EDITORIAL

Shifting Eating Patterns: Snackification and the Evolving Role of Front-of-Pack Labelling

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INTRODUCTION

India's food environment is undergoing a rapid transformation driven by urbanization, economic growth, and changing lifestyles. These structural shifts are reshaping dietary behaviours across the country. One visible manifestation of this transition is snackification—the increasing consumption of packaged and ready-to-eat snack foods outside traditional meal structures.

Historically, Indian diets centred around structured meals prepared at home using cereals, pulses, vegetables, and minimally processed ingredients. Over the past two decades, however, the rapid expansion of packaged food markets and aggressive marketing by the food industry have gradually altered these dietary patterns. Snack foods are now frequently consumed between meals and sometimes replace conventional meals.

Evidence indicates that consumption of ultra-processed foods globally and in India has grown rapidly. Between 2009 and 2023, global UPF market sales grew from US$1·5 trillion to $1·9 trillion (constant 2023 US dollars and prices), led by rapid UPF sales growth in low-income and middle-income countries (1).

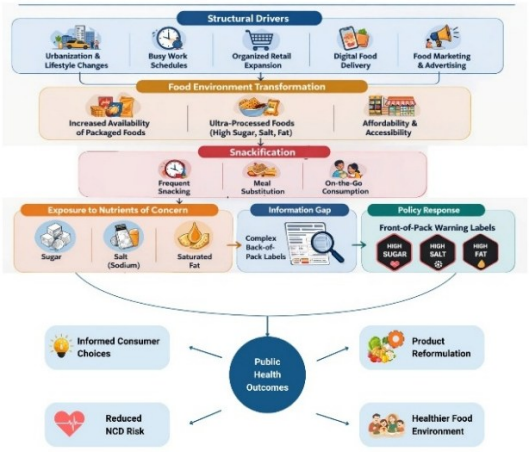
India, with approximately 1.4 billion inhabitants, has experienced unprecedented growth in UPF consumption over the past two decades. Market intelligence data indicate that India's UPF sector expanded at a compound annual growth rate (CAGR) of 13.37% between 2011 and 2021, with retail sales increasing from USD 0.9 billion in 2006 to approximately USD 38 billion in 2019 (2; 3). This growth trajectory represents one of the fastest rates globally, reflecting fundamental shifts in food systems, retail infrastructure, and consumer behaviour.

Recent Indian national consumption data show a measurable shift toward processed food consumption. The share of beverages and processed foods in total food expenditure increased to 9.8% in rural India and 11.1% in urban India in 2023–24, signalling a continuing nutrition transition toward packaged and ultra-processed foods (4).

These dietary changes carry important implications for public health. India is experiencing a growing burden of non-communicable diseases (NCDs), including obesity, hypertension, diabetes, and cardiovascular diseases. The health implications of this dietary transition are profound. Recent epidemiological data from the Indian Council of Medical Research-India Diabetes (ICMR-INDIAB) national study document alarming prevalence rates: 11.4% for diabetes (101 million individuals), 15.3% for prediabetes (136 million), 28.6% for generalized obesity, and 39.5% for abdominal obesity. Hypertension affects 315 million individuals, while dyslipidemia prevalence exceeds 80% in certain population segments (5). Increased consumption of foods rich in sugar, salt (sodium), and saturated fats—nutrients commonly present in ultra-processed snack products—has been identified as a key dietary risk factor contributing to this epidemiological transition.

Snackification therefore represents not merely a behavioural change but a broader transformation in food systems with significant public health implications. Figure 1 illustrates a framework highlighting how structural drivers, food environments, product composition, marketing influences, and dietary exposure to nutrients of concern interact to influence public health outcomes. The framework also highlights the role of front-of-pack warning labels as a policy response to support healthier consumer choices.

Figure 1: Framework linking food system drivers to public health outcomes.



Structural Drivers of Snackification.

The rise of snackification reflects broader socio-economic transformations shaping contemporary food systems. Rapid urbanization, longer commuting times, and changing work patterns have reduced the time available for preparing traditional home-cooked meals. These lifestyle shifts have increased reliance on convenient ready-to-eat foods.

Simultaneously, the expansion of organized retail and digital food delivery platforms has significantly increased the accessibility of packaged snack products. Foods that were once limited to urban supermarkets are now widely available in neighbourhood grocery stores and through online delivery services. Marketing strategies further reinforce these trends. Snack foods are heavily promoted across television, digital media, and social platforms, often targeting children and adolescents and shaping dietary preferences from an early age (6).

Small-portion packaging formats at relatively low price points have also contributed to increased consumption. These packaging strategies encourage impulse purchases and normalize frequent snacking behaviour across socio-economic groups.

Transformation of the Food Environment.

