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THE NUTRA ECONOMIST

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Magazine Index

FROM THE DESK OF CHAIRPERSON, NUTRIFYTODAY

Six Years, One Responsible Nutrition Supply Chain

PRIYANKA SRIVASTAVA

Chairperson, NutrifyToday

On February 5, 2026, NutrifyToday completes six years. That anniversary is not a celebration of longevity for its own sake; it is a reminder of what the nutraceutical sector is being asked to do right now: move faster, prove more, and earn trust at scale. NutrifyToday started with a straightforward, demanding mandate serve the responsible nutrition supply chain, and help move innovation to market with speed and discipline, not shortcuts.

In the early days, it could feel like a lone journey. Many of the frictions we set out to reduce opacity, fragmented standards, inconsistent qualification, and slow commercialization are deeply embedded in how categories mature. But that journey is no longer lonely. It is now powered by 82,000 industry leaders who support the mission in their own way: by sharing intelligence, contributing expertise, challenging assumptions, and holding the bar high for quality and compliance.

This is why NutrifyToday is not business as usual. It is a community act designed to serve a larger purpose: enable a democratized world of nutra supply chain where merit rules. In practice, "merit" means evidence, execution, and accountability what many of you describe as best governance and compliance (GC). The aim is to make credibility more visible and access more fair, so serious innovators are not disadvantaged by noise and responsible operators are not penalized by complexity.

As NutrifyToday evolves, we are building what can be described as an operating system for the responsible nutra industry an infrastructure layer that helps participants qualify, connect, and execute with less friction. With that evolution comes a responsibility: tech-driven fairness with minimal human intervention in process. The objective is not to eliminate people; it is to reduce bias, inconsistency, and avoidable delay by translating decisions into auditable workflows. When rules are clear and data is traceable, trust becomes measurable.

This issue of Nutra Economist continues that operating-system conversation through the lens of the Philippines. In the last edition, we explored the market fundamentals: demographics, consumer choices, health in general, and the nutra market at large. This edition goes deeper into what determines outcomes how supply chains are structured, governed, and scaled when a supplement company commits to Philippines market expansion.

We examine supply chain models companies can leverage from partnership-led entry strategies and manufacturing options to distribution architectures and compliance pathways. We surface the strategic trade-offs leaders must own explicitly: speed versus control, margin versus resilience, and local responsiveness versus global standardization. And we translate those choices into operational requirements: vendor governance, documentation discipline, quality management, and the capacity to adapt when assumptions change.

Our cover theme is equally pragmatic. The tariff maze has become dense, and it now shapes strategy as much as strategy shapes it. Companies are asking a simple question with a complicated answer: how do you find your way when classifications, rates, and enforcement practices keep shifting across borders? In these pages, we map how the maze is currently structured and where it typically breaks execution—then outline how disciplined operators build navigational advantage through better intelligence, scenario planning, and documentation discipline.

We also analyze how the tariff maze impacts product formats, with capsules as the case study for this edition. Small choices ingredient origin, excipient selection, encapsulation location, and classification interpretation can change landed cost and compliance exposure. In a tariff-dense environment, format strategy becomes supply chain strategy.

Finally, this edition is strengthened by valuable inputs from industry members. Their perspectives bring tested lessons, not theory. We hope you find this issue meaningful, and we invite your advice on how to make Nutra Economist more useful for the community it serves.

Thank you for building together.

Surviving the Tariff Maze: How Supplements Can Still Win in 2026

In 2024, the U.S. goods trade deficit reached $1.2 trillion. In April 2025, the White House turned that macro figure into a new baseline tariff architecture: most imports into the United States began carrying an additional 10% duty, with higher country-specific rates layered on top unless a product fell into an expanding set of exceptions (Section 232 categories, Annex II carveouts, and bilateral deal exemptions).

For dietary supplements, this was not merely another trade-cycle headline. It became a structural stress test for a supply chain that is unusually dependent on cross-border intermediate goods vitamins, amino acids, mineral salts, standardized botanical extracts, excipients and on multi-country manufacturing (bulk production in one country, blending/encapsulation in another, and packaging/labeling in a third). The resulting "tariff maze" is not a single rate; it is a stack of decision gates classification, origin, exemption status, deal-specific ceilings, and enforcement risk that now determines landed cost and, increasingly, formulation choices.

What follows is a journalist-style, numbers-forward map of that maze—focused on China, the U.S., India, Germany, France, Brazil, Switzerland, the UK, Australia, and Indonesia—plus a practical playbook to maneuver through it without compromising compliance, quality, or margin.

1) The new architecture: why "tariff" now means "stack"

The baseline layer: a global 10% plus country schedules

Executive Order 14257 (April 2, 2025) established an additional 10% ad valorem duty on "all imports from all trading partners" (with enumerated exceptions), then moved to higher "reciprocal" rates for selected partners. By late 2025, the effective "trade deficit" tariff rate ranged broadly from 10% to 41% depending on origin, with an explicit 40% penalty duty for transshipment (evasion) cases.

The parallel layer: issue-specific IEEPA tariffs (notably China)

Separate from trade-deficit tariffs, the Administration used IEEPA for other policy objectives. For supplements, the most consequential parallel action was the fentanyl-related tariff on China, listed at 10% at the time referenced (after rising to 20% and later being lowered effective November 10, 2025).

The e-commerce layer: de minimis is no longer a pressure valve

A major and often underappreciated change: the U.S. suspended de minimis duty-free treatment (the under-$800 channel). This lands directly on cross-border DTC shipments (finished goods), laboratory and R&D sample shipments (ingredients), and small-lot continuity buys when primary lanes break.

The deal layer: ceilings, exemptions, carveouts

The maze continues to move. The U.S. has repeatedly adjusted rates and exemptions via subsequent orders and bilateral frameworks. A critical example: the EU framework (Aug 21, 2025) established a 15% tariff ceiling for EU goods—implemented as "the higher of MFN or 15%" and also committed MFN-only treatment for specific EU product groups starting September 1, 2025, including generic pharmaceuticals and their ingredients and chemical precursors. Switzerland's rate likewise moved from a high schedule to a 15% ceiling after a joint statement in mid-November 2025. Indonesia's framework reduced U.S. reciprocal tariffs on Indonesian goods to 19% while Indonesia committed to remove about 99% of tariff barriers on U.S. exports and address certain non-tariff barriers.

2) Why supplements feel the pain differently: the intermediate-goods trap

Most consumer industries can treat tariffs as a finished-goods pricing issue. Supplements generally cannot because tariffs hit the "molecules" before they hit the brand.

- **Actives are inherently global.** Vitamins and amino acids are frequently produced at scale in Asia; botanicals cluster where crops grow; high-spec micronutrients concentrate in Europe; specialty excipients come from multiple regions.
- **HS classification fragments the sector.** Similar products can sit in radically different HS chapters (plant extracts vs. food preparations vs. chemical compounds), shifting whether they fall into exemptions, special duty lists, or higher-scrutiny buckets.
- **Stacking is common.** When you combine the global 10% layer, a country-specific layer, issue-specific tariffs (e.g., China fentanyl), retaliation dynamics, and legacy actions, landed cost becomes a policy function, not just a procurement function.

3) Ingredients vs. finished formulations: the core asymmetry

Why some ingredients "escape" what finished products cannot

Industry reporting and supplier communications indicate Annex II carveouts spared a set of key dietary ingredients many vitamins, minerals, amino acids, and certain well-known nutrients from parts of the new IEEPA tariff regime. The practical outcome is a two-tier market: exempt core actives versus non-exempt botanicals/specialty compounds.

This matters because the sector's real cost structure is not capsule shells and labels; it is the actives.

Why finished formulations are more exposed

Finished capsules/tablets/blends are more likely to be treated as "food preparations," "mixed preparations," or retail-ready consumer goods categories less likely to be fully shielded by ingredient-specific carveouts, especially when shipped as final goods into the U.S. via formal entries or former de minimis channels.

4) Country corridors: what the maze looks like; and what it forces companies to do

A. China ↔ United States: the most policy-sensitive lane

China → U.S. (ingredients): Even with carveouts for certain inputs, exposure remains high because tariffs operate under multiple authorities. A 10% fentanyl-related tariff applies to "all goods from China," and the "trade deficit" rate experienced extreme swings in April 2025 (up to 125% before being reduced to 10% for a period and later extended), making volatility itself a core risk variable. The de minimis suspension removes the low-value "escape hatch."

