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Citrus Flavonoids / Vitamin C Supplementation
and Intestinal Microbiome Diversity / Advances in
Weight Management / Cosmeticorexia Among
Children And Adolescents / Europeans Value
Cosmetics and Personal Care / Fi Europe 2026

Editor's Word



In this issue, we explore the growing role of citrus flavonoids in foods and supplements, with a focus on their potential cardiometabolic benefits. We also review current evidence on vitamin C supplementation and intestinal microbiome diversity.

Innovation continues across the industry, from advances in biotic science and authenticated, fully traceable botanical ingredients to new research on grape pomace and on dietary supplement certification. In cosmetics, we are addressing cosmeticorexia among children and adolescents in the age of social media.

As a B2B publication connecting science, innovation, and industry, we also bring you insights into evolving consumer expectations, European perspectives on cosmetics and personal care, and upcoming industry events, including Vitafoods Asia and Fi Europe 2026—where ingredients, ideas, and partnerships come together to shape what's next.

We hope this edition offers valuable insights and fresh inspiration for your business, product development, and ongoing exploration of emerging opportunities.

Daria Šurić,
EDITOR-IN-CHIEF

Bimonthly digital magazine for industry professionals
in health, nutrition and cosmetics sector

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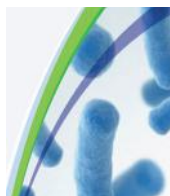
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Citrus Flavonoids in Food Supplements and Nutraceuticals for Cardiometabolic Health

Citrus bioflavonoids such as naringin, hesperidin, naringenin and nobiletin are emerging as promising cardiometabolic compounds, with evidence suggesting benefits for lipid metabolism, inflammation and vascular health.

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These polyphenolic compounds, including naringenin, hesperitin, and nobiletin, have attracted significant clinical interest for their ability to modulate lipid metabolism and mitigate systemic inflammation associated with metabolic syndrome¹. Current evidence indicates that these flavanones improve cardiovascular profiles by up-regulating the AMPK and PPAR α pathways, thereby down-regulating genes involved in dysregulated lipid synthesis².

Furthermore, clinical applications of these compounds, particularly as citrus-derived extracts, have demonstrated efficacy in reducing serum triglyceride levels and improving the high-density lipoprotein profile in hyperlipidaemic patient cohorts^{3,4}. Mechanistically, these interventions are further augmented by the inhibition of adipogenesis and modulation of PCSK9/IDOL signalling, which collectively reinforce the potential of citrus bioactives in the clinical management of dyslipidaemia^{5,6}.

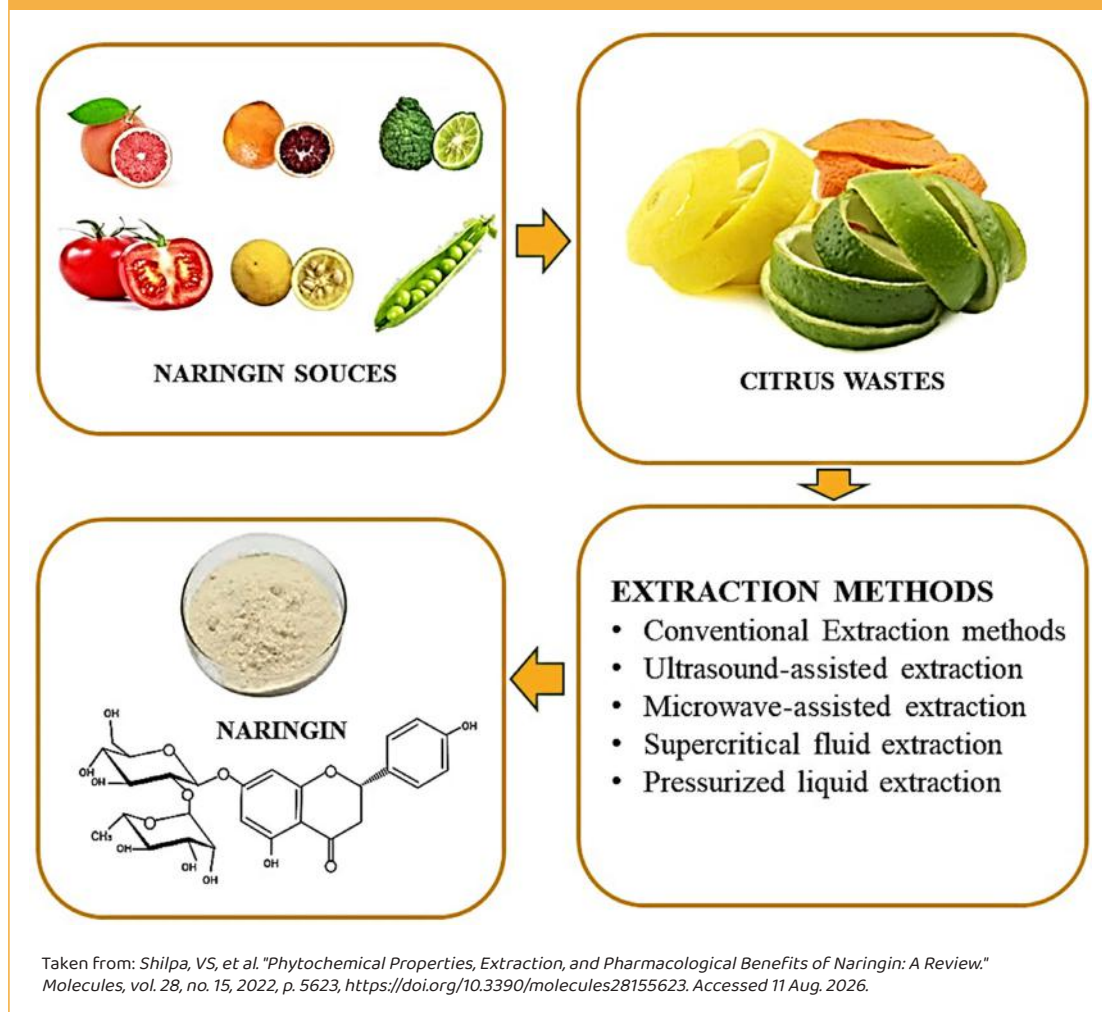
Beyond lipid regulation, these flavonoids also

scavenge reactive oxygen species and improve endothelial function by attenuating pro-inflammatory signalling cascades, thereby addressing the underlying pathophysiology of atherosclerosis⁷. However, despite these promising metabolic regulatory effects, translating pre-clinical data into therapeutic practice remains constrained by limited human clinical trials and the need for standardised dosing parameters that reflect physiologically relevant metabolite concentrations^{8,9}.

Addressing these pharmacokinetic challenges, particularly the bioavailability and dose-dependent efficacy of these agents, is critical to validating their role as adjunctive therapies in clinical settings¹⁰. Future research should prioritise longitudinal investigations that correlate systemic bioavailability with long-term cardiovascular outcomes to bridge the gap between experimental evidence and standardised nutraceutical guidelines¹¹. Specifically, rigorous monitoring of the food matrix is essential, as dietary interactions significantly influence the



Figure 1 Extraction of naringin using different techniques



pharmacokinetics and absorption profiles of compounds like hesperidin in diverse patient populations¹². Moreover, systematic comparisons regarding the impact of hydroxyl and methoxyl group substitution patterns on the bioactivity of polymethoxyflavones are necessary to refine structural-activity relationship models¹².

Mechanism of action

The modulation of lipid metabolism by Citrus flavonoids primarily involves the activation of the adenosine monophosphate-activated protein kinase pathway, which subsequently inhibits HMG-CoA reductase and reduces hepatic cholesterol synthesis¹³. Additionally, highly methoxylated polymethoxyflavones, such as nobiletin and tangeretin, exhibit superior potency in attenuating hepatic and intestinal triglyceride accumulation by modulating lipoprotein secretion and normalising insulin sensitivity¹⁴.

Furthermore, hesperidin and naringin (Figure 1) exert auxiliary glycemic control by enhancing hepatic glycolysis and down-regulating gluconeogenesis, while neohesperidin concurrently suppresses adipocyte hypertrophy to improve insulin sensitivity.

Notably, naringin exhibits potent anti-atherogenic efficacy by enhancing bile acid synthesis via the gut-microbiota-FXR/FGF15-CYP7A1 axis, whereas

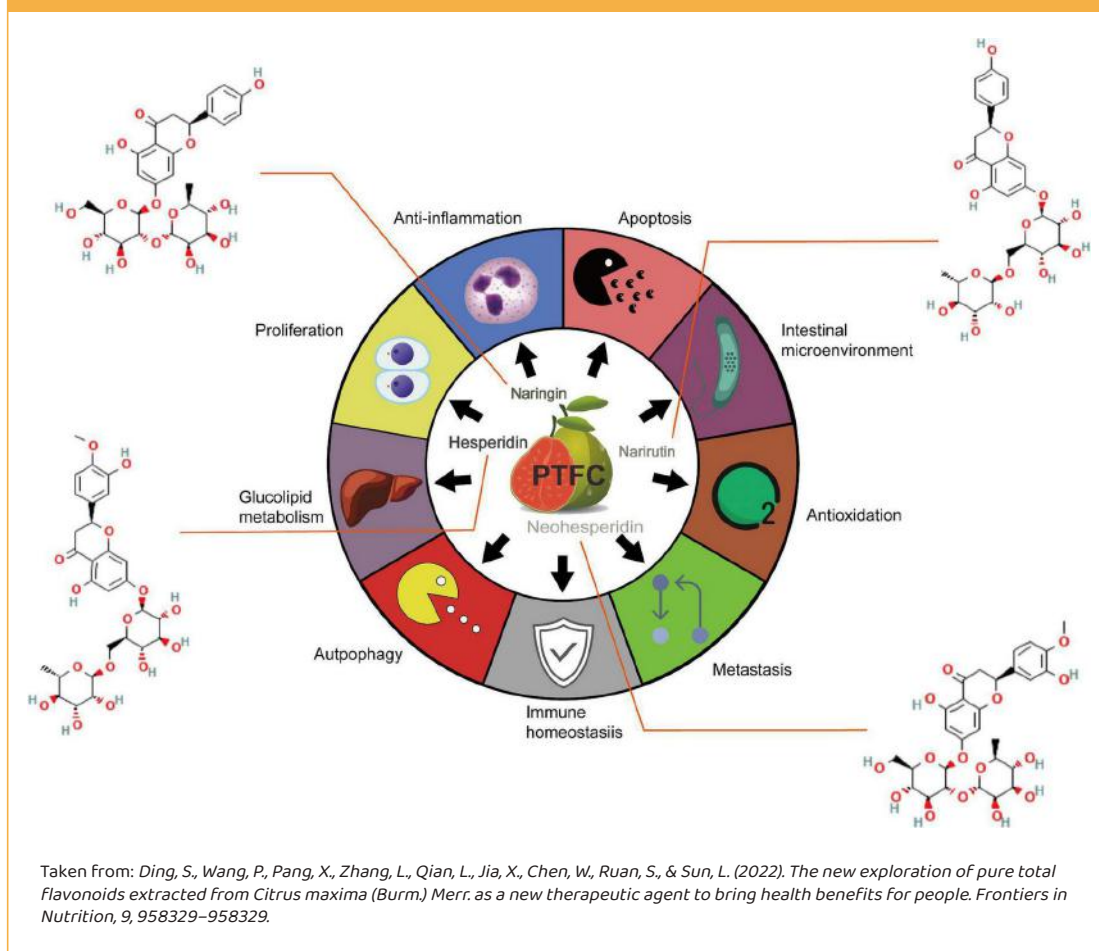
aglycones such as naringenin and hesperetin target hepatic cholesterol homeostasis by downregulating HMGCR and reducing ApoB secretion^{15,16}.

Beyond these metabolic effects, polymethoxyflavones have been identified as novel hypolipidaemic agents capable of achieving systemic concentrations of bioactive metabolites that mirror effective in vitro dosages. This efficacy is notably distinct from that of standard flavanone glucosides, as polymethoxyflavones exhibit a greater capacity to reduce serum total and LDL cholesterol through substantial hepatic accumulation of active metabolites¹⁷.

Beyond these metabolic benefits, novel encapsulation techniques - including liposomal delivery systems and hydrogelation - are being actively developed to overcome the inherent bioavailability limitations of these compounds and to optimise their therapeutic delivery in human subjects¹⁸.

