NEPAS POSITION PAPER: USE OF NUTRACEUTICALS IN CHILDREN AND ADOLESCENTS IN NEPAL

POSITION PAPER-7

Evidence • Ethics • Equity • Rational Child Health Practice

NEPAL PAEDIATRIC SOCIETY-2026

Position Paper on the USE OF NUTRACEUTICALS IN CHILDREN AND ADOLESCENTS IN NEPAL

Endorsed by Nepal Paediatric Society (NEPAS)

Position and scope endorsed by the Nepal Paediatric Society (NEPAS). This position paper presents the Society's position and is intended to guide medical officers, pharmacists, general practitioners, paediatricians, policymakers, academic institutions, and others involved in recommending, prescribing, dispensing, or advising on nutraceuticals for children and adolescents in Nepal.

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NEPAS Position Paper: Use of Nutraceuticals in Children and Adolescents in Nepal.

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Applicable to: Medical Officers, Pharmacists, General Practitioners, Paediatricians & all those who are involved in prescribing, dispensing and suggesting the use of Nutraceuticals for Children in Nepal.

Executive Summary

The use of nutraceuticals among children and adolescents has increased substantially worldwide and is growing rapidly in Nepal. Nutraceuticals represent a heterogeneous group of products ranging from essential micronutrients with well-established health benefits to commercial formulations with limited supporting evidence. Children are increasingly recommended, prescribed, and consuming such products. The Nepal Paediatric Society (NEPAS) recognises that some nutritional supplements are essential, evidence-based interventions that have significantly improved child survival, growth, cognitive development, and public health. At the same time, the Society recognises growing concerns regarding irrational use, exaggerated marketing claims, inadequate regulation, economic burden on families, and diversion of resources away from proven public-health interventions.

NEPAS supports evidence-based nutritional supplementation where clear benefits have been demonstrated. However, the Society does not support routine use of nutraceutical products in healthy children when robust evidence demonstrating clinically meaningful benefits remains absent. Recommendations must be specific to the product, indication, target age group, dose, duration, and intended clinical outcome. Evidence supporting treatment of a deficiency or a particular disease should not automatically be interpreted as evidence supporting supplementation in all healthy children.

This position paper aims to guide paediatricians, policymakers, academia, healthcare providers and families towards rational, equitable and evidence-based use of nutraceuticals in Nepal.

1. Introduction

The term nutraceutical refers to foods, food components or biologically active substances that are believed to provide medical or health benefits beyond basic nutrition[2]. Nutraceuticals encompass vitamins, minerals, probiotics, omega-3 fatty acids, amino acids, herbal products and specialised nutritional formulations. They are frequently promoted for prevention of disease, promotion of growth and enhancement of physical or cognitive performance.

Globally, the nutraceutical sector has developed into a multi-billion-dollar industry. Increasing public awareness regarding health, longevity and disease prevention has fuelled consumer demand. Similar trends are now evident in Nepal, where nutraceutical products have become increasingly visible in pharmacies, hospitals, online platforms, and social media.

Parents are commonly exposed to claims relating to:

• Immunity enhancement	• Brain development	• Improved learning ability
• Increased height	• Better appetite	• Stronger bones
• Athletic performance	• Prevention of illness	• General wellbeing

Such claims appeal directly to parental aspirations for their children. However, scientific evaluation of these claims remains variable. The fundamental question for paediatric practice is not simply whether a nutrient plays an important physiological role, but whether supplementation produces clinically meaningful improvements in child health outcomes.

2. Why Nepal Needs a Distinct Position

Nepal continues to face significant nutritional and public-health challenges. Micronutrient deficiencies, undernutrition, growth faltering and dietary inequities remain important contributors to childhood morbidity and developmental impairment. At the same time, Nepal remains a resource-constrained setting where healthcare expenditure is predominantly borne directly by families. Under such circumstances, every health recommendation carries economic consequences.

A nutraceutical costing NPR 1,500-3,000 per month may represent a manageable expense in high-income settings but may constitute a substantial financial burden for many Nepalese households. Therefore, the appropriate question is not merely: "Does the product exert a

biological effect?" but rather: "Does the product improve outcomes that matter sufficiently to justify its cost, risks, and opportunity costs?" This public-health and equity perspective is central to the NEPAS position.