China → U.S. (finished formulations): Finished goods now face the loss of de minimis economics, higher scrutiny/documentation, and greater tariff certainty risk because finished SKUs are harder to reclassify or "swap origin" without changing manufacturing reality.

U.S. → China: China announced retaliatory tariff increases lifting additional duties on U.S. goods up to 125%.

Strategic implication: "Cheapest FOB" has been displaced by "lowest policy-adjusted landed cost with highest continuity," and exporters increasingly need lawful local finishing or third-country manufacturing models without drifting into transshipment risk (explicitly targeted with penalty duty language).

B. India ↔ United States: where "25% + 25%" becomes the headline

India sits at 25% on the adjusted "reciprocal tariff" schedule (July 31, 2025 update), followed by an additional 25% action tied to Russian oil imports effective August 27, 2025 for most products with exceptions (including Section 232 categories and Annex II items). The combination has driven commentary about effective tariffs "around 50%" on key nutraceutical raw materials.

A second friction point is classification uncertainty: products in HS Chapters 13 and 21 can be treated as tariff-liable nutraceutical inputs, while similar materials may enter duty-free if classified as colorants (Chapter 32), creating negotiation and pricing instability with U.S. buyers.

Strategic implication: U.S. buyers reduce India-origin exposure for tariff-sensitive inputs, restructure into semi-finished plus U.S. finishing, or reserve India-origin actives for higher-margin SKUs. Indian exporters are pushed toward defensible HS certainty because the same input can swing from viable to non-viable based on classification.

C. Germany/France (EU) ↔ United States: the 15% ceiling that behaves like a floor

The EU framework's "higher of MFN or 15%" effectively creates a 15% minimum for many EU-origin lines (unless exempt), while carving out MFN-only treatment beginning September 1, 2025 for certain categories, including generic pharmaceuticals and their ingredients and chemical precursors. The practical question for supplement operators is whether a given ingredient's HS classification can legitimately fall within those carveouts—an area requiring careful customs and regulatory review.

Strategic implication: EU-origin bulk inputs can still win on predictability and high specification, but the 15% floor reshapes the cost curve, and EU-origin finished formulas into the U.S. increasingly sit in premium positioning unless final-stage work shifts to the U.S.

D. Switzerland ↔ United States: from punitive schedule to negotiated ceiling

Switzerland appeared at 39% on a July 2025 adjusted schedule, but by Nov. 14, 2025 the rate was reduced to a 15% ceiling.

Strategic implication: Switzerland remains a premium sourcing hub; 15% is not cheap, but the predictability can be rational for high-spec ingredients where consistency underwrites brand equity.

E. United Kingdom ↔ United States: lower headline tariffs, rising optionality

The UK is listed at 10% on the adjusted schedule. However, major outlets reported fresh U.S.–Europe tariff threats connected to geopolitical disputes, underscoring that "today's rate" is no longer the full risk picture.

Strategic implication: Treat the UK as tariff-light but policy-optional—contract for flexibility and maintain multi-origin contingency plans.

F. Indonesia ↔ United States: a 19% lane with export upside

A U.S.–Indonesia framework sets reciprocal tariffs at 19%, while Indonesia committed to eliminate about 99% of tariff barriers on U.S. industrial and food/ag goods and address certain non-tariff barriers.

Strategic implication: Indonesia may become a more credible export growth market for U.S. supplements if regulatory requirements (including halal considerations) are handled early; as an ingredient origin, 19% penalizes commodity inputs unless they are unique or part of a broader risk-diversification strategy.

G. Australia ↔ United States: baseline tariff, but regulatory is the gate

Australia is not listed in the July 2025 adjusted schedule and therefore defaults to the global baseline structure under EO 14257 (absent later product-specific exemptions). In practice, classification and compliance pathways (especially where products drift toward "therapeutic goods") often matter more than the tariff line itself.

H. Brazil ↔ United States: diversification potential, tariff volatility

Brazil appears at 10% on the adjusted reciprocal schedule, but the corridor is politically sensitive, with separate actions and escalation signaling. Reuters reporting referenced subsequent easing on certain Brazilian commodities, illustrating how quickly the lane can swing.

Strategic implication: Brazil can be a strong diversification origin for botanicals and agro-derived ingredients, but should be modeled as tariff-volatile rather than a fixed-rate replacement.

5) The corridor matrix: ingredients vs. finished formulations (decision aid)

This is a directional operating matrix, not a legal tariff schedule; actual duty depends on HS code, exemption status, and stacking.

- **China → U.S.:** ingredients moderate-to-very-high (stack risk); finished high (plus de minimis loss); exports back very high risk (retaliation reached 125%).
- **India → U.S.:** ingredients high (25% + additional 25% action risk); finished very high for margin-sensitive SKUs.
- **EU (Germany/France) → U.S.:** medium on ingredients (15% floor unless exempt); medium-high on finished (15% floor).
- **Switzerland → U.S.:** medium (15% ceiling) with stability premium.

- **UK → U.S.:** low-medium (10% baseline) but rising geopolitical optionality.
- **Indonesia → U.S.:** medium-high (19%), with improving export access in the reverse direction.
- **Australia → U.S.:** low-medium baseline; regulatory classification dominates.
- **Brazil → U.S.:** low-medium baseline but policy-volatile.

6) The new math: landed cost is now a "policy-adjusted" number

A supplement executive used to ask procurement, "What's the price per kilo?" Now the better question is: "What is the price per kilo under our most likely tariff stack, our most defensible classification, and our most realistic enforcement posture?"

Three illustrative examples:

- **China-origin active into the U.S.:** start with MFN (often low/zero for many chemical/vitamin lines), add the China fentanyl tariff (10%), add trade-deficit tariff exposure depending on exemption status and current China dynamics, then consider any legacy duties.
- **India-origin botanical extract into the U.S.:** add 25% (trade deficit schedule for India) plus another 25% tied to the Russia-oil action for most products (unless exempt), making the "~50%" headline plausible for unprotected inputs.
- **EU-origin finished supplement into the U.S.:** if MFN is below 15%, the framework effectively pushes the combined rate toward 15% unless a carveout applies hence the shift toward premium niche positioning.

7) How the supplement industry can manoeuvre legally, operationally, and with margin discipline

The strongest operators are treating tariffs not as a one off surcharge but as a permanent design constraint like GMP, claims substantiation, or stability testing. The playbook is evolving toward eight moves:

1) Build a tariff grade BOM: HS code + origin + exemption flag at the ingredient level

If you cannot see the tariff stack per ingredient, you cannot manage it. Tie each raw material to:

- defensible HS classification,
- country of origin logic,
- exemption status (Annex II / deal carve outs),
- "alternate origin" list and validated spec equivalence.

USTR's own "Presidential Tariff Actions" page is a useful index for tracking orders and annexes but you still need internal SKU level mapping.

2) Treat Annex II as a formulation input; not a footnote

Industry summaries indicate Annex II protections cover many core nutrients, but not all botanicals and novel compounds.

Formulators can respond by:

- prioritizing exempt actives where clinically and commercially acceptable,
- redesigning "hero ingredient" SKUs so the majority of COGS is in protected lines,
- isolating non exempt botanicals into premium SKUs with margin headroom.

3) Adopt a "China+1 is not enough" sourcing doctrine

Because India can also stack to ~50% for many goods, diversification becomes multi node:

- **EU/Swiss** for high spec, high value actives where consistency and predictability matter,
- **selected ASEAN** sources for certain botanicals/excipients,
- **domestic/near shore** options for extraction and blending where feasible.

4) Move the last mile strategically but do not confuse "manufacturing" with "transshipment"

The July 2025 tariff order explicitly targets evasion schemes, with a 40% duty for goods determined to be transshipped to evade duties.

Legitimate manufacturing footprint changes require:

- real value adding processing,
- traceable documentation,
- strong origin determinations.

5) Redesign product architecture: modular formulas and region specific finishing

A practical operational shift:

- keep a stable global "core blend,"
- add region specific actives and packaging in the destination region (U.S., EU, Asia),
- reduce cross border shipment of the highest tariff final form.

6) Use trade mechanics that are built for this environment

Examples (where appropriate to your footprint and compliant with law):

- bonded warehousing / FTZ deferral for inventory timing,
- duty drawback for re exports,
- contract clauses that explicitly allocate tariff volatility.