These advanced delivery platforms effectively protect sensitive flavonoids from premature enzymatic degradation in the gastrointestinal tract, thereby improving their systemic circulation and tissue-specific bioavailability¹⁹. Additionally, pharmacological interventions utilising bergamot-derived flavanone-enriched fractions have shown potential to reduce the formation of cholesterol esters and apolipoprotein B-containing lipoproteins by inhibiting acyl-CoA cholesterol acyltransferase²⁰.

Figure 2 Summary of the therapeutic potentials of PTFC administration on hepatic metabolic disorder, cardiovascular events, malignancies development and intestinal barrier dysfunction



Different forms of bioflavonoids

Citrus flavonoids occur in various chemical structures, primarily as glycosides – such as naringin and hesperidin – which require gut microbiota-mediated hydrolysis to their aglycone forms, naringenin and hesperetin, for absorption^{21,22}. Conversely, polymethoxyflavones lack these sugar moieties, which facilitates enhanced lipid solubility and enables more direct systemic uptake across the intestinal epithelium²³.

This structural differentiation between glycosides and aglycones remains a critical factor in determining the therapeutic efficacy of nutraceutical formulations, as the latter often exhibit higher immediate bioavailability^{24,25}. In particular, structure-activity relationship studies demonstrate that the fully methoxylated A-ring found in specific polymethoxyflavones is uniquely associated with potent inhibitory activity against hepatic apoB secretion, a feature absent in more polar flavonoid glycosides.

Furthermore, inherent inter-individual variability in flavanone metabolism is heavily dependent on the gut microbiota's ability to convert glycosides into absorbable aglycones via rhamnosidase activity²⁶.

The most effective bioflavonoids for cardiometabolic support

Among the various candidates, bergamot-derived flavonoids have emerged as particularly potent due

to their unique composition of naringin, neohesperidin, and specialised glycosylated flavanones, which collectively modulate lipid profiles more effectively than common citrus extracts²⁷.

Furthermore, clinical investigations into standardised extracts such as Bergavit[®] have demonstrated significant reductions in plasma triglycerides, total cholesterol, and LDL-cholesterol over long-term supplementation^{28,29}. These synergistic effects may be further amplified by co-administering bergamot with low-dose statins, facilitating the achievement of cholesterol targets in patients who are otherwise refractory to monotherapy.

Such combinatorial approaches are particularly valuable for patients with metabolic syndrome, as bergamot constituents provide additional antioxidant and radical scavenging activities that mitigate common statin-induced side effects. Moreover, these compounds exhibit anti-inflammatory and vascular-protective properties that help attenuate the persistent oxidative stress and inflammatory responses fundamentally linked to the progression of cardiovascular disease³⁰ (Figure 2).

Consequently, integrating these polyphenol-rich fractions into therapeutic regimens offers a promising adjunctive strategy for individuals struggling to reach optimal lipid targets or experiencing poor tolerability with conventional pharmacological treatments³¹. Current research also highlights the capacity of these polyphenol-rich fractions to modulate

autophagy and protect microvascular endothelial cells from LPS-induced dysfunction, further underscoring their potential as pleiotropic agents in managing metabolic syndrome³².

Sources of citrus bioflavonoids in dietary supplements

Commercial preparations predominantly utilise extracts from the Rutaceae family, including bitter orange, sweet orange, and grapefruit, which serve as concentrated sources of specific flavanone glycosides such as naringin and hesperidin³³. In contrast, specialised bergamot polyphenolic fractions are engineered to deliver higher concentrations of these bioactives – often exceeding 200 times the levels found in raw juice – to ensure superior potency in addressing hyperlipidaemia³⁴.

These high-concentration extracts frequently include unique constituents such as melitidin and brutieridin, which are increasingly recognised for their potent hydroxymethylglutaryl-CoA reductase inhibitory activity^{35,36}. These components mimic the biochemical mechanism of statins, effectively reducing cholesterol biosynthesis while enhancing the therapeutic profile of standardised nutraceutical interventions³⁷.

Effective dosages

Clinical evidence indicates that standardised extracts, such as Bergamot-derived Polyphenolic Fraction, are typically administered in daily dosages ranging from 500 mg to 1500 mg to achieve significant improvements in lipid parameters^{38,39}. Specifically, clinical trials have observed that consistent daily supplementation over several months leads to marked reductions in low-density lipoprotein cholesterol and total cholesterol, while concurrently trending toward increased high-density lipoprotein levels⁴⁰. Furthermore, these longitudinal interventions have demonstrated significant improvements in fasting plasma glucose levels, suggesting a systemic impact on overall metabolic regulation in dyslipidemic patients⁴¹.

Beyond lipid modulation, the pleiotropic effects of these extracts are underscored by their ability to reduce markers of inflammation, such as C-reactive protein, which remains a critical target in addressing the underlying pathophysiology of metabolic syndrome⁴². Beyond these metabolic improvements, emerging data suggest that high-dose formulations may also promote significant reductions in body mass index and waist circumference, offering a comprehensive approach to managing obesity-related comorbidities⁴³.

These substantial clinical outcomes, with observed reductions in total cholesterol ranging from 12.3% to 31.3% and LDL-C decreases between 7.6% and 40.8%, emphasise the utility of these extracts as a viable therapeutic alternative for patients with mixed hyperlipidaemia⁴⁴. These results underscore the potential for nutraceuticals to serve as a fundamental, safe, and effective intervention in the clinical management of dyslipidaemia, especially for patients demonstrating statin intolerance or those requiring supplemental therapy to achieve target lipid levels^{45,46}.



Future perspectives

Future investigations must prioritise large-scale, long-term randomised clinical trials to move beyond current small-scale, uncontrolled data and definitively establish the relationship between these interventions and the reduction of major cardiovascular clinical events⁴⁷. Additionally, standardising the phenolic content and bioavailability profiles of these formulations remains essential to ensure consistency in clinical practice, as current evidence on the efficacy of single-agent versus synergistic nutraceutical combinations is often inconsistent and requires further consensus-based validation⁴⁸.

Furthermore, exploring the mechanistic interplay between these nutraceuticals and metabolites of the gut microbiota could elucidate the precise pathways through which they influence systemic cardiometabolic health⁴⁹. Additionally, investigating gender-specific variations in treatment response and the influence of baseline polyphenol status will be critical to refining personalised therapeutic protocols for high-risk populations⁵⁰.

Integrating these findings with multi-component nutraceutical strategies may provide more robust modulation of concurrent lipid and glycaemic disturbances than isolated monotherapies⁵¹.

Conclusion

The clinical utility of citrus-derived bioactives marks a pragmatic shift towards integrative management for individuals with suboptimal lipid profiles or those constrained by statin intolerance^{52,53}. By incorporating these compounds into broader cardiovascular health strategies, clinicians can leverage their pleiotropic mechanisms to address both lipid dysregulation and systemic inflammation^{54,55}. However, it remains imperative that such nutraceutical approaches be positioned as supportive measures rather than replacements for established pharmacological therapies, particularly in high-risk patients who must adhere to evidence-based guidelines^{56,57}.

Rigorous adherence to standardised regulatory protocols and quality control measures is necessary to mitigate risks associated with product heterogeneity and to ensure patient safety across diverse clinical applications⁵⁹. Ultimately, moving towards a more personalised approach requires assessing the absorption and metabolism of these polyphenols, as individual variability remains a significant factor in therapeutic outcomes⁶⁰.

Further research must also employ rigorous, placebo-controlled methodologies in sufficiently large, diverse populations to account for genetic polymorphisms and baseline lifestyle factors that modulate individual metabolic responses^{61,62}.

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The Cardiometabolic Benefits of Citrus Flavonoids

Flavonoids such as hesperidin and quercetin, naturally found in citrus fruits, have attracted considerable scientific interest for their antioxidant, anti-inflammatory, and potential cardioprotective properties.

AUTHOR:

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Natural Ingredients

Over two hundred and fifty flavonoids have been identified in citrus fruits. Flavonoids are a branch of polyphenols, which total more than eight thousand across the plant kingdom. The highest concentration of these compounds is found in the rind and peel, but they are also found in the internal membrane, juice, and seeds. They can be broken down into five distinct classes, namely flavanones, polymethoxylated flavones, flavones, flavanols, and anthocyanidins. These molecules play a significant role in the plant's physiology. As secondary metabolites formed from two biological pathways, one of which utilizes the amino acid phenylalanine, they regulate growth, defend against pathogens, and provide protection from environmental assaults like drought or extreme cold, to name a few of their functions.

Among these, some of the most notable flavonoids are hesperidin, naringin, and quercetin. In addition to contributing to a plant's development, they are also part of a citrus fruit's characteristic flavor

and color. Naringin gives grapefruits their bitter taste and contributes to the fruit's yellow/orange color. Cyanidins give blood oranges the red, ruby color associated with their peel and flesh.

Beyond their role in plant physiology and characteristics, flavonoids are valued for their antioxidant, anti-inflammatory, and cardioprotective benefits. Extensive research has examined these compounds to understand their mechanisms of action and potential health benefits for humans. There is broad scientific agreement among qualified experts that eating citrus fruit, along with vegetables and grains, can help reduce the risk of cancer and heart disease. This has provided a pathway for manufacturers to provide an FDA approved health claim in their labeling and advertisements. This has created greater awareness among the public as to the importance of proper nutrition in maintaining good health.

Marketing the nutritional value and raising public consciousness about the benefits of citrus fruits has provided an avenue to encourage people to in-





clude more of these foods in their diets, but sadly, only a small portion of the public adheres to the guidelines recommended by the Center for Disease Control and Prevention. Given the fast-paced nature of Western society and the propensity to eat processed convenience foods, it can be difficult to benefit from the flavonoids that citrus foods have to offer. What can be done to remedy this situation when faced with the vagaries of human nature? Including flavonoid supplements as part of a person's diet may be part of the answer.

Flavonoids such as quercetin and hesperidin are readily available online, through natural food stores, and pharmacies. In concentrated form, these flavonoids can deliver greater health benefits than what is found in fruit. Hesperidin, one of the most abundant flavonoids found in citrus and shown to provide cardiovascular support, would require a person to consume six to ten oranges or thirty to fifty grams of dried citrus peel to attain an efficacious one-gram dose. Quercetin, a well-studied but much less abundant flavonoid, could only be attained at a comparable level by drinking ninety-five to one hundred and sixty litres of citrus juice. This level can easily be achieved by taking one or two capsules daily with food.

Hesperidin has been widely studied for its potential therapeutic role in conditions such as vascular insufficiency, reduced blood flow, high blood pressure, and elevated cholesterol and triglyceride levels. Vascular insufficiency, a hallmark of heart disease, occurs when plaque buildup or vasoconstriction restricts normal blood flow and impairs cardiac output. Research suggests that hesperidin helps relax and strengthen blood vessels, improves venous tone, and lowers triglyceride and LDL cholesterol levels. In a [human clinical study](#), individuals with metabolic syndrome who took 500 milligrams of hesperidin orally each day showed reduced inflammatory biomarkers, including C-reactive protein, and increased nitric oxide production, which together improved endothelial function. Nitric oxide is a small molecule with strong vasodilatory and anti-inflammatory effects that plays a key role in vascular

homeostasis by relaxing blood vessels, lowering blood pressure, and improving blood flow. Another [study](#) assessed the effects of hesperidin supplementation on cardiovascular risk factors. This meta-analysis using the results of human clinical research concluded that hesperidin supplementation of one thousand milligrams daily had a lowering effect on total cholesterol, triglycerides, low-density lipoproteins, and blood pressure.

Likewise, quercetin also showed similar benefits in improving cardiovascular functions. A review of quercetin's benefits on vascular integrity, inflammation, and lipid metabolism concluded that quercetin has a beneficial effect on vascular lining by reducing oxidative stress and improving its elasticity. Oxidative stress, a condition when the body's ability to neutralize reactive molecules is overwhelmed, causes considerable damage to arterial linings, causing them to be less resilient and hardened. It can function as a harbinger to heart disease if left untreated. Quercetin's ability to scavenge these reactive molecules helps to protect arterial health by reducing elastin degradation. Elastin is a protein that allows arteries to stretch. Over time, due to oxidative stress and other factors, elastin can be replaced by collagen, which causes rigidity. This creates an environment that is conducive to plaque buildup, cell proliferation, and inflammation, which could eventually lead to a blockage.

