

Let's Fix Our Food



icmr
INDIAN COUNCIL OF
MEDICAL RESEARCH

NIN
NATIONAL INSTITUTE
OF NUTRITION

LET'S FIX OUR FOOD

POLICY BRIEF SERIES



Priority Policy Actions for Promoting Healthier Food
Environment for Children and Youth in India

 **RESOLVE**
TO SAVE LIVES

 **unicef**
for every child

 **Global Health
Advocacy Incubator**

भारतीय
जन स्वास्थ्य
प्रतिष्ठान  **PUBLIC
HEALTH
FOUNDATION
of INDIA**



 **World Health
Organization**
India

 **fssai**

 **DEAKIN
UNIVERSITY**

 **YuWaah!**
The Potential of Young People

LET'S FIX OUR FOOD

POLICY BRIEF SERIES

Priority Policy Actions for Promoting Healthier Food
Environment for Children and Youth in India

CONTENTS

About this series	4
Let's Fix Our Food initiative	6
About the priority actions	8
How to use these briefs	10
1. Creating healthy school food environments for a healthy India	13
2. Advancing skill-based nutrition literacy for children and adolescents in India	24
3. Restricting the marketing of unhealthy foods to children and adolescents in India	32
4. Strengthening awareness through front-of-pack nutrition labelling	43
5. Health taxes in India: Why, what and how?	52
6. Healthier oils for a healthier India: Reshaping dietary fats to prevent non-communicable diseases	60
7. Population-level salt reduction: A key public health strategy to reduce non-communicable diseases	70
8. Advancing potassium-enriched low-sodium salt substitute strategies for hypertension control in India	78
9. Social and behaviour change communication for healthier children and adolescents in India	88
10. Voices of the youth: What adolescents say about India's food environment – and what they recommend	96

ABOUT THIS SERIES

India is facing a rapidly growing burden of diet-related non-communicable diseases (NCDs), including obesity, diabetes, hypertension, cardiovascular diseases and certain cancers. The Indian Council of Medical Research–India Diabetes (ICMR-INDIAB) study highlights the widespread burden of metabolic risk factors across the country, estimating that more than 101 million adults are living with diabetes, approximately 315 million with hypertension and 254 million with generalized obesity.¹ However, this burden is no longer confined to adults. In India, 561 million children aged 5–19 years constitute nearly one-third (28.5 per cent) of the total population.² Nearly 41 million children aged 5–19 years are living with overweight or obesity in 2025, and India is projected to account for more than 11 per cent of the global childhood obesity burden by 2030 if current trends continue.³ These trends place an increasing burden on the health system, reduce productivity and have significant social and economic consequences for the country.

Unhealthy diets, characterized by excessive consumption of foods high in fat, sugar and salt (HFSS) and inadequate intake of fruits, vegetables, pulses and whole grains, are among the leading modifiable risk factors contributing to the growing burden of obesity and NCDs.⁴ The Dietary Guidelines for Indians (2024) estimate that 56.4 per cent of India's disease burden is attributable to unhealthy diets, making healthier diets one of the greatest opportunities to improve population health.⁵ The Economic Survey 2025–26 underscores the importance of promoting healthier diets and creating supportive food environments. It raises concerns about the increasing consumption of HFSS foods and highlights policy measures such as restricting the marketing of unhealthy foods, implementing front-of-pack nutrition labelling and introducing health taxes to improve population health, strengthen human capital and support sustainable economic growth.⁶

A nutritious, safe and diverse diet enables children and youth to survive, thrive, learn and realize their full potential, build meaningful relationships and contribute productively to society. However, current food environments across homes, schools, workplaces, communities, food retail settings and digital platforms increasingly promote unhealthy food choices. The widespread availability and aggressive marketing of HFSS foods, coupled with inadequate nutrition literacy and limited access to affordable healthy foods, make healthy choices more difficult and contribute to the rising burden of obesity and other diet-related diseases.⁷

Creating healthier food environments requires coordinated action across multiple sectors. The policy actions presented in this series represent high-impact, evidence-based and feasible interventions to address the major drivers of unhealthy diets in India. These recommendations are firmly grounded in and aligned with existing national and global policy frameworks, including the National Multisectoral Action Plan for Prevention and Control of Common Non-Communicable Diseases (NMAP), the Dietary Guidelines for Indians (2024), Rashtriya Bal Swasthya Karyakram (RBSK) 2.0, the Eat Right India initiative and other flagship programmes of the Food Safety and Standards Authority of India (FSSAI), as well as the Oil and Sugar Boards established by the Ministry of Education. They are also consistent with international guidance, including the World Health Organization (WHO) “Best Buy” interventions for the prevention and control of NCDs. Collectively, these policy actions provide a strategic road map for creating healthier food environments and promoting healthy diets among children and youth in India.



LET'S FIX OUR FOOD INITIATIVE

The Let's Fix Our Food (LFOF) initiative is a multi-stakeholder platform led by the Indian Council of Medical Research–National Institute of Nutrition (ICMR–NIN) to create healthier food environments for children and youth in India. By generating evidence, promoting policy action, and empowering children and youth as advocates for change, the initiative aims to reduce the consumption of HFSS foods and foster healthier dietary behaviours through collaborative action involving government, academia, civil society, international organizations and youth networks.

Vision

To support and empower children and youth to become leaders in creating healthier food environments by amplifying their voices, fostering informed choices, and strengthening policies and actions that improve nutrition and healthy lifestyles.

The LFOF initiative aims to:

1. **Improve food environments** by generating evidence and promoting policies that reduce the availability, accessibility, marketing and consumption of HFSS foods.
2. **Engage children and youth** as active participants in shaping healthier food environments and advocating for evidence-informed public policies.
3. **Promote healthier dietary behaviours and physical activity** through awareness generation, behaviour change communication and youth-led initiatives.
4. **Strengthen evidence-informed policy advocacy** by developing policy briefs, disseminating research findings and facilitating dialogue among policymakers, researchers, civil society and young people.
5. **Mobilize multisectoral action** through advocacy campaigns, media engagement, webinars and stakeholder collaborations to accelerate the adoption and implementation of policies that support healthy food environments.

Under the leadership of the ICMR–NIN, the initiative brings together organizations such as Resolve to Save Lives (RTSL), United Nations Children's Fund (UNICEF), Global

Health Advocacy Incubator (GHAI), Public Health Foundation of India (PHFI), Institute of Economic Growth (IEG), International Food Policy Research Institute (IFPRI), Lady Irwin College, University of Delhi, World Food Programme (WFP), World Health Organization (WHO), Food Safety and Standard Authority of India (FSSAI, Deakin University and YuWaah Generation Unlimited.

The Let's Fix Our Food (LFOF) initiative is a multi-stakeholder platform led by the Indian Council of Medical Research–National Institute of Nutrition (ICMR–NIN) to create healthier food environments for children and youth in India.