7) Upgrade QA/QC as you diversify origins

Tariff avoidance through supplier switching is meaningless if you lose:

- identity and purity,
- contaminant risk control (heavy metals, solvent residues, adulteration),
- batch to batch consistency.

Quality failures are the hidden “tariff” that can wipe out the savings.

8) Price with transparency and segmentation

Tariffs are forcing segmentation:

- essential commodity SKUs (price elastic) need tariff protected actives and efficient finishing,
- premium SKUs (less price elastic) can carry higher tariff ingredients, but must justify with differentiation.

8) The 2026 watch list: why the maze is still moving

Three dynamics will shape the next 6–12 months:

1. Retaliation risk is back on the front page
In January 2026, European leaders publicly discussed retaliation tools and packages in response to fresh U.S. tariff threats.

2. China’s retaliation precedent is already extreme
China’s 2025 move to raise duties on U.S. goods to 125% set a benchmark for how quickly export markets can become uneconomic.

3. De minimis suspension has changed the economics of cross border supplement commerce
With the under $800 channel no longer reliably duty free, brands must redesign the DTC supply chain (or price it accordingly).

What this means in one sentence

The supplement industry is moving from “formulation as science + marketing” to “formulation as science + marketing + trade architecture”—and winners will be the companies that treat tariff exposure as a first class design variable across sourcing, specs, manufacturing footprint, and channel strategy.

The Trade War Comes for the Capsule

NutrifyToday Market Research Bureau

A trade war most consumers will never see is unfolding inside the products they take every day. While U.S. policy has largely insulated finished generic medicines from broad tariff shocks, the humble hard empty capsule—an essential input for both pharmaceuticals and dietary supplements—has been swept into a high-stakes antidumping and countervailing duty case targeting imports from Brazil, China, India, and Vietnam. The numbers behind the "invisible input" are large: the U.S. imports tens of billions of capsules annually, and new duty exposure can reach high double digits depending on supplier. For manufacturers, this turns procurement into a tariff strategy and makes supplier choice a competitive moat; for supplement brands, it threatens another round of cost pressure that may look like pennies per bottle but compounds into meaningful consumer impact at scale. The result is a maze of rate shopping, nearshoring, contract rewrites, and format substitution—raising a provocative question: in the next phase of industrial policy, will the smallest components quietly reset the economics of American health and wellness?

Washington's trade policy is creating an odd new hierarchy in American health care: the finished generic drug is increasingly treated as untouchable, while the humble component that makes millions of pills possible is being priced like a geopolitical luxury.

Hard empty capsules ; the two-piece shells used in both pharmaceuticals and dietary supplements have become a flashpoint in the tariff maze. Policymakers have largely avoided actions that could spike prices of essential medicines. But capsules do not always ride under the same policy umbrella as "drugs." They sit in a grey zone: part packaging, part medical input, and therefore an easier target for trade remedies. The result is a paradox that manufacturers now have to operationalize: generic medicines may be protected at the top of the value chain, while the "shell" remains exposed at the bottom.

The scale of this exposure is easy to underestimate because capsules are cheap, ubiquitous, and invisible to consumers. Yet the U.S. imports them at a volume measured not in containers but in billions. In 2023, U.S. imports of hard empty capsules totalled roughly $147 million, with unit counts equivalent to about 52.8 billion capsules overall, and approximately three-quarters of the import base coming from four countries: Brazil, China, India, and Vietnam. Those are precisely the countries now caught in the most consequential trade action the capsule industry has seen in years.

From petition to penalties

The current case traces back to an October 2024 petition by Lonza Greenwood, a U.S. capsule producer, alleging that imports were being dumped at unfair prices and subsidized in ways that harmed domestic industry. That petition triggered parallel investigations antidumping and countervailing duty at the U.S. Department of Commerce and the U.S. International Trade Commission.

On December 19, 2025, Commerce issued final affirmative determinations covering hard empty capsules from Brazil, China, India, and Vietnam. The headline number is the size and dispersion of the duty rates. Brazil faced the steepest outcome, with a dumping margin in the high double digits. China's rates varied materially by exporter including at least one exporter at zero while other Chinese exporters faced meaningful duties. India and Vietnam saw substantial rates as well, and Commerce's final tables made a point the market quickly absorbed: duty exposure is not just country-specific; it can be exporter-specific. In practical terms, "who you buy from" now carries a tariff consequence as material as "where you buy from."

The next gate is injury. Trade remedies become enforceable orders only if the ITC concludes that imports caused injury or threatened injury to U.S. industry. The ITC's schedule has already been revised and extended, pushing key filings into January 2026. If the ITC issues an affirmative injury determination, the expected publication of orders in early February 2026 would formalize the duty regime and force procurement shifts across both pharma and supplements.

The "capsule gap" in policy

Why would policymakers spare generics but allow capsule duties? Because trade policy does not always follow public-health logic; it follows product definitions and customs classifications. Capsules are not finished medicines and may not qualify for the same carve-outs that protect APIs or completed drug products. That distinction matters because generic economics are famously tight. Industry analyses often cite net margins in the low single digits for many generic products. In that world, a duty shock on a key input doesn't need to be large to be destabilizing.

Capsules are particularly sensitive because they are a "small line item" that becomes large when multiplied by scale. A capsule might cost fractions of a cent; a billion capsules are no longer fractions. Commerce's own import statistics underscore the concentration: in 2023, India supplied roughly 18.7 billion capsules to the U.S. market, China about 9.6 billion, Vietnam about 9.1 billion, and Brazil about 1.7 billion. When duties attach to that much volume, procurement becomes strategy, not administration.

Winners, losers, and the limits of reshoring

Domestic producers stand to gain pricing power if import competition becomes more expensive. But reshoring has constraints: building capsule capacity is not a fast flip. Customers require qualification, consistency, and quality systems aligned to pharmaceutical and supplement standards. Even if U.S. capacity expands significantly, the near-term reality is that the American market will remain meaningfully import-dependent. What changes is the direction and the terms of that dependence.

This is why the most likely outcome is not a clean "back to America" story, but a reshuffling story buyers shifting toward lower-duty exporter entities, non-subject countries, and, over time, more regionalized supply footprints. The strategic logic is straightforward: if duty rates differ by exporter, procurement teams will treat supplier selection like a tariff instrument. The competitive moat becomes the ability to source at a lower effective duty burden and to execute supplier transitions without disrupting production.

The market is already placing bets on proximity. A notable signal is the announcement by capsule manufacturer ACG of a roughly $200 million investment to build U.S. capsule manufacturing capability, with operations targeted for early 2027. Even if tariff outcomes are only one part of that investment logic, the direction is clear: resilience, customer proximity, and policy risk management are now part of the capsule business model.

What it means for supplements: pennies per bottle, billions in aggregate

For the dietary supplement sector, the impact will not be uniform. The industry's retail scale is often estimated in the tens of billions of dollars annually, and capsules remain one of its dominant formats. Many supplement companies can absorb modest capsule cost increases without moving shelf prices, especially for premium products where the active ingredients and marketing costs dominate the economics.

But the pressure becomes more acute in high-count, value-positioned capsule products where the shell is a meaningful share of total cost. A duty-driven increase of a few cents per bottle can cascade through the distribution chain,

becoming a larger retail adjustment once margins are preserved across manufacturer, distributor, and retailer. At sector scale, "small" cost increments can aggregate into large consumer impacts—particularly if multiple input shocks arrive in the same year (freight, labor, packaging, compliance).

The analysis underlying this trade case suggests a plausible retail outcome of low single-digit to mid single-digit price increases for affected capsule-heavy portfolios, not because capsules become expensive in absolute terms, but because the supply chain becomes more expensive to operate: more inventory buffering, more supplier audits, longer lead times, and greater compliance overhead.

The new operating system: tariff engineering as a core competency

The most sophisticated companies are already responding with a playbook that looks less like traditional procurement and more like trade engineering:

- Diversifying not just by country, but by exporter entity within the same country to manage rate differentials.
- Renegotiating contracts with duty pass-through clauses and shared-risk mechanisms.
- Front-loading inventory to bridge uncertainty—while managing the working capital hit.
- Exploring "format hedges" such as tablets, powders, and gummies for certain SKUs, not as a brand pivot but as a cost and supply continuity strategy.
- Tightening customs compliance and documentation so the wrong duty rate is not applied at entry—an error that can erase margin faster than any marketing campaign can recover it.