Together, these two flavonoids show great utility in supporting cardiac function when used therapeutically. When used in conjunction with a balanced diet that includes multiple servings of fruits and vegetables, it can serve as the basis for a heart healthy regime that can help mitigate the incidence of cardiovascular disease. While supplements do not serve as a silver bullet, they are complementary to traditional therapies and have been shown to benefit host health. Used in conjunction with Vitamin C and other co-factors like magnesium, they can help preserve metabolic processes that are essential to heart health.

Vitamin C Supplementation and Intestinal Microbiome Diversity: A Critical Review of Current Evidence

Vitamin C supplementation may influence gut microbiome diversity by modulating intestinal oxidative stress, microbial composition, and the production of beneficial metabolites such as short-chain fatty acids. Emerging evidence also points to potential synergies with prebiotics, probiotics, butyrate, and bioflavonoids, although further clinical research is needed to establish optimal doses and long-term effects.

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Emerging evidence suggests that dietary ascorbic acid plays a pivotal role in shaping microbial community structure by mitigating intestinal oxidative stress and fostering a favourable environment for beneficial taxa¹. Clinical studies have shown that targeted vitamin C administration significantly increases microbial alpha diversity and promotes the production of faecal short-chain fatty acids². This shift is reflected in increased relative abundance of *Lachnospiraceae*, alongside a corresponding reduction in potentially pathogenic populations such as *Enterococci*³. Furthermore, high-dose vitamin C intake is associated with the resto-

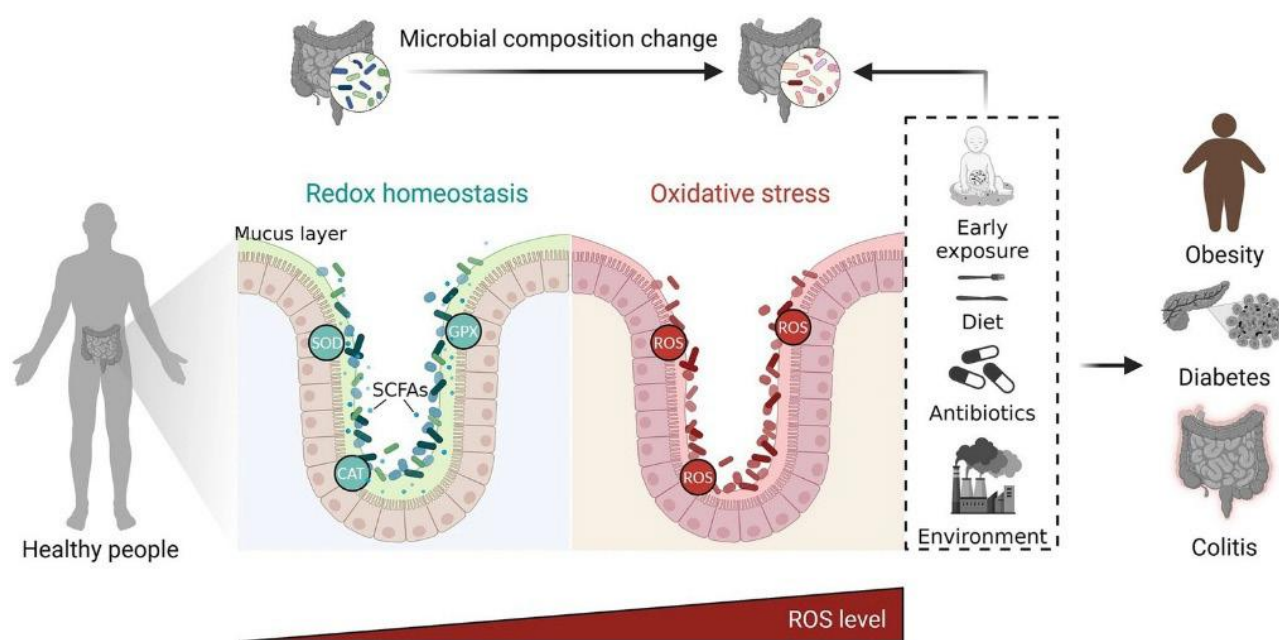
ration of essential gut-liver functions, counteracting the depletion of antioxidants⁴.

This fits with broader nutrition-based approaches to dysbiosis. High-dose supplementation may help regulate metabolic pathways affected by oxidative stress^{3,5}. By neutralising reactive oxygen species, vitamin C may reduce inflammatory signals that promote the growth of pathobionts under oxygen-rich gut conditions^{6,7} (Figure 1).

It may also reduce hydrogen peroxide and other oxidative stressors, thereby supporting the antioxidant defences naturally provided by beneficial bacteria such as *Lactobacillus* and *Bifidobacterium*⁷. A



Figure 1 The complex and bidirectional relationship between oxidative stress and gut microbiota



The gut microbiota exerts influence on oxidative stress through regulating the production of metabolites and antioxidant enzymes. On the other hand, oxidative stress has an impact on the gut microbiota by promoting dysbiosis. Maintaining a balanced gut microbiota through a healthy diet, regular exercise, and other lifestyle factors can help mitigate the harmful effects of excessive ROS on gut health. ROS, reactive oxygen species; SOD, superoxide dismutase; CAT, catalase; GPX, glutathione peroxidase; SCFAs, short chain fatty acids. The figure was created with BioRender.com. Taken from: Penumutlu, S., Koray, B. J., Hewlett, K., & Belenky, P. (2023). Fiber supplementation protects from antibiotic-induced gut microbiome dysbiosis by modulating gut redox potential. *Nature Communications*, 14(1), 5161–5161. <https://doi.org/10.1038/s41467-023-40553-x>

more stable redox environment could further support certain *Clostridia* species, which produce antioxidants such as ascorbic acid and glutathione that help protect the intestinal barrier from ongoing stress⁸. Overall, this antioxidant effect may help stabilise the gut environment and reduce the inflammatory signalling linked to dysbiosis⁹.

Moreover, by fostering an environment conducive to microbial richness, such supplementation aligns with the broader therapeutic potential of antioxidants - including polyphenols and other vitamins - to rectify dysbiosis and improve long-term host metabolic outcomes¹⁰. Beyond these metabolic effects, vitamin C and its oxidation products, including L-dehydroascorbic acid, may inhibit opportunistic pathogens and thereby help commensal bacteria maintain a dominant role in the intestinal community. This synergistic inhibition of enteric bacterial replication, when coupled with the modulation of local redox states, may ultimately promote a resilient ecological profile similar to the high microbial diversity observed in healthy ageing cohorts^{11,12}. Future research should investigate whether these shifts in microbial composition facilitate improved production of short-chain fatty acids, as observed with other antioxidant-rich interventions that enhance host immune signalling and gut barrier integrity^{13,14}. Furthermore, because redox balance is essential for limiting the expansion of virulence factors in pathogens that thrive in oxygen-rich environments, maintaining adequate vitamin C levels may help protect against systemic inflammation. By curbing the oxidative stress that often accompanies dysbiosis, this stabilisation of the gut milieu bolsters the host's in-

nate immune barrier against pathogen-mediated inflammation¹⁵. Moreover, the conversion of vitamin C into reactive metabolites may exert direct bactericidal effects against specific pathogens, complementing the broader metabolic cross-talk that helps stabilise intestinal homeostasis.

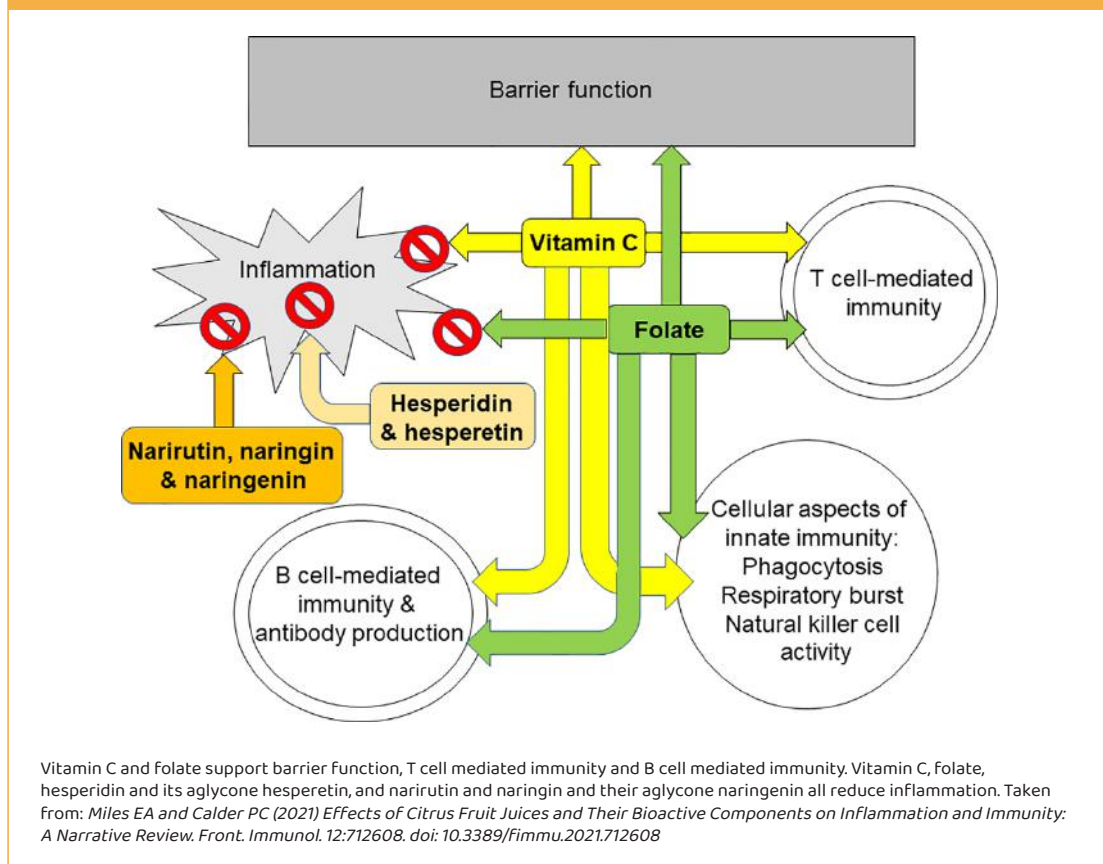
Additionally, the antioxidant-rich microenvironment established by ascorbic acid supplementation may act in concert with specific probiotic strains, such as *P. Freudenreichii*, to bolster systemic antioxidant defences and modulate inflammatory pathways like NF- κ B¹⁶.

Dosage

Daily vitamin C intake strongly affects plasma ascorbic acid levels, but higher oral doses are mostly excreted in urine¹⁷. Reaching therapeutic tissue levels may therefore require careful dose adjustment, since the kidneys tightly control plasma vitamin C and help prevent possible pro-oxidant effects at very high doses¹⁸.

Consequently, pharmacokinetic studies indicate that split-dosing strategies may optimise bioavailability by maintaining steady-state concentrations without triggering compensatory renal clearance mechanisms^{19,20}. Accordingly, the most defensible microbiome-focused regimen is **1,000 mg/day of vitamin C, preferably divided into 500 mg twice daily for two weeks**, although this should be regarded as an evidence-based study dose rather than an established recommendation for increasing microbial richness³. Future investigations should explore the synergistic potential of combining this regimen with prebiotic substrates to maximise the niche expan-

Figure 2 Summary of the effects of orange juice bioactives on different aspects of inflammation and immunity



sion of butyrate-producing commensals^{21,22}. Furthermore, longitudinal analyses are required to determine whether these sustained plasma concentrations effectively translate into long-term shifts in microbial taxonomic guilds associated with healthy ageing phenotypes²³.

Vitamin C with butyrate supplementation might offer a combinatorial approach to further enhance gut barrier integrity by simultaneously mitigating oxidative stress and providing essential substrates for colonocyte energy metabolism^{24,25}. This therapeutic synergy is particularly relevant in the context of respiratory infections, where the gut-lung axis highlights how gut dysbiosis can exacerbate systemic inflammation and pulmonary oxidative stress^{26,27}. Indeed, given that vitamin C promotes neutrophil-mediated pathogen clearance and reduces metabol-

ic requirements during systemic infection, such co-supplementation may serve as a critical prophylactic measure to bolster host immune resilience^{28,29}.

