague descriptors such as "100 per cent natural" or "clinically proven" without substantiation, while the Food Safety Connect app has opened up consumer-led reporting of labelling violations.

From January 2026, mandatory scientific substantiation of product claims further raises the bar, requiring brands to back every assertion with evidence.

A key challenge lies in navigating the fine line between structure-function claims permitted under nutraceutical regulations and drug-like claims that require clinical validation and approval.

At the same time, evolving policy direction and taxation clarity, including developments such as GST rationalisation for nutraceuticals, are expected to bring greater formalisation and accountability to the sector. In parallel, clearer labelling norms are gaining momentum, especially for products making therapeutic or functional claims.

The rise of plant-based supplements, clean-label formulations, ayurvedic nutraceuticals, and clinically backed wellness products reflects a clear shift toward more credible and science-led offerings. These developments signal a more conscious approach to product development, where efficacy and transparency are becoming central to brand positioning

At the same time, the industry has been actively investing in innovation to align with evolving consumer preferences. The rise of plant-based supplements, clean-label formulations, ayurvedic nutraceuticals, and clinically backed wellness products reflects a clear shift toward more credible and science-led offerings. These developments signal a more conscious approach to product development, where efficacy and transparency are becoming central to brand positioning.

As the nutraceutical market in India continues to expand rapidly, regulatory clarity and standardisation are becoming central to sustaining long-term growth and consumer trust.

The direction is clear. Compliance is now a front-end requirement shaping how nutraceutical products are formulated, positioned, and brought to market.

Where innovation must go next

The nutraceutical industry's next chapter depends on expanding its definition of innovation. Product development that introduces new ingredients, delivery formats, or health propositions is valuable, but it means little if the claims attached to those products cannot be substantiated with evidence and defended under regulatory scrutiny.

Building compliance into the earliest stages of development, at formulation, during the creation of marketing language, and well before a product reaches print, is the standard the industry must now meet.

In this context, technology is emerging as a critical enabler. AI-powered systems can support faster validation of claims, reduce manual review time, and help ensure alignment with evolving regulatory frameworks. This allows companies to innovate with greater confidence, knowing that product claims are backed by data and can withstand scrutiny across markets.

AI-powered label validation tools like FoLSol® are making this significantly more achievable. What once required hours of manual regulatory cross-checking across multiple frameworks can now be completed in minutes. For exporters managing compliance across 22 or more global markets simultaneously, this kind of infrastructure is a practical necessity. The businesses treating compliance technology as a core investment are the ones best positioned for sustainable, penalty-free growth.

Conclusion

Consumer awareness in India is at an inflection point. Buyers of nutraceuticals and supplements are becoming more discerning, actively evaluating ingredient lists, clinical backing, and the credibility of claims before making a purchase.

At the same time, demand for preventive health solutions continues to grow, making it essential for innovation and credibility to move together. The nutraceutical companies that will define the next decade are those that treat honest, substantiated labelling as a business priority from day one of product development.

Genuine innovation in healthier lifestyles starts with getting the label right.

Can ayurveda scale sustainably without scientific standardisation?

Dr Saurabh Arora, Managing Director, Auriga Research emphasises that while ayurveda's traditional knowledge is valuable, its large-scale growth and global acceptance depend on scientific standardisation, consistent quality control, and clinical validation

Ayurveda has long been celebrated as one of the world's oldest systems of medicine. Rooted in centuries of observation, experience, and traditional wisdom, it has shaped how generations have approached health, wellness, and preventive care. Today, as global interest in natural and plant based therapies grows, Ayurveda is increasingly finding its way into international markets and modern healthcare conversations.

But scaling Ayurveda beyond traditional practice raises a fundamental question. Can it truly expand sustainably without scientific standardisation?

The honest answer is no. If Ayurveda is to grow responsibly and reach larger populations, scientific validation and process standardisation will become essential.

From personalised medicine to industrial scale production

Historically, Ayurveda operated in a very different ecosystem from what we see today. Treatments were deeply personalised and localised. Practitioners often collected herbs themselves, knew the exact geography where the plants were grown, and understood the right stage of harvest. Medicines were prepared in small quantities, often tailored for a specific patient, and consumed soon after preparation. In such a system, the supply chain was extremely simple and tightly controlled. One practitioner oversaw everything from sourcing herbs to preparing the final medicine. The practitioner's knowledge of local biodiversity, seasonal cycles, and preparation techniques ensured quality and efficacy. However, modern demand for Ayurvedic products has fundamentally changed this model. Medicines are now produced at scale, raw materials move through complex supply chains, and finished products are stored, transported, and distributed across large geographies. This transformation introduces a new layer of complexity that traditional practices alone cannot manage.

The challenge of consistency

One of the biggest challenges in scaling Ayurveda is maintaining consistency. When herbs are sourced from multiple regions, processed in different facilities, and converted into commercial dosage forms, variations in quality become inevitable. Without clear scientific benchmarks, it becomes difficult to ensure that every batch of a formulation delivers the same therapeutic effect. Factors such as soil conditions, climate, harvesting practices, and storage conditions can significantly influence the chemical composition of medicinal plants.

Scientific standardisation helps address these variables. It allows the industry to define quality parameters for raw materials, establish clear protocols for extraction and processing, and ensure that the final formulation remains consistent in potency and efficacy.

The shift towards standardised extracts

A major shift already underway in the Ayurvedic industry is the gradual movement away from the direct use of raw herbs towards standardised plant extracts. Extracts allow manufacturers to isolate active compounds and maintain better control over quality, dosage, and shelf life. This approach simplifies several operational challenges related to storage, transportation, and variability in plant material. More importantly, it enables researchers and manufacturers to build reproducible processes that can meet global regulatory expectations.

However, the transition to extracts also demands deeper scientific understanding. Extraction methods must be carefully developed, validated, and documented to ensure that the therapeutic properties of the original herb are preserved.

The growing importance of clinical evidence

Another critical requirement for scaling Ayurveda is the generation of clinical evidence. Many modern Ayurvedic formulations combine multiple herbs in novel ways inspired by traditional knowledge. While these formulations may draw from historical texts, they often differ in composition, dosage form, or extraction techniques. As a result, relying solely on traditional literature is no longer sufficient. Scientific studies are needed to demonstrate efficacy, determine safe dosage levels, and evaluate long term safety profiles. Clinical trials and well designed research studies help generate this evidence. They provide the data necessary to build trust among patients, practitioners, and global regulators alike.

Tradition as a guide, not a substitute for science

India's traditional knowledge systems remain an invaluable resource for modern medicine. Ayurveda's historical texts offer insights into plant based therapies that continue to inspire research and innovation. However, tradition alone cannot replace scientific validation when medicines are produced at scale and distributed across global markets. If Ayurveda is to evolve into a truly global therapeutic system, it must embrace modern scientific tools while preserving the wisdom that defines it. Standardisation, quality control, and clinical validation are not threats to tradition. Instead, they are the foundations that can help Ayurveda grow responsibly and sustainably. In many ways, the future of Ayurveda lies in this balance between heritage and evidence. Tradition can provide the starting point, but science must ensure that what reaches the patient remains safe, consistent, and effective.

Is true personalisation in nutraceuticals possible?

Deepu Oommen, Co-Founder, NeuMeal, a functional food brandfrom Neu Nutrition, Hyderabad, draws from real-world experience to explore how genomics, microbiome science, AI and precision nutrition are shaping the future of personalised healthcare in India

The market signal: Personalised nutrition is no longer a niche

The numbers speak clearly. The global personalised nutrition market was valued at approximately $15 billion in 2024 and is projected to reach nearly $31 billion by 2030 at a CAGR of around 14.4 per cent (MarketsandMarkets). Asia-Pacific, including India, is expected to be the fastest-growing region, driven by rising health awareness, lifestyle disease burden, and digital adoption.