The bigger takeaway

The capsule case is not a niche trade dispute. It is a stress test for how industrial policy interacts with health economics. A country can declare that medicines must remain affordable while simultaneously imposing duties on the components that make those medicines—and supplements possible at scale.

In the next phase of the trade war, the strategic question isn't whether consumers will notice the capsule. It is whether the capsule will quietly reset the back-end economics of American health and wellness—and force companies to compete on supply chain design before the public even realizes what changed.

Sleep Microarchitecture: The Next Frontier in Sleep Science

Why do we wake up tired despite a full night's sleep?

DR. SURESH LAKSHMIKANTHAN
Chief Business Officer, Natural Remedies

Many people get enough hours of sleep yet still struggle to feel truly restored. This disconnect has prompted sleep science to move beyond simply measuring how long we sleep, toward a how well do we sleep. i.e. restorative sleep.

Traditional sleep metrics focus on REM and NREM, these are macroarchitecture of sleep, but these alone cannot explain differences in next-day freshness, resilience, and recovery. The answer lies deeper in the brain's intrinsic regulation of sleep, the subcategory of NREM, known as sleep microarchitecture.

Central to this understanding is the Cyclic Alternating Pattern (CAP), a physiological EEG rhythm that occurs exclusively during NREM sleep. CAP reflects the brain's moment-to-moment ability to maintain stability while responding to internal and external challenges. Among CAP subtypes, CAP A1 has drawn scientific attention as it represents the brain's "maintenance mode" the phase where neural recovery and restoration are most efficient. This phase reflects optimal sleep stability and restoration. A higher CAP A1 proportion is associated with deeper, restorative sleep.

This insight is especially relevant in the context of modern stress. Chronic stress may not always reduce sleep duration, but it can subtly disrupt sleep at the neurological level. As a result, sleep may look sufficient on the surface while remaining fragmented beneath.

Translating this complex science into a tangible solution, Holixer® an award winning clinically validated extract of Holy Basil represents a significant scientific milestone. It is the first botanical ingredient globally shown to improve CAP-A1 rate, specifically the restorative sleep, validated using gold-standard polysomnography. This marks a meaningful step toward evidence-based, natural solutions that address sleep quality at its neurological core.

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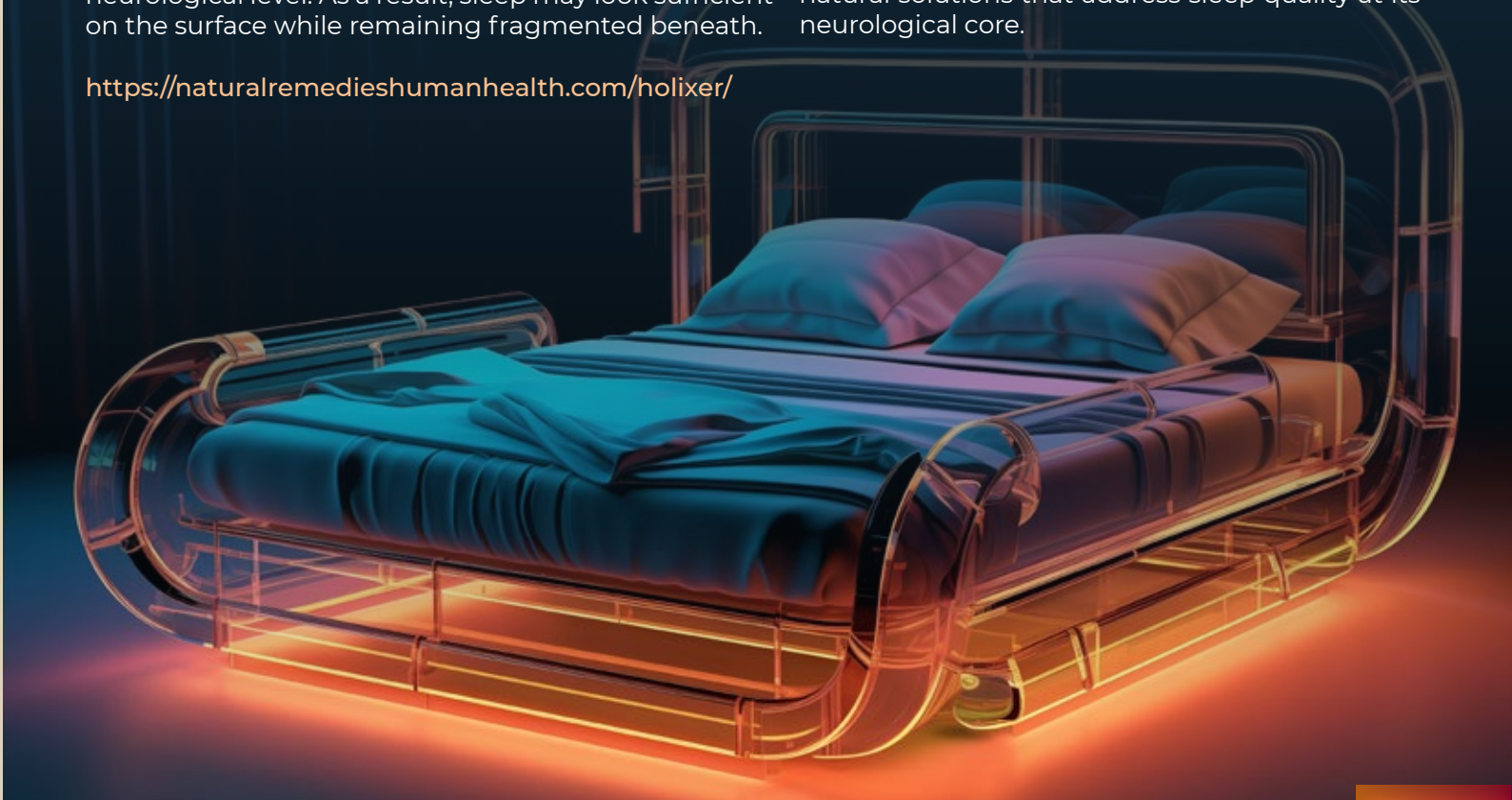


Nutrigenomics: The Emerging Science of Personalized Nutrition

Dr. Muneeb Rehman, Nutrify Today Academy

From One-Size-Fits-All Diets to Precision Eating Based on Your Genes

Knowing how your DNA affects your nutritional needs could change the way healthcare works around the world. A new branch of science is quietly changing how we think about nutrition in a time when chronic diseases kill millions of people every year. Nutrigenomics, which is the study of how genetics and nutrition work together, could change the way healthcare works by moving from treating diseases after they happen to preventing them with personalized dietary plans based on each person's genetic profile. This new field says that the next big thing in precision medicine might not be at the pharmacy, but in the kitchen.

The Science Behind Your Dietary DNA

Nutrigenomics is based on a deceptively simple idea: your genes affect how your body processes nutrients, and the foods you eat can change how your genes are expressed. Nutrigenomics is different from traditional dietary guidelines because it doesn't give everyone the same advice. Depending on their genetics, a diet that works for one person might not work for another person or even make them sick.

The field brings together three different areas of science that work well together. First, it looks at the direct link between DNA and nutrients, that how the vitamins, minerals, and other foods you eat can turn genes on or off, changing how they work. Second, it looks at epigenetic interactions, which are when nutrients change the physical structure of DNA without changing the genetic code itself. This is known as methylation of DNA. Third, it looks into nutrigenetics, which is how genetic differences between people, especially single nucleotide polymorphisms (SNPs), change how they react to the same changes in diet

These mechanisms determine a person's metabolic phenotype, which is the unique biochemical traits and nutritional needs that can be measured. By understanding these traits, healthcare professionals and nutritionists can stop giving general dietary advice and start making nutrition plans that are based on science and tailored to each person.

Current Status: From Laboratories to Consumer Homes

The field of nutrigenomics has gone from being something that scientists were interested in to something that doctors can use. At first, the process is easy: people give a DNA sample, usually by saliva or a cheek swab, and special labs look at it. The study finds genetic differences that affect how nutrients are broken down and absorbed, as well as how likely someone is to have food allergies.