Further evidence suggests that restoring colonic hypoxia through such metabolic support is crucial, as this physiological state discourages the proliferation of oxygen-tolerant Proteobacteria while protecting the integrity of the intestinal epithelial barrier. This restoration of the anaerobic gut niche is essential, as the pediatric microbiome undergoes integrated developmental processes where stable microbial ecosystems are vital for building resistance against systemic pathogens.

Vitamin C and bioflavonoids - synergy for microbiome

The co-administration of vitamin C with specific bioflavonoids, such as hesperidin and naringin, may enhance the bioavailability and therapeutic efficacy of these compounds within the intestinal lumen through complementary antioxidant pathways^{20,30} (Figure 2).

Specifically, this combination may mitigate the oxidative degradation of these phytochemicals, allowing them to exert more potent regulatory effects on the gut-lung axis by preserving the integrity of intestinal mucosal defences³¹. Likewise, these compounds can stimulate the production of microbial-derived mediators that act as signalling molecules to reinforce systemic immunity³². These signalling molecules are pivotal for the production of short-chain fatty acids, which are positively associ-



ated with the maintenance of tight junction integrity and the reduction of markers linked to microbial translocation³³.

Future possibilities

Research is now shifting toward integrating vitamin C supplementation with prebiotics and probiotic consortia to determine if these multi-modal interventions can systematically mitigate the microbial loss and diminished richness often observed in modern, sanitised environments³. Such studies should also test whether these combinations affect hydrogen-consuming and butyrate-producing bacteria involved in gut fermentation.

In particular, researchers could examine whether vitamin C's effects on redox balance and hydrogen metabolism change availability in ways that boost butyrate production by non-methanogenic bacteria. Given the competitive nature of the gut microenvironment, reducing methanogenesis may serve as an effective strategy to prevent depletion, thereby ensuring that metabolic flux is preferentially channelled toward the synthesis of beneficial short-chain fatty acids³⁵. Furthermore, investigating how these redox-mediated metabolic shifts influence the production of acetate and aromatic lactic acids could provide deeper insights into how such interventions stabilise host immune homeostasis³⁶.

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PoZibio® contains lipoteichoic acid (LTA), a naturally occurring cell wall component in *Lactobacillus paracasei* D3.5. LTA helps to:

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- Regulate the gut-brain axis, supporting cognitive function and mood
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- Leaky Gut Syndrome (LGS) isn't a disease—it's **part of the normal aging process** that develops when the lining of the gut becomes weakened over time. Lifestyle choices, the environment, diet, genetics, and epigenetics play a role in how accelerated this process becomes.
- In a younger healthy gut, the outermost layer of that part of the body is called the mucous layer. It is a thin layer that helps protect the innermost layer, where cells line up tightly like bricks (tight junctions) in a wall.
- With normal aging, the mucous layer naturally thins, allowing unwanted particles such as undigested food, toxins, and bacteria to pass through the weakened junctions and enter the bloodstream.
- This process is **closely associated with age-related inflammation (inflammaging)**, an immune response that further damages the mucous layer and weakens the inner junctions.
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Advances in Weight Management: The Roles of Appetite, Metabolism, Gut Health and Stress

Obesity management is evolving beyond calorie restriction to a systems-based approach targeting appetite regulation, metabolism, gut health, and psychological wellbeing. Clinical evidence supporting nutraceuticals that complement lifestyle strategies for sustainable weight management is crucial.

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Pavitra Viswanath, PhD,
Director of Clinical
Affairs Saanroo



Obesity is a major global health challenge associated with cardiometabolic disorders and reduced quality of life¹⁻³. Managing weight is challenging because it is influenced by diet, physical activity, genetics, hormones, and behaviour. Hence, weight management requires comprehensive strategies that extend beyond calorie restriction alone and include physical activity, behavioural modification, and, in some cases, pharmacological or dietary adjuncts¹⁻³. Within this context, nutraceuticals have gained attention as adjunctive interventions because they may influence appetite regulation, lipid metabolism, insulin sensitivity, and inflammatory pathways^{4,5}.

Appetite regulation is a critical component of successful weight management. Hunger and satiety signals influence both the quantity and quality of foods consumed. *Caralluma fimbriata*, an edible succulent traditionally used in India during periods of food scarcity, has attracted scientific interest because of its potential appetite-suppressing effects⁶⁻¹⁰. In a placebo-controlled study involving 50 overweight Indian adults, supplementation with 1 g/day

of *Caralluma* extract (Slimaluma[®]) for 60 days significantly reduced hunger levels, energy intake, and waist circumference compared with placebo⁶. Participants also reported lower consumption of high-calorie foods such as sugars and fats, suggesting that the extract may influence food preferences in addition to appetite⁶. Notably, the strongest and most consistent findings were related to appetite control and central adiposity rather than substantial body-weight reduction, highlighting the importance of managing hunger as a long-term weight-management strategy⁶. The significance of appetite regulation becomes even clearer in conditions characterised by excessive hunger.

In one study, supplementation with the *Caralluma* extract in children and adolescents with Prader-Willi syndrome, a genetic disorder associated with hyperphagia and obesity risk, improved appetite-related behaviours and reduced hyperphagia scores⁷. Although this population differs from the general overweight population, the findings reinforce the central role of appetite regulation in weight control⁷.

Psychological well-being also plays an important



role in body weight regulation^{1,3}. Chronic stress can influence eating behaviour, increase cravings for energy-dense foods, and disrupt hormonal pathways involved in appetite control¹¹. In an 8-week randomised placebo-controlled trial, Slimaluma[®] supplementation significantly reduced perceived stress and worry in 97 healthy adults compared with placebo⁸. Improvements in cortisol-related responses were also observed in males, suggesting possible effects on the hypothalamic-pituitary-adrenal axis⁸. Given the well-established links between stress, emotional eating, and weight gain, interventions that support psychological well-being may provide additional benefits for long-term weight management^{1,3,8,11}.

Beyond appetite regulation, metabolic efficiency influences how the body utilises and stores energy¹⁻³. AMP-activated protein kinase (AMPK), often referred to as the body's metabolic master switch, regulates glucose uptake, fatty-acid oxidation, and cellular energy balance^{12,13}. In a 16-week double-blind, randomised clinical trial, supplementation with *Gynostemma pentaphyllum* extract (ActivAMP[®]) resulted in significant reductions in body weight, body mass index, total fat mass and regional adiposity measures in overweight and obese adults¹⁴. Improvements were also observed in markers of metabolic health, supporting the concept that enhancing metabolic function may complement traditional dietary approaches¹⁴. These findings illustrate how targeting energy utilisation pathways can represent an alternative strategy to appetite suppression alone.

Another emerging area of interest is the relationship between gut health and body weight regulation¹⁵. The gut microbiome influences energy harvest, appetite signalling, inflammation, and metabolic health¹⁵. Oleoylethanolamide (OEA), a naturally occurring lipid amide involved in satiety signalling through activation of peroxisome proliferator-activated receptor alpha (PPAR- α), has been investigated for its effects on weight management and gut health¹⁶⁻¹⁸. In a randomised, double-blind, placebo-controlled trial, a highly bioavailable form of OEA (Trpti[™]) improved body-weight-related outcomes while also promoting the growth of beneficial microbial species, including *Akkermansia muciniphila* and *Faecalibacterium prausnitzii*, both of which are associated with metabolic health and gut barrier integrity¹⁷.

Improvements in markers of intestinal permeability and immune regulation were also observed, suggesting that gut health may represent an important but often overlooked component of successful weight management¹⁷. Together, these findings support the concept that targeting satiety pathways and the gut microbiome simultaneously may offer a complementary strategy for supporting healthy body weight and metabolic function.

Collectively, these studies illustrate the evolution of weight-management science from a calorie-centric model toward a systems-based approach. Appetite regulation, metabolic efficiency, gut health, and psychological well-being all contribute to body-weight regulation and are increasingly recognised as important therapeutic targets. As understanding of obesity continues to evolve, future weight-man-

agement strategies are likely to incorporate interventions that simultaneously address multiple physiological pathways. The growing body of evidence suggests that sustainable weight management depends not simply on eating less, but on supporting the biological systems that govern energy intake, energy utilisation, and long-term metabolic health.

About the writer:

Pavitra Viswanath is Director of Clinical Affairs at Saanroo, where she oversees global clinical research and guides the development, execution, and translation of studies across the company's ingredient portfolio. She brings over 10 years of research experience in oncological sciences and molecular biology, most recently as Medical Science Liaison Manager, Oncology, at Eli Lilly and Company. Pavitra earned her PhD in Oncological Sciences from the University of Utah and an MS in Biomedical Sciences from MD Anderson Cancer Center.

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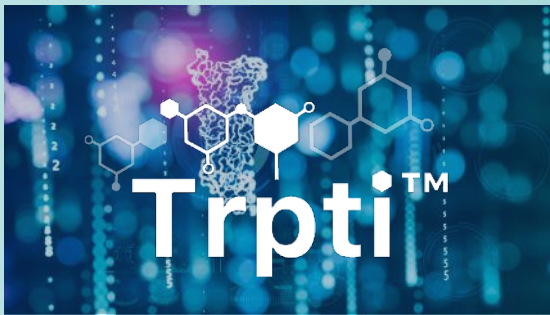
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Weight Management That Works With the Body, Not Against It

Viral Shah, Senior Business Development Director, Saanroo

The body already knows how to manage weight. The problem is we stopped giving it the right signals.

Consumer expectations around weight management have shifted dramatically. People want results that are clinically credible, accessible, and sustainable - without injections, without side effects, and without stopping when they can no longer afford a prescription. Backed by five published, peer-reviewed human clinical trials, two ingredients are meeting that demand by doing something elegantly simple: restoring the biological signals the body uses to regulate hunger and metabolism naturally.



Trpti™ - giving the gut back its voice. After every fat-containing meal, your small intestine produces a molecule called oleoylethanolamide (OEA). Its job is to tell your brain you're full and trigger your body's natural release of satiety hormones GLP-1 and GIP. In people struggling with weight, that signal weakens over time. Trpti™ restores it - using LipiSpense® technology to protect OEA through digestion so it arrives intact where it needs to act. A published clinical crossover study showed a single dose raised post-meal GLP-1 by 20–25% versus placebo, with a 3.5x greater overall GLP-1 response.¹ A separate 12-week randomized controlled trial found Trpti™ significantly enriched Akkermansia muciniphila — a gut bacterium increasingly recognized as a key marker of metabolic health — while levels in the placebo group actually declined.² Two published trials. One ingredient. A genuinely differentiated story for gut-metabolic health formulas.



ActivAMP® - the exercise effect, without the exercise. Sustainable weight management isn't only about eating less - it's about what the body does with energy between meals. ActivAMP®, derived from Gynostemma pentaphyllum and standardized to gypenoside L and ginsenoside Rg3, activates AMPK — the cellular switch the body uses during exercise to burn stored fat rather than accumulate it. Three independent randomized controlled trials at 450 mg/day confirm the effect.^{3–5} A 16-week study in overweight adults showed significant reductions in body weight, fat mass, and triglycerides. A crossover study demonstrated a 4% improvement in exercise performance, with AMPK activation confirmed in actual human muscle tissue. And by supporting cellular energy metabolism, ActivAMP® helps preserve lean muscle mass — the biological factor most responsible for keeping weight off long term.

Intake down, output up - independently proven, versatile together. Each ingredient carries its own clinical story and commercial positioning. Together they address both sides of weight management - satiety signaling and metabolic output - making them equally suited to standalone SKUs or comprehensive stacks. LipiSpense® technology also opens Trpti™ to formats beyond capsules: gummies, stick packs, RTD beverages, and functional shots — the formats today's consumers reach for. Five published trials. Two mechanisms. One clear formulation opportunity.

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Advancing Biotic Science for the Evolving Needs of Asia-Pacific Consumers

Lallemand Health Solutions is showcasing its latest clinically documented microbiome solutions at Vitafoods Bangkok 2026, taking place September 2-4, helping brands address some of the fastest-growing health opportunities across the Asia-Pacific region.

As consumers across APAC increasingly seek proactive approaches to aging well, maintaining cognitive performance, supporting digestive health, and improving overall wellbeing, Lallemand Health Solutions continues to invest in science-backed biotic innovations designed to deliver meaningful health benefits and strong market differentiation.