3. Scientific Basis for Nutraceuticals

NEPAS recognises that nutraceuticals are not inherently unscientific. Many nutrients contained within nutraceutical products play essential physiological roles. Iron, zinc, choline, folate, vitamin B12, vitamin D, and omega-3 fatty acids contribute to neurodevelopment, neurotransmitter synthesis, synaptic plasticity, myelination, immune regulation, and cognitive development. Nutrient deficiencies during infancy and childhood can adversely affect growth, cognition, and health. For example, iron deficiency during critical developmental periods may impair neurodevelopment and school performance. Zinc participates in immune regulation and cellular growth. Choline contributes to memory-related pathways, while omega-3 fatty acids are structural components of neuronal membranes.

These biological functions are well established. However, biological plausibility alone should not be regarded as proof of clinical efficacy. Many products marketed as cognitive enhancers, immune boosters, or growth promoters are supported primarily by mechanistic hypotheses rather than strong evidence demonstrating meaningful improvements in real-world outcomes such as educational achievement, neurodevelopment, illness reduction, or quality of life. A nutrient may be essential for normal development without routine supplementation being beneficial for an otherwise healthy child.

4. The Difference Between Nutritional Correction and Nutritional Enhancement

One of the most important distinctions within the nutraceutical debate is the difference between correcting deficiency and enhancing normal function. The scientific evidence strongly supports appropriate treatment of nutritional deficiencies and the use of established nutritional interventions for defined clinical or public-health indications. Preventive supplementation may also be evidence-based for defined populations, even when an individual deficiency has not been documented. Vitamin A deficiency, iron deficiency anaemia, iodine deficiency disorders, and severe acute malnutrition represent conditions where nutritional interventions demonstrably improve health outcomes. In contrast,

significantly less evidence exists to support the concept that large-scale supplementation of healthy children improves intelligence, memory, height, school performance, immunity, or athletic ability.

Parents should understand that:

- Treating deficiency is evidence-based medicine.
- Enhancing normal function remains scientifically uncertain for many products.

NEPAS believes this distinction should be communicated clearly to families.

5. Evidence Hierarchy

The Society believes nutraceuticals should be held to the same standards applied to other health interventions.

Table 1. NEPAS Evidence Hierarchy for Nutraceutical Use in Children

Evidence Category	Examples	Quality of Evidence	NEPAS Position
Level I	Vitamin A supplementation, zinc therapy, iron supplementation for deficiency, iodine deficiency prevention, nutritional rehabilitation programmes	Strong evidence from RCTs, systematic reviews, and WHO recommendations	YES
Level II	Omega-3 fatty acids, selected probiotics, specialised nutritional formulations, disease-specific supplements	Moderate evidence; benefits may be condition-specific	CONDITIONAL YES

Level III	Brain tonics, height enhancers, memory boosters, examination supplements, appetite stimulants for healthy children, immunity boosters	Insufficient or inconsistent evidence	NO for routine use

6. Health Economics and Equity Considerations

The economic dimension of nutraceutical use is particularly important in Nepal. Healthcare expenditure remains largely out-of-pocket, and many families face competing demands on limited financial resources. Expenditure on nutraceutical products of uncertain effectiveness may divert resources from interventions with stronger evidence, including nutritious foods, healthcare visits, immunisation-related expenses and educational needs.

The concept of opportunity cost is therefore highly relevant. In many cases, improved dietary diversity through increased consumption of nutrient-rich foods may offer greater and more sustainable benefits than prolonged consumption of expensive proprietary nutraceutical products. Nevertheless, dietary improvement and supplementation are not always interchangeable. Children with documented deficiencies, restrictive diets, specific medical conditions, or increased nutritional requirements may need targeted supplementation or specialised medical nutrition in addition to dietary counselling.

NEPAS believes recommendations must account not only for efficacy but also for affordability, equity, and public-health value.

7. Safety Considerations

A common misconception is that natural products are inherently safe. Scientific literature does not support this assumption. Reviews have identified concerns regarding contamination, adulteration, heavy metals, pesticide residues, manufacturing variability, inaccurate labelling and interactions with medications. Children may be especially

vulnerable to adverse effects because of differences in metabolism, body size and growth requirements.