People get personalized advice on the best foods to eat, supplements to take, and changes to make in their lives that are in line with their genetic profile based on this information. Nutrigenomic testing is now available to everyone, not just people in medical settings, because companies now offer it directly to consumers. There is now a lot more scientific proof that nutrigenomics works. Studies have found certain genes, like fat mass and obesity-associated (FTO), angiotensin-converting enzyme (ACE), brain-derived neurotrophic factor (BDNF), and fatty acid desaturase (FADS), that consistently interact with food across different groups of people. For example, people with certain versions of the FTO gene lose more weight on low-carb diets, while others do better on diets that are high in carbs and low in energy. Nutrigenomics is a great example of how it works in the case of cardiovascular disease. The ACE gene is in charge of blood pressure. People with certain ACE genotypes are much more likely to get high blood pressure if they eat a lot of saturated fat. Changes in genes that code for apolipoprotein and fatty acid desaturase enzymes also change how people react to dietary fats and cholesterol, which changes their risk of heart disease.

Transforming Disease Prevention and Management

The effects on stopping chronic diseases are very big. This technology is used a lot to help people with type 2 diabetes, which affects more than 589 million people around the world. Nutrigenomics can find people who are genetically likely to have insulin resistance, glucose intolerance, and metabolic dysfunction long before they show any signs of these problems. Instead of putting people on generic diabetic diets right away, personalized nutritional interventions can be used to stop or slow the disease from starting

Obesity, which kills 4 million people every year [5], is the main thing that current nutrigenomic research is looking into. Genetic testing shows which macronutrient mix focusing on protein, carbs, or fats works best for each person to help them lose weight. This personalization makes it much easier to stick to dietary plans, which is a key reason why generic diet advice often doesn't work in the long run.

Researchers are now looking into ways to stop cancer. Early research shows that some genetic profiles make people more likely to respond to cancer-fighting compounds in certain foods. Plant-based foods contain phytochemicals, antioxidants, and anti-inflammatory nutrients that can change how genes work in ways that may lower the risk of cancer, but this seems to depend on the person's genotype.

Integration with Advanced Technologies

When nutrigenomics works with other biological "maps," it gets a huge boost. In other words, your genes give us the plans, but other things, like studying your proteins and gut microbes, show us what's really going on in the building right now. When you put them all together, they show us how your lunch really talks to your cells from all angles.

We are not just guessing anymore, either. AI can now look at your DNA, your snacks, and your sleep patterns to figure out exactly how your body will react to certain foods. Wearable technology gives us constant feedback, so your diet can finally change as quickly as you do. This isn't just a small science project; it's a big business. The nutrigenomics market is worth about $613 million right now, but by 2034 it will be worth an amazing $2.6 billion. People like us who are sick of getting "one-size-fits-all" advice and want a health plan that is as unique as our DNA are driving that growth.

India's Position and Future Potential

The United States and the United Kingdom are the top two countries in terms of nutrigenomics research output. India, on the other hand, is only 16th in the world in terms of published research, according to Scopus database metrics. But this is both a gap and a great chance.

India has a huge population, a lot of genetic diversity, and more and more people are getting chronic diseases. For example, diabetes affects more than 77 million Indians, and obesity rates are rising quickly. This makes personalized nutrition approaches very appealing. The country is well-suited to move forward with nutrigenomics research and applications because of its strengths in bioinformatics, information technology, and computational sciences. Indian institutions are starting to set up nutrigenomics research centers and clinical applications, but these are still in the early stages.

Challenges Constraining Broader Implementation

As exciting as this sounds, we aren't quite at the "Star Trek" level of nutrition just yet. There are still a few big hurdles we need to clear before personalized diets become the norm for everyone. For starters, our genes are complicated. A DNA variant that affects health in one group of people might act totally differently in another. Because most studies have been small or short-term, we are still missing those massive, decades-long projects that prove once and for all that a "DNA diet" beats a standard healthy one.

Then, there's the "creepiness factor." Your genetic data is the most private thing you own. People are rightfully worried about whether that info could be misused by insurance companies or employers. Plus, the rules of the game are still being written; global regulations haven't quite caught up with the tech, leaving a lot of gray areas around quality and safety. We also have to talk about the price tag. While testing is getting cheaper, it's still out of reach for most people globally. And even if you can afford a test, finding a doctor or dietitian who is trained to read those complex results is like hunting for a needle in a haystack.

Finally, there's the sheer complexity of being human. One health goal like heart health can involve hundreds of genes interacting with everything from what you ate for breakfast to how stressed you were at work. Trying to untangle that web is a massive scientific puzzle, and we have to be careful not to oversimplify the answers. After all, a "too-simple" answer can sometimes be worse than no answer at all.

The Path Forward: From Promise to Practice

Experts agree that if we want personalized nutrition to move from "cool science experiment" to a standard part of your doctor's visit, we need a solid game plan. Here are the four big shifts that need to happen:

A Shared "Library" of Data: We need massive, public databases where scientists can share genetic and health info safely. The trick is making this data accessible enough for researchers to find breakthroughs, while keeping it under lock and key so your personal privacy is never compromised.

Proof That It Actually Works: Before your doctor prescribes a DNA-based diet, they need to see the proof. This means we need long-term studies that put personalized nutrition head-to-head with standard healthy eating. We need to see with hard data that the "custom" version actually leads to better health over many years.

More Than Just Science, Behavior Matters: It's not enough to know what someone should eat; we have to understand why they do or don't eat it. This requires a team effort between biologists, nutritionists, and even psychologists. After all, a perfect diet plan is useless if it's too hard for a real person to stick to.

New Rules and Better Schooling: Finally, we need to train the next generation of doctors and dietitians so they can explain these results without scratching their heads. Governments also need to make sure that testing companies follow clear "rules of the road" so that every kit is correct, safe, and easy to understand.

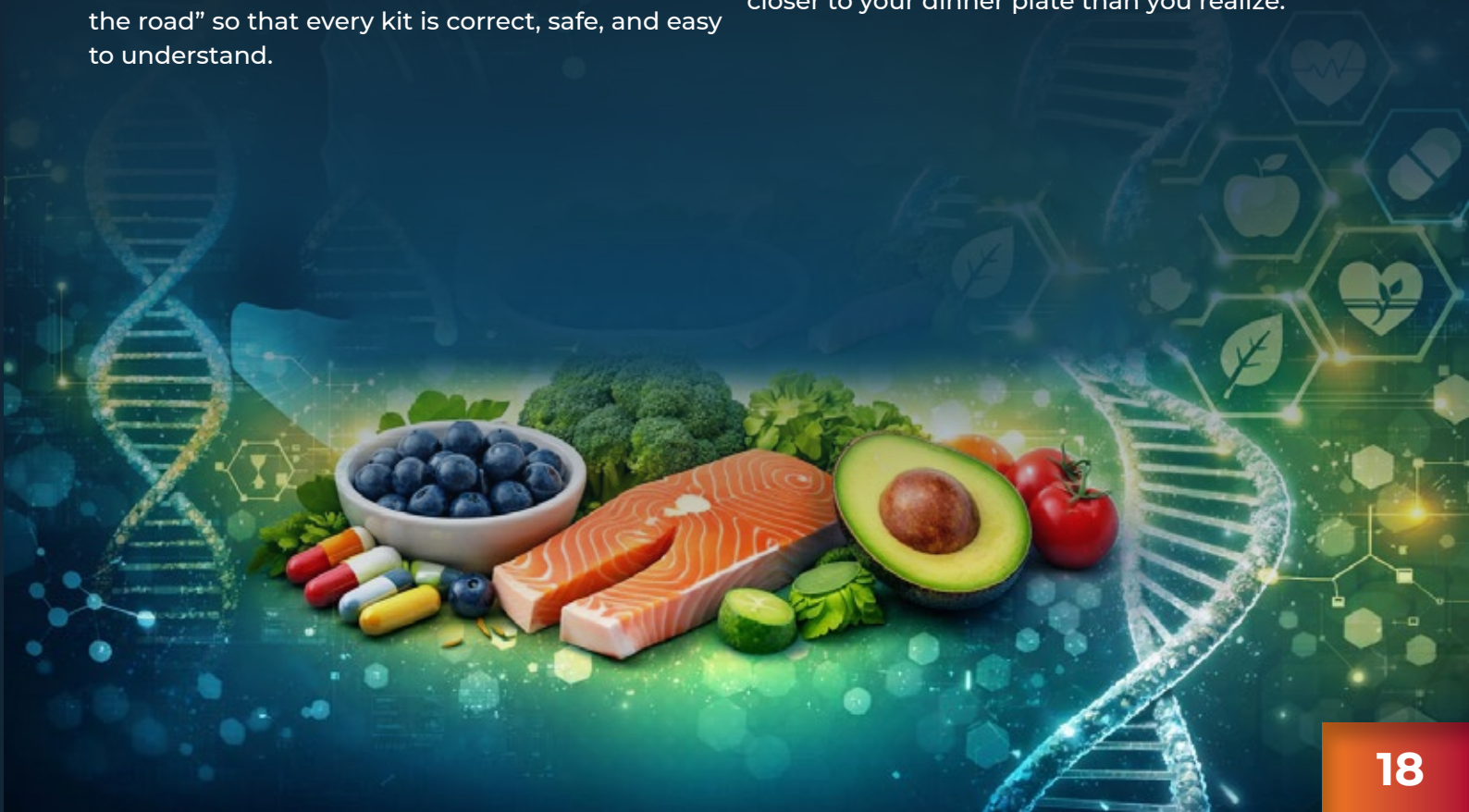
Conclusion: A Change in the Way We Promote Health