ABOUT THE PRIORITY ACTIONS

On 24 June 2021, NITI Aayog convened a high-level dialogue on the prevention of childhood obesity, which identified five priority policy actions to address the growing burden of obesity. These included implementing double-duty actions, taxation of HFSS foods, front-of-pack nutrition labelling (FoPNL), a child-led nutrition literacy approach, and regulating the advertising of HFSS foods across private and public media.

Building on these priorities, the LFOF initiative convened 12 national e-dialogues between March 2022 and May 2026 to deliberate on these priority areas as well as emerging issues requiring urgent action to create healthier food environments for children and youth. The e-dialogues brought together researchers, policymakers, public health experts, civil society organizations, youth representatives and development partners to discuss key policy priorities. In parallel, the LFOF U-Report Survey amplified the voices of children and youth by capturing their perspectives on food environments, dietary behaviours and priorities for healthier food choices.

Insights generated through these e-dialogues, together with findings from the U-Report Survey and a review of national and global evidence, informed the development of the Let's Fix Our Food Policy Brief Series to support evidence-informed policy action for improving the nutrition and food environments of children and youth. The first phase, launched on 28 March 2025, focused on five priority areas: children and youth voices and recommendations, restrictions on the marketing of unhealthy foods, HFSS taxation, social and behaviour change communication, and nutrition literacy.

The second phase builds on this foundation by expanding the scope of the series to address additional priorities for creating healthier food environments. It introduces policy briefs on healthy school food environments, skill-based nutrition literacy, FoPNL, healthier dietary oils and fats, salt reduction and low-sodium salt substitutes. Together with the priorities covered in the first phase, these policy briefs provide a comprehensive and integrated policy framework to improve dietary behaviours, prevent malnutrition in all its forms, and reduce the burden of diet-related NCDs among India's children and youth.

Insights generated through these e-dialogues, together with findings from the U-Report Survey and a review of national and global evidence, informed the development of the Let's Fix Our Food Policy Brief Series to support evidence-informed policy action for improving the nutrition and food environments of children and youth.



HOW TO USE THESE BRIEFS

Each policy brief is a stand-alone document that can be read independently. Together, the 10 policy briefs form a comprehensive, complementary suite of recommendations covering regulatory, fiscal, educational, environmental and behavioural levers of change. Policymakers are encouraged to consider these briefs together, as the evidence consistently demonstrates that no single intervention is sufficient; lasting improvements in food environments require coordinated, multisectoral action.

These briefs are intended for:

- Central and state government policymakers and programme officers working in nutrition, food systems, education and health
- Civil society organizations and advocacy groups engaged in food-systems reform
- Academic researchers and public health professionals
- International development partners and donors
- Media and communication professionals working in nutrition and public health

The time to act is now. India's children and youth deserve food environments that support – not undermine – their right to health, learning and a full life.

Let's Fix Our Food.

Together, the 10 policy briefs form a comprehensive, complementary suite of recommendations covering regulatory, fiscal, educational, environmental and behavioural levers of change.

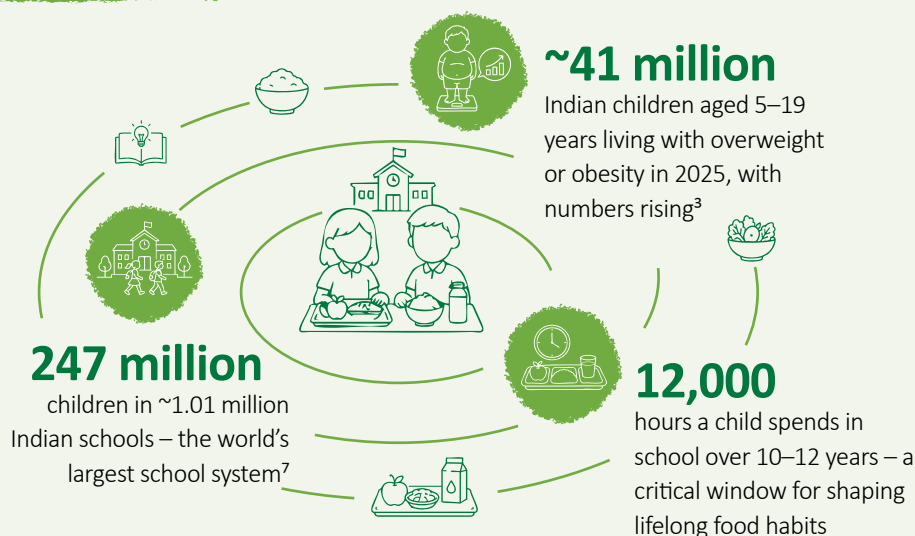


References

1. Anjana, R. M., et al., 'Metabolic Non-Communicable Disease Health Report of India: The ICMR-INDIAB national cross-sectional study (ICMR-INDIAB-17)', *Lancet Diabetes & Endocrinology*, vol. 11, no. 7, July 2023, pp. 474–489.
2. Registrar General of India, Census of India 2011: *Provisional population totals – India data sheet*, Office of the Registrar General & Census Commissioner, New Delhi, 2011.
3. World Obesity Federation, *World Obesity Atlas 2026: Childhood obesity*, 2nd ed., World Obesity Federation, London, 2026, <data.worldobesity.org/publications/?cat=24>, accessed 20 June 2026.
4. World Health Organization Regional Office for the Eastern Mediterranean, 'Unhealthy Diet' [Internet], WHO EMRO, Cairo, <emro.who.int/noncommunicable-diseases/causes/unhealthy-diets.html>, accessed 3 July 2026.
5. ICMR-National Institute of Nutrition, *Dietary Guidelines for Indians*, Revised ed., Indian Council of Medical Research, Department of Health Research, Ministry of Health and Family Welfare, Government of India, Hyderabad, 2024, <nin.res.in/dietaryguidelines/pdfs/locale/DGI_2024.pdf>, accessed 15 May 2026.
6. Government of India, Ministry of Finance, Department of Economic Affairs, *Economic Survey 2025–26* [Internet], Government of India, New Delhi, 2026, <dea.gov.in/announcements/economic-survey-2025-26>, accessed 18 June 2026.
7. United Nations Children's Fund, *Feeding Profit: How food environments are failing children*, Child Nutrition Report 2025, UNICEF, New York, September 2025.

1. CREATING HEALTHY SCHOOL FOOD ENVIRONMENTS FOR A HEALTHY INDIA

Creating healthy school food environments for a healthy India



Why this matters: The urgency of action

Childhood and adolescence are the most consequential periods for establishing lifelong dietary habits. Yet today, children in India and globally are exposed to food environments that systematically undermine healthy eating.