"Asia-Pacific remains one of the most dynamic and innovative health ingredients markets in the world," says Romane Maillet, Product Category Manager. "At Vitafoods Bangkok, we look forward to sharing new clinical findings and helping our partners develop next-generation microbiome solutions that respond to evolving consumer expectations."

Healthy aging: Supporting mobility, vitality and quality of life

Healthy aging continues to gain momentum throughout Asia, driven by rapidly aging populations and growing consumer interest in maintaining indepen-

dence, mobility, and overall vitality. At Vitafoods Bangkok, Lallemand Health Solutions will spotlight Cerenity™, a clinically documented probiotic solution designed to support healthy aging through the gut-muscle axis. Recent clinical research demonstrated beneficial effects on physical performance and quality of life in older adults, highlighting the potential of targeted microbiome interventions to support aging populations. The company's healthy aging platform also includes innovative solutions addressing cardiovascular and cognitive health, helping brands build comprehensive wellness offerings for aging consumers.

New insights into cognitive performance

Demand for solutions supporting focus, mental performance, and cognitive resilience continues to grow across Asia-Pacific, particularly among students, professionals, gamers, and active older adults. Lallemand Health Solutions will present new data

Vitafoods Asia

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Exhibitor

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supporting its expanding cognitive health portfolio, including results from a recent clinical study evaluating Cerebiome® in action video gamers. Preliminary findings¹ demonstrated measurable improvements in several attention-related parameters, including:

- reaction time
- processing speed

These results further reinforce the growing evidence supporting the gut-brain axis and open new opportunities for brands targeting cognitive capacities and mental performance.

Clinically documented solutions for women's health

Lallemand Health Solutions will also present its portfolio of targeted probiotic solutions supporting women's health across key life stages, featuring innovations such as:

- Prenatis™, evaluated in a clinical study involving 180 pregnant women, demonstrating benefits for maternal health and early infant microbiome development.
- Lacidofil®, shown to support microbiota balance around C-section delivery.
- *L. plantarum* Rosella®², supported by six clinical studies involving more than 800 women, for vaginal microbiota balance.
- *B. bifidum* Rosell®-71, clinically evaluated for digestive comfort during menstruation.

Together, these solutions provide healthcare-focused brands with scientifically substantiated approaches to female health and wellbeing through microbiome modulation.

Experience innovation at Booth #H7-P41

Visitors to booth #H7-P41 have the opportunity to meet Lallemand Health Solutions experts, explore recent clinical developments, discuss product innovation opportunities, and discover FizzBiotics™ by Lallemand, an engaging sparkling probiotic concept designed to elevate consumer experience and support product differentiation.

Whether developing solutions for healthy aging, cognitive capacities, digestive wellness, or women's health, brands can leverage Lallemand Health Solutions' extensive scientific, regulatory, and manufacturing expertise to accelerate innovation and bring differentiated products to market.

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B2B Events Calendar 2026

This is an overview of the B2B live events during 2026



Nutramedic &Cosmetics MEDIA PARTNER

2-4 September, Bangkok

<https://link.informa.com/z5d>

FOOD MATTERS *live*

22-23 September, Rotterdam

<https://foodmatterslive.com/rotterdam>



28-29 September, Lyon

<https://natexpo.com/>



6-8 October, Milan

<https://www.cphi.com/europe/>



21-22 October, Barcelona

<https://www.cosmetorium.es/en/>



26-30 October, Las Vegas

<https://www.supplysideglobal.com/>



Nutramedic &Cosmetics MEDIA PARTNER

17-19 November, Frankfurt

<https://www.figlobal.com/europe/attend/registration/>



25-26 November, Milan

<https://www.in-vitality.it/>

¹ These results should not be considered definitive, as the manuscript is currently under peer review and may be revised.

² *L. plantarum* ROSELLA is *L. plantarum* P17630 (Proge P17630®), licensed from PROGE FARM®, Italy.

TriNutra's ThymoQuin® Achieves Eurofins NSF/ANSI 173 Dietary Supplement Product Certification

Independent third-party certification reinforces TriNutra's commitment to quality, transparency, and standardized botanical innovation.

TriNutra announced that ThymoQuin®, its premium, USP-grade black seed oil softgel capsules (bovine and Tapioca), has achieved Eurofins NSF/ANSI 173 Dietary Supplement Product Certification, marking another important milestone in the company's commitment to delivering scientifically validated botanical ingredients supported by rigorous quality standards.

Issued by Eurofins Assurance, the certification verifies that ThymoQuin® softgels successfully met the requirements of the NSF/ANSI 173-2024a standard following an independent evaluation of product quality, manufacturing controls, and labeling. The certification also includes ThymoQuin Premium® and ThymoQuin Premium Organic®, reinforcing consistent quality across TriNutra's standardized

black seed oil portfolio.

"Establishing safety, quality, and purity has always been the foundation of everything we do at TriNutra," said Morris Zelkha, CEO of TriNutra. "Our investment in clinical research is only meaningful if every batch of ThymoQuin® consistently reflects the same level of quality and standardization. Achieving Eurofins Certification provides independent verification of that commitment and offers our partners additional confidence in the products they bring to market.

As part of the certification process, ThymoQuin® underwent a comprehensive third-party evaluation that included verification of ingredient identity, label compliance, facility review, analytical testing, contaminant screening, microbiological testing, and confirmation that the product met the requirements established by the NSF/ANSI 173 standard for dietary supplements.

"Independent certification plays an increasingly important role in today's ingredient marketplace," said Dr. Liki von Oppen-Bezalel, Ph.D., Chief Scientific Officer at TriNutra. "It provides an additional level of confidence that the quality systems behind ThymoQuin® align with the same scientific rigor applied throughout our research and development process. We believe our sustainable and transparent sourcing, proprietary manufacturing processes, and scientific validation help advance botanical ingredients and support our customers' success."

ThymoQuin is a self-affirmed GRAS ingredient in the U.S. and is globally approved for use in foods and dietary supplements by authorities such as EFSA, Australia's TGA, the Thai FDA, and Health Canada. It has received several global patents, has been clinically studied to support the gut-stress axis, and is available in oil and powder formats for nutraceuticals, cosmeceuticals, and oral care.

To learn more about ThymoQuin®, visit TriNutra.com or www.ThymoQuin.com.





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UC Davis Study Challenges Decades of Assumptions About Grape Pomace

Peer-reviewed research published in the international scientific journal *Molecules* reveals remarkable molecular diversity in Chardonnay grape pomace, reshaping how scientists think about one of nature's most overlooked whole-food ingredients

For decades, scientists have viewed grape pomace primarily as a source of dietary fiber, polyphenols, and other beneficial plant compounds.

A newly published peer-reviewed study in the international journal *Molecules*, conducted by researchers from the Barile Lab and Wang Lab at the University of California, Davis, suggests that perspective may have been incomplete.¹

The UC Davis team analyzed grape pomace from four widely grown California wine grape varieties - Chardonnay, Sauvignon Blanc, Pinot Noir, and Merlot - but rather than relying on conventional nutritional analysis, researchers used advanced analytical methods capable of mapping individual molecular structures, which revealed a far more complex biological system than previously recognized.

"What emerged was far more than a simple comparison of nutrient content. Each grape variety displayed its own distinctive molecular fingerprint, with unique patterns of naturally occurring oligo-

saccharides and phenolic compounds. But Chardonnay stood apart," said Prof. Daniela Barile, lead researcher at UC Davis. PhD candidate Bruna Paviani added, "Interestingly, the phenolic profiles also varied among the pomaces, including between the two white varieties. Chardonnay contained the highest levels of catechin and epicatechin, compounds associated with a range of potential health benefits."

These findings suggest that grape pomace is not simply a source of dietary fiber and antioxidants, but a remarkably sophisticated whole-fruit system whose structural complexity has only recently become visible through advances in analytical science.

The research uncovered 29 distinct oligosaccharide compositions in Chardonnay grape pomace - the greatest diversity observed among the four grape varieties studied. White grape pomaces also exhibited substantially greater soluble carbohydrate content and overall oligosaccharide diversity than the red wine pomaces analyzed.

These findings provide new scientific insight into



Created with AI

the whole-food ingredient that forms the foundation of WellVine™, a science-backed functional prebiotic ingredient used in foods and beverages.

Rather than simply adding another compound to the growing list of nutrients found in grapes, the study invites scientists to rethink grape pomace itself - not only as a source of fiber and antioxidants, but as a sophisticated whole-food matrix whose biological complexity is only now becoming visible through advances in modern analytical science.

"Every meaningful scientific discovery changes the questions we ask," said Scott Forsberg, CEO of WellVine™. "For years, we've known grape pomace contained valuable nutrients. This research suggests we've only begun to appreciate just how sophisticated this natural food system really is."

Beyond expanding scientific understanding of grape pomace, the findings may influence how researchers and product developers think about whole-food ingredients more broadly.

For decades, nutrition science has often focused on identifying individual nutrients or bioactive compounds believed to be responsible for specific health benefits. This research points toward a different perspective—one that recognizes foods as highly organized biological systems whose naturally occurring components may work together in ways science is only beginning to understand.

That shift has practical implications for the future of functional foods and beverages. Rather than relying solely on isolated ingredients, researchers and formulators are increasingly exploring whole-food

matrices that preserve the natural relationships among fiber, polyphenols, oligosaccharides, and other plant compounds.

"This study doesn't tell us everything about how these compounds function," said Forsberg. "But it gives scientists a much clearer picture of what's actually there. That's how meaningful science progresses - first by seeing more clearly, then by asking better questions. We believe this research represents an important step toward understanding why whole-food ingredients can behave differently than isolated components."

The study also adds to growing scientific interest in transforming agricultural byproducts into high-value functional ingredients. Chardonnay grape pomace, once viewed primarily as a byproduct of winemaking, is increasingly being recognized as a naturally complex whole-fruit ingredient with potential applications in next-generation food, beverage, and wellness products.

For more info: www.Wellvine.com.

Study Citation: ¹ Bruna Paviani; Xueqi Li; Han Peng; Mara Baller; Selina C. Wang; Daniela Barile. Comparative Analysis of Oligosaccharide and Phenolic Profiles in White and Red Grape Pomace from California. *Molecules*. 2026;31(14):2530. doi:10.3390/molecules31142530.

*This release is for informational purposes only and is not intended as medical advice. Statements regarding dietary ingredients have not been evaluated by the Food and Drug Administration. Products discussed are not intended to diagnose, treat, cure, or prevent any disease.



NEW SCIENTIFIC PUBLICATION

An innovative patented ingredient
with clinically proven efficacy for
age-related cognitive decline



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Authenticated, US-Sourced & Fully Traceable Saw Palmetto Ingredient

BioVivo Science launches VeriPalmetto™ - fresh, wild-harvested Florida berries, domestic extraction and advanced authentication provide greater control over quality, consistency and supply.

BioVivo Science, a supplier and manufacturer of premium, science-driven botanical solutions made in the USA, is launching its latest fully controlled, traceable-from-farm-to-extraction, and scientifically authenticated ingredient: saw palmetto branded as VeriPalmetto™.

Native to the southeastern United States, saw palmetto (*Serenoa repens*) is a well-established botanical that has been extensively studied for its role in supporting prostate and urinary function, testosterone, and hair health. Nearly 90% of the world's saw palmetto berries are harvested in Florida during late summer and early fall, when they reach peak ripeness and contain optimal levels of the fatty acids and phytosterols responsible for their functional properties.

"Demand for saw palmetto continues to grow as consumers increasingly seek established botanical solutions for healthy aging and men's wellness," said

James Roza, VP of Technical Services at BioVivo Science. "At the same time, brands are placing greater emphasis on ingredient authenticity, traceability, and US-sourced, US-made supply. Our VeriPalmetto™ saw palmetto line was developed to meet these priorities, offering scientifically authenticated ingredients with standardized fatty acid profiles and flexible formats for a range of nutraceutical applications."

BioVivo Science sources fresh berries through an established network of experienced Florida harvesters rather than purchasing previously dried material. This approach provides greater oversight of berry maturity, drying conditions, raw-material integrity, inventory, and batch-to-batch consistency. The berries are then processed at BioVivo Science's botanical extraction and manufacturing facility in Jeffersonville, Indiana.