Nutrigenomics is more than just a new branch of science; it's a whole new way of thinking about how to stay healthy. For decades, medicine has been reactive, we wait until someone gets sick and then try to fix it. This new approach is proactive. Instead of telling every person with high blood pressure to "eat less salt," we can finally identify exactly which people are genetically sensitive to sodium and which aren't. Instead of giving everyone the same generic weight-loss advice, we can build strategies based on how your specific metabolism actually works.

As the technology gets cheaper and the AI gets smarter, this will stop being a luxury for the few and become a standard for the many. We are moving toward a world where your nutritional plan isn't a piece of paper, it's a lifelong, personalized guide that helps you sidestep chronic diseases before they even have a chance to start.

For a country like India, this is a massive opportunity. India doesn't have to just settle for the old way of doing things. We have a rare chance to skip the line and build something better. By putting smart digital tools and life-saving DNA science into the hands of families today, we can stop chronic diseases before they even start. This isn't just about technology; it's about protecting the health and happiness of millions of people across the country.

The era of "one-size-fits-all" medicine is ending. The era of precision health is here, and it might be closer to your dinner plate than you realize.



The Philippines Supplement Boom: Which Supply Chains Win on Margin, Growth, and Trust : PART 2

NutrifyToday Market Research Bureau

The Philippine vitamins and dietary supplements (VDS) market is entering a new phase. After the pandemic pulled supplements into the mainstream, demand is now being sustained by structural forces: a young but fast-modernizing population, rising urban middle-class purchasing power, and a growing burden of lifestyle-driven health risks. The VDS market is about **US$802 million (2023)** and is projected to reach roughly **US$1.3 billion by 2028**, implying **high single-digit growth** over the next five years. In parallel, consumer surveys indicate **about 62% of Filipinos** take supplements at least weekly—one of the highest rates reported in Asia.

For business leaders, the critical question is no longer "Will supplements grow?" It is: **Which supply chain models build the strongest gross contribution (GC), the most durable growth, and the deepest consumer trust?**

Where Filipinos actually buy supplements

Despite the noise around digital commerce, the Philippine market remains retail-led. In 2023, channel shares for VDS were approximately:

- Health & beauty specialists and pharmacies (OTC retail): 66%
- Grocery retail (supermarkets and hypermarkets): 16.7%
- Direct selling / MLM: 13.6%
- Retail e-commerce: 3.7%

This distribution tells a clear story: the "center of gravity" remains OTC retail, powered by drugstores and health & beauty chains. E-commerce is rising fast, but from a small base, and it is best understood as an influence and acquisition engine more than the dominant fulfillment mechanism—at least for the next 3–5 years.

The five supply chain models shaping the market

1) Pharmacy-first OTC retail (pharmacies, health & beauty specialists)

This is the market's primary demand gateway and the model that ranks #1 for sustained growth. Why? Three reasons: trust, habit, and convenience. In the Philippines, pharmacist and store advisor recommendations still carry meaningful weight, especially for family multivitamins, immunity products, children's formulas, and women's wellness. OTC shelf presence also builds brand legitimacy that digital-only challengers struggle to replicate.

2) Grocery retail (supermarkets, hypermarkets, convenience formats)

Grocery is the "mass access" channel. It wins on frequency and footfall, and it works best for staples: vitamin C, basic multivitamins, and entry-price immunity products. The limitation is education. Complex claims—anti-aging, sleep, metabolic health convert less reliably in grocery without strong packaging, brand equity, or in-store activation.

3) Direct selling / MLM

Direct selling remains a meaningful force at 13.6% of market value because it solves a critical issue: supplements often require explanation, reassurance, and routines. MLM distributors create education and social proof, which is especially powerful in premium regimens (beauty stacks, weight programs, "detox," and wellness bundles).

From an economics lens, MLM can deliver strong factory-level margins, but field commissions and incentives absorb a significant portion of revenue. In practice, MLM tends to rank near the top on per-unit margin potential, but it is less predictable for sustained growth because field productivity and retention can fluctuate.

4) Brand-owned D2C (direct-to-consumer websites, subscriptions, membership programs)

D2C generally offers the best GC potential because it avoids the retailer margin. However, the advantage holds only if acquisition costs are disciplined and repeat rates are strong. D2C works best for higher-value bundles, subscriptions, and program-based products (e.g., 90-day skin routines, metabolic reset packs, sleep systems). It is most effective among urban middle and upper-middle consumers who are already comfortable with online payments and home delivery.

5) Marketplaces and social commerce (Shopee, Lazada, TikTok-led sales)

E-commerce is still just 3.7% of value today, but it is where the next cohort of consumers is being shaped. Generation Z in particular is highly digital: surveys show over 90% research products online, and a large majority of young online shoppers purchase through marketplaces Shopee often leading the pack.

The marketplace model can scale quickly, but margins are volatile due to platform fees, ad costs, discounting, and intense competition. The most common winning play is to use marketplaces for customer acquisition and replenishment while preserving brand equity through controlled pricing, authenticity safeguards, and strong content.

Which model wins on GC, and which wins on growth?

A practical ranking for executives:

- **Best for sustained growth:**
  #1 Pharmacy-first OTC (the anchor)
  #2 Omnichannel layering (OTC + marketplace + social)
  #3 Grocery (for mass penetration)
  #4 D2C (selectively, where retention is proven)
  #5 MLM (strong in niches, variable in predictability)

- **Best for GC (unit economics potential):**
  #1 D2C (if CAC is controlled)
  #2 MLM (if field productivity is stable)
  #3 OTC retail (scale with shared margins)
  #4 Marketplaces (often promotion-heavy)

The core insight: No single supply chain wins by itself. The most resilient strategy is pharmacy-anchored omnichannel, with digital used to educate, acquire, and retain.

What sells: the categories powering demand

Consumer needs cluster into a few large demand pools. By positioning, the market is led by:

- **General health:** ~42% of dietary supplement value (multivitamins, tonics, baseline wellness).
- **Beauty / skin / anti-aging:** ~14% (collagen, glutathione, vitamin E, "brightening" and hair/skin/nails).
- **Immune support:** ~12%, and historically one of the fastest-growing positionings.

Within beauty, women's products have been a powerful growth engine; women's multivitamins have posted very high growth rates in recent years as "health meets appearance" becomes a mainstream purchase logic. Meanwhile, emerging "next wave" categories include sleep and stress, eye health (screen-time driven), and metabolic health (weight, liver, sugar concerns).

The generation divide: where channel strategy must evolve

Older consumers Gen X and many older millennials tend to prefer pharmacies and supermarkets and are more likely to trust established brands and in-person advice. Younger consumers young millennials and Gen Z are more likely to discover products through creators and communities, compare on marketplaces, and buy through social-led promotions. The implication is clear: OTC builds trust; digital builds preference. Winning brands connect both.

The executive playbook for the next 24 months

1. **Anchor distribution in OTC health & beauty retail** for legitimacy and volume.
2. **Build a controlled digital layer** (marketplaces + social commerce) to capture Gen Z discovery and replenish behavior.
3. **Use D2C selectively** for subscription bundles and higher-margin regimens.
4. **Deploy MLM strategically** where education and community are decisive—beauty stacks, weight programs, and premium wellness routines.
5. **Win trust with proof:** transparent labels, onsistent dosing, authenticity guarantees, and outcomes-based communication.

