

Food-environment policies for child nutrition in Ecuador and Latin America: beyond front-of-package labels and advertising restrictions

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Summary

Latin American countries have expanded front-of-package warning labels and restrictions on food marketing to children, yet childhood overweight and obesity continue to rise. Ultra-processed foods (UPFs) dominate retail and digital environments and remain embedded in school settings. Drawing on evidence from Ecuador and comparable middle-income settings, we argue that labeling and advertising policies are necessary but insufficient when healthier options remain unavailable, unaffordable, or outcompeted at point of sale. We outline complementary food-environment actions (e.g., school food environments, fiscal incentives for minimally processed foods, digital marketing regulation, and alignment with local food systems) within a framework that addresses commercial determinants of health and governance safeguards against industry capture. Protecting children requires shifting from restricting promotions alone to reshaping the systems that make unhealthy diets the default.

The Lancet Regional Health - Americas
2026;61: 101532

Published Online 18 June 2026

<https://doi.org/10.1016/j.lana.2026.101532>

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Keywords: Ultra-processed foods; Food marketing; Food environment; Childhood obesity; Nutrition policy; South America; Low- and middle-income countries

Progress and paradox in Latin American nutrition policy

The past decade has witnessed unprecedented regulatory action on food environments across Latin America. Chile's pioneering front-of-package warning labels, implemented in 2016, triggered a regional cascade of similar policies, with Ecuador, Peru, Mexico, Uruguay, and Argentina adopting variations of nutrient warning systems.¹ Concurrently, several countries have introduced restrictions on food and beverage advertising directed at children, recognizing marketing as a key driver of unhealthy dietary preferences.² These measures represent genuine achievements in a region where non-communicable diseases now account for over 80% of deaths and where one in three children and adolescents lives with overweight or obesity.³

Ultra-processed foods are industrial formulations of substances extracted or derived from foods, plus additives, with little or no intact whole food (NOVA group 4).⁴ In children and adolescents, higher ultra-processed food (UPF) intake has been associated with greater adiposity in observational studies; a 2026 meta-analysis of 23 studies (~155,000 adolescents) reported higher odds of overweight or obesity among those with the highest versus lowest UPF intake (pooled odds ratio

[OR] 1.63, 95% confidence interval [CI] 1.36 to 1.95), although heterogeneity was high and causality cannot be inferred.⁵

Yet a troubling paradox persists. Despite regulatory momentum, the food environment across Latin America remains saturated with UPFs. Sales of packaged foods and sugar-sweetened beverages continue to grow, supermarket penetration accelerates into peri-urban and rural areas, and dietary patterns increasingly mirror those of high-income countries, with corresponding epidemiological consequences.⁴ In Ecuador, where front-of-package traffic-light labels have been mandatory since 2014, recent data indicate that analysed UPF portions contributed approximately 10% of total energy intake per serving occasion among young Ecuadorians, with high prevalence of consumption across sociodemographic groups.⁶ This figure continues to climb despite a decade of labeling requirements. *Encuesta Nacional de Salud y Nutrición* (ENSANUT) 2018 data indicate that Ecuadorian children and adolescents consume processed foods on a mean of 2.3 days per week,⁷ a picture corroborated by subnational studies showing high rates of energy-dense snack and UPF consumption among Ecuadorian schoolchildren.^{8,9}

The central argument of this work is straightforward. Marketing-focused regulations, though necessary, are insufficient to structurally transform food environments dominated by ultra-processed products.

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A policy approach centered on labeling and advertising restrictions addresses information asymmetries and promotional pressure, yet leaves largely unaltered the availability, affordability, and institutional embeddedness of UPFs in daily life. Protecting children from unhealthy food marketing is not equivalent to protecting them from unhealthy food systems. This gap points to the need for a broader policy lens that moves beyond consumer information and marketing controls toward comprehensive food environment strategies encompassing public procurement, pricing and subsidy mechanisms, school food standards, urban food access, and support for minimally processed, culturally grounded food systems.

What does the evidence on food marketing to youth reveal?