Globally, one in five children and adolescents aged 5–19 years lives with overweight, and one in seven lives with obesity. For the first time, overweight and obesity have surpassed underweight as the dominant form of malnutrition among children and adolescents worldwide.¹

The Comprehensive National Nutrition Survey (CNNS, 2016–18) found that approximately 10 per cent of adolescents are pre-diabetic, 1 per cent are diabetic, and approximately 5 per cent have elevated blood pressure, representing early indicators of a growing chronic disease burden.²

An estimated 41 million Indian children aged 5–19 years were living with overweight or obesity in 2025, with projections indicating continued increases in the absence of decisive policy action.³

Good nutrition is associated with improved academic performance and higher school attendance.^{4,5} Yet the current school food environment in India is characterized by the widespread availability of foods high in fat, sugar and salt (HFSS) in school canteens and through nearby street vendors.⁶

The scale of the opportunity – and the challenge

Schools are among the most influential settings for improving children's diets and establishing lifelong healthy eating behaviours. India's 1.01 million schools serve nearly 247 million children, and a typical child spends approximately 12,000 hours in school over 10–12 years of education.⁷ This extensive exposure creates an unparalleled opportunity – and responsibility – to shape healthy dietary habits. Even modest improvements to school food environments, when implemented consistently and at scale, can lead to population-level improvements in dietary behaviours, health outcomes and the long-term prevention of non-communicable diseases (NCDs), while reducing healthcare expenditure.

The evidence: Why school food-environment interventions work

The evidence is clear: healthy school food environments do not emerge spontaneously. They require deliberate design, enforceable policies, sustained monitoring and multisector collaboration.⁸

- HFSS foods are widely accessible in and around Indian schools, contributing to unhealthy dietary patterns from an early age.^{5,6}

- School food environments are not isolated. They interact with influences from homes, communities and digital media, creating a complex system that shapes children's long-term food preferences and behaviours.
- Healthy school food environments require enabling systems that include clear regulatory frameworks, dedicated monitoring, multisector collaboration, adequate resources and enforceable accountability mechanisms.⁸
- The World Health Organization (WHO) 2025 guideline on school food environments provides the strongest global evidence base to date and affirms that comprehensive, multi-component interventions, spanning food standards, marketing restrictions, nutrition education and physical activity, are the most effective.⁸

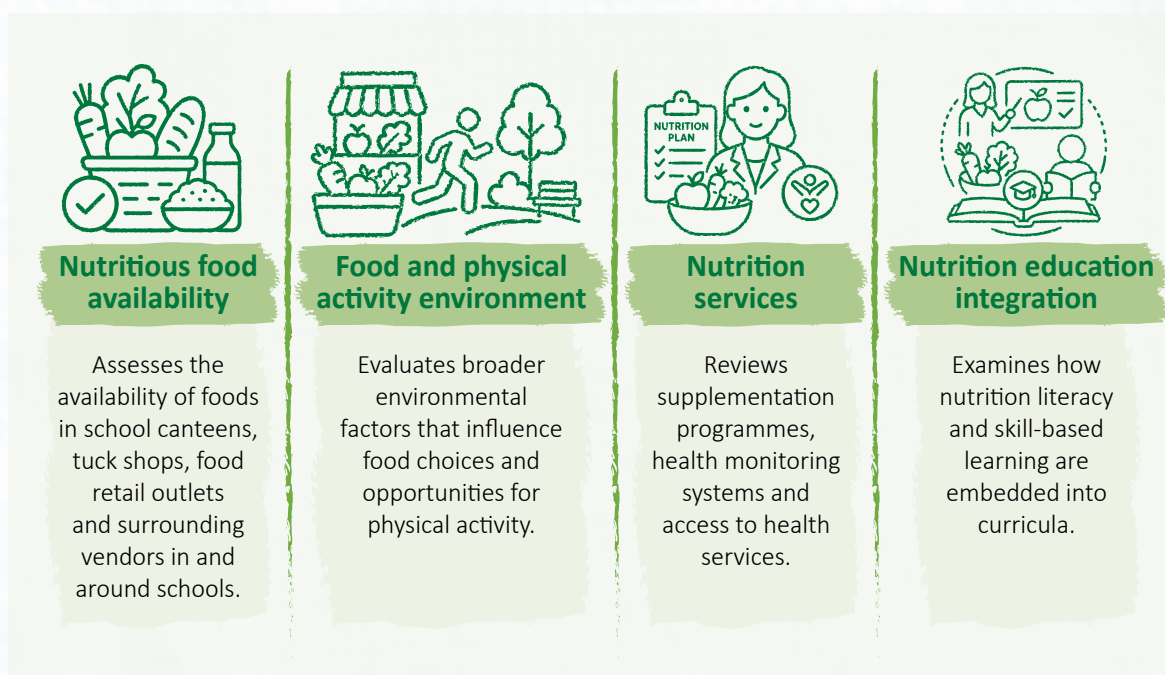
Minimum standards for school nutrition: Five action areas⁹

- Nutritious school meals
- Supportive, HFSS-free food environments
- Integrated health and nutrition services
- Nutrition literacy and behaviour change education
- Opportunities for regular physical activity

The NEAT-S tool: Building an evidence base for policy action

The United Nations Children's Fund (UNICEF) Nutrition Environment Assessment Toolkit for Schools (NEAT-S)¹⁰ provides a structured, validated methodology for systematically assessing school food environments and generating actionable evidence for policymakers. The toolkit evaluates four interconnected domains:²⁰

By systematically collecting data across these four domains, NEAT-S enables schools and policymakers to identify specific gaps, prioritize interventions and benchmark progress over time, thereby creating the accountability infrastructure required for effective school food policy demands.



Global lessons: Identifying gaps in school food environments

Systematic assessments of school food environments using the UNICEF Nutrition Environment Assessment Toolkit for Schools (NEAT-S)¹⁰ have identified critical gaps requiring policy reform across multiple countries. These assessments demonstrate that comprehensive national standards, effective implementation and strong accountability mechanisms are the hallmarks of successful school food systems.^{6,7}

Country	Key findings from NEAT-S assessments
Fiji¹⁰	Identified gaps in the availability of nutritious foods within school settings
Mongolia¹⁰	Identified gaps in school nutrition standards and education content
Viet Nam¹⁰	Highlighted the need for stronger national school nutrition standards and clearer guidance on foods sold within and around school premises
Indonesia¹¹	Highlighted the urgent need to improve school food and physical activity environments
Sri Lanka¹²	Identified gaps in school canteen guidelines and monitoring mechanisms, informing subsequent government policy reforms

India's landscape: Foundations, gaps and emerging innovations

National foundations: PM POSHAN and the FSSAI regulatory framework

India has a strong foundation for improving school food environments. The PM POSHAN Scheme is one of the world's largest school feeding programmes, reaching millions of children daily. Over time, it has evolved from a calorie-focused intervention into a more comprehensive programme that links nutrition, education, health and community participation. The scheme provides fortified meals, supplementary foods such as milk and eggs, and locally relevant foods to improve dietary adequacy, learning outcomes and school attendance. PM POSHAN has successfully established food and nutrition norms. However, some critical gaps remain, including the need to specify limits for salt, sugar, fats and oils used in school meals in line with WHO and National Institute of Nutrition (NIN) guidelines.