When it comes to the authentication of the ingre-





dient, a high total fatty acid percentage alone does not confirm its legitimacy. Lower-cost, animal-derived lipids and non-saw-palmetto fatty acids may be blended to mimic expected fatty acid levels, but these imitations lack the therapeutic profile of true *Serenoa repens*.

"The first line of defense to eliminate the 'black box' of adulteration is the control of the supply chain," said Chris Smith, Director of Tolling & International Sales, at BioVivo Science. "Our established network of experienced Florida harvesters gives us direct control at the source, beginning with fresh, authentic *Serenoa repens* berries. From harvest and drying through extraction at our U.S. facility, every critical step is managed with greater transparency and oversight — giving customers a more traceable, consistent, and secure domestic supply."

Every production batch of saw palmetto undergoes rigorous testing for botanical identity, fatty acid composition, residual solvents, and other quality specifications. BioVivo Science provides comprehensive documentation and certificates of analysis to support transparency and regulatory confidence throughout the supply chain.

Smith continued, "The 2026 harvest began in early August, and we are anticipating labor constraints that could impact berry availability this season. We encourage customers to connect with our supply chain team early to discuss anticipated demand and help secure supply."

BioVivo Science's saw palmetto ingredients are commercially available as liquid and fine-powder extracts to accommodate various delivery formats for the nutraceutical industry. BioVivo Science offers standardized fatty acid profiles of 95%, 85%, 45%, 25%, and 15%.



BioVivo Science to host first-anniversary facility experience

In connection with the VeriPalmetto™ launch, BioVivo Science is inviting industry leaders, brand partners, and media to its first-anniversary celebration in Jeffersonville, Indiana, September 16, 17, or 18, 2026 (One tour each day). Guests will have the opportunity to tour the largest botanical extraction and production facility in the U.S., learn about its progress and expanded capabilities, be the first to learn about new product launches, try prototype samples, meet with company executives and technical experts, network with industry peers, and experience local cultural activities.

RSVP: <https://form.jotform.com/261745650066156>

More info: www.biovivoscience.com.



VeriPalmetto™
Authenticated Saw Palmetto Extract

Beyond Beauty: How Probiotics and Postbiotics Are Shaping the Next Generation of Nutricosmetics

As beauty and wellness become increasingly interconnected, consumers are looking for science-backed solutions that support skin health from within. Probiotics and postbiotics are emerging as innovative ingredients, opening new opportunities for the next generation of nutricosmetics.

AUTHOR:

Lallemand Health Solutions

The nutricosmetics market continues to expand as consumers increasingly embrace a holistic approach to beauty and wellness. Rather than relying solely on topical solutions, today's consumers are seeking products that support skin health from within, reflecting a broader shift toward preventative health and whole-body wellbeing. Market growth is being fueled by increasing awareness of the connections between nutrition, mental wellness, immune function, and skin appearance. Notably, 66% of consumers recognize a connection between skin health and overall health, reinforcing the appeal of "beauty from within" concepts.

For supplement brands, this evolution creates an opportunity to develop differentiated formulations targeting skin hydration, skin barrier function, healthy aging, and overall skin resilience through scientifically documented microbiome solutions.

The emerging science of the gut-brain-skin and gut-immune-skin axes

The skin is the body's largest organ and serves as a protective interface between the body and the external environment. Recent scientific advances have

revealed that skin health is influenced by far more than topical care alone. The gut microbiome, immune system, stress levels, sleep quality, and lifestyle factors all contribute to skin appearance and function.

Two interconnected pathways have attracted significant attention from researchers and product developers:

- **The gut-brain-skin axis**, which links emotional wellbeing, stress responses, sleep quality, and skin appearance.
- **The gut-immune-skin axis**, which highlights how immune regulation can influence skin microbiota balance, barrier integrity, and visible skin health.

These emerging insights are driving demand for probiotic and postbiotic ingredients capable of delivering benefits that extend beyond gut health into broader wellness and beauty applications.

The growing role of microbiome solutions in beauty formulations

Probiotics, postbiotics, and other microbiome-targeted ingredients are becoming key assets in modern nutricosmetic development. Unlike topical prod-



ucts that act primarily at the skin surface, these ingredients work systemically, supporting physiological processes associated with skin hydration, barrier function, immune balance, and stress management.

A psychobiotic approach to beauty: Cerebiome®

One of the most innovative developments in nutricosmetics is the application of psychobiotics to support skin appearance through the gut-brain-skin axis.

Cerebiome® combines two clinically documented probiotic strains, *L. helveticus* Rosell®-52 and *B. longum* Rosell®-175. Originally recognized for its benefits on stress, mood, sleep quality, and stress-related gastrointestinal symptoms, Cerebiome® has recently demonstrated promising effects on skin appearance.

In an eight-week clinical study involving 35 women, supplementation with Cerebiome® resulted in:

- Significant reductions in perceived stress
- Improved sleep quality
- Increased skin hydration
- Enhanced skin elasticity and firmness
- Reduced appearance of wrinkles and fine lines
- Improvements in skin radiance and overall complexion

These findings illustrate how addressing internal stress pathways may help support visible beauty outcomes, creating new opportunities for brands seeking differentiated "inside-out" beauty formulations.

Supporting skin resilience through immune modulation: Immuse®

Another emerging area of innovation is the use of postbiotics to influence skin health through immune pathways.

Immuse®, a heat-inactivated *Lactococcus lactis* strain Plasma developed by Kirin Holdings Company, Limited and commercialized through a strategic partnership with Lallemand Health Solutions, uniquely activates plasmacytoid dendritic cells (pDCs), a key orchestrator of immune responses. Clinical studies have demonstrated that supplementation with Immuse® can:

- Help maintain skin microbiome stability
- Support expression of genes involved in skin barrier integrity
- Enhance antimicrobial defense mechanisms
- Improve visible signs such as skin redness
- Help skin better cope with seasonal dryness

Together, these findings support a resilience-focused approach to beauty, in which immune health contributes to maintaining a healthier and more balanced skin ecosystem.

Opportunities for product developers

Probiotic and postbiotic ingredients can be incorporated into a wide variety of delivery formats, including capsules, powders, sachets, stick packs, etc. Their versatility creates opportunities for brands to develop targeted solutions addressing:

- Healthy aging

- Skin hydration
- Beauty sleep
- Stress-related skin concerns
- Skin barrier support
- Skin microbiome balance
- Holistic wellness and beauty concepts

Moreover, microbiome ingredients combine well with established beauty actives such as vitamins, minerals, botanicals, collagen peptides, and other functional ingredients, enabling brands to develop highly differentiated formulations backed by multiple mechanisms of action.

Turning science into market opportunities

As consumer demand for holistic beauty solutions continues to grow, innovation at the intersection of the microbiome, immunity, and skin health is creating exciting opportunities for brands seeking meaningful differentiation. With more than 90 years of expertise in microbial solutions and a portfolio supported by extensive clinical research, Lallemand Health Solutions is committed to transforming scientific discoveries into commercially relevant products that help partners accelerate innovation and address emerging consumer needs.

"Our mission is not only to advance microbiome science but also to help our partners translate that science into successful market opportunities," says Isabelle Champié, Vice President Sales and Marketing at Lallemand Health Solutions. "Whether through probiotics targeting the gut-brain-skin axis or postbiotics supporting skin resilience through immune modulation, we are focused on providing evidence-based solutions that enable brands to bring differentiated products to market."

Meet us at SupplySide Global – Booth #5545

Visitors attending SupplySide Global in Las Vegas (USA) at the end of October, are invited to meet the Lallemand Health Solutions team at Booth #5545 to discover how clinically documented probiotic and postbiotic ingredients can support next-generation nutricosmetic and wellness formulations. Discussions will include opportunities to:

- Discover clinically documented probiotic and postbiotic innovations
- Learn about the latest research in cognitive health, healthy aging, and microbiome science
- Discuss formulation, regulatory, and commercialization strategies
- Experience FizzBiotics™ by Lallemand, an innovative sparkling probiotic concept designed to create engaging consumer experiences

Whether the goal is to launch a new beauty-from-within product, expand into emerging health categories, or strengthen an existing portfolio, Lallemand Health Solutions provides the scientific, regulatory, and manufacturing expertise to help bring innovative concepts from idea to market success.

For more info: healthsolutions@lallemand.com
www.lallemand-health-solutions.com

When Skincare Stops Being Care: Cosmeticorexia Among Children And Adolescents In The Age Of Social Media

Social media is pushing skincare routines and active ingredients onto increasingly younger children, turning self-care into appearance anxiety and consumption. The emerging phenomenon of cosmeticorexia raises important questions about children's skin health, wellbeing and protection from commercial influence.



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At first glance, skincare among children and adolescents may seem like one of the more harmless social media trends. Learning basic hygiene habits is certainly desirable, while an interest in cosmetics can be a form of play, creativity and bonding with peers or parents. There are also educational workshops where teenage girls, under professional guidance, make simple skincare and hygiene preparations suited to the needs of their age group, while learning about responsible ingredient selection and safe use. The problem begins when that interest develops into elaborate skincare routines, the use of active ingredients intended for adult skin and exposure to commercial messages that children are not yet able to assess critically.

This raises the question of whether we are dealing merely with a passing cosmetics trend or with a more sophisticated form of exploitation of children's

vulnerability. Here, the child is not exploited through physical labour, but simultaneously becomes a marketing tool, a distributor of the commercial message and the target audience to whom the product is sold. This is precisely why such exploitation appears harmless at first: it is concealed behind attractive packaging, entertaining videos, a sense of community and the illusion of free choice.

It is particularly troubling that a very young content creator with a smaller but highly engaged following - a so-called micro-influencer - does not appear to another child as a paid advertiser, but as a trusted peer.

The psychological consequences may be profound. Children learn that their normal face is an unfinished project; that pores, skin texture and the first blemishes are flaws to be corrected; and that acceptance and belonging depend on buying prod-



ucts and performing a routine correctly. Skincare then ceases to be hygiene, play or a pleasant ritual and becomes a means of controlling one's appearance.

What is cosmeticorexia?

Cosmeticorexia, also known as dermorexia, refers to a culturally reinforced preoccupation or obsession with achieving 'flawless' skin. It can lead to excessive, age-inappropriate or compulsive use of cosmetic products and aesthetic procedures.

The concept was explored in greater detail in 2026 in the specialist journal *Dermatology and Therapy* by clinical psychologist Alberto Stefana of Italy's National Institute of Health and dermatologist Giovanni Damiani of the University of Milan. Cosmeticorexia is not currently recognised as a mental disorder, nor are there standardised diagnostic criteria for it. Nevertheless, the authors consider that it may represent a clinically relevant problem warranting clearer definition, standardised assessment and epidemiological monitoring.

Its core features include a gradual increase in the time and money invested in routines, anxiety or distress when they cannot be performed, and reliance on skincare as a means of regulating emotional states. This pattern may persist despite skin irritation, financial burden or psychosocial difficulties.

The phenomenon is further encouraged by the portrayal of normal skin features as problems that need to be treated or corrected, alongside the growth of a market for cosmetic products presented as having medicine-like effects and social media platforms that reward content centred on skincare routines and physical appearance. The boundary between skincare and treatment becomes increasingly blurred, while normal skin features are more frequently presented as problems for which there is a corresponding product.

Emerging evidence suggests that exposure to such content and the adoption of the behaviours it promotes are beginning at increasingly younger ages. Preadolescents and adolescents are especially susceptible to social comparison, the need to belong and appearance-focused content. Intensive social media use has been linked to greater concern about appearance, a less positive body image and maladaptive appearance-management behaviours.

For some people, skincare may become an avoidant coping strategy for dealing with unpleasant emotions. A routine may temporarily relieve anxiety while simultaneously maintaining the need to monitor the skin constantly and search for new flaws. Cosmetic practices themselves may cause or worsen visible skin changes, which then become a reason to introduce further products. This creates a self-reinforcing cycle: the more extensive the routine, the greater the potential for irritation, while irritated skin fuels further concern and expansion of the routine.

'Sephora kids' and routines costing hundreds of euros

The phenomenon known as 'Sephora Kids' refers to preadolescents and younger adolescents who, most often under the influence of social media, pur-

chase products for elaborate routines and active ingredients intended to meet the needs of adult skin. These include retinoids, exfoliating acids, serums and anti-ageing products whose suitability for this age group is seriously questioned by dermatologists.

