Food Allergic Enteropathy

STG-068

Standard Treatment Guideline (STG)



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Standard Treatment Guidelines (STGs) for Paediatric Nutrition are essential to ensure evidence-based, ethical, and standardized nutritional care for infants, children, and adolescents across Nepal. Given the persistent burden of undernutrition, micronutrient deficiencies, growth disorders, and the emerging challenge of childhood overweight and obesity, uniform clinical guidance is necessary to improve nutritional outcomes and reduce variations in practice. These guidelines support paediatricians, medical officers, residents, nutritionists, nurses, and other healthcare professionals in the assessment, prevention, and management of nutrition-related conditions, particularly in resource-limited settings. STGs promote rational, safe, and timely nutritional interventions while reinforcing professional competence, patient safety, informed decision-making, appropriate documentation, and accountability in accordance with the Nepal Medical Council's Code of Ethics and Professional Conduct. They also help establish nationally accepted standards of care, reduce preventable errors, strengthen multidisciplinary collaboration, and support quality improvement initiatives, clinical audit, and continuing professional development. The adoption and implementation of national paediatric nutrition STGs will contribute to improved growth, development, disease prevention, and overall child health, while promoting equitable access to quality nutrition services throughout Nepal.

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Food Allergic Enteropathy

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Introduction and Definition

The most common form of food allergy in humans is cow's milk protein allergy (CMPA). Prevalence peaks in infancy (1.5–3%) and declines to less than 1% by 6 years of age. Approximately 10–15% of children with CMPA are also allergic to soy; the risk of cross-allergy is higher when symptoms begin before 6 months of age.

Pathogenesis: Food allergic enteropathy results from immune-mediated hypersensitivity reactions to dietary proteins, leading to intestinal inflammation, mucosal injury, and malabsorption. T-cell mediated immune responses play a major role in non-IgE-mediated disease.

IgE-mediated	Non-IgE mediated	Mixed (IgE and non-IgE)
Mild-to-moderate: urticaria, flushing, peripheral angioedema, pruritis; Anaphylaxis: respiratory (wheezing, stridor) and/or cardiovascular (hypotension, tachycardia) compromise	Mild-to-moderate: cow's milk enteropathy, food-protein-induced proctitis/proctocolitis, FPIES, Heiner syndrome	Atopic dermatitis, allergic eosinophilic oesophagitis, eosinophilic gastritis

A. Gastrointestinal features

1. Lower GI manifestations:
   - Loose stools
   - Per-rectal bleeding
   - Abdominal distension
   - Perianal erythema

2. Upper GI manifestations:
   - Colic
   - Gastro-oesophageal reflux
   - Micronutrient deficiencies (iron, zinc)

B. Respiratory features: wheezing, stridor.

C. Skin manifestations: eczema. Multisystem involvement usually suggests IgE-mediated disease, whereas non-IgE-mediated disease typically presents with isolated GI involvement. The classical CMPA presentation is chronic loose stools and failure to thrive, often beginning after an episode of gastroenteritis in a formula-fed infant.

Multiple food allergy

Infants may be allergic to multiple foods simultaneously — commonly soy, wheat, oats, meat, fish, and eggs — and may develop early sensitisation despite exclusive breastfeeding. Failure to thrive occurs in only about 25% of cases, making diagnosis difficult. In infants with immediate reactions, diagnosis is usually straightforward with often-positive skin prick tests; without immediate reactions, diagnosis is challenging, especially with adequate weight gain. Undiagnosed multiple food allergy may manifest with T-cell activation and reduced pancreatic enzyme release, with temporary improvement on pancreatic enzyme supplementation.

Food protein-induced enterocolitis syndrome (FPIES)

FPIES is a severe, potentially life-threatening form of mucosal food hypersensitivity, commonly triggered by cow's milk or soy (may also occur with other foods). It commonly presents with severe vomiting, diarrhoea, dehydration, or shock; less common features include melaena or mucoid stool.

Diagnostic Approach / Investigation

Diagnostic strategies include food challenge testing, endoscopy/colonoscopy, skin prick testing, skin patch testing, and specific IgE testing.