In the Philippines, supplements are becoming a daily habit across income bands. But the companies that dominate the next decade will not be the loudest on social media; they will be the ones that build a supply chain architecture that compounds trust, margin, and reach simultaneously.

The Rising Importance of Nutraceuticals in Modern Health

ROHIT AGARWAL

Managing Partner
Nutra Grace

In recent years, nutraceuticals have gained significant popularity due to their potential to enhance health and prevent chronic diseases. Derived from "nutrition" and "pharmaceutical," nutraceuticals refer to food products that offer additional health benefits beyond basic nutrition. These products include vitamins, minerals, herbal extracts, amino acids, and probiotics, which are formulated to address specific health concerns, such as boosting immunity, improving digestion, or supporting heart health.

One of the primary reasons for the growing demand for nutraceuticals is the increasing awareness of the importance of preventative healthcare. Consumers are becoming more proactive about maintaining their well-being, seeking natural solutions that align with a balanced diet and active lifestyle. Nutraceuticals are often considered safer and more sustainable alternatives to pharmaceuticals, especially for long-term use. For instance, omega-3 fatty acids from fish oil can support cardiovascular health, while probiotics help maintain gut health and improve digestion.

Another driving factor is the aging population. As people live longer, there is a growing need to manage age-related conditions like arthritis, cognitive decline, and osteoporosis. Nutraceuticals such as glucosamine for joint health and antioxidants like resveratrol for skin and heart health are becoming essential components of wellness routines for older adults.

Moreover, the increasing preference for plant-based products is shaping the future of nutraceuticals. Natural extracts like turmeric, ginger, and moringa are gaining attention for their anti-inflammatory and antioxidant properties. As research continues to uncover the health benefits of various nutraceuticals, their role in modern health will only expand, offering consumers a natural path to preventive care and overall well-being.

A Materials Science Perspective on Solubility in Nutraceuticals

DR. ANAND
Greenspace Herb

One of the nutraceutical industry's most persistent challenges is solubility. Many bioactives derive their stability from rigid crystalline structures, yet these same structures severely limit aqueous solubility and, in turn, bioavailability. Despite the discovery of numerous phytochemicals with strong therapeutic promise, nearly 70% fail to translate effectively due to poor dissolution. This creates a critical gap between ingredient innovation and clinical efficacy. Cocrystal technology offers a rational, materials-science-driven solution by modifying solid-state behavior without altering molecular identity.

At the core of the issue is lattice energy. Bioactives such as quercetin, resveratrol, and boswellic acids form tightly packed crystalline networks stabilized by hydrogen bonding and π–π interactions, making solvent escape energetically unfavorable. Traditional strategies—salt formation or amorphous dispersions—are limited by chemical compatibility or long-term instability. Cocrystals provide a middle path by incorporating a nutraceutically acceptable coformer to disrupt crystal packing while retaining crystalline stability.

Performance enhancement is often driven by the "spring and parachute" effect. Rapid dissociation of a hydrophilic coformer generates transient supersaturation, while delayed recrystallization sustains absorption. Quantitative gains can be dramatic, with solubility improvements ranging from several-fold to orders of magnitude.

With scalable, low-solvent manufacturing methods and predictive molecular design tools, cocrystals are shifting from academic innovation to commercially viable nutraceutical platforms—unlocking the true functional potential of poorly soluble bioactives.

Formulation to Finish: Why Integrated CDMO Models Are Winning the Nutraceutical Market

The highly competitive nutraceutical industry requires speed, quality, and regulatory compliance. This makes the Integrated CDMO model the clear market leader. Instead of managing different developers and manufacturers, brands are choosing single, "Formulation to Finish" partners like Zeon Lifesciences. This integrated approach is essential for three main reasons:

Key Facts and Figures

Market Growth: The global Vitamins, Minerals, and Supplements (VMS) CDMO market, a key outsourcing segment, is expected to grow at a strong annual rate of over 8% through 2032. This highlights the increasing dependence on outside expertise.

Cost of Delay: A delay in launching a nutraceutical product can cost a brand between $10,000 and $50,000 each month in lost revenue. This emphasizes the importance of speed.

Compliance Risk: Manufacturing and quality control make up about 40% of the total revenue in the outsourced services market. This shows how mauch brands prioritize compliant, high-quality production to meet global standards, such as FSSAI and FDA.

Strategic Advantages

Innovation and Bioavailability: Many valuable nutraceutical ingredients, such as curcumin and probiotics and even certain protein forms, have natural challenges with absorption or stability. Integrated CDMOs address this by applying advanced R&D techniques like precision blending, wet–dry granulation, compressed diskette formats, targeted enteric coating systems, and spray-drying technology in the manufacturing process. This approach enhances ingredient performance and reduces rework.

Regulatory Certainty

The regulatory landscape for supplements can feel fragmented, with different standards applying at the sourcing, formulation, and packaging stages. A single integrated CDMO streamlines this process by maintaining robust quality systems—often modeled on pharmaceutical-grade GMP—to ensure consistency from raw materials to final packaging. This unified approach lowers the risk of non-compliance, rework, or market launch delays.

Speed to Market (Accelerated Launch)

Removing the cumbersome "Tech Transfer" between different entities shortens the product development timeline by months. Integrated teams make sure that formulas are scalable and cost-effective from the start, letting brands quickly take advantage of new wellness trends.

By providing a quality-driven and scientifically supported journey from concept to consumer, the integrated CDMO model offers the strategic edge needed for success in the modern nutraceutical market.

References

Credence Research, Vitamins, Minerals, and Supplements CDMO Market, 2024–2032 (reporting a CAGR of 8.23%).

Industry Segmentation Analysis (Reflecting the high capital expenditure and specialized expertise required for manufacturing and QC services within the nutraceutical contract manufacturing market).

Internal Industry Analysis/Consultancy Estimates (figure used to quantify revenue loss in product development and time-to-market scenarios).

SURESH GARG
CMD & Founder
Zeon Lifesciences Ltd

Yugap Wellness

The Silent Epidemic: How Your Weekend Bloating Could Be Fueling Chronic Inflammation
That uncomfortable bloating and gas you brush off as a “bad weekend meal” might be a key warning sign of a much deeper health issue. For many, occasional digestive problems point to an underlying condition: Gut Dysbiosis, which is an imbalance of gut bacteria, along with a damaged intestinal barrier. This leads to a serious state called Chronic Low-Grade Inflammation (LGI).

The Gut Barrier Breakdown

Your gut lining is a highly selective barrier. When it gets damaged, often due to poor diet, stress, or lack of prebiotics and probiotics, it becomes leaky.

This condition makes your gut lining weaker, allowing partly digested food and certain bacterial toxins (like LPS) to slip into your bloodstream.

Your Solution: Fortify the Gut First

The way forward starts with supporting your gut barrier. Prebiotic supplements like YuGut feed the good bacteria, helping them thrive, strengthen the gut lining, and naturally keep unwanted microbes in check. Managing everyday discomforts like bloating with a well-formulated product is the first step toward better overall wellness. Don’t brush off the signals—your gut health plays a major role in how energetic and balanced you feel in the long run.

The Domino Effect on Disease

Chronic LGI is often called the silent epidemic because it has no clear symptoms until it turns into a serious disease. It doesn’t cause noticeable pain; it simply speeds up aging and disease processes by continually stressing your body.

Scientists widely link LGI to a concerning list of chronic illnesses that account for substantial majority of global mortality, including:

- Cardiovascular Disease: LGI stiffens blood vessels.
- Type 2 Diabetes: It disrupts insulin signaling.
- Neurodegeneration: It impacts the gut-brain axis, leading to mood disorders and cognitive decline.