In India, the broader nutraceuticals market currently sits in the range of $6–8 billion and is projected to grow at a CAGR of 11–13 per cent through the early 2030s. Personalised nutrition is increasingly cited by Indian industry leaders as the defining trend for 2025–26 — a shift from generic supplementation to condition-specific, individually tailored solutions that consumers are actively seeking.

What do we actually mean by personalisation?

Personalisation in nutrition exists on a spectrum. At one end is the simple questionnairethat recommends a generic vitamin pack based on age and gender. At the other is truepersonalisation — a multi-dimensional, data-driven formulation built on an individual'sunique biology, behaviour, and environment. Between these poles lie several increasinglysophisticated layers: lifestyle and dietary profiling; biomarker testing; genomic analysis (nutrigenomics) of SNPs that shape how a person metabolises nutrients; microbiomeprofiling of the gut ecosystem; and finally, multi-omics integration that combines all of the above with real-time physiological data.

Each layer adds scientific depth — and operational complexity and cost.

Our journey: Building a multi-dimensional personalised supplement

As someone who has worked in the intersection of science and consumer nutrition, I want to share our experience of attempting to operationalise true personalisation — not as a theoretical exercise, but as a real product offered to real customers.

Our proposition was a personalised nutraceutical and probiotic supplement covering health conditions including weight management, gut health, performance and endurance, general health, and sleep — customised for each individual based on a three-pronged data approach: lifestyle, genomic data, and microbiome data.

The process

Step 1 – Lifestyle and dietary profiling: Customers filled a detailed questionnaire ofapproximately 50 questions, capturing diet patterns, sleep quality, physical activitylevels, stress indicators, existing health concerns, and supplementation history.

Step 2 – Genomic analysis: A saliva sample was collected from the customer andsequenced to identify genetic markers — specific SNPs — that indicated predisposition to certain nutritional deficiencies or health conditions, and to assess the degree of that risk.

This is the domain of nutrigenomics, where the science examines how genes influence nutrient metabolism and absorption.

Step 3 – Microbiome profiling: A stool sample was collected and analysed using 16SrRNA sequencing to create a detailed

microbiome portfolio — identifying the species composition and relative abundance of the customer's gut bacterial community. The 16S rRNA sequencing approach is a widely used, validated method for profiling microbial communities in the gut.

Step 4 – Integrated risk profiling: The lifestyle, dietary, genomic, and microbiome data were combined to create a comprehensive health and nutritional risk profile for each individual. From this, the reference requirement for each nutrient was established, and the estimated deficit was identified.

Step 5 – Formulation and delivery: Based on the risk profile, a customised nutraceutical supplement and probiotic blend was formulated specifically for that individual and delivered to them.

In concept, this is as close to true personalisation as the nutraceutical industry has yetattempted at a consumer level.

What we ran into: The hard realities

The science held up reasonably well. The operationalisation, however, surfaced aformidable set of challenges — ones that anyone attempting this path will inevitably encounter.

1. Cost of sequencing: Genomic and microbiome sequencing remain expensive. Each saliva sample and each stool sample analysis cost the customer approximately Rs 5,000 each. Together, the diagnostic cost alone ran to Rs 10,000 per customer before any supplement was formulated or delivered — placing this firmly in premium territory and limiting the addressable market.

2. Turnaround time: From sample collection to report generation, the end-to-end lead time was approximately one month. This is far from the instant gratification that today's consumer expects, particularly in a digital-first purchase environment. The extended wait period created drop-off and dissatisfaction even before the product was delivered.

3. Questionnaire fatigue: The 50-question lifestyle and dietary questionnaire, while necessary for data quality, took approximately 10 minutes to complete. In an online setting, this was long enough to cause significant customer drop-off during the onboarding process.

> True personalisation in nutraceuticals is possible. We have done it. The science isreal, and the quality of risk profiling it produces is genuinely superior to anything ageneric supplement can offer. But viable at scale, accessible in price, and fast enough for today's consumer? Not yet

4. Scale and individualised manufacturing: By definition, each customer's formulation was different. This meant no two batches were identical. Small-batch, individualised manufacturing is not how the nutraceutical supply chain is built — standard operations are designed for scale, not uniqueness.

Each personalised order required individual assessment and separate batch preparation, making operations labour-intensive and costly.

5. Efficacy and customer retention: The improvements from a science-based nutritional personalisation programme are real, but they are not immediate. Correcting nutritional deficits and achieving measurable health improvements takes weeks to months. In an environment where customers look for visible, rapid results, this mismatch between scientific timelines and consumer expectations led to early drop-off before the programme could demonstrate its value.

6. Complex logistics: A personalised supplement model involves multiple touchpoints: dispatching the test kit to the customer, retrieving the samples, sending them to the sequencing centre, generating the report, formulating the batch, and then dispatching the supplement.

Many sequencing centres capable of handling this work are located outside India, adding complexity, cost, and time to an already multi-step logistics chain.

7. The probiotic strain gap: Microbiome sequencing using the 16S rRNA method can identify a large number of bacterial species in the gut — commonly in the range of 200 or more species in a single individual. However, only a very limited number of bacterial species are currently available in commercially viable, regulatory-compliant probiotic supplement formulations — typically around 20 species or fewer are commonly used in nutraceutical-grade preparations. This means the ability to act on microbiome data with targeted supplementation is severely constrained by the available probiotic toolkit.

8. High manpower and scientific expertise cost: Operating this model requires a genuinely multidisciplinary team: bioinformaticians, geneticists, microbiome scientists, nutritionists, nutraceutical formulators, data analysts, and IT professionals — in addition to standard operations, customer service, and logistics personnel. Building and sustaining this team is a significant and recurring cost burden.

9. Science is still catching up: The correlations underpinning genomic and microbiome-to-nutrition recommendations remain probabilistic rather than deterministic. More critically, the available literature is heavily skewed toward Western populations. The Indian gut microbiome is demonstrably distinct — the LogMPIE study across 14 locations identified Prevotella copri as the dominant genus, contrasting sharply with the Bacteroides-dominant Western profile — yet applied science translating this into nutraceutical formulation guidance for Indians is almost entirely absent.

10. Regulatory and data privacy dimensions: Handling genomic and microbiome data from customers adds layers of responsibility around data privacy and security that are not typical of a standard supplement business. India's evolving regulatory landscape around personal health data — under the Digital Personal Data Protection Act, 2023 — adds compliance considerations that are still being interpreted for this emerging sector. Additionally, health claims on nutraceutical products in India are regulated by FSSAI, and claims derived from genomicor microbiome data must navigate this framework carefully.

The road ahead: Where technology is taking personalisation

Despite these challenges, the direction of travel is clear — and the technologies-

needed to make true personalisation viable at scale are coming.

Robotics and precision manufacturing: Automation through robotics is already transforming pharma manufacturing and is beginning to enter nutraceuticals. As precision small-batch robotic formulation systems become more accessible, the cost and complexity of producing individualised supplement batches will reduce significantly, making personalised manufacturing economically viable at greater scale.

Portable sequencing technology: Oxford Nanopore Technologies has already commercially launched compact, portable sequencing devices like the MinION, which can perform DNA and RNA sequencing in the field or in a clinical setting. Research published in Communications Biology has demonstrated the feasibility of analysing nanopore sequencing data on Android smartphones. As this technology matures and costs decline further, doorstep genomic and microbiome sequencing — where a compact device collects and processes samples on-site — becomes a realistic prospect within the next decade.