The Food Safety and Standards Authority of India (FSSAI) Food Safety and Standards (Safe Food and Balanced Diets for Children in School) Regulations, 2020¹³ represent a landmark regulatory step. However, several key provisions remain inadequately implemented.

Regulation 3(5) requires school authorities to ensure that no person sells foods high in saturated fat, trans-fat, added sugar or sodium within school premises. **Regulation 5(1)** prohibits the advertisement, marketing, sale or offering for sale of such products within school campuses and within a 50-metre radius of school gates. Operationalizing these provisions is an immediate national priority.

National NEAT-S pilot: Evidence from India

A pilot adaptation of the NEAT-S tool was conducted in 2025–26 in selected private schools in Uttar Pradesh, generating India's first systematic evidence on the quality of school food environments:

- Widespread availability of ultra-processed snacks and sugary beverages in school canteens
- Limited structured nutrition services and health monitoring systems
- Insufficient physical activity infrastructure in a significant proportion of schools
- Informal or inconsistently implemented nutrition-related policies, even where national frameworks exist

These findings underscore the urgency of institutionalizing school food environment monitoring as a routine government function and enforcing existing guidelines more rigorously. While national frameworks, including school health, anaemia prevention and food

safety regulations, provide important entry points, they should be integrated with nutrition literacy interventions and supportive physical environments to drive sustained dietary behaviour change.^{14–16}

National convergence and emerging initiatives

- **The Central Board of Secondary Education** has mandated the display of visual “Sugar Boards” and “Oil Boards” in schools to highlight the hidden sugar and fat content of commonly consumed foods. This simple but powerful intervention can help build nutrition awareness among students.¹⁷
- **Rashtriya Bal Swasthya Karyakram (RBSK) 2.0** broadens its scope beyond the diagnosis and management of clinical conditions to actively promote healthy behaviours and lifestyle practices among children. The programme now emphasizes key determinants of child health, including appropriate screen time, adequate sleep, healthy dietary habits and positive lifestyle choices. By integrating the principles of the Eat Right programme and engaging peer educators, School Health and Wellness Ambassadors and community stakeholders in outreach activities and caregiver counselling, RBSK 2.0 aims to ensure that children and their families receive consistent, evidence-based guidance to support healthy living and long-term well-being.¹⁸
- **The Ayushman Bharat School Health and Wellness Programme** trains teachers as Health and Wellness Ambassadors and students as Wellness Messengers, embedding health promotion into school life through multi-ministerial collaboration.¹⁹
- **The Ministry of Women and Child Development (MWCD)** has issued directives to establish limits on the sugar, salt and fat content of meals provided under government nutrition programmes.²⁰

State-level innovations: Proof of concept

- **Karnataka:** School nutrition gardens, partnerships with non-governmental organizations (NGOs), awareness campaigns on salt reduction and healthier cooking oils, and capacity-building for school cook-cum-helpers demonstrate that a whole-of-school approach can be operationalized at scale.²¹
- **Chhattisgarh:** Systems-based interventions integrate community-managed nutrition gardens, locally sourced and culturally relevant menus, and school-based nutrition education, linking food production, meal diversification and community engagement in a potentially replicable model.²²

Critical gap: Undefined HFSS foods

A significant barrier to implementation is the absence of a formally adopted and legally operational definition of foods high in fat, sugar and salt (HFSS) in India. Without a standardized and regulatable definition, implementation of marketing restrictions and school canteen regulations remains inconsistent and vulnerable to legal challenge. Developing and formally adopting an HFSS definition is therefore a prerequisite for effective policy implementation.

Emerging challenge: Ultra-processed food consumption is rising

Post-COVID trends show a significant rise in HFSS consumption and fat intake among Indian children and adolescents. This underscores the urgent need to strengthen nutrition literacy, accelerate multisector convergence and intensify enforcement of school food environment regulations.²³

Policy recommendations

1. Adopt a standardized, legally operational HFSS definition

Develop and formally adopt a standardized regulatory definition of HFSS foods through the FSSAI. This definition is foundational to ensuring clarity, uniformity, and enforceability across all regulations, marketing restrictions and school food environment standards in India.

2. Operationalize and enforce FSSAI school food regulations

Immediately notify and implement pending provisions of the Food Safety and Standards (Safe Food and Balanced Diets for Children in School) Regulations, 2020, particularly Regulation 3(5) (school authority accountability for HFSS food sales on school premises) and Regulation 5(1) (prohibition of HFSS food advertisement, marketing and sale within schools and within a 50-metre radius of school gates). Enforcement should be strengthened through standardized compliance monitoring, clear accountability mechanisms, routine inspections, mandatory signage, penalties for non-compliance and a school canteen benchmarking system with star ratings.

3. Mandate universal dissemination of standards and regulations to schools and school management committees (SMCs)

All relevant notifications, circulars, advisories and regulations issued by FSSAI and other government departments relating to school food environments, HFSS food restrictions,

food safety and nutrition standards should be mandatorily disseminated to all schools and SMCs, and communicated to parents through schools, to ensure awareness, compliance and uniform implementation across educational institutions. In addition, standards for fats and oils, sugar and salt used in school meals under the PM POSHAN programme should be developed, notified and widely disseminated to support the provision of healthier meals in schools.

4. Scale up nutrition literacy tools across all schools

Sugar Boards, Oil Boards and other practical nutrition literacy tools should be scaled up and mandatorily extended to all school types across India. These simple, low-cost interventions can build daily nutrition awareness and should be complemented by student-facing activities that link awareness with skill-building and behaviour change.

5. Institutionalize NEAT-S as a routine state-level monitoring tool

Periodic assessment of school food environments through NEAT-S should be institutionalized as a routine state-level monitoring mechanism and conducted at least annually to evaluate HFSS food exposure, menu quality, food safety and hygiene, and gaps in nutrition services. Assessments should be aligned with and integrated into the Swachh Evam Harit Vidyalaya Rating, the Unified District Information System for Education Plus (UDISE+), Eat Right India, RBSK 2.0 and the Ayushman Bharat School Health and Wellness Programme to enable benchmarking, accountability and continuous improvement.