A. Food challenge testing — the core diagnostic requirement. CMPA is confirmed by symptom resolution on an elimination diet with recurrence on challenge. The gold standard is the double-blind placebo-controlled food challenge (DBPCFC), though this is time-consuming, expensive, and requires cooperation; an open food challenge (OFC) is used in most cases:

- Child continues a milk-containing diet
- No symptoms for 2 weeks → CMPA ruled out
- Recurrence of symptoms → CMPA confirmed

In IgE-mediated reactions, OFC must be conducted under medical supervision. In severe anaphylaxis, therapeutic elimination is initiated without challenge.

B. Endoscopy/colonoscopy findings

- Patchy lesions
- Increased intraepithelial lymphocytes
- Villous blunting
- Mild mucosal eosinophilia
- Fat accumulation in epithelium
- Intestinal lymphoid hyperplasia

Findings are often less striking in multiple food allergy compared with classic CMPA.

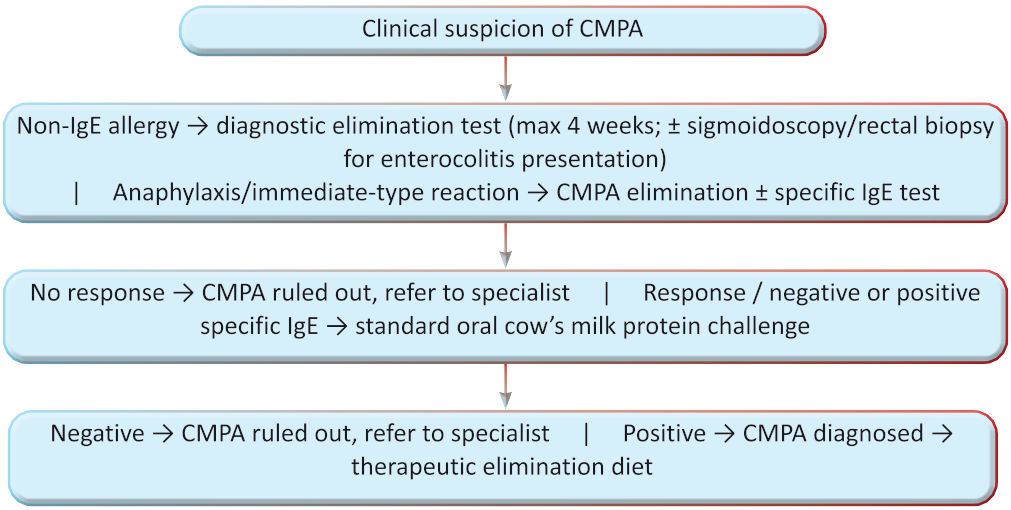
C. Skin prick testing — detects IgE-mediated tissue-bound antibodies

- Wheal ≥5 mm (≥2 mm in infants <2 years) suggests higher specificity
- Negative predictive value ~95%; useful prognostic indicator
- Not validated for non-IgE-mediated CMPA; negative in FPIES and clinical soy allergy

D. Skin patch testing — evaluates T-cell-mediated responses; allergen applied for 48 hours, reactions assessed at 24 hours; a positive test shows erythema and induration.

E. Specific IgE testing — detects circulating antibodies but does not differentiate sensitisation from clinical allergy; not useful for non-IgE-mediated CMPA but may be considered in life-threatening reactions. Food challenge may be delayed by a year if CMP-specific IgE is positive with symptom resolution on an elimination diet.

Approach to a child with suspected CMPA



Management and Follow-up

Treatment is based on dietary elimination and depends on feeding type: exclusively breastfed, mixed-fed, formula-fed, or IgE-mediated reactions.