India-specific microbiome research: India is beginning to build its own microbiome research infrastructure. The Indian Human Microbiome Initiative (IHMI) — a pioneering national effort — has profiled over 4,000 healthy individuals from 17 distinct cultural and ecological communities across India, creating the first large-scale map of how traditional diets, regional environments, and genetic ancestry shape the Indian gut microbiome. Complementing this, the Indian Microbiome Database (IndMDB) is consolidating microbiome research conducted on Indian individuals across institutions including the National Institute of Biomedical Genomics and the National Centre for Cell Science. Government investment in expanding this kind of research through scientific institutions is essential — and early signs of it are visible.

Wearables and continuous physiological monitoring: The integration of IoT-connected wearable devices — smartwatches, smart rings, and emerging biosensors including skin-worn patches — with personalised nutrition platforms represents a significant next frontier. These devices can continuously transmit real-time physiological data (glucose levels, heart rate variability, sleep quality, activity patterns) that, when fed into personalised nutrition models alongside genomic and microbiome data, will allow nutritional recommendations to be dynamically adjusted over time rather than based on a single point-in-time assessment.

AI and bioinformatics automation: AI-driven tools are accelerating pattern recognition in genomic and microbiome datasets, reducing analysis time and cost while improving predictive accuracy. As these models mature, the translation from raw sequencing data to actionable nutraceutical recommendations will become faster and more reliable — a critical unlock for the entire personalisation pipeline.

Longitudinal tracking and adaptive formulation: Future personalisation models will not stop at formulation and delivery. The combination of wearables, regular microbiome check-ins, and AI-powered tracking will enable supplement formulations to evolve as the customer's health status, lifestyle, and even microbiome composition change over time. Personalisation will shift from a static, one-time output to a continuous, adaptive process.

The honest answer

Yes — true personalisation in nutraceuticals is possible. We have done it. The science isreal, and the quality of risk profiling it produces is genuinely superior to anything ageneric supplement can offer.

But viable at scale, accessible in price, and fast enough for today's consumer? Not yet.

The constraints we faced are not arguments against personalisation; they are a map of theproblems to be solved. And the most urgent of those problems, for India, is building thescientific foundation — microbiome studies, nutrigenomics research, multi-omicsintegration — on Indian populations, Indian diets, and Indian genetic diversity. That foundation doesn't yet exist. Until it does, true personalisation will remain impressive inconcept but limited in precision.

References

The market size and growth figures cited in this article are drawn from published market research reports by MarketsandMarkets, Fortune Business Insights, Grand ViewResearch, and IMARC Group (2024–2025). Indian microbiome research references are drawn from peer-reviewed publications and publicly documented initiatives including LogMPIE and the Indian Human Microbiome Initiative (IHMI). Sequencing technology references are drawn from Oxford Nanopore Technologies and peer-reviewed journals including Communications Biology and Frontiers in Microbiology.

NUTRACEUTICALS

Taking centre-stage in animal health

Nutraceuticals are moving from the margins to the mainstream, reshaping animal health across segments. The focus is shifting from treatment to prevention, with science-led nutrition driving better productivity and performance. These solutions are helping improve feed efficiency, strengthen immunity and reduce antibiotic use. Once seen as optional, nutraceuticals are now becoming essential. Industry experts weigh in on what is driving this shift, the gaps that remain, and where the next phase of growth will come from

India is well-positioned to emerge as a global hub for animal nutrition

India's animal health market is growing at a CAGR of 7.11 per cent, indicating steady progress in scale and investment. However, this growth sits alongside a persistent gap, with 536.76 million livestock and 851.81 million poultry still underfed. The challenge is not simply the availability of feed, but how efficiently it is utilised at the farm level. Data from the NSSO shows that only 5.1 per cent of farmer households access animal husbandry information, while 40.4 per cent receive guidance for crop farming. This imbalance shapes outcomes across productivity, cost efficiency, and animal health.

The National Dairy Development Board's Ration Balancing Programme highlights the scale of the awareness gap. Introduced in 2012, it reached 2.15 million farmers and showed that optimising existing feed reduced costs by 11.8 per cent and increased net daily income by 27 per animal without additional investment. However, it covered only 2.7 per cent of livestock households, which points to the limited reach of such interventions.

Market landscape and segment trends

The structure of India's animal nutrition market reflects a clear divide between organised and unorganised segments. In 2025, livestock accounted for 50.9 per cent of the market. This share reflects continued dependence on traditional feeding practices. Dairy, despite being central to the rural economy, still relies heavily on crop residues and home-mixed rations, with limited adoption of balanced compound feed.

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Poultry is the most organised segment, with a 36.41 per cent market share in 2025. Integrated operations and rising protein demand support consistent feed adoption and efficiency gains. Aquaculture holds a 5.2 per cent share and is expanding due to export demand and commercialisation. Companion animals account for 8.2 per cent, driven by urbanisation and changing consumer behaviour.

Nutraceuticals and health outcomes

The role of nutraceuticals is expanding. Regulatory changes have accelerated this shift. The Food Safety and Standards Authority of India introduced antibiotic limits across food-animal production in October 2024, effective April 2025. This has increased the adoption of alternatives such as probiotics, enzymes, and amino acids.

These inputs improve feed conversion ratios and support immunity. They also reduce dependence on antibiotics and help produce residue-free animal products. Research-backed Ayurvedic formulations are gaining traction. Trials conducted by ICAR-NDRI have shown improvements in milk yield and animal health, positioning India as a strong player in herbal nutrition solutions.

Structural and regulatory challenges

Affordability and access remain significant challenges in the industry. Feed costs are under pressure due to the volatility of raw materials. The shift of maize for ethanol production and fluctuations in soyabean meal prices have driven up input costs. Since feed constitutes a major portion of livestock expenses, even minor price changes can significantly impact farmers' profit margins.

Market fragmentation complicates the situation. The poultry sector operates through organised value chains, while cattle and aquaculture rely on local feed sources or on-farm mixing. This results in uneven nutritional outcomes and lower feed efficiency. Additionally, regulatory clarity is still developing. While compliance with BIS standards is required for certain categories, many specifications remain voluntary, creating uncertainty in the market.

India's path forward

India is well-positioned to emerge as a global hub for animal nutrition. It has the world's largest livestock base, supported by a growing research ecosystem. Policy support through initiatives such as the Animal Husbandry Infrastructure Development Fund and the National Livestock Mission is strengthening capacity and encouraging investment across the value chain.

The next step lies in scaling awareness. Digital extension and targeted outreach can help farmers adopt precision nutrition practices more effectively. As adoption improves, gains in productivity and feed efficiency will follow. This shift can ease cost pressures and improve access over time. With sustained focus, India can build a more efficient and globally competitive animal nutrition ecosystem.

Nutraceuticals are integral to animal health and long-term productivity

India's animal nutraceuticals market stands at a pivotal juncture, with strong growth potential across livestock, poultry and companion animal segments. Being an organised sector in industry, poultry nutraceutical segment is well established.

However, in the dairy sector, especially amongst the unorganised dairy sector, an untapped opportunity lies in bridging the widespread awareness gap around balanced nutrition, an essential yet often overlooked aspect of animal health.

In the livestock sector, productivity has improved through cross-breeding, better farm management, and a sharper focus on yield. While progressive dairy farmers understand nutritional practices, the small and marginal livestock farmers remain inconsistent, directly impacting fertility, immunity, and overall output. For small and marginal farmers, who rely on dairy as a steady source of income beyond seasonal agriculture, nutraceuticals offer a powerful lever to enhance productivity, improve animal health, and enable more predictable earnings.

The cross-breeding programs, improved fertility, and rising awareness will drive scale in the livestock sector. On the other hand, the companion animal segment is emerging as a high-growth opportunity. As per the INFAH estimates, companion care segment is poised for rapid growth, with a projected CAGR of 12 per cent from Rs 15 billion in 2025 to Rs 48 billion in 2035. Pet adoption has risen steadily, particularly among nuclear families, a trend accelerated during and after COVID. Yet, only a small percentage of pets in India receive balanced nutrition. As pet parents become increasingly conscious of calorie intake, breed-specific needs, and preventive healthcare, nutraceuticals are evolving from optional choice to essential components of overall pet wellness.