The scale of this trend was demonstrated by the study *Pediatric Skin Care Regimens on TikTok*, published in *Pediatrics* in 2025 by Molly Hales, Sarah Rigali, Amy Paller, Walter Liszewski and Tara Lagu. The research team analysed 100 videos posted by 82 content creators aged between 7 and 18 years.

Approximately one-third of the videos were posted by children aged 13 or younger, while the remainder were posted by creators aged 14 and over. All but one were girls or young women. The videos were most often filmed at bedroom dressing tables or bathroom sinks, and a typical routine contained one or more cleansers, toners, serums and moisturisers. Sunscreen appeared far less frequently. Glow Recipe, Bubble, Drunk Elephant and The Ordinary were particularly overrepresented.

The most common format was 'Get Ready With Me', accounting for 52% of the videos analysed. While applying products, the girls discussed their plans and daily activities, allowing the cosmetics routine to blend naturally into content that did not resemble conventional advertising.

In a further 20% of videos, the products, their order and the way they were applied were the main focus. Evening and 'after-school' routines accounted for 16% of the content, while videos entitled 'Sunday Skin Care' or 'Sunday Reset' featured more elaborate and time-consuming practices, such as applying masks.

Nine 'Mommy and Me' videos were particularly revealing: mothers and daughters applied cosmetic products together, with the daughter most often instructing the mother in the correct order and method of use. This almost symbolically reverses the traditional relationship: instead of learning a hygiene habit from an adult, the child becomes the product expert and the bearer of a consumer trend.

A total of 260 different products were identified in just 100 videos. The most common active ingredients were alpha-hydroxy acids, including citric, lactic and glycolic acid, and vitamin-based ingredients such as niacinamide, tocopherol and panthenol.

The routines contained an average of six products and cost an average of USD 168, or approximately EUR 146. The most expensive and time-consuming routines included more than ten products with a total value exceeding USD 500, or approximately EUR 435.

Among the 25 most-viewed videos, the most frequently featured product was the hydroxy-acid toner Glow Recipe Watermelon Glow BHA+PHA Pore-Tightening Toner. A 150-millilitre bottle cost USD 35, or approximately EUR 30. Only one-third of the most-viewed videos featuring this toner also included sunscreen.

Overall, only 26.2% of the routines analysed included sun protection. This represents a significant missed opportunity, particularly for the youngest users, who do not need anti-ageing ingredients or elaborate routines but could genuinely benefit from consistent protection against UV radiation.





The study also found that the most-viewed routines contained an average of 11 potentially irritating active ingredients, with some containing as many as 21. The problem does not necessarily lie in any single ingredient, but in applying multiple products at the same time, repeating the same active ingredients at different stages and creating cumulative skin exposure.

In one video, a reaction developed on camera. A young girl applied 14 products to her face, with a total value of almost USD 350, or approximately EUR 305. By the end, the skin on the upper part of her face was visibly red and inflamed. Although she praised the resulting 'glow', she also admitted that she did not know what was happening to her skin and asked for help because her face was burning intensely and causing considerable pain.

That scene captures the entire paradox: visible inflammation is interpreted as a desirable 'glow', while a painful reaction becomes almost a minor inconvenience in the performance of the routine.

The research team also found that these routines are time-consuming. In some videos, girls wake as early as 4:30 a.m. to complete their elaborate morning skincare before school. The routine is no longer a casual hygiene habit, but an activity around which sleep and everyday obligations are organised.

Is the skin barrier of children really immature?

Discussion of cosmetics for children should be grounded in the actual physiology of the skin. Children's skin gradually matures during the first years of life, while prepuberty and puberty bring a new change - not because the skin barrier becomes 'immature' again, but because hormonally driven sebum production leads to oilier skin and the development of acne.

In a study published in 2017, Fanqi Kong, Carlos Galzote and Yuanyuan Duan compared skin properties in healthy children of different ages - from one to ten years - with those of their mothers. Each age group included approximately 29-30 children. The researchers assessed the clinical appearance of the skin, transepidermal water loss, moisture content and water-holding capacity on the face, forearm and lower leg.

The skin barrier of younger children was more permeable than that of older children and adults, but permeability-related values approached those of adult skin by approximately five years of age. Clinically, the skin of younger children was softer, smoother and generally in better condition than that of older children and their mothers, while softness and smoothness gradually decreased with age.

The mothers had a higher measured skin moisture content than the children, although the authors noted that prior use of moisturising products, as well as the site and method of measurement, may have influenced this result. Overall hydration of children's skin increased with age, primarily because barrier maturation reduced transepidermal water loss.

The study shows that the greater skin sensitivity of preadolescents and adolescents cannot simply be attributed to an 'immature skin barrier'. At that age, a greater concern is the unnecessary cumula-

tive use of numerous potentially irritating active ingredients.

What does young skin really need?

According to the American Academy of Dermatology, basic skincare for preadolescents should be based on gentle cleansing, moisturising as needed and daily sun protection. The face may be washed once or twice a day, while a single evening cleanse may be sufficient for dry or sensitive skin. Harsh cleansing and introducing too many products too early may cause irritation.

The turning point comes with hormonal changes during prepuberty and puberty. Increased sebum production can lead to an oilier complexion, clogged pores, blackheads and acne. Only then may skincare acquire an additional, targeted function that corresponds to the skin's actual needs.

In the European cosmetics context, a salicylic acid product may be introduced as needed for oily skin, clogged pores, and mild blemishes. Salicylic acid may cause dryness and irritation, which is why appropriate moisturising remains an important part of skincare. New products should be introduced one at a time and gradually so that their tolerability can be assessed. This is not a universal recommendation for all teenagers: skin without blemishes does not require an active ingredient simply because a child has entered puberty.

Severe, persistent or inflammatory acne, as well as lesions that leave scars or dark marks, require assessment by a dermatologist and, where necessary, treatment with medicines. Acne treatment should not be equated with a cosmetics routine or devised independently on the basis of social media recommendations.

The AAD does not recommend retinol, vitamin C or exfoliating acids intended to treat wrinkles, signs of photoageing and uneven pigmentation as part of routine skincare for children and adolescents, because they target concerns their skin generally does not have. A retinoid or salicylic acid may be justified when there is a dermatological indication, but the decision to use it should then be left to a dermatologist.

Puberty does change the needs of the skin, but it does not turn a child's bathroom into an anti-ageing cosmetics department. Gentle cleansing, moisturising as needed and sun protection are sufficient for preadolescents. As sebum production increases and blemishes appear, salicylic acid may be introduced selectively. The active ingredient then addresses a genuine skin need rather than a social media trend.

Cosmeticorexia under regulatory scrutiny

In March 2026, the Italian Competition Authority, Autorità Garante della Concorrenza e del Mercato, opened two investigations into Sephora, Benefit Cosmetics and affiliated LVMH companies over possible unfair commercial practices associated with the premature use of adult cosmetics by children and adolescents, including those under the age of 10 or 12.

The investigations concern not only the products themselves, but also the possible encouragement of compulsive purchasing of face masks, serums and

anti-ageing creams, covert marketing through very young micro-influencers, and insufficiently clear or potentially misleading information about whether the products are intended for or tested on minors. The concerns relate particularly to information available online and in Sephora stores, and to the Sephora Collection and Benefit Cosmetics product lines.

The Italian authority warned that the frequent and combined use of a wide range of products without an adequate understanding of how they should be used may harm the health of minors. A marketing strategy involving very young micro-influencers and encouraging compulsive purchasing among young people, a particularly vulnerable group, was considered especially problematic.

The investigations have not yet been concluded and the liability of the companies involved has not been established. Nevertheless, their very initiation signals an important shift in perspective: cosmeticorexia is no longer exclusively a dermatological and psychological concern, but also an issue of protecting underage consumers, covert advertising and industry responsibility.

The responsibility of adults

The exploitation of children does not always take the form of physical labour in harsh conditions. In the digital environment, it can be far more subtle: a child simultaneously becomes a product promoter, content that attracts attention and a consumer to whom the product is sold. Commercial benefit is derived by exploiting children's developmental vulnerability, their need to belong and their still limited ability to recognise covert advertising. This form of exploitation may leave no visible physical traces, but it can have a lasting impact on self-esteem, the relationship with one's own body and patterns of consumption.

I must admit that I see a ruthless commercial and marketing game here, one in which children become a means of achieving visibility, recognition and, ultimately, profit. The moral responsibility lies with us adults, who are capable of recognising manipulation – from regulatory authorities and the cosmetics industry to parents.

At the same time, it must be acknowledged that, for some families, creating social media content may offer a way out of difficult socioeconomic circumstances. Parents may justify it as an attempt to provide better living conditions for their children, which is in itself a legitimate aim. However, a legitimate intention does not justify turning a child into a marketing tool and a source of income.

Society's sensitivity to child labour has deep historical roots. Poor families once survived by sending their own children to work, and in some parts of the world this practice continues today, although it is often ignored. Digital exploitation of children cannot simply be equated in severity or circumstances with physical child labour, but it rests on a disturbingly similar principle: adults derive economic benefit by using children's vulnerability, labour, privacy or influence over their peers.

What disturbs us so deeply about the exploitation of children is not only their vulnerability, but the deliberate exploitation of an unequal power relation-

ship. Children have not yet fully developed the ability to think critically, recognise covert manipulation or understand the long-term consequences of their own exposure. Their natural need for belonging, imitation and approval can therefore easily be turned into a means of making money.

We are particularly troubled when children's naivety and innocence – qualities that we adults have gradually lost over the course of our lives for various reasons – are exploited by the very people and institutions that should protect them. A child may agree to participate, but that consent is not equivalent to the fully informed and independent decision of an adult, particularly when the child is both emotionally and materially dependent on the adults making the decisions.

Cosmetics manufacturers should therefore seriously consider stating clearly that products intended for adults are not intended for children, particularly when they contain active ingredients that do not meet the needs of children's skin. The market and patterns of cosmetics use are changing, and safety assessments, communication and labelling must keep pace with the actual and reasonably foreseeable behaviour of consumers. This is the very least that every manufacturer and Responsible Person can do.

Such a warning, however, cannot substitute for responsible conduct by the industry. If the packaging states that a product is not intended for children while very young influencers simultaneously promote it to their peers, the warning becomes a mere formality. Genuine protection of children begins only when adults stop turning their naivety, trust, privacy and need to belong into a market advantage.

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Europeans Value Cosmetics and Personal Care for Daily Life, Wellbeing, and Healthy Ageing – Far Beyond Appearance

Major pan-European study finds 88% of Europeans say their daily personal care routines, powered by cosmetics and personal care products, positively impact how they feel today and help them age healthily, while 71% say these routines help them feel focused, prepared, and able to perform in daily life.

A major new pan-European study released today by Cosmetics Europe reveals that consumers across Europe already associate their personal care routines, supported by cosmetics and personal care products, with far more than appearance alone. People value them for how they support them in participating in daily life, engaging with confidence, and maintaining wellbeing and healthy ageing over time – topical issues as Europe responds to demographic change and focuses on helping people live healthier, more active lives for longer.

The European Consumer Perception Study 2026,

based on responses from more than 6,000 consumers across 10 European countries, shows that their personal care routines – powered by everyday cosmetics and personal care products such as shampoo, body wash, deodorant, toothpaste, skincare, sunscreen, and makeup – are deeply embedded in daily life and strongly associated with both everyday functioning and long-term health.

Not just appearance: a fundamental reframe

This new study shows that, for most Europeans,



personal care is about more than appearance. 73% say their personal care routine supports their well-being and healthy ageing, either primarily or alongside appearance, while only 27% say it mainly maintains their appearance. This is one of the clearest findings in the research, pointing to a broader shift in how consumers understand cosmetics and personal care products: not simply as products of appearance, but as part of the everyday routines that help them live well today and over time.

This is reflected in everyday life across Europe. Nine in ten Europeans (91%) have an established personal care routine, and 76% of those say cosmetics and personal care products are important or very important within that routine – helping them feel clean, comfortable, confident, and ready to engage in daily life.

Showing up: how personal care routines help Europeans perform, participate and be productive

The study also reveals a clear link between personal care routines, including cosmetics and personal care products, and how people function in society. 71% say their personal care routines help them feel focused, prepared, and able to perform in daily life. 73% say they help them participate and engage with confidence at work, school, and in social interactions. Most notably, 80% agree that feeling comfortable and confident makes them more productive – while 60% say feeling “not at their best” affects their ability to participate fully.