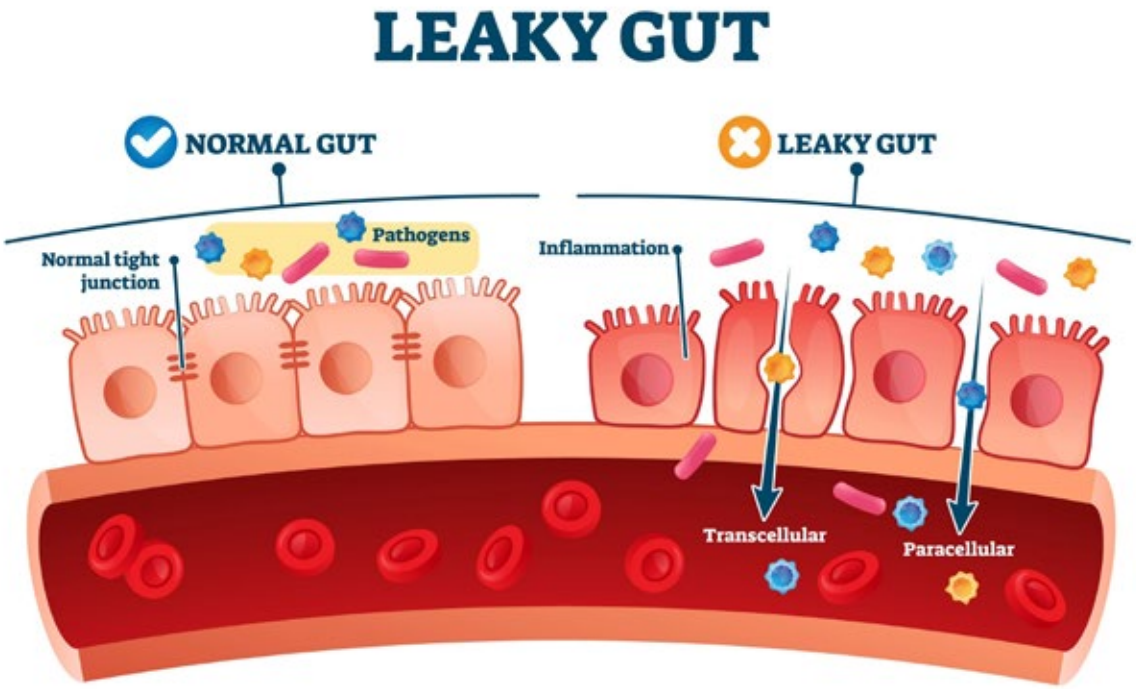


Image source: Shutterstock

Once these particles enter your bloodstream, your immune system flags them as threats and reacts. It’s not the sharp, quick inflammation you get with a fever — it’s a slow, constant internal fight. That ongoing response is called chronic low-grade inflammation (LGI).

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PANELISTS

Dr. Rachana Bhoite
Heading Nutrition Science & Clinical Research at Dr. Reddy's

Dr. Babu. U. V.
Director of R&D at The Himalaya Wellness Company

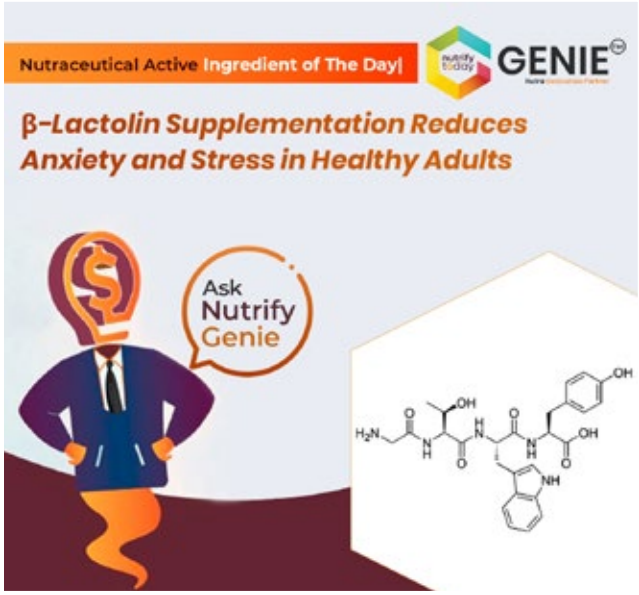
Kanchan Jaiswal
Head Nutrition Science & Clinical Affairs at MANKIND PHARMA LTD.

Register: https://nutrifytoday.live/The-Grail

INGREDIENTS OF THE MONTH

In a 6-week randomized, placebo-controlled trial of adults aged 45–64 with low psychological well-being, daily supplementation with □-lactolin–rich whey peptide significantly reduced trait anxiety and subjective stress, while also improving vitality and mental health–related quality of life. Participants showed higher salivary IgA levels and, in younger adults, reduced prostaglandins, suggesting possible immune and stress-modulating mechanisms. These findings indicate that □-lactolin may support mood and psychological resilience in healthy adults.

Wondering how? Ask NutrifyGenie now

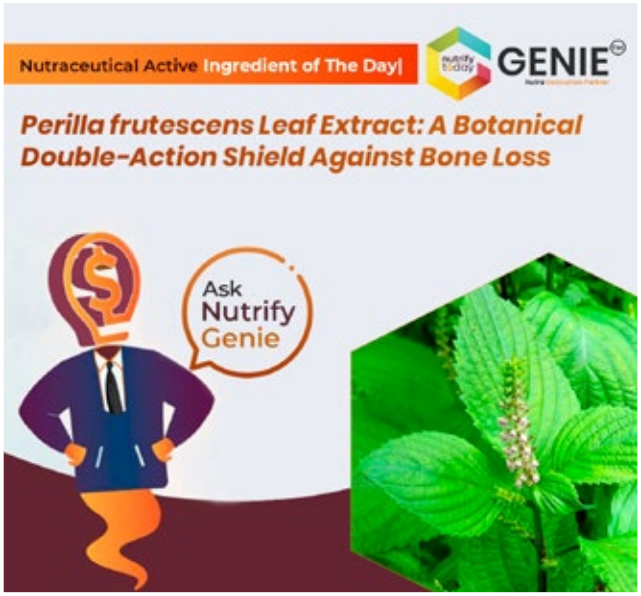


Rheum ribes is a wild rhubarb traditionally used across the Middle East for digestive and liver support, and it's now gaining attention for its potential role in mental health. Containing anthraquinones and polyphenols with antioxidant and anti-inflammatory activity, this botanical may influence the gut-brain axis and neurotransmitter pathways , mechanisms that are increasingly linked to mood and obsessive-compulsive symptoms. In a recent clinical work combining Rheum ribes with Echium amoenum showed meaningful improvements in OCD severity without reported side effects, highlighting its promise as a safe, natural complement to holistic mental wellness strategies.

Wondering how? Ask NutrifyGenie now

INGREDIENTS OF THE MONTH

Perilla frutescens leaf hexane fraction (PLH) is emerging as a powerful botanical ally for bone health, offering a dual-action approach to osteoporosis management. Rich in the flavonoids luteolin and baicalein, PLH helps restore balance in bone remodeling by inhibiting excessive osteoclast formation while simultaneously promoting osteoblast activity. Research shows that PLH suppresses key inflammatory and oxidative pathways involved in bone loss (RANKL-induced ROS, MAPK, and NF-□B signaling), while enhancing markers of bone formation such as alkaline phosphatase and osteogenic potential. By reducing bone breakdown and supporting new bone formation, PLH stands out as a promising natural ingredient for maintaining skeletal strength and long-term bone integrity.



Wondering how? Ask NutrifyGenie now

Bupleurum chinense is a cornerstone herb in traditional medicine, widely recognized for its role in emotional and mental well-being. Clinical evidence suggests that Bupleurum-based formulations can significantly reduce the severity of major depressive disorder, either when used alone or alongside conventional antidepressants. Studies show improvements in depression scores comparable to SSRIs, with the added benefit of fewer and milder adverse effects. By supporting mood regulation through multi-target mechanisms rather than single neurotransmitter pathways, Bupleurum chinense stands out as a promising botanical ingredient for integrative mental health support, especially for individuals seeking gentler, holistic approaches to managing depression.

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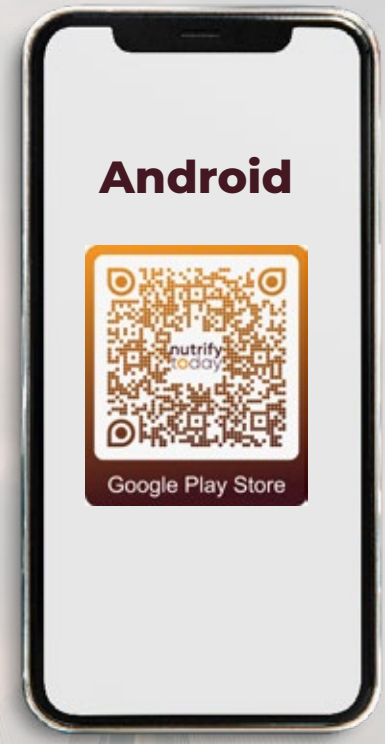

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