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Addressing these gaps also require research-driven innovation. At Zenex Animal Health, the focus is on balanced nutritional feed supplements and advanced scientifically formulated solutions such as phytobiotics and probiotics to improve gut health, strengthen immunity, and support sustainable animal performance. Innovations including novel probiotic strains and next-generation feed supplements underscore the role nutraceuticals can play in enhancing both productivity and disease resistance.

Despite the promise, challenges persist in the absence of a well-defined regulatory framework for nutraceuticals. Further, limited rural infrastructure and access to veterinary services continue to constrain adoption. A prevailing misconception is that nutraceuticals are supplementary, in reality, they are integral to animal health and long-term productivity.

Encouragingly, growing government support, strengthening veterinary infrastructure including vet hospitals and diagnosis centres, milk processing facilities and increased availability of trained veterinarians and paravets are improving awareness and access. Together, these factors position India to emerge as a significant global player in the animal nutraceuticals space.

Nutraceuticals are being seen as tools that support animal health and output

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India's animal nutraceuticals market is still under-penetrated, but momentum is building. What was once seen largely as a premium add-on in feed or pet care is slowly becoming part of a wider preventive animal health conversation, both in livestock and companion animals.In livestock, the opportunity is significant because nutritional gaps remain large. Commercial feed penetration is still low compared with herd size, especially in cattle, where dry fodder and crop residue continue to dominate feeding practices in many regions. But that is changing as dairy economics come under pressure and farmers look more closely at feed efficiency, fertility, immunity and milk productivity.The numbers point to that shift. India's animal feed supplements market was valued at $1.6 billion in 2024 and is projected to touch $2.6 billion by 2033, growing at a CAGR of 5.3 percent, according to IMARC. At the same time, India's livestock animal health market is expected to grow at 10.2 percent CAGR through 2033, supported by rising disease-management spending and the government's Rs 3,880 crore Livestock Health and Disease Control Programme.

Nutraceuticals sit squarely within that story. Probiotics, enzymes, toxin binders, mineral mixtures, herbal actives and gut-health products are seeing wider use, particularly as producers, especially in poultry, move away from antibiotic-led growth models. India's feed additives market alone is projected to reach $2.38 billion by 2034, underlining the broader move toward performance-focused nutrition.

Companion animal nutraceuticals are smaller in scale but growing faster. Products linked to gut health, joint support, skin care, stress and immunity are moving beyond niche urban demand. Growth in pet ownership, greater veterinary awareness and e-commerce-led distribution have all contributed to expanding the market.

One of the biggest misconceptions around animal nutraceuticals in India is that they are optional extras. In cattle, traditional fodder is often assumed to be enough

to support productivity. In pets, homemade diets or kitchen leftovers are frequently seen as nutritionally adequate. In poultry too, discussions often remain focused on antibiotics, while scientifically formulated nutrition gets less attention. At the heart of this is a broader tendency to view nutrition as a routine cost rather than a productivity input.

That is also where a major untapped opportunity lies.

Much of the attention around nutraceuticals has focused on premium pet supplements, but the larger opening may be in smallholder livestock nutrition. India's dairy and poultry sectors remain dominated by fragmented producers, many of whom are underserved when it comes to science-backed supplementation. Even modest gains in mineral balancing, rumen health, probiotics or reproductive nutrition can improve milk yields, feed efficiency and disease resilience.

The market is likely to be driven by products linked not just to nutrition, but also to antibiotic reduction, methane efficiency, immunity, longevity and species-specific formulations

Another area to watch is preventive health. There is growing scope to position nutraceuticals not as curative add-ons, but as part of routine health management — something that has already reshaped demand in human nutraceuticals.

Looking ahead, the market is likely to be driven by products linked not just to nutrition, but also to antibiotic reduction, methane efficiency, immunity, longevity and species-specific formulations.India may still be underestimating the category because nutraceuticals are often viewed simply as supplements. But as productivity pressures rise, they are increasingly being seen as tools that support animal health and output. That is where the market's bigger opportunity may lie.

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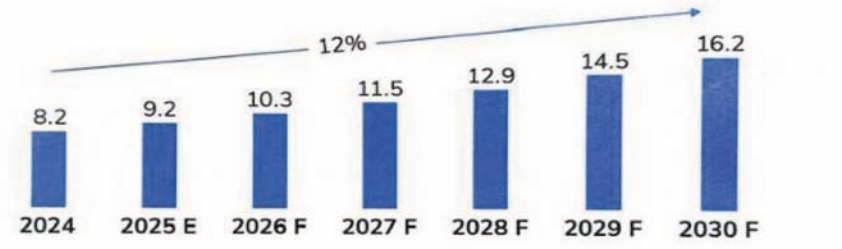
Nutraceuticals at the crossroads: Domestic demand meets global export opportunity

Health Foods and Dietary Supplements Association (HADSA), in partnership with Frost & Sullivan, launched an exclusive whitepaper titled: 'Nutraceuticals at the crossroads: Domestic demand meets global export opportunity'. Express Nutra provides an in-depth analysis of the whitepaper

The Indian healthcare narrative is undergoing a seismic shift. No longer is the conversation confined to reactive treatment within the sterilised walls of a hospital; it has moved into the kitchens, gym bags, and daily rituals of the common citizen. This evolution was the focal point of the Global NutraConnect Summit: Unveiling the Growth Story, where the Health Foods and Dietary Supplements Association (HADSA), in partnership with Frost & Sullivan, launched an exclusive whitepaper titled: 'Nutraceuticals at the crossroads: Domestic demand meets global export opportunity'.

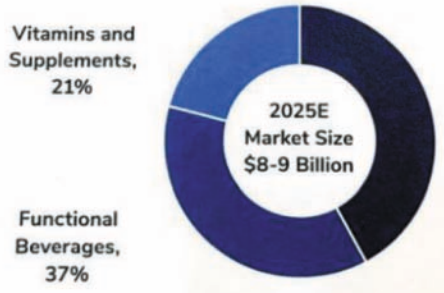
The report paints a picture of a sector that has moved from the "fringes of FMCG" to a central pillar of India's national health strategy. As we stand in 2026, the data confirms that India is not just a participant in the global wellness economy—it is becoming one of its primary engines.

FIG: Indian Nutraceuticals Market Size projection till 2030 (USD Billion)



Source: Frost & Sullivan Analysis

FIG: Segmental Breakup of Indian Nutraceutical Market Size in 2025 (USD Billion)



Source: Frost & Sullivan Analysis

The 2030 vision: From billions to exponential growth

The financial trajectory of the Indian nutraceutical market is nothing short of aggressive. Currently, in 2025, the market is estimated at a robust USD 8.9 billion. However, it is the forward-looking projections that demand the attention of investors and policymakers alike. With a projected Compound Annual Growth Rate (CAGR) of 12 per cent, the market is expected to scale to approximately USD 16.2 billion by 2030. This growth is not accidental. It is a direct response to a "dual health challenge". While India battles persistent micronutrient deficiencies where a staggering 80 per cent of the population lacks critical gaps in Vitamin D, B12, and Iron—it is simultaneously being hit by a "rising tide" of Non-Communicable Diseases (NCDs). With NCDs now accounting for roughly 63 per cent of all deaths in the country, the demand for preventive, cost-effective health solutions has moved from a luxury to a household necessity.