Recent systematic evidence of food marketing practices across Latin America provides a sobering picture of the nature and scope of commercial promotion targeting children and adolescents. A scoping review of food and beverage marketing across 11 Latin American countries, including Ecuador, Guatemala, and Peru, found that the vast majority of marketed products across television, packaging, retail settings, and digital platforms were UPFs and exceeded nutrient recommended thresholds for sugar, sodium, and saturated fat.¹⁰ Child-directed marketing strategies were pervasive, encompassing cartoon characters, celebrity endorsements, collectible promotions, and emotionally framed messages that emphasize fun, happiness, and social belonging. These practices reinforce brand recognition and normalize UPFs as integral components of everyday childhood experiences, extending the influence of marketing well beyond point-of-purchase interactions.¹¹

Packaging emerged as a particularly potent marketing vehicle, largely exempt from advertising restrictions focused on broadcast media. Products displayed in supermarkets, convenience stores, and school kiosks often feature sophisticated visual and narrative cues designed to attract children, irrespective of whether television commercials faced regulatory scrutiny.¹⁰ Digital platforms have further amplified both the reach and the subtlety of food marketing. Social media, online gaming environments, and influencer-driven content expose children to branded food promotion in contexts that blur commercial and entertainment boundaries, challenging traditional definitions of advertising and complicating regulatory enforcement.¹²

These findings underscore a fundamental limitation of current regulatory frameworks. They tend to conceptualize marketing as a set of discrete, identifiable promotional acts that can be addressed through content-based restrictions. Contemporary food marketing, however, operates as an integrated system that

extends beyond advertising to encompass product design, placement, pricing, and the construction of consumption environments. In this context, warning labels on packaging coexist with product designs deliberately optimized for child appeal. Television advertising bans leave digital ecosystems unregulated. Similarly, formal limits on commercial promotion do not preclude food companies from sponsoring school sports programs or distributing branded educational materials.¹³

Why are labeling and advertising restrictions not enough?

Front-of-package warning labels represent one of Latin America's most influential contributions to global nutrition policy. In Chile, a before-and-after evaluation of the Law of Food Labeling and Advertising (2015–2017) found that household purchases of sugar-sweetened beverages classified as “high” in sugar decreased by 22.8 mL per capita per day, a 23.7% relative reduction compared with the pre-regulation trend; the proportion of households purchasing these beverages also fell by 10.5 percentage points.¹ Industry reformulation to avoid label thresholds and increased consumer awareness of nutritional quality have also been reported in Chile and elsewhere.^{1,14} Ecuador's traffic-light system, though less stringent than Chile's octagonal warnings, has been associated with improved label comprehension and modest shifts in purchasing behavior, particularly among more educated consumers.¹⁵ Experimental studies in other settings are consistent with partial purchase effects.^{16,17} In a four-week randomized trial ($n = 1578$), warning-style labels were associated with slightly healthier packaged food purchases than nutrition information panels alone (mean difference: 0.87; 95% CI 0.03 to 1.72).¹⁶ In a 2025 randomized choice trial ($n = 275$), Food Compass Score and Food and Drug Administration (FDA) healthy labels were each associated with more healthy and fewer unhealthy product selections versus no label (+11.2 and +6.4 healthier choices per 100 decisions, respectively).¹⁷ These findings suggest that food labeling can influence purchasing and product selection behaviors, although evidence for sustained dietary or health effects remains limited.

These documented effects, however, reveal the inherent limits of information-based interventions. Labels operate by enabling consumers to make informed choices within existing market structures, yet their effectiveness may be constrained where healthier alternatives are unavailable, unaffordable, or difficult to access. These conditions are frequently unmet in low- and middle-income settings across Latin America. In Bolivia and Peru, around one quarter and one fifth of the population, respectively, cannot afford a healthy diet, and regional evidence indicates that higher costs of

nutritious foods push lower-income households toward cheaper, energy-dense options.¹⁸ In Honduras and Paraguay, the penetration of supermarket chains into secondary cities has accelerated the displacement of traditional fresh-food markets without meaningfully improving dietary quality.^{4,19} In Ecuador's highland indigenous communities,^{8,20} in urban informal settlements, and across much of the rural coast,²¹ "choice" operates within severe structural constraints. Small neighborhood grocery stores (locally known as *tiendas*) stock predominantly packaged products with extended shelf life, while access to fresh foods is limited by inadequate cold-chain infrastructure, supply instability, and higher relative prices.²²

Advertising restrictions face analogous structural limitations. Bans on child-directed television advertising address only one communication channel, while commercial promotion disperses across largely unregulated spaces. The food retail environment, where purchasing decisions are ultimately made, remains largely outside the scope of most marketing regulations. Point-of-sale placement at child eye level, checkout aisle positioning, volume discounts, and in-store promotions function as *de facto* marketing independent of formal advertising definitions.²³ For children accompanying parents in supermarkets or purchasing snacks independently from neighborhood stores, the retail environment often constitutes the decisive site of commercial influence.