6. Mandate annual student health and nutrition report cards

The Government should mandate the development and annual implementation of a standardized Health and Nutrition Report Card for all students to assess and monitor key indicators, including nutritional status, dietary practices, physical activity and fitness levels, growth and overall health. The report card should function as a systematic mechanism for the early identification of health and nutrition risks, increased parental and school engagement, strengthened school health services, and improved accountability for healthy school environments.

7. Mandate daily structured physical activity for all students

In alignment with the Fit India Mission and the Ayushman Bharat School Health and Wellness Programme, all schools should provide a minimum of 60 minutes of structured physical activity daily for all students, including those in Grades 11 and 12, through mandatory integration within the school timetable. Specific measures should promote the equitable participation of girls, alongside regular fitness assessment, monitoring and certification mechanisms.

8. Establish structured parent and family engagement on nutrition

In collaboration with SMCs, structured parent and family engagement programmes should be implemented through parent–teacher meetings (PTMs), including a minimum of two family nutrition sessions each year. These sessions should promote healthy lunchbox practices, nutritious home diets, adherence to iron and folic acid (IFA) supplementation and deworming, and greater awareness of the risks associated with HFSS foods and children’s exposure to digital food marketing.

References

1. United Nations Children’s Fund, *Feeding Profit: How food environments are failing children*, Child Nutrition Report 2025, Report brief, UNICEF, New York, September 2025.
2. Ministry of Health and Family Welfare, Government of India, United Nations Children’s Fund and Population Council, *Comprehensive National Nutrition Survey (CNNS)*, Ministry of Health and Family Welfare, New Delhi, 2019, <nhm.gov.in/WriteReadData/l892s/1405796031571201348.pdf>, accessed 21 June 2026.
3. World Obesity Federation, *World Obesity Atlas 2026: Childhood obesity*, 2nd ed., World Obesity Federation, London, 2026, <data.worldobesity.org/publications/?cat=24>, accessed 23 June 2026.
4. Rajan A, et al., ‘Relation of Dietary Practices and Academic Achievement Among School-Going Children in Kattankulathur Block, Chengalpattu District, Tamil Nadu’, *Cureus*, vol. 16, no. 11, 2 November 2024, e72882.
5. De Neve, J. W., et al., ‘Relationship between Adolescent Anaemia and School Attendance Observed during a Nationally Representative Survey in India’, *Communications Medicine*, vol. 4, 2024, p. 112.
6. Bassi, S., et al., ‘Food Environment in and around Schools and Colleges of Delhi and NCR in India’, *BMC Public Health*, vol. 21, no. 1, 2021, p. 1767.
7. Government of India, Ministry of Education, ‘UDISE+ Dashboard’, Government of India, New Delhi, 2026, <udiseplus.gov.in>, accessed 20 April 2026.
8. World Health Organization, *Policies and Interventions to Create Healthy School Food Environments: WHO guideline*, World Health Organization, Geneva, 2025.

9. Association of Southeast Asian Nations, World Food Programme and United Nations Children's Fund, *Minimum Standards and Guidelines for ASEAN School Nutrition Package*, UNICEF, Jakarta, 2024.
10. United Nations Children's Fund East Asia and Pacific Regional Office, *Nutrition Environment Assessment Toolkit for Schools (NEAT-S) for East Asia and Pacific*, UNICEF, Bangkok, 2024.
11. United Nations Children's Fund Indonesia, *Nutrition Environment Assessment Toolkit for Schools (NEAT-S) in Indonesia: Identifying barriers to healthy school nutrition environments to strengthen policies and programmes*, UNICEF Indonesia, Jakarta, May 2025, <unicef.org/indonesia/media/24206/file/nutrition-environment-assessment-toolkit-for-schools-Indonesia.pdf>, accessed 12 June 2025.
12. United Nations Children's Fund, *Strengthening Nutrition in Schools in Sri Lanka*, UNICEF Regional Office for South Asia, Kathmandu, 2025.
13. Food Safety and Standards Authority of India, *Food Safety and Standards (Safe Food and Balanced Diets for Children in School) Regulations, 2020*, Gazette of India, Extraordinary, Part III, Section 4, Ministry of Health and Family Welfare, Government of India, New Delhi, 4 September 2020.
14. Ministry of Human Resource Development, Department of School Education & Literacy, MDM Division, 'Guidelines for Food Safety and Hygiene', Government of India, New Delhi, 26 June 2026. <education.gov.in/sites/upload_files/mhrd/files/documentreports/Guidelines__Food_Safety_and_Hygiene.pdf>.
15. Press Information Bureau, Government of India, 'India's Fight against Anaemia', Ministry of Health and Family Welfare, New Delhi, 2025, <static.pib.gov.in/WriteReadData/specificdocs/documents/2025/apr/doc2025418542201.pdf>, accessed 23 June 2026.
16. Ministry of Health and Family Welfare and Ministry of Human Resource Development, *School Health Programme under Ayushman Bharat: Operational guidelines*, Government of India, New Delhi, 2018.
17. Government of India, Ministry of Health and Family Welfare, 'Display of "Oil and Sugar Board" in Ministries/Departments/Offices to Promote Healthy Lifestyles and Combat Obesity and NCDs', New Delhi, 2025, <ncpcr.gov.in/uploads/1751980271686d18ef6ef80_reg-sugar-and-oil-board.pdf>, accessed 25 June 2026.
18. Ministry of Health and Family Welfare, *Rashtriya Bal Swasthya Karyakram (RBSK 2.0): Child health screening and early intervention services – Operational guidelines 2026*, National Health Mission, New Delhi, May 2026.

19. Ministry of Women and Child Development, Government of India, 'Letter to Principal Secretaries/Secretaries of Department of Social Welfare/Women and Child Development of All States/UTs' (No. PA/185/2024-CPMU), New Delhi, 2025, <goacivilsupplies.gov.in/wp-content/uploads/2025/10/Nutrition-norms-of-supplementary-nutrition-09.09.2025.pdf>, accessed 25 June 2026.
20. National Health Mission, *School Health and Wellness Programme*, Ministry of Health and Family Welfare, Government of India, New Delhi, 2020, <nhm.gov.in/index1.php?lang=1&level=3&sublinkid=1384&lid=746>, accessed 25 June 2026.
21. Government of India, Ministry of Education, Department of School Education & Literacy, PM-POSHAN Division, 'Programme Approval Board (PAB) Annual Work Plan & Budget (AWP&B) of Karnataka under PM POSHAN 2024–25', New Delhi, 2025, <pmposhan.education.gov.in/Files/PAB/PAB-2024-25/Minutes-PAB-2024-25/Karnataka-PAB%20Minutes.pdf>, accessed 26 June 2026.
22. NIHR Global Health Research Centre for Non-communicable Diseases and Environmental Change, 'Food Systems in India', 2025, <ghrcentre-ncdec.nihr.ac.uk/project/leveraging-food-aid-to-food-systems-intervention-in-india/>, accessed 26 June 2026.
23. World Health Organization Country Office for India, *The Growth of Ultra-Processed Foods in India: An analysis of trends, issues and policy recommendations*, WHO Country Office for India, New Delhi, 2023, <who.int/publications/i/item/9789290210672>, accessed 26 June 2026.