Breaking down the market: Beyond the pill

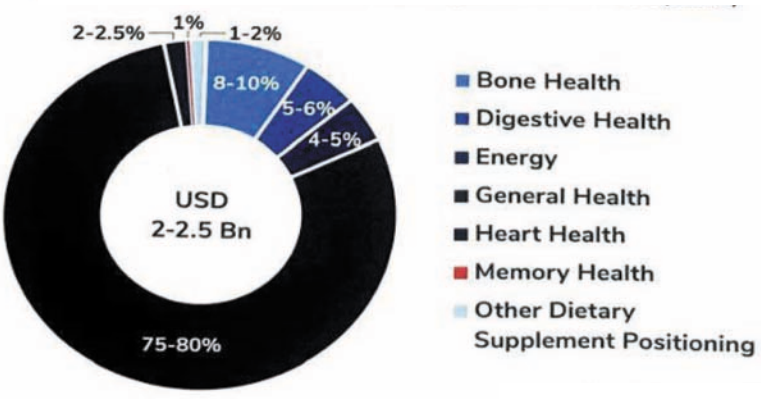
A critical takeaway from the Frost & Sullivan analysis is the structural composition of the Indian market. Unlike Western markets that may lean heavily on concentrated supplements, the Indian consumer shows a distinct preference for "health in everyday consumption".

The 2025 market segmentation:

- **Functional foods (42 per cent):** Taking the largest slice at USD 3.8 billion, this includes fortified staples like iron-enriched atta, probiotic dairy, and diabetic-friendly cereals.
- **Functional beverages (37 per cent):** Estimated at USD 3.3 billion, encompassing energy drinks, Ayurvedic RTD beverages, and protein shakes.
- **Vitamins and minerals (21 per cent):** Valued at approximately USD 1.9–2.0 billion, catering to specific gaps like bone health and anemia.

By 2030, if these proportions hold, functional foods alone will represent a USD 6.5–6.7 billion opportunity, reinforcing the idea that the future of Indian nutraceuticals is edible and drinkable, not just encapsulated.

Percent Share of Overall Dietary Supplements Market (2025)



Source: Frost & Sullivan Analysis

A fragmented consumer: The four strategic lenses

The whitepaper brilliantly dismantles the myth of a "monolithic" consumer. To succeed in India, brands must navigate four distinct cohorts, each with unique psychological and physiological drivers.

The kids segment: The mother as gatekeeper

For children, the focus remains on growth, immunity, and cognitive performance. Parents are increasingly looking for "stealth health"—fortified tiffin snacks or gummies—that integrate into existing routines.

Young Adults (18-30): Performance and aesthetics

This is the most dynamic cluster, driven by digital discovery and fitness influencers. Their needs are anchored in sports nutrition (whey/plant protein), weight management, and "beauty-from-within" products focusing on skin and hair.

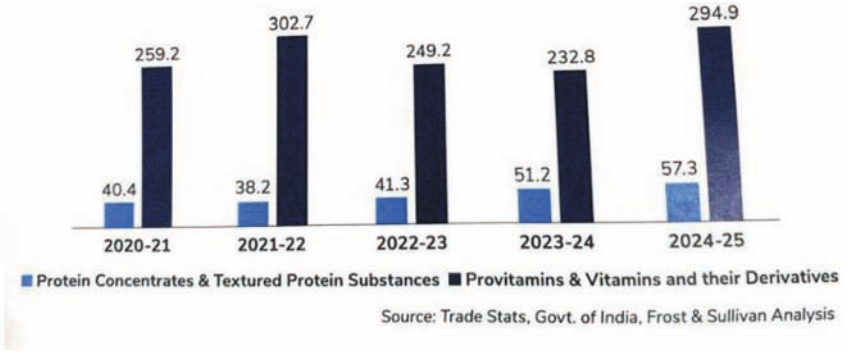
Adults (30-55): Risk management

As metabolic stress sets in, this group pivots toward sugar management, heart health, and stress support. Here, trust is the primary currency; doctor recommendations and long brand histories are the key drivers of purchase.

The women's segment: Specialised care

This segment is a powerhouse, addressing gender-specific needs like PCOS, anemia, and menopausal care. With nearly 50 million women reaching menopause annually, the demand for targeted hormonal and bone health support is skyrocketing.

Nutraceuticals Exports from India (2020-25) in USD Mn



Therapeutic frontiers: Weight, ageing, and GLP-1

Perhaps the most exciting "frontier" identified in the report is the evolution of Weight Management. India is moving away from "short-term fixes" toward a holistic metabolic approach. The global success of GLP-1 drugs has created a ripple effect in the nutraceutical space, with companies like Nestle and Herbalife developing products that support metabolic health and appetite suppression through natural nutrients.

Simultaneously, India is bracing for a "silver tsunami." By 2031, the country will house 140 million elderly people. This demographic shift is turning "Healthy Ageing" into a massive opportunity for solutions addressing joint mobility, memory loss, and immune resilience.

The global export leap: The 2 per cent challenge

While the domestic story is one of triumph, the export landscape remains a "work in progress." Currently, India contributes less than 2 per cent to global nutraceutical exports. However, the momentum is shifting. Between 2023-24 and 2024-25, India saw a 27 per cent surge in the export of Provitamins and Vitamins.

To move from 2 per cent to a dominant global position, the report identifies three critical success factors:

1. Compliance with international labeling and traceability standards.

2. Leveraging the inherent cultural "credibility" of Ayurveda and herbal strengths.

3. Utilising India's massive raw material base to offer competitive scale.

The way forward: science-led and consumer-centric

The whitepaper concludes that a "one-size-fits-all" portfolio will struggle to survive in a market where the consumer is increasingly educated and discerning.

The nutraceutical sector in India sits where health, food, and innovation meet, ready to shape the global wellness economy in a meaningful way. As consumers increasingly look for natural, preventive, and personalised health options, it presents significant room for growth and diversification. India's ready access to raw materials like herbs and botanic, along with its deep roots in Ayurveda, gives it a distinct competitive edge in this field.

India is well placed to capitalise on its deep pharmaceutical know-how, a consultative FSSAI regulatory setup, and an expanding manufacturing ecosystem. With several Free Trade Agreements (FTs) already in force across key markets including the UK, EU, USA, Mauritius, UAE, and Australia; alongside ongoing talks with the US, and a stronger push toward research, molecule development, and scientific validation, the sector is set to grow responsibly and take a global lead by 2030.

IADSA: Better regulation and policy for better lives

Simon Pettman, Executive Director, International Alliance of Dietary/Food Supplement Associations (IADSA) underscores how responsible supplementation supported by strong industry standards and policy frameworks can not only empower individuals to take charge of their health but also contribute to more sustainable healthcare systems worldwide

Good nutrition is the foundation of good health. Yet around the world, FAO and WHO data show that more than two billion people still suffer from micronutrient deficiencies, often quietly and often with serious consequences.

In India, as in many countries, economic growth and urbanisation are transforming lifestyles and expectations around health. As populations live longer and healthcare systems face increasing pressure, attention is turning towards achieving optimal health in addition to avoiding deficiencies.

In this evolving landscape, supplementation is becoming an increasingly valuable tool to help individuals proactively support their wellbeing through vitamins and minerals, botanicals and other ingredients. For millions of consumers around the world, health supplements have become a trusted part of daily routines—a way to take greater ownership of their health and maximise their personal potential.

Increasingly, evidence is also showing that supplementation can contribute not only to individual wellbeing but also to the sustainability of healthcare systems, including by lowering healthcare costs and easing pressure on healthcare services. As governments look for solutions that are both effective and economically sustainable, the contribution of responsible supplementation is gaining greater attention.

Since 1998, IADSA has served as the global platform supporting the evolution of regulation and policy for the health supplement sector. We have been called upon by partners in government in more than 80 countries to share knowledge, research, perspectives and best practices, always grounded in science and the public interest.