Society therefore emphasises that safety should be demonstrated rather than assumed. Products intended for routine paediatric use should undergo rigorous quality assurance and post-marketing surveillance.

8. Regulatory Challenges in Nepal

Nepal currently regulates nutraceuticals primarily through the food safety and dietary supplement frameworks under the Department of Food Technology and Quality Control (DFTQC), with potential overlap with the Department of Drug Administration (DDA). Although dietary supplements are addressed under the Dietary Supplement Guideline, 2072, regulatory challenges persist regarding product classification, overlapping institutional mandates, limited market surveillance, and concerns about unregistered products and misleading health claims. Clear legal definitions, delineation of regulatory responsibilities, and a harmonised, risk-based regulatory framework are needed to strengthen product registration, quality assurance, safety assessment, and post-market surveillance, thereby protecting public health and supporting the responsible development of Nepal's nutraceutical sector.

Regulatory ambiguity may arise where the respective mandates of DFTQC and DDA overlap or are not clearly delineated. Such grey areas can create gaps in product classification, registration, oversight and enforcement, potentially allowing products with inadequate evidence or uncertain quality to reach the market. NEPAS therefore calls for clearly defined institutional responsibilities and coordinated, risk-based regulation.

A robust, independent quality-assurance mechanism should verify the composition, purity, safety and accuracy of labelling of products intended for children. Manufacturers should be required to substantiate efficacy and safety claims with credible scientific evidence, with particular scrutiny of claims relating to growth, cognition, appetite and immunity. Misleading or unsubstantiated promotional claims should attract appropriate regulatory action.

Public regulatory actions in recent years have highlighted concerns related to unregistered products, questionable claims and market oversight.

NEPAS supports strengthening:

- Product registration systems.
- Market surveillance.
- Advertising oversight.
- Evidence requirements.
- Independent safety monitoring.

Clear division of responsibilities and coordination between Department of Food Technology and Quality Control (DFTQC) and Department of Drug Administration (DDA). Independent verification of product composition, purity, safety and labelling. Credible scientific substantiation of efficacy and safety claims, especially for paediatric products. Effective action and accountability for misleading promotion and non-compliant products.

9. Public Health Prioritisation in Nepal

The Society recognises that the greatest improvements in child health are unlikely to come from commercial nutraceuticals alone. Available evidence suggests that child survival, development and wellbeing in Nepal are most strongly influenced by:

- Maternal nutrition.
- Breastfeeding.
- Appropriate complementary feeding.
- Dietary diversity.
- Immunisation.
- Infection prevention.
- Safe water and sanitation.
- Access to healthcare.

Public-health investments in these areas are likely to generate substantially greater population-level benefits than indiscriminate use of commercial nutraceutical products. Therefore, nutraceuticals should be viewed as adjuncts rather than substitutes for fundamental child-health interventions. These interventions are complementary to, rather than universally interchangeable with, evidence-based supplementation.

10. The NEPAS Position

Category I: YES	Category II: CONDITIONAL YES	**Category III: NO**
• Vitamin A deficiency prevention. • Zinc therapy for acute childhood diarrhoea. • Iron supplementation for documented deficiency. • Iodine deficiency prevention. • Therapeutic feeding and nutritional rehabilitation. • Vitamin D supplementation where deficiency or high-risk conditions exist. • Disease-specific medical nutritional support. These interventions are supported by strong evidence and should remain integral components of child-health policy and practice.	NEPAS recognises emerging evidence supporting selected nutraceuticals in specific clinical circumstances. Examples include: • Omega-3 fatty acids. • Selected probiotics. • Choline supplementation. • Some specialised nutritional products. **Use should be based upon:** • Clinical indication. • Individual risk-benefit assessment. • Quality of available evidence. • Financial implications. • Expected outcomes. Routine use in all healthy children is not currently justified.	NEPAS does not support routine use in healthy children of products marketed primarily as: • Brain boosters. • Intelligence enhancers. • Memory tonics. • Examination supplements. • Height enhancers. • Appetite stimulants for healthy children. • General immunity boosters. • Wellness tonics.