A. Exclusively breastfed infants

- Antigens disappear from breast milk within 72 hours
- Maternal elimination duration — IgE-mediated: 3–6 days; non-IgE without atopy: 2 weeks; non-IgE with atopy: 4 weeks
- If symptoms persist, consider multiple food allergy or alternative diagnoses
- If symptoms improve, CMP challenge is done in the maternal diet; if symptoms recur, CMP is excluded for as long as breastfeeding continues
- Maternal calcium supplementation (1000 mg/day) recommended

B. Mixed-fed infants

- Complete withdrawal of cow's milk protein and all unmodified animal-milk products
- Continue breastfeeding without maternal elimination
- Infants <6 months (mild–moderate): extensively hydrolysed formula (eHF)
- Infants >6 months: eHF or soy formula
- If uncertain and no improvement within 2 weeks of eHF, trial amino-acid formula (AAF) before ruling out CMPA

C. Formula-fed infants — restart breastfeeding if recently stopped; otherwise manage as for mixed-fed infants.

Management of non-IgE-mediated CMPA (algorithm)

Presentation	Initial Formula	If Improves	If No Improvement
Mild–moderate, age >6 mo	Soy protein formula	Continue → OFC in 3 months	Switch to eHF
Mild–moderate, age <6 mo	Extensively hydrolysed formula (eHF)	Continue → OFC in 3 months	Switch to amino-acid formula → OFC at 1 year
Severe, age <6 mo	Amino-acid formula	—	OFC at 1 year

Management of IgE-mediated CMPA

- Mild to moderate: extensively hydrolysed formula (eHF)
- Severe: amino-acid formula
- OFC under hospital supervision with caution, typically between 12–18 months
- Elimination diet for at least one year, with reevaluation every 6 months thereafter

Best-practice confirmation pathway

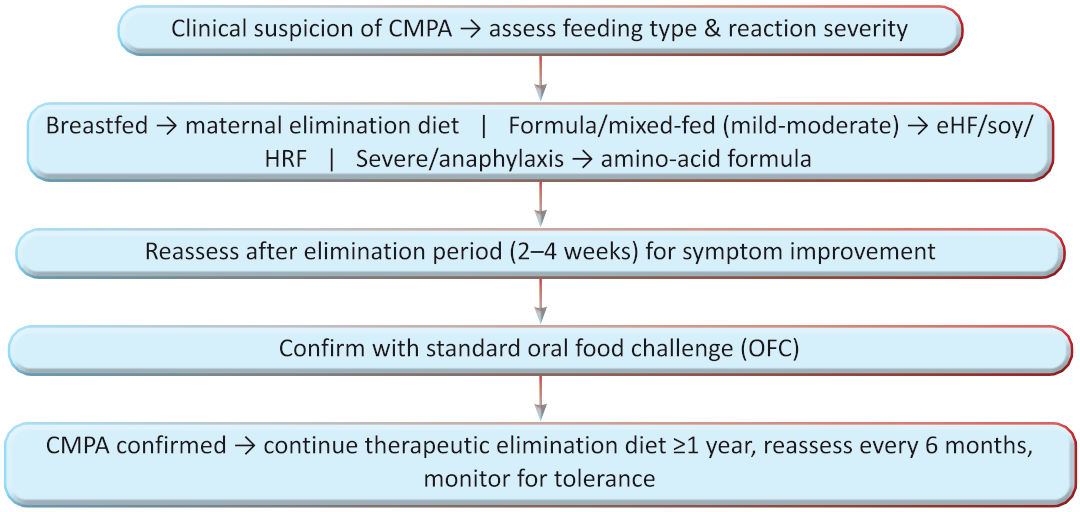
- Breastfed baby, mild-to-moderate symptoms: continue breastfeeding; mother on CM-free diet + calcium for 2–4 weeks
- Formula-fed baby, mild-to-moderate symptoms: extensively hydrolysed (eHF) or hydrolysed rice formula (HRF) for 2–4 weeks
- Severe symptoms/anaphylaxis: amino-acid-based formula (AAF) for 2–4 weeks
- If symptoms improve/disappear → reintroduction/challenge with CM to confirm CMA before long-term elimination
- Long-term management: eliminate all CM sources (refer to dietitian/nutritionist) or continue breast milk/eHF/HRF/AAF depending on tolerance for 6 months or until 9–12 months of age, monitoring tolerance development

An oral food challenge test after a short diagnostic elimination diet is recommended to confirm the diagnosis of CMA and avoid overdiagnosis.

Prognosis

- 50% tolerate CMP by 1 year
- 75% by 3 years
- 90% by 6 years
- Only 5% persist into adulthood

Summary Flow Chart of Diagnosis and Management



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