The overlooked role of retail, digital platforms, and school environments

Three domains merit particular attention as critical gaps in current regulatory approaches: neighborhood retail environments, digital marketing ecosystems, and school food provision.

Neighborhood food retail in Latin American cities has undergone substantial transformation. Traditional markets coexist with expanding convenience store chains, informal vendors, and increasingly ubiquitous delivery platforms. Studies from urban Ecuador document that UPFs dominate product offerings in stores surrounding schools, with sugar-sweetened beverages, chips, and confectionery positioned prominently near entrances and child-accessible heights.²⁴ This retail saturation means that children encounter UPFs continuously, walking to school, during recess, after classes, regardless of what advertising they view at home.

Digital marketing represents perhaps the most significant regulatory blind spot. Latin American children and adolescents exhibit high social media engagement, with platforms like TikTok, Instagram, and YouTube serving as primary sources of entertainment and social interaction. In response, food and beverage companies have strategically shifted promotional spending toward digital channels, employing influencer partnerships, branded gaming content, and targeted advertising

enabled by algorithmic profiling.¹² The transnational nature of digital platforms complicates national regulatory efforts; content originating outside national jurisdictions reaches children, effectively bypassing country-level advertising restrictions. Mexico and Chile have initiated regulatory consultations on digital advertising restrictions targeting minors, while Brazil's Child and Adolescent Rights framework has been invoked in legal proceedings challenging child-targeted digital food marketing.¹⁰ School food environments present distinct regulatory and institutional challenges. While several Latin American countries have implemented school food standards, implementation gaps remain substantial.¹⁸ In Ecuador, the national school feeding program (*Programa de Alimentación Escolar*) operates alongside private kiosks and surrounding vendors over which nutritional oversight is limited. As a result, schools simultaneously function as sites for nutrition education while permitting commercial food sales that contradict curricular messages.²⁴ This institutional contradiction undermines policy coherence and normalizes UPF consumption within educational settings.

Ecuador as a case study of regulatory ambition facing structural barriers

Ecuador offers an instructive case of early regulatory adoption encountering implementation realities. The 2013 Food Labeling Regulation established Latin America's first mandatory front-of-package system, requiring traffic-light indicators for sugar, fat, and sodium content. Subsequent regulations restricted the advertising of products with red ("high") indicators during children's programming and prohibited their sale in schools. On paper, Ecuador's framework anticipated several provisions that other countries would later adopt.

Implementation, however, has been uneven. Enforcement of advertising restrictions varies substantially across media platforms and geographic areas, reflecting differences in regulatory capacity and oversight. Ecuadorian school kiosks are not allowed to sell, advertise, or consume ultra-processed foods high in sugar, salt, and fat by law.²⁵ However, policies face chronic monitoring deficits, with studies documenting the continued availability of restricted products in educational settings.²⁴ The traffic-light system, while pioneering, also established relatively permissive thresholds (≥ 15 g total sugars, ≥ 20 g total fat, and ≥ 600 mg sodium per 100 g for the "high" designation)¹⁵ compared with Chile's stricter octagonal warning thresholds (≥ 10 g sugars, ≥ 4 g saturated fat, and ≥ 400 mg sodium per 100 g in the final implementation stage), allowing many products with substantial sugar or sodium content to avoid receiving the "high" designation that would trigger advertising and school-environment restrictions.¹⁴

These regulatory limitations intersect with deeper structural features of Ecuador's food environment that labeling alone cannot address. The country's nutrition transition has accelerated rapidly, with traditional diets rich in grains, legumes, and locally produced foods shifting toward increased consumption of packaged products, sugar-sweetened beverages, and fast food, particularly among younger generations.²² Macroeconomic factors, including economic instability and food inflation, create pricing structures that favor processed over fresh foods.²⁶