2. ADVANCING SKILL-BASED NUTRITION LITERACY FOR CHILDREN AND ADOLESCENTS IN INDIA

What is nutrition literacy?

Nutrition literacy means the ability to obtain, understand and use nutrition information in daily life. It helps people choose balanced diets, read food labels and avoid unhealthy food practices. Nutrition literacy is more than knowledge; it also includes the skills and confidence needed to apply information for better health. When people have good nutrition literacy, they are more likely to improve their diets and reduce their risk of disease.¹

The challenge: A new kind of illiteracy

India's evolving food system, characterized by the rapid proliferation of ultra-processed foods (UPFs), aggressive commercial marketing and pervasive digital advertising, has created an increasingly complex environment that adolescents must navigate daily.²

Despite unprecedented access to information through digital platforms, adolescents remain highly vulnerable to misleading nutrition claims, persuasive food marketing strategies and confusing food labels.^{3,4}

India has made commendable progress in improving literacy and educational access. Yet a critical gap has emerged: the difference between being literate and being nutrition literate.⁵

India's evolving food system, characterized by the rapid proliferation of ultra-processed foods (UPFs), aggressive commercial marketing and pervasive digital advertising, has created an increasingly complex environment that adolescents must navigate daily.



Nutrition literacy is not merely about nutritional awareness. It is inherently skill-based and action-oriented, encompassing the ability to critically evaluate food choices, interpret food labels, resist manipulative marketing and make informed dietary decisions.

Schools represent the most strategic setting for addressing this challenge, offering a structured environment in which nutrition education, supportive food environments and skill-building interventions can collectively and durably shape adolescents' dietary behaviours.⁶

National policy mandate

The National Education Policy 2020 (Chapter 4: “Learning Should be Holistic, Integrated, Enjoyable, and Engaging”) explicitly recognises Health and Nutrition education as essential competencies for all students. Under Section 4.23 on “Curricular Integration of Essential Subjects, Skills, and Capacities,” the NEP 2020 establishes a clear mandate for the systematic integration of nutrition education within school curricula, emphasising its role in developing “good, successful, innovative, adaptable, and productive human beings in today’s rapidly changing world.”

What the evidence says: WHO synthesis on school nutrition

A comprehensive World Health Organization (WHO) review of global evidence on school nutrition and nutrition literacy programmes identifies several consistent features of effective interventions:⁸

- Nutrition education is most effective when it is behaviourally focused, sustained in duration and intensity, facilitated by trained staff, and embedded within curricula, particularly when combined with supportive environmental changes and parental engagement.
- Effective pedagogical approaches include enhanced curriculum design, cross-curricular integration, hands-on and experiential learning (such as school gardens and cooking classes), peer-led education and reinforcement strategies.
- Experiential learning, particularly practical cooking and gardening activities, is consistently identified as a high-impact component of successful interventions.
- Student self-efficacy and perceived competence in making healthy food choices are strongly associated with improved dietary outcomes. Programmes that build confidence, not just knowledge, are more likely to deliver sustained behavioural change.

Minimum standards for skill-based nutrition literacy in schools

The Association of Southeast Asian Nations (ASEAN)–World Food Programme(WFP)–United Nations Children’s Fund (UNICEF) Minimum Standards and Guidelines for School Nutrition Programmes provide an actionable framework that can be adapted to the Indian context:⁶

- Nutrition education curricula should be needs-based, competence-oriented and grounded in evidence-based learning models.
- School food and nutrition education should actively engage all stakeholders who influence children’s food choices, including students, parents, teachers, canteen operators, caterers and community members.
- Curricula should be regularly updated and teachers should be equipped with the skills, resources and pedagogical tools required to deliver high-quality nutrition education.
- Nutrition education should be complemented by targeted behavioural nudges within the school environment to make healthy choices easier and more accessible, while reinforcing appropriate water, sanitation and hygiene (WASH) behaviours.

International precedents: Proven models of success

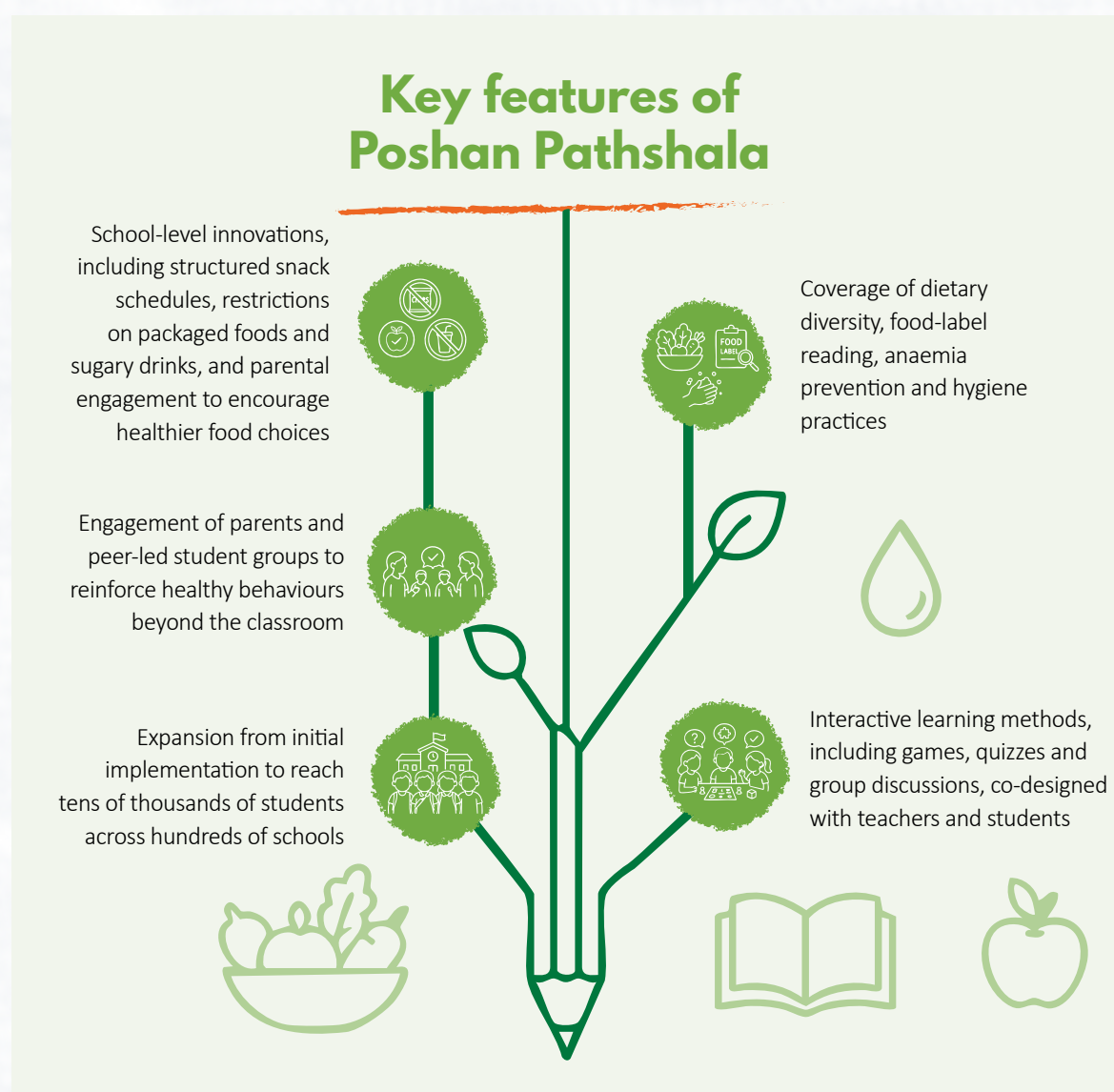
Indonesia	Philippines	Japan
Peer-led school nutrition literacy	Gulayan sa Paaralan (School Garden Programme)	Shokuiku (Food Education)
This model combines peer-led learning, digital engagement, interactive sessions and adolescent empowerment. It has strengthened nutrition knowledge, practical skills and confidence among students and has demonstrated sustainability even during the COVID-19 pandemic.	This model uses school gardens as living laboratories for nutrition learning. It helps builds practical skills, positive attitudes, vegetable consumption and community engagement, while also supporting school feeding programmes.	Institutionalized in 2005, Shokuiku is a globally recognized food-education model supported by national legislation. It integrates food education into curricula and school meals, helping to build lifelong healthy eating habits and appreciation of food culture. It is supported by standardized national guidelines.
Source: ASEAN, WFP and UNICEF 2024 ⁶	Source: ASEAN, WFP and UNICEF 2024 ⁶	Miyoshi et al. 2012; Tanaka and Miyoshi 2012 ^{9,10}