Not just today: consumers already connect their personal care routines to healthy ageing

Critically, consumers do not see their personal care routines – powered by cosmetics and personal care products – only in terms of daily life. 88% say their personal care routines have a positive impact on how they feel today and on helping them age healthily over time – placing cosmetics and personal care within a broader culture of proactive health.

The full report explores in detail how consumers connect specific product categories – including oral care, skincare, and sunscreen – with prevention and long-term health protection.

Why this matters for Europe

At a time when Europe is focused on prevention, healthy ageing, and wellbeing, these findings highlight how personal care routines already form part of the everyday habits that support how people feel, function, and participate in daily life – and why they deserve to be acknowledged in public debate and policy discussions.

John Chave, Director General at Cosmetics Europe, said: “For too long, cosmetics and personal care have been framed primarily through appearance. This study shows a different reality: these are everyday products that help people engage in daily life and maintain their wellbeing over time. In a Europe focused on prevention and healthy ageing, that matters.

“Consumers have already made the connection



between their daily personal care routines and their long-term health and wellbeing. The challenge now is for policy and public debate to keep pace with how Europeans actually use and value these products – as part of daily life today and healthy ageing over time.”

The full report, *Beauty and beyond: The everyday role of cosmetics and personal care in Europe*, is available [here](#).

About the study

The European Consumer Perception Study 2026 was commissioned by Cosmetics Europe and conducted by IFOP. 6,001 consumers aged 18 and over were surveyed across Bulgaria, Denmark, France, Germany, Italy, the Netherlands, Poland, Spain, Sweden, and the United Kingdom. The study explores how consumers use and perceive cosmetics and personal care products, including their role in daily life, wellbeing, confidence, participation, and healthy ageing.

About Cosmetics Europe

Cosmetics Europe is the European trade association for the cosmetics and personal care industry. For more than 60 years, Cosmetics Europe has been the voice of the cosmetics and personal care industry in Europe. Our members include cosmetics and personal care manufacturers as well as associations representing our industry at national level, right across Europe. For more information, please consult the Cosmetics Europe website.

Registration is Now Open for Fi Europe 2026: Where Ingredients, Ideas and Partnerships Power What's Next

With more content, more diversity and a brand new Pet Food and Nutrition Forum, Fi Europe 2026 is poised to be one of the biggest editions yet as it returns to Frankfurt.

Registration is now open for [Fi Europe 2026](#), as the world's leading food ingredients event returns to Messe Frankfurt, Germany from 17-19 November. Expecting to welcome over 1,650 exhibitors and around 27,000 visitors, this year's event is on track to be one of the largest to date.

Visitors will have opportunities to meet a huge variety of businesses, from start-ups to global leaders like ADM, AGRIFLEX, Beneo, Bühler, Cargill, Givaudan, GEA, and Nexira, as well as gaining exclusive new market insights and exploring the latest ingredient and technology developments. Fi Europe 2026 will showcase the full spectrum of food ingredient innovation, offering attendees a unique opportunity to connect with the most influential players in the industry.

"The food, beverage and pet food sectors continue to evolve rapidly, driven by changing consumer

expectations, advances in technology and growing demand for products that support health, well-being and sustainability," says Yannick Verry, Fi Events Brand Director at Informa Markets. "Fi Europe reflects these shifts, ensuring attendees have access to the knowledge, ideas, partnerships and solutions needed to stay ahead."

Pet nutrition takes centre stage

The continued 'humanisation' of pets is creating new opportunities for ingredient suppliers and manufacturers, with demand growing for products that support pet health, well-being and nutrition. This year, the expanded **Pet Food & Nutrition Hub** will feature more ingredients, formulations, technologies and solutions shaping the market.

New for 2026, the **Pet Food and Nutrition Forum** will enable visitors to explore trends, challenges, and





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opportunities in one of the food industry's fastest-growing categories. This feature will bring together professionals, decision-makers, and innovators for numerous networking, expert-led sessions, exhibitor showcases, and interactive experiences designed to inspire innovation and foster collaboration.

The heart of Fi Europe: food and health ingredients and insights

The **Food ingredients and Health ingredients areas** remain central to Fi Europe, with attendees able to explore thousands of innovative and best-in-class ingredients, including a wide range of **natural and organic solutions**.

Fi Europe's content programme has always curated the latest knowledge from renowned experts across the industry, and 2026 will be no exception. Attendees can expect cutting-edge insights and thought leadership delivered through the **Innovation Hub** and **Fi Europe Conference**. Aligned with the one of the sector's hottest topics for 2026, the third day of the conference will spotlight weight management, honing in on how the rise of GLP-1 medications and changing consumer eating behaviours are reshaping food innovation.

In addition to this, attendees can expect to learn about other trending topics and ingredients, ranging from plant-based and clean label solutions to ingredients supporting healthspan, gut health, cognitive well-being and more. These themes will also be explored through the event's free **Innovation Tours**, which provide guided insights into how exhibitors are responding to evolving market demands through reformulation, sustainability initiatives, meat alternatives, and technology-driven ingredient solutions.

From concept to commercial scale

This year's event will focus primarily on food and beverage ingredients, but exciting expansions are planned by Fi Europe's organisers. The **Ready to Market area** will connect product development with commercial opportunity through finished products, packaged formats, sustainable solutions and private label offerings, helping businesses accelerate their route to market.

Alongside this, Fi Europe's growing **Tech, Services & Equipment area** will bring together processing technologies, packaging innovations, automation

tools and digital solutions supporting modern food and beverage manufacturing, helping attendees turn ingredients and concepts into finished products at scale.

Enhanced networking for maximum impact

"We're always looking for ways to bring our community together, ensuring Fi Europe is not only a place for learning and discovery, but also one that creates meaningful face-to-face connections beyond the event itself," continues Verry. "To harness these connections, we've upgraded the Fi Europe app and introduced a new Supplier Pass that includes the event's complete visitor list, enabling attendees to see who will be in Frankfurt and schedule meetings in advance with relevant contacts – in our dedicated Meeting Lounge if desired. Combined with early app access, this pass will help visitors plan ahead and make the most of their time at Fi Europe 2026."

The event also offers a range of in-person networking opportunities, with highlights including a **Women's Networking Breakfast**, for women shaping the future of the food and beverage industry, and the **Future of Nutrition Lunch & Learn** for senior decision-makers. Also returning this year is the **Fi Europe Innovation Awards**, which celebrate groundbreaking innovations as well as set the stage for exciting future connections and collaborations.

Registration for Fi Europe 2026 is now open, with super early bird prices available until 6 September.

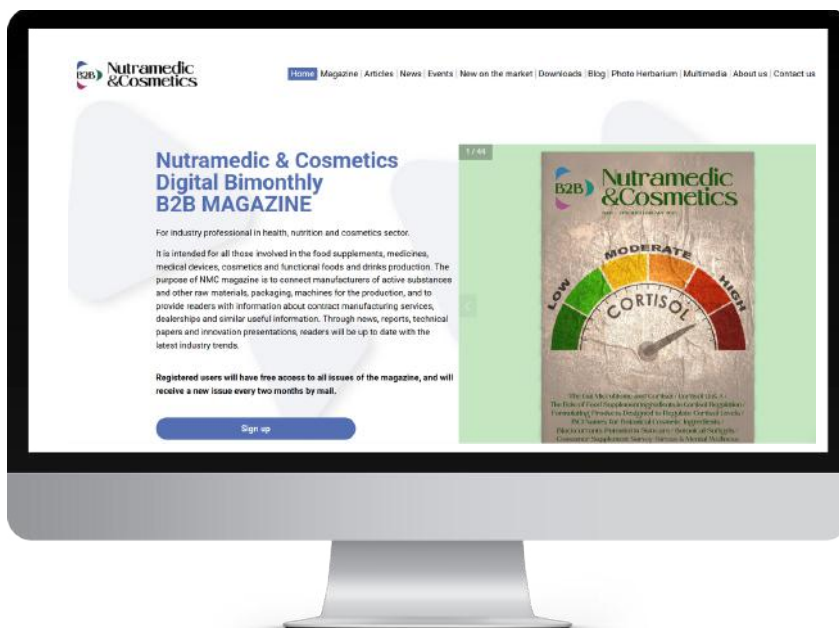
About Food ingredients (Fi)

Fi was launched in Utrecht, The Netherlands, in 1986. Its portfolio of live events, extensive data and digital solutions, as well as high-level conferences is now established throughout the world and provides regional and global platforms for all stakeholders in the food ingredients industry. Over 1,000,000 people have attended Fi shows over the years, with billions of Euros worth of business created as a result. With more than 35 years of excellence, the events, digital solutions and supporting products deliver a proven route to market, with a truly global audience. Since 2018, Fi has been part of the Informa Markets portfolio.

For more information, please visit: www.figlobal.com.

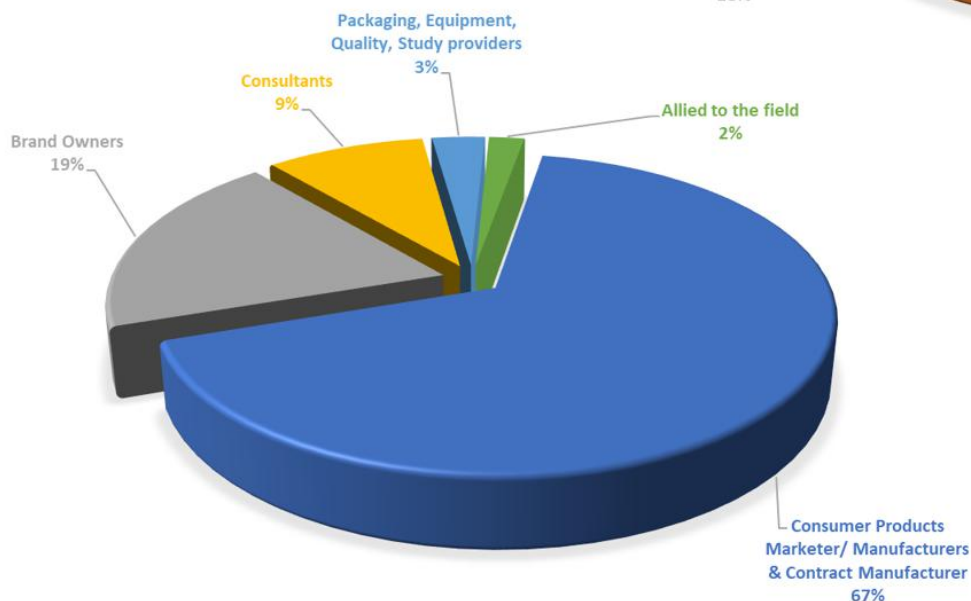


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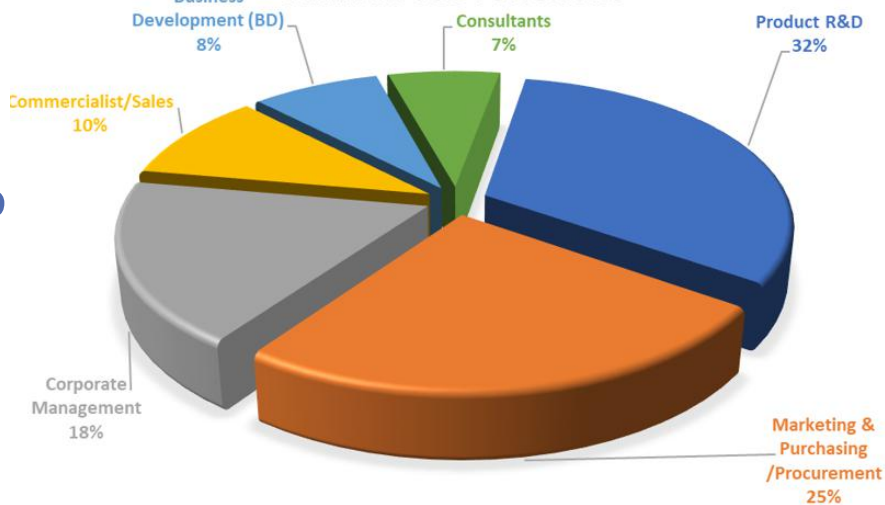


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