To be heard requires trust, and this must always be earned. That is why our work is built on three pillars: scientific rigour, responsible industry standards, and strong partnerships.

As governments look for solutions that are both effective and economically sustainable, the contribution of responsible supplementation is gaining greater attention

We are committed to product quality and responsible practices across our sector. From developing global guidance on good manufacturing practice and product stability, to investing in initiatives that strengthen consumer understanding and safety, our work aims to continuously elevate standards to allow consumers to buy products with confidence.

Our latest global research conducted by IPSOS shows that consumers value and trust health supplements. In Europe the figure is 69 per cent, in the US 74 per cent and in South East Asia consumer trust reaches 92 per cent.

Over the past 20 years, the regulation of supplements has evolved considerably. In 1998, when IADSA was created, the majority of the world did not have specific regulation for supplements. This took time to change.

Some regulations emerge in response to public demand. Others reflect the need to harmonise markets or facilitate trade. And all reflect to some degree national customs, traditions and experience. But at their core, regulations share four key elements:

1. They have clear terminology, whether health/dietary/food supplement, to ensure legal clarity and to ensure that consumer perception of the purpose of our products is properly understood. Their purpose is to supplement: they are not medicines to treat or cure.

2. They must be safety based, allowing consumers to buy products that work for them as long as they are safe.

3. They must provide guidance on communication and claims to ensure transparency and trust and consumers access to information to allow them to make the right choices.

4. They must always have a foundation of quality requirements to ensure product integrity.

Today's global leaders in our sector have not grown overnight, they have grown over many years always with considerable resources allocated to innovation, their people and investment at home and internationally. To invest, companies need a stable regulatory climate. And a stable regulatory framework nationally, regionally and globally also helps protect a level playing field so that those companies who are doing what is right are not damaged by the small minority who are not.

As the global market continues to grow, we will continue our work across the world to help to achieve better and regulation and policy which ultimately results in better lives.

Regulating the grey zone: Nutraceuticals between food and drugs in India

As India's nutraceutical market surges on the back of rising health consciousness, **Dr Amit Kumar,** Assistant Professor of Law, Maharashtra National Law University (MNLU) explores the complex regulatory grey zone these products occupy between food and medicine. He underscores how ambiguous definitions, weak oversight, and aggressive marketing have created a landscape where consumer perception often outpaces scientific validation—raising critical questions about safety, efficacy, and the urgent need for a more robust and balanced regulatory framework

Nutraceuticals which refer to food-derived products such as vitamins, minerals, herbal extracts, probiotics, amino acids and fortified formulations that are marketed for nutritional, preventive or physiological benefits beyond basic nourishment have increasingly become flagship products of a growing wellness economy. They however currently fall into a fuzzy regulatory realm that lies in the intermediary space, between being food and being drugs. These products are not just sold to be consumed as food but marketed also as products that prevent diseases and keep people fit and healthy. Nutraceuticals remain one of the most loosely defined and least regulated products in India despite their sensitive consumption-based nature.

The nutraceutical conundrum has its roots in functional and ambiguity regulatory. Nutraceuticals are products that fall into the gray zone between food and medication. They are not regular food because they promise health benefits; they are not drugs since most of them do not undergo evidence-based trials necessary for drugs. Their ambivalent legal definitional status has facilitated the emergence of a huge market characterized by low oversight on efficacy, variable quality control, and exaggerated health claims.

Internationally, the word "nutraceutical" does not carry one consistent definition in science. The term refers to a range of dietary supplements, fortified foods, botanical extracts, and functional foods used for preventing diseases and promoting general well-being, even when the scientific basis differs. Studies have consistently established that the regulation of these products internationally poses challenges due to their ambiguous

placement between nutrition and pharmaceutical science.

Nutraceuticals are governed in India largely by the Food Safety and Standards Act, 2006 via the Food Safety and Standards Authority of India (FSSAI). The relevant rules categorize nutraceuticals as foods with some form of health benefit. In terms of regulation therefore, features such as food safety and labelling, contamination, hygiene, permitted substances and packaging become preponderant. rather medical efficacy and effectiveness as in the case of drugs.

The difference is significant. Prior to getting approves as a medicine in the Drugs and Cosmetics Act, 1940, a drug must fulfill many stringent conditions such as manufacturing control, licensing, adverse effects monitoring and at least theoretical standards of safety and use. However, many nutraceuticals that are sold in India also come in capsule, tablet, syrup and sachet forms just like medicines and sold in pharmacies along with prescription drugs. People therefore conflate them with medicines and presume them to be scientifically tested. In most cases, they are not.

The above practice has led to what scholars term "classification arbitrage". Nutraceuticals such as those claiming to help with cholesterol control, sleep improvement, sugar levels management or joint pain are not required to undergo rigorous scrutiny and testing when sold as supplements rather than as medicines avoiding costs and regulatory delays while retaining the market perception of therapeutic efficacy.

The recent ORS controversy foregrounds this dilemma aptly . In October 2025, FSSAI issued an advisory requiring firms to remove the term 'ORS' from products that were not in compliance with ORS standards. FSSAI opined that the use of such terms in beverages would create a false impression among customers that the beverages are equivalent to ORS. Enforcements measures were taken against such beverages. This injunction holds a lot of significance because the ORS is not an ordinary drink. Its preparation requires adherence to scientific methods using specific salt and sugar proportions. Besides, it is used as a first response to treat millions of people across the globe who suffer from dehydration, especially children suffering from dehydration due to diarrhea. An incorrect ORS formulation claiming similar therapeutic benefits can and has shown to have serious adverse effects. The controversy nevertheless has highlighted the ease with which such therapeutic terms could be commercialized in cases where line between foods and medicines is blurred.

However, while the ORS controversy has gained a lot of traction, similar cases have been witnessed even before in the nutraceutical market. For instances in the aftermath of the Coronavirus pandemic, there was a proliferation of immunity boosters in the market

with all kinds of vague claims suggesting their potential against the virus. Likewise, protein shakes are sold under the promise of achieving metabolic excellence without their amino acid profiles being explained to consumers. Similarly herbal remedies promise management of various conditions, including diabetes, hormonal, cognitive or liver disorders, pediatric multivitamin gummies are marketed as candies nudging overuse. Even sleep inducers promote consumption of melatonin mixes even in the absence of any sufficient research.

The issue has in fact been well-studied in international literature. Medical research has documented existence of serious side effects from using "natural" substances: liver failure, nephrotoxicity, contamination and adverse drug interactions to name a few. The situation is aggravated by insufficient monitoring and prevalence of self-medication.

Despite this, unlike drugs, there is no robust requirement for nutraceuticals to furnish evidence about the effectiveness of the product prior to its marketing. The research cited is more about individual ingredients rather than the product itself. Nutraceuticals manufacturers often quote generic scientific research done on turmeric, magnesium, and probiotics but go on to sell a multi-component product claiming effectiveness without proving its safety and performance at certain dosage levels.

The issue of quality control poses another problem. FSSAI has taken cognizance of the non-compliance by nutraceuticals firms and has begun tightening norms following the discovery of nutraceuticals containing higher than prescribed amounts of nutrients even using prohibited substances, or making false claims. However, enforcement remains uneven among states and online marketplaces have enhanced the level of supervision required.

The weakest link however is advertising. Indian consumers are bombarded with advertisements such as "boosts immune system", "promotes sugar metabolism", "detoxifies liver", "hormonal wellness", "brain stimulant", and "clinically proven fat loss". Such statements are carefully drafted, clear enough to convince consumers but vague enough not to evade liability. Despite laws on Consumer Protection and misleading advertisement such as Drugs and Magic Remedies (Objectionable Advertisements) Act, digital commerce easily outpaces traditional reinforcement. Influencers across social media too promote the sale of these supplements without showcasing credible evidence, conflicts of interest, or any adverse risks. Supplement manufacturers do not have to demonstrate product efficacy before marketing and action from regulatory agencies is usually taken in only post facto and in response to any highlighted adverse effects as in the case of ORS.