National momentum: India's emerging innovations

Several state-level initiatives demonstrate the feasibility and scalability of school-based nutrition literacy programmes in India and provide strong precedents for national action.

Gujarat: Poshan Pathshala

Implemented under the Samagra Shiksha programme with UNICEF support, *Poshan Pathshala* delivers short, activity-based nutrition sessions using a practical, skills-first approach.¹¹



Measuring what matters: The INFOLIT framework

Effective policy requires robust measurement. Nutrition literacy among adolescents spans multiple dimensions and requires targeted assessment and monitoring frameworks.



Functional literacy

The ability to access, understand and apply nutrition information in day-to-day food decisions



Interactive literacy

The ability to engage with peers, families and food environments to develop social food-related skills



Critical literacy

The ability to evaluate food marketing claims and making independent, informed food choices

India's Indian Nutrition and Food Literacy Tool (INFOLIT) tool represents the country's first validated framework for assessing adolescents' nutrition knowledge and practical nutrition literacy skills. It is based on the Nutbeam health literacy model.^{5,12}

Importantly, INFOLIT has been culturally adapted to the Indian context. The framework includes competencies such as understanding a balanced thali, interpreting Indian packaged food labels and awareness of anaemia, making it a uniquely relevant tool for national monitoring and programme evaluation.

Policy recommendations

1. Institutionalize nutrition literacy within school curricula

Integrate age-appropriate, skill- and competency-based nutrition and nutrition literacy education across school curricula in alignment with the National Education Policy (NEP) 2020. The curriculum should focus on practical skills, including dietary diversification, differentiation between healthy and unhealthy food choices, food-label reading, critical evaluation of food marketing, and informed food decision-making.

2. Adopt a skill-based and experiential learning approach

Move decisively beyond theoretical nutrition knowledge towards participatory and activity-based learning approaches, including school gardens, cooking demonstrations, peer-led learning, quizzes, games and problem-solving exercises that strengthen functional, interactive and critical nutrition literacy.

3. Issue a joint ministerial directive for mandatory nutrition education

The Ministry of Education and the Ministry of Health and Family Welfare may consider issuing a joint directive mandating structured, skill-based nutrition education within

school timetables for Grades 1–12, with a minimum allocation of 45–60 minutes per week. The curriculum (across all school boards) should be aligned with the Dietary Guidelines for Indians 2024 and NEP 2020 and should cover healthy diets, food-label reading, food-systems awareness and critical evaluation of food marketing. Practical activities, such as Sugar, Oil and Salt Boards, should complement classroom instruction.

4. Develop national guidelines and standardized frameworks

Develop clear national standards and operational guidelines for school-based nutrition and food-literacy programmes. These should draw on proven global models, including Japan's Shokuiku and the ASEAN school nutrition standards, while ensuring rigorous contextual adaptation to India's diverse sociocultural and regional food environments.

5. Strengthen teacher capacity and school-based delivery systems

Train and empower teachers, school health personnel, nutritionists and community health workers to deliver engaging, evidence-based nutrition education using interactive pedagogical approaches and culturally relevant learning materials. Sustained investment in educator capacity is essential for maintaining programme quality and implementation fidelity.

6. Promote peer-led and adolescent-centred approaches

Establish peer-educator models, student-led campaigns, nutrition clubs and digital engagement platforms to deepen adolescent participation, cultivate leadership, strengthen communication skills and support sustained behaviour change.

7. Integrate nutrition literacy within existing national programmes

Embed nutrition and food-literacy components within ongoing school health, adolescent health and nutrition initiatives, including PM POSHAN, the School Health and Wellness Programme and Rashtriya Kishor Swasthya Karyakram (RKSK) 2.0, to leverage existing infrastructure and maximize reach.

8. Establish monitoring, assessment and accountability mechanisms

Adopt validated tools such as INFOLIT^{5,12} to periodically assess adolescents' functional, interactive and critical nutrition literacy. Findings should be used systematically to strengthen programme design, improve implementation quality and support evaluation at school, state and national levels.

9. Leverage digital platforms for scalable nutrition literacy

Develop adolescent-friendly digital platforms, targeted social media campaigns and interactive educational content to promote evidence-based nutrition information at scale. Digital channels can complement school-based delivery and provide an opportunity to counter digital food marketing with credible and engaging health messaging.