At the same time, Ecuador is an agricultural exporting country where production capacity exceeds the population; however, poverty constrains the capacity to buy fresh, healthy food mainly in rural areas.²⁷ Indigenous and rural communities in Ecuador encounter compounded structural barriers to dietary adequacy, which call for targeted, culturally grounded, and rights-based policy responses that recognize the resilience of local food systems and the knowledge held by communities about traditional food practices. Geographic isolation limits access to fresh and diverse foods while simultaneously exposing residents to penetration by packaged products through expanding distribution networks. The same logistics that make fresh produce expensive and scarce in remote areas often facilitate the penetration of UPF. Nutritional outcomes reflect these structural conditions. Childhood stunting remains highly prevalent in highland indigenous communities even as rates of overweight and obesity increase, producing a pronounced double burden of malnutrition that increasingly manifests within single households.²⁸

Corporate power, the commercial determinants of health, and the political economy of food regulation

A structural analysis of food environments in Ecuador and Latin America cannot remain silent on the commercial determinants of health (i.e., private sector activities, commercial strategies, and business models that shape the conditions determining population nutrition).^{29,30} Multinational food and beverage corporations exercise substantial power asymmetries relative to public health institutions. This asymmetry translates into disproportionate influence over policy agendas, regulatory design, and implementation processes. This influence manifests through direct lobbying of legislators and regulators, strategic funding of nutrition research to shape scientific agendas and influence the framing of evidence on UPFs, sponsorship of professional associations and public health events, litigation against front-of-package labeling and advertising restrictions, and the promotion of voluntary industry self-regulation as an alternative to binding governmental action.^{19,31} Such strategies have been documented in

relation to both Ecuador's traffic-light labeling system and subsequent advertising restrictions, where industry coalitions mounted sustained challenges to implementation. These dynamics directly condition the political feasibility of comprehensive food-environment reform.^{30,32}

Protecting food policy processes from undue commercial influence requires explicit governance safeguards. These include mandatory disclosure and management of conflicts of interest in regulatory proceedings, formal restrictions on food industry participation in the design of nutrition policies and school feeding programs, systematic monitoring of corporate political activities, and legal frameworks that distinguish engagement with legitimate stakeholders from commercial capture.^{31,33,34} The World Health Organization (WHO) framework on engagement with non-State actors and the Pan American Health Organization (PAHO) regional guidance on conflict of interest in nutrition provide important reference points for strengthening institutional safeguards across the region. The experience of tobacco control, which explicitly excluded industry from policymaking through Article 5.3 of the WHO Framework Convention on Tobacco Control, offers a relevant precedent for ultra-processed food regulation.³¹ Unless political barriers are addressed alongside technical ones, the structural transformation of food environments will remain aspirational rather than operationally achievable.

Toward comprehensive food-environment and food-system interventions

Protecting children from unhealthy food systems requires coordinated policy action across multiple domains rather than isolated regulatory measures. Four priority areas warrant particular emphasis. Critically, these measures are complements to (not substitutes for) existing front-of-package labeling and advertising restriction policies, which must be concurrently strengthened and rigorously enforced within broader food-system strategies. First, school feeding and food procurement programs should be restructured as central instruments of both nutrition policy and local food system development. Brazil's *Programa Nacional de Alimentação Escolar* demonstrates that public procurement requirements mandating purchases from family farmers can simultaneously improve school meal quality and strengthen local agricultural economies.³⁵ Ecuador's school feeding program could adopt similar provisions, redirecting public resources toward fresh, minimally processed, and locally-sourced foods while supporting smallholder agriculture. Integrating nutrition promotion and screening within school-based health services can further strengthen adolescents' capacity for healthier choices and enable early identification of diet-related risk,³⁶ complementing regulatory measures aimed at marketing and retail. Crucially,

school food environments must be addressed comprehensively, not only kiosks inside schools but also surrounding vendors and delivery services that function as de facto school food systems.

Second, fiscal instruments should rebalance price signals currently favoring UPFs. Sugar-sweetened beverage taxes, implemented in Mexico and several other countries, have demonstrated demand reduction effects.³⁷ Comparable approaches could be extended to other categories of UPFs, alongside the removal of subsidies that lower the cost of processed food inputs and the introduction of targeted subsidies for fruits, vegetables, and legumes to improve affordability to healthier options. In Ecuador, the adoption of a tax on sugar-sweetened beverages responded to fiscal pressures to stabilize public finances and increase government income,³⁸ rather than aligning with strict nutrition goals.¹⁵ Fiscal measures acquire particular significance for shaping consumption patterns. Villacis et al.³⁹ demonstrated that the sugar-sweetened beverage consumption decreased at the highest rate when a tax rather than labeling was applied, especially among low- and very-low-socioeconomic strata in Ecuador. This positive tax experience could be extended to UPF, offering a fiscal benefit while reducing consumption in the short term and, over the long term, contributing to the prevention of non-communicable diseases.