Note: This position does not imply that all such products are ineffective. Rather, current evidence remains insufficient to demonstrate benefits that justify routine recommendation, particularly within a resource-constrained setting. The burden of proof should rest with manufacturers and promoters rather than with children and families.

11. Recommendations

For Policymakers: The Government of Nepal should clarify and coordinate the respective regulatory responsibilities of DFTQC and DDA; strengthen product registration, independent quality assurance, labelling and evidence requirements; require substantiation of manufacturers' safety and efficacy claims; and ensure effective advertising oversight, adverse-event reporting, post-market surveillance and accountability for misleading promotion.

For Academia: Academic institutions should prioritise independent research evaluating efficacy, safety, product quality, neurodevelopmental outcomes and cost-effectiveness of nutraceuticals in Nepalese children.

For Healthcare Providers: Healthcare professionals should practise evidence-based prescribing, avoid unnecessary supplementation, review products for duplication and interactions, consider affordability, and report suspected adverse events.

For Parents: Parents and caregivers should prioritise balanced diets and evidence-based nutrition, question unsupported claims, avoid unnecessary or duplicate supplements, and seek qualified advice. Family expenditure should prioritise interventions with demonstrated health benefits.

Roles and Responsibilities in Preventing Unnecessary use of Nutraceuticals

Preventing unnecessary nutraceutical use requires coordinated action. Supplements should be used in children only when there is a clear nutritional, clinical, or public-health indication, with an appropriate product, dose, duration, and follow-up.

Parents and caregivers: Prioritise a varied, age-appropriate diet; avoid giving supplements solely to improve appetite, growth, intelligence, or immunity; check for duplicate ingredients; and seek professional advice when concerns arise.

Society, schools, and media: Challenge myths and social pressure around supplements, avoid spreading unverified claims, and promote evidence-based nutrition messages and healthy eating practices.

Paediatricians: Assess dietary intake, growth, clinical history, and risk factors before recommending supplements; explain benefits and risks; review all products for duplication or interactions; and reassess the need for continued use.

Other healthcare workers: Provide consistent, evidence-based counselling; avoid unsupported recommendations; check product ingredients and doses; refer children with suspected deficiencies or growth concerns; and report suspected adverse effects.

Government and policymakers: Strengthen product quality assurance, labelling, advertising controls, and post-market surveillance; issue national evidence-based guidance; monitor adverse events; and support access to nutritious foods and independent research.

NEPAS and professional organisations: Promote continuing education, public awareness, independent guidance, research, and collaboration with regulators to distinguish indicated supplementation from unnecessary commercial use. The goal is not to discourage appropriate supplementation, but to ensure that each product has a sound rationale and a favourable balance of benefits and risks. The guiding principle is supplement when indicated-not simply because a product is available or advertised.

Box 1. NEPAS Evidence Threshold for Routine Recommendation

Before supporting routine use of a nutraceutical product in children, NEPAS believes the following criteria should be fulfilled:

✓ Demonstrated safety in children.

✓ Evidence from high-quality clinical trials.

✓ Clinically meaningful improvements in child-health outcomes.

✓ Benefits exceeding potential harms.

✓ Demonstrated value for money.

✓ Regulatory compliance and quality assurance.

✓ Added benefit beyond dietary improvement and established public-health interventions.

If these criteria are not met, routine use should not be recommended.

Conclusion

The Nepal Paediatric Society believes that nutraceuticals should neither be indiscriminately promoted nor categorically rejected. Some nutritional interventions constitute essential pillars of child survival and development and deserve continued support. Others may have a role in selected clinical circumstances but require indication-specific assessment. Many commercially marketed products continue to make claims that exceed available scientific evidence.

NEPAS therefore adopts a position grounded in science, ethics and equity. In Nepal, recommendation of any nutraceutical should be based on demonstrated clinical benefit, safety, product quality, affordability and public-health value. The health of Nepalese children will ultimately be advanced most effectively through optimal nutrition, breastfeeding, immunisation, infection prevention, quality healthcare, and targeted evidence-based supplementation where clearly indicated.

The guiding principle is clear: supplement when indicated, not merely because a product is available or advertised.

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