What then should India do?

In such a scenario what India requires today is a careful balancing act. What is needed today is not an outright ban on nutraceuticals, but a systematic regulatory framework wherein the risk is calibrated with oversight. The starting point, however, needs to be a statutory demarcation of the line between ordinary nutritional products and quasi-medical ones. Nutritional products which make disease management claims, contain pharmacologically active ingredients, or act as substitutes for approved therapeutic treatment, need to be treated differently from those ordinary dietary supplements. While some of these products may require stricter scrutiny than what they get under the current system, others need to undergo a hybrid regulatory process involving aspects of both food and drug legislation.

Simultaneously, India should also consider implementing a graded evidence approach for nutraceuticals based on the type of claims. A simple multivitamin required for nutritional deficiency need not regulated at par a product which aims at controlling the level of glucose in blood or improving cognitive functions, hormone regulation or cardiovascular wellness.

The reform must also be accompanied with a transparent claim governance approach. Any assertions such "supports immunity" or "promotes gut health" should be linked to a publicly available evidence registry prepared by the regulators. Any stakeholder interested in the truth behind a claim can verify the scientific rationale behind the approval of the supplement in question. It will drive the industry away from fuzzy marketing language towards credible science.

Equally crucial is the need to establish a national nutrivigilance framework analogous to pharmacovigilance in medicine. Currently, the risks associated with using certain dietary supplements largely go undocumented even though such products may react with other drugs, contain undisclosed substances, or cause organ toxicity.

The digital market deserves immediate attention as well. Influencers, celebrities, and algorithmic advertising have become effective means of disseminating dubious health claims. It is unacceptable that platforms act as mere conduits while making money from fraudulent promotional campaigns. It is their duty to directly verify adherence to the law, withdraw any illegal ads, and require sponsors of health-related advertisements to clearly identify their role. Given that consumers today often receive their health information from social media, regulating the digital market becomes crucial in protecting consumers.

However, the measures discussed above will only succeed when the fragmentation of roles between FSSAI and CDSCO, the Indian agencies responsible for ensuring food safety standards and therapeutic efficacy respectively, has been addressed. Nutraceuticals currently slip through the regulatory gaps as they sit right at the intersection between food and drugs. This calls for a coordinated approach and a collaboration effort to classify borderline products in order to prevent them from exploiting the jurisdictional overlap between both authorities. In this regard, India can also learn from the scientific approach adopted by the EU which validates health claims scientifically prior to releasing the products in markets through the Nutrition and Health Claims Regulation read with assessments conducted by the European Food Safety Authority (EFSA). This ensures that unsupported claims are regularly rejected. India presently resembles the permissive American model more than the precautionary European one, but without equivalent enforcement capacity.

Using the language packaging and trust associated with medicine and yet not meeting the corresponding medical requirements defeats the purpose of consumer autonomy. The real problem however is not only the undermining of the consumer right to make informed choices but damage to the public health. If regulated well, nutraceuticals can play a legitimate role in preventive healthcare. Hence if evidence-based healthcare is what India wants, there should be no conflation of nutrition with medicine.

India's hidden hunger crisis: Why food fortification must become a public health priority

Dr Rajan Sankar, Director-Nutrition, Tata Trusts and Founding Director of The India Nutrition Initiative, unpacks the paradox of a food-surplus nation grappling with widespread micronutrient deficiencies

India has achieved something truly remarkable in the last few decades. We have moved from being a country that relied on food aid to one that is a food-surplus nation. Our godowns are full of wheat and rice, and our farmers have ensured that no citizen needs to go to bed on an empty stomach. However, as we look at our growing children and the health of our women, a new and quieter challenge has emerged. This is the crisis of "Hidden Hunger."

Hidden hunger does not cause the stomach to growl. It is a condition where a person may eat enough rotis and rice to feel full, but their body is still starving for essential micronutrients like iron, iodine, zinc, and vitamins A, D, and B12. These tiny nutrients are the building blocks of our health. Without them, a child's brain cannot develop to its full genetic potential, and an adult's productivity is cut short.

The latest National Family Health Survey (NFHS-5) shows us the scale of this problem. Over 67 per cent of our children under five and nearly 59 per cent of adolescent girls are anemic. Among women of reproductive age, the prevalence of anemia stands at 57 per cent. These are not just numbers; they represent millions of lives that are not as healthy as they could be. To address this, we need a strategy that works on multiple levels.

A three-pronged approach to nutrition

It is important to understand that no single solution can solve malnutrition. We must view nutrition as a multi-sectoral challenge. Large-Scale Food Fortification (LSFF) is most effective when it is used as a complementary strategy alongside two other vital pillars: dietary diversification and targeted supplementation.

1. Dietary diversification: This is the ideal, long-term solution. Every Indian should have access to a balanced thali that includes a variety of pulses, green leafy vegetables, fruits, and animal-source proteins. However, for many families, a diverse diet is either not affordable or not easily available due to local market conditions.

It is important to understand that no single solution can solve malnutrition. We must view nutrition as a multi-sectoral challenge. Large-Scale Food Fortification (LSFF) is most effective when it is used as a complementary strategy alongside two other vital pillars: dietary diversification and targeted supplementation

2. Targeted supplementation: This is a clinical approach. Programs like "Anemia Mukt Bharat" provide iron and folic acid (IFA) tablets directly to high-risk groups like pregnant women and school-going children. While effective, supplementation requires people to remember to take a pill every day, which can be difficult to sustain.

3. Large-Scale Food Fortification (LSFF): This is where LSFF fits in. It provides a "nutritional floor" or a baseline of nutrients for the entire population. By adding essential vitamins and minerals to the staples we already eat like salt, milk, oil, and rice—we can reach everyone without asking them to change their eating habits, their cooking style, or even their taste.

The Indian success story: Salt and beyond

India's journey with fortification is not new. In fact, we were one of the first countries to recognize its power. The most famous success is our Universal Salt Iodisation program. It began in 1962 with the National Goiter Control Programme. By the early 1990s, the government took a historic decision to iodize all edible salt in a phased manner to cover the entire country. Today, nearly 90 per cent of Indian households have access to iodised salt, which has protected millions of children from brain damage and physical disabilities caused by iodine deficiency.

Building on this success, we have expanded to other staples. Rice fortification is now one of the largest programs in our country's history. Since the Prime Minister's announcement in 2021, the government has worked to supply fortified rice through all social safety net schemes. This includes the Public Distribution System (PDS), the Integrated Child Development Services (ICDS), and the PM-POSHAN school meal program. By 2024, millions of metric tons of rice enriched with iron, folic acid, and vitamin B12 reached the most vulnerable families across every state.

In the open market, voluntary fortification of edible oils and milk has also scaled up significantly. Many leading brands now carry the +F logo, indicating they are enriched with Vitamins A and D. Because edible oil and milk are processed in large, central facilities, it is easier for the industry to fortify them and for the government to monitor the quality.

Creating an enabling environment

The success of these programs is not acciden-

tal. The Government of India has built a robust "enabling environment" to ensure that fortified food is safe, high-quality, and effective.

The Food Safety and Standards Authority of India (FSSAI) has been at the heart of this. In 2018, it notified comprehensive standards for the fortification of staples like rice, wheat flour, oil, and milk. It also established the Food Fortification Resource Centre (FFRC) as a "resource hub" to provide technical assistance to food businesses and coordinate between different government ministries.

To ensure that the +F logo on a packet truly means it has the right nutrients, the government has invested in a massive network of laboratories. There are now dozens of FSSAI-notified and NABL-accredited labs across the country specifically capable of testing for fortificants in rice, premixes, and oils. This infrastructure ensures that the industry follows the rules and that the public can trust what they buy.