These structural drivers have fundamentally altered the food environment encountered by Indian consumers. Retail outlets today offer a wide range of snack products including savoury snacks, biscuits, confectionery, instant noodles, and ready-to-eat foods. Many of these products fall within the category of ultra-processed foods, which are typically characterized by high levels of added sugars, sodium, refined carbohydrates, and saturated fats.

Ultra-processed foods are designed to maximize convenience, palatability, and shelf stability. However, these characteristics often come at the expense of nutritional quality. Diets dominated by ultra-processed foods may provide excessive calories while lacking essential nutrients such as fibre and micronutrients. Evidence increasingly links high consumption of ultra-processed foods with obesity, metabolic disorders, and cardiovascular diseases (7).

As ultra-processed snack foods become more widely available and affordable, they increasingly compete with traditional home-prepared meals, contributing to shifts in dietary habits across both urban and rural populations (4).

Snackification and Nutrients of Concern.

Within this evolving food environment, snackification has emerged as a prominent dietary pattern. Many individuals now consume snack foods multiple times throughout the day rather than relying solely on structured meals. While occasional snacking can be compatible with balanced diets, concerns arise when frequently consumed snacks contain high levels of nutrients of concern, particularly added sugars, sodium, and saturated fats.

Frequent intake of such foods may lead to cumulative nutrient consumption exceeding recommended dietary limits. This concern is particularly relevant among children and adolescents, who are often exposed to intensive marketing of ultra-processed snack products and may develop early preferences for highly processed foods.

Addressing the nutritional implications of snackification therefore requires policy interventions that improve transparency in food environments and enable consumers to quickly identify foods high in these nutrients.

Front-of-Pack Labelling as a Policy Instrument.

Front-of-pack labelling (FOPL) has emerged globally as an important public health policy tool aimed at improving consumer understanding of the nutritional quality of packaged foods. Traditional nutrition information panels located on the back of packages are often complex and difficult to interpret during routine purchasing decisions. Simplified front-of-pack labels provide clear visual cues that enable consumers to quickly identify foods high in sugar, salt, and saturated fats. Several countries have implemented different types of labelling systems including nutrient warning labels, colour coded labels, summary indicators, endorsement logos and nutrient specific numeral labels indicating when foods contain high levels of nutrients of concern. Front-of-package (FOP) warning labels (e.g., "High in Sugar") are widely considered the most effective, simple, and reliable system for reducing the purchase of unhealthy, processed foods (8).

Studies conducted in India similarly indicate strong consumer support for simplified warning-style labels that clearly identify foods high in critical nutrients (9).

Policy Momentum in India and Global Lessons.

Nutrition labelling has gained increasing attention within India's food policy landscape. The Food Safety and Standards Authority of India (FSSAI) has explored regulatory approaches aimed at improving transparency in nutrition information on packaged foods.

India's national nutrition initiatives also emphasize improving food environments and consumer awareness. The Eat Right India movement promotes healthier food practices by encouraging informed dietary choices and supporting reformulation of food products to reduce harmful nutrients. These initiatives complement national strategies to address NCDs under the National Programme for Prevention and Control of Non-Communicable Diseases (NP-NCD), which identifies unhealthy diets as a major modifiable risk factor.

Recent judicial developments have further strengthened policy momentum. In India following public interest litigations by consumer groups, the Supreme Court of India urged regulators to consider introducing front-of-pack warning labels for packaged foods containing high levels of sugar, salt, and saturated fats. The Court emphasized that clearer nutrition information could support informed consumer choices and contribute to public health protection.

Global experience provides further insights. Countries such as Chile, Mexico, and Israel have implemented front-of-pack warning labels identifying foods high in sugar, salt, and saturated fats. Evidence from these countries suggests that warning labels improve consumer understanding, reduce purchases of unhealthy foods, and encourage product reformulation by food manufacturers (10).

Recent work by the The EAT Lancet Commission has further emphasized the need to address unhealthy food environments as a central driver of the global NCD

epidemic. The Commission highlights structural interventions—including improved food labelling, fiscal measures, and regulation of food marketing—as critical tools for reducing population exposure to unhealthy diets and improving public health outcomes (11).

CONCLUSION

Snackification represents a visible outcome of broader transformations occurring within India's food systems. Rapid expansion of packaged food markets, evolving retail environments, and changing lifestyles have reshaped dietary behaviours across the country. While convenience-driven food environments are likely to continue expanding, their implications for public health require careful policy attention.

Front-of-pack warning labels offer a practical and evidence-based strategy to reduce information asymmetry and empower consumers to make healthier dietary choices. When integrated with broader nutrition governance initiatives—including Eat Right India and national NCD control programmes—such measures can contribute to improving food environments and reducing the growing burden of diet-related non-communicable diseases in India.

AUTHORS CONTRIBUTION

All authors have contributed equally.

DECLARATION OF GENERATIVE AI AND AI ASSISTED TECHNOLOGIES IN THE WRITING PROCESS

The authors haven't used any generative AI/AI assisted technologies in the writing process.

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