Third, digital marketing regulation must advance urgently. Children's extensive engagement with digital platforms requires regulatory frameworks addressing online commercial practices rather than relying solely on traditional advertising definitions. Potential policy tools include age-verification requirements, restrictions on algorithmic targeting of minors, mandatory transparency for influencer marketing and sponsored content, and platform liability provisions. Given the transnational nature of digital platforms, effective regulation will depend on regional and international coordination. The PAHO Plan of Action for the Prevention of Obesity in Children and Adolescents provides a framework for harmonized regional standards that can strengthen national efforts and reduce regulatory gaps across borders.⁴⁰

Fourth, nutrition policy requires integration with agricultural and broader food system development. Current disconnections between health-sector nutrition interventions and agricultural policies often produce contradictory outcomes. Public health campaigns encouraging fruit and vegetable consumption frequently operate alongside agricultural and trade policies favoring commodity crop production and reliance on food imports. Establishing coherent food policy councils, formal intersectoral coordination mechanisms, and routine policy coherence assessments can align governmental action toward a shared objective of improving population nutrition and strengthening sustainable, resilient food systems, consistent with the

UN Food Systems Summit 2021 commitments and national food systems transformation pathways that several Latin American governments have since formalized.

From protecting children from food advertisements to protecting them from unhealthy food systems

The food environments shaping children's dietary trajectories in Ecuador and across Latin America are not accidental configurations, but products of food system structures, corporate strategies, and policy frameworks that have historically privileged commercial interests over nutritional outcomes. Marketing-focused regulations have achieved genuine, if bounded, gains. Front-of-package labels improve consumer information, and advertising restrictions reduce promotional pressure through regulated channels. These measures merit continued implementation and strengthening.

Yet the food environment children navigate daily encompasses far more than labels and advertisements. It includes the products available in neighborhood stores, the meals provided in schools, the digital content embedded in social media platforms, the relative prices of fresh versus processed foods, and the food production systems determining what is grown, processed, and distributed. Transforming these environments requires moving beyond marketing regulation toward comprehensive food-environment and food-system policies addressing availability, affordability, and institutional provision.

Childhood food environments matter not only for immediate nutritional status, but for the formation of lifelong dietary patterns. Tastes, preferences, and consumption habits established in childhood tend to persist into adulthood and can transmit across generations. The ultra-processed dietary patterns normalized during childhood in contemporary Ecuador will shape cardiovascular disease, diabetes, and cancer burdens for decades. Conversely, policy action establishing healthy food environments for today's children represents an investment in population health extending across the lifespan.

The challenge is not whether to regulate food marketing, this question has been settled affirmatively across Latin America. The more pressing challenge is whether governments are willing to pursue the more ambitious task of restructuring food environments and food systems so that they actively support, rather than undermine, children's nutritional wellbeing. The evidence assembled here suggests that marketing regulation alone cannot achieve this transformation. Protecting children from unhealthy food systems will require policy ambition commensurate with the structural forces shaping their dietary futures.

Contributors

JFL-G and ML-M: conceptualisation. JFL-G and ML-M: writing – original draft. FQ-C: writing – review and editing. All authors have read and approved the final manuscript.

Generative AI statement

The authors used generative artificial intelligence tools for language editing and grammatical refinement only. The tools were not used to generate scientific content, interpret data, or draw conclusions. All scientific responsibility for the content remains with the authors.

Declaration of interests

ML-M reports having previously received remuneration from Danone and Foods For Tomorrow for advisory board participation and consulting activities. These activities were unrelated to the submitted work and are not ongoing. At present, he has no active financial relationships with these entities. JFL-G and FQ-C declare no competing interests. The views expressed are those of the authors and not necessarily those of their affiliated institutions.

Acknowledgements

Funding: The authors declare that no financial support was received for the research, authorship, and/or publication of this article.

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