Beyond the labs, the government uses a process called supportive supervision. This is not about being a "policeman." Instead, it is a way to guide and assist the staff in the field—like those at Anganwadi centers or PDS shops to improve their performance.

Through regular monitoring and digital tools, the government can track the supply of fortified foods in real-time, solving problems as they arise and ensuring that the nutrients actually reach the plates of our children.

A call for community ownership

While the government is in the "driver's seat," the journey toward a nutrition-secure India requires the participation of every citizen. We must move from a "government program" to a "Jan Andolan"—a people's movement.

Families need to develop a "health-seeking behavior." This means choosing to look for the +F logo when buying oil or milk at the local kirana store. It means mothers ensuring that their children eat the hot cooked meals provided at the Anganwadi centers and schools. When the community takes ownership, it puts pressure on the system to deliver even better services.

Conclusion

Large-Scale Food Fortification is a scientifically proven, cost-effective, and non-disruptive way to fight hidden hunger. It is a bridge that connects our success in food production to our goal of nutritional security. By combining LSFF with a diverse diet and targeted health interventions, India can finally break the cycle of malnutrition.

We have the standards in place, we have the industry capacity, and we have the laboratory network to ensure quality. As we move toward achieving Sustainable Development Goal 2 (Zero Hunger), let us ensure that every meal in every Indian home is not just filling, but truly nourishing. The future of our children depends on the choices we make today. Look for the +F logo—it is a small mark that makes a big difference.

India's nutraceutical sector finds its moment at Global NutraConnect Summit 2026

India's nutraceutical sector is entering a decisive growth phase, driven by rising consumer awareness, regulatory momentum, and expanding global demand. The Global NutraConnect Summit 2026, organised by Health Foods and Dietary Supplements Association (HADSA) in Mumbai, brought together key stakeholders to map this transition from domestic expansion to global opportunity

Kalyani Sharma

The Global NutraConnect Summit: Unveiling the Growth Story, organised by Health Foods and Dietary Supplements Association (HADSA) on April 16, 2026, in Mumbai, convened regulators, global thought leaders, and domestic industry stakeholders at a critical juncture for India's nutraceutical sector. The summit also marked the unveiling of the whitepaper "Nutraceuticals at the Crossroads: Domestic Demand Meets Global Export Opportunity," highlighting India's dual opportunity in domestic consumption and global exports.

The summit commenced with a welcome address by Kaushik Desai, Secretary General, HADSA, who welcomed dignitaries and underscored the importance of collaboration between regulators, industry, and global stakeholders in shaping the future of the sector.

Opening remarks were delivered by Dr Ajit Singh, President, HADSA and Chairman, ACG, who reflected on the industry's evolution from a relatively unknown category to a fast-growing sector with strategic importance. He also highlighted a critical gap in manufacturing infrastructure, noting that nutraceutical production continues to rely on pharma machinery not designed for handling natural, complex ingredients. He called for industry-led engagement with equipment manufacturers to develop specialised solutions tailored to nutraceutical formulations.

Regulatory momentum and industry growth

Delivering the Guest of Honour address,

Pritee Chaudhary, Regional Director, Food Safety and Standards Authority of India (FSSAI), Western Region, highlighted the sector's rapid expansion. She revealed that licensing activity in the western region has grown from approximately 4,200 in 2023–24 to nearly 8,800 in 2026, indicating an annual growth rate of 25–30 per cent. Positioning nutraceuticals as a "sunrise industry," she emphasised the shift from a pharmacy-led healthcare model to a supermarket-driven, consumer-centric approach.

She also pointed to government-led nutrition initiatives such as fortified food distribution as key drivers, while stressing the importance of trust, accessibility, and continuous dialogue between regulators and industry.

Global regulatory perspective and trust imperative

The keynote by Simon Pettman, Executive Director, International Alliance of Dietary/Food Supplement Associations (IADSA), offered a global perspective on the evolution of regulatory frameworks.

He emphasised that while demand for supplements is rising globally, sustainable growth depends on scientific rigour, responsible practices, and strong partnerships. He also highlighted high levels of consumer trust in supplements across regions and outlined key regulatory pillars including safety, transparency, clear categorisation, and quality standards.

India's global opportunity and innovation potential

Chi Hee Kim, Chair, IADSA and Vice President – Global Regulatory and Post-Market Safety Affairs, Herbalife, described the current phase as a defining moment for the sector. She noted that India is emerging as a key manufacturing and innovation hub with the potential to serve global markets. However, she stressed that regulatory alignment and standardisation will be critical to unlocking export opportunities and building global trust.

Beyond the keynote and leadership addresses, the summit also featured individual expert sessions, offering deeper insights into scientific advancements, regulatory developments, and market trends shaping the nutraceutical landscape.

The Global NutraConnect Summit 2026 underscored that India's nutraceutical sector is transitioning from high-growth potential to global relevance. With strong regulatory support, rising consumer demand, and increasing industry maturity, the sector is poised for accelerated expansion

Nutra growth story: Policy, regulation and ease of doing business

A key policy-focused discussion explored regulatory frameworks and ease of doing business in India. The panel was moderated by Dr Vaibhav Kulkarni, Hon. Secretary, HADSA and Founder Director, Zantus Lifesciences.

Panelists included Michelle Stout, Regulatory Policy Director, Amway Global; Vaidehi Kalzunkar, Deputy Director (Technical), FSSAI; Rini Sanyal, Chair – Regulatory, HADSA; Dr Yashwant Kumar, Founder and CEO, Benefic Nutrition and Dr Sujatha Jayaraman, Vice President – R&D, Hindustan Unilever Foods

The discussion focused on regulatory clarity, reducing compliance complexity, and strengthening India's ease of doing business to enable faster industry growth and global competitiveness.

Another key panel 'From Concept to Consumer – Product Development, Manufacturing and Quality' addressed the end-to-end value chain from product conceptualisation to manufacturing and quality assurance. The discussion highlighted the importance of innovation, robust quality systems, and scalable manufacturing practices in building globally competitive nutraceutical products.

The CEO and Leadership Roundtable on "Nutraceutical Vision 2030" brought together leading industry stakeholders, including Dr Ajit Singh, President, HADSA and Chairman, ACG; Hitesh Patel, Managing Director, K Patel Phyto Extractions; Prashant Nagre, Managing Director, Fermenta Biotech; Suresh Garg, Chairman, MD and Founder, Zeon Lifesciences; Rajat Shah, Co-Founder and Executive Director, Nutrivential; Achal Chauhan, CEO and Director, BACFO Pharmaceuticals and Yashna Garg, Chief Marketing Officer, Zeon Lifesciences

The roundtable focused on scaling capabilities, strengthening supply chains, and positioning India as a global nutraceutical leader.

Whitepaper unveiling: A sector at the crossroads

HADSA, in partnership with Frost & Sullivan, launched an exclusive whitepaper titled: 'Nutraceuticals at the crossroads: Domestic demand meets global export opportunity

The report paints a picture of a sector that has moved from the "fringes of FMCG" to a central pillar of India's national health strategy. As we stand in 2026, the data confirms that India is not just a participant in the global wellness economy—it is becoming one of its primary engines.

Conclusion

The Global NutraConnect Summit 2026 underscored that India's nutraceutical sector is transitioning from high-growth potential to global relevance. With strong regulatory support, rising consumer demand, and increasing industry maturity, the sector is poised for accelerated expansion.

However, as discussions throughout the summit highlighted, the path forward will depend on maintaining quality, strengthening regulatory frameworks, and building global trust ensuring that India not only participates in but leads the next phase of growth in the global nutraceutical industry.

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