References

1. Taylor, M., D. Sullivan, E. Ellerbeck, B. Gajewski and H. Gibbs, 'Nutrition Literacy Predicts Adherence to Healthy/Unhealthy Diet Patterns in Adults with a Nutrition-Related Chronic Condition', *Public Health Nutrition*, vol. 22, 2019, pp. 2157–2169.
2. Ghosh-Jerath, S., et al., 'Mapping Ultra-Processed Foods (UPFs) in India: A formative research study', *BMC Public Health*, vol. 24, no. 1, 2024, p. 2212.
3. Doshi, D. H., K. G. Mehta, J. H. Bhatt, P. Chavda and A. Chaudhari, 'Awareness, Interpretation Ability of Nutrition Label, and Consumption Practices about Processed Food Packets among Adolescents: A cross-sectional study from Western India', *Medical Journal Armed Forces India*, vol. 81, no. 5, 2025, pp. 577–583.
4. World Health Organization, *Food Marketing Exposure and Power and Their Associations with Food-Related Attitudes, Beliefs and Behaviours: A narrative review*, World Health Organization, Geneva, 2022.
5. Yadav, S., A. Konapur, T. R. Mokalla and S. M. Gavaravarapu, 'Development and Validation of an Indian Nutrition and Food Literacy Tool (INFOLIT) for Adolescents', *Frontiers in Nutrition*, vol. 12, 13 November 2025, 1626673.
6. Association of Southeast Asian Nations, World Food Programme and United Nations Children's Fund, *Minimum Standards and Guidelines for ASEAN School Nutrition Package*, UNICEF, Jakarta, 2024.
7. Ministry of Human Resource Development, Government of India, *National Education Policy 2020*, Government of India, New Delhi, 2020.
8. World Health Organization, *Nutrition Action in Schools: A review of evidence related to the Nutrition-Friendly Schools Initiative*, World Health Organization, Geneva, 2020.
9. Miyoshi, M., N. Tsuboyama-Kasaoka and N. Nishi, 'School-Based "Shokuiku" Program in Japan: Application to nutrition education in Asian countries', *Asia Pacific Journal of Clinical Nutrition*, vol. 21, 2012, pp. 159–162.
10. Tanaka, N., and M. Miyoshi, 'School Lunch Program for Health Promotion among Children in Japan', *Asia Pacific Journal of Clinical Nutrition*, vol. 21, 2012, pp. 155–158.
11. Government of India, Ministry of Education, Department of School Education and Literacy, *Samagra Shiksha: An integrated scheme for school education – Framework for implementation*, Government of India, New Delhi, 2022, <samagra.education.gov.in/docs/ss_implementation.pdf>, accessed 26 June 2026.
12. Nutbeam, D., 'The Evolving Concept of Health Literacy', *Social Science & Medicine*, vol. 67, no. 12, 2008, pp. 2072–2078.

3. RESTRICTING THE MARKETING OF UNHEALTHY FOODS TO CHILDREN AND ADOLESCENTS IN INDIA

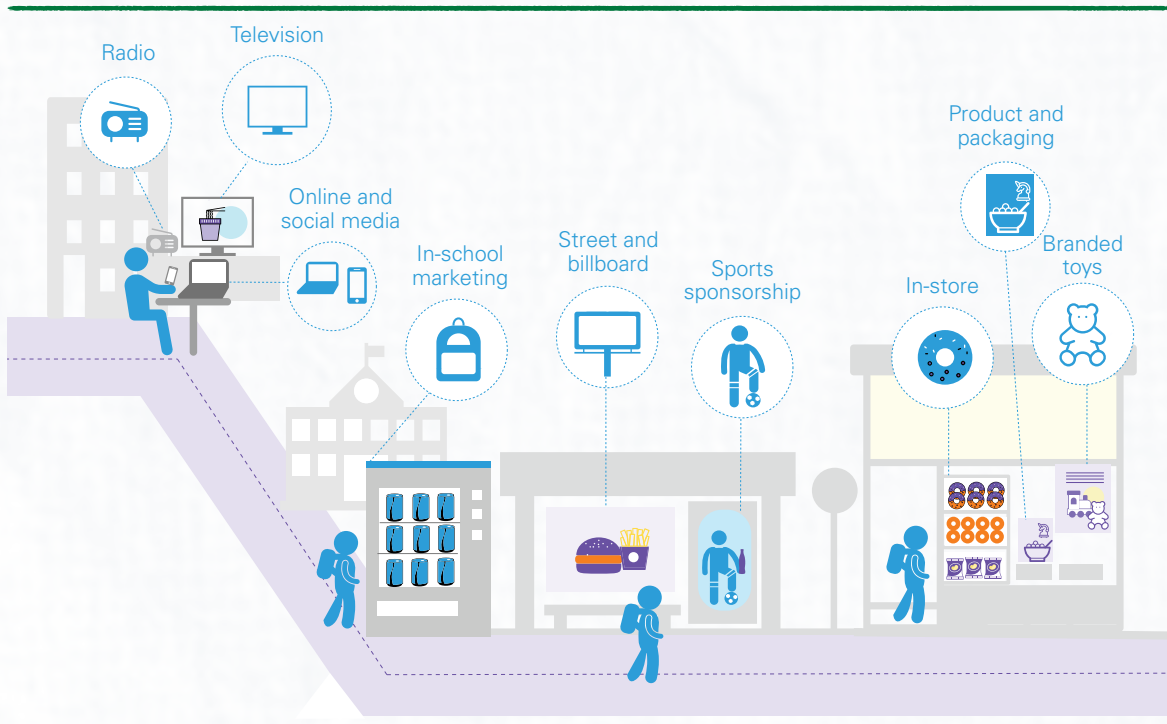
Children in India are widely exposed to HFSS food marketing across television, digital media, sports and school environments. However, fragmented regulations, reliance on self-regulation and the absence of clear statutory definitions of HFSS foods limit effective enforcement of marketing restrictions. Strengthening comprehensive and mandatory child-focused regulations is essential to protect children's health.

The problem

The marketing of unhealthy foods increasingly targets children and adolescents across print, television, digital and other media due to their spending power, purchasing influence and potential as future adult consumers. Marketing of foods high in fat, sugar and salt (HFSS) influences dietary preferences and consumption behaviours, increasing the risk of overweight, obesity, and non-communicable diseases (NCDs).^{2,3} The expansion of digital and mass media has amplified children's exposure to persuasive marketing techniques such as celebrity endorsements, cartoon characters, influencer promotions and sports sponsorships.⁴

Evidence shows that exposure to HFSS food advertising significantly influences children's food intake and food choices.⁵ Children exposed to food advertising on television and through advergames consumed an average of 60 kcal and 53.2 kcal more, respectively, than those exposed to non-food advertising.⁶ Children exposed to cartoon-based food advertisements also consumed 45 per cent more food than those exposed to non-food advertisements.⁷

Figure 1. Pathways through which children and adolescents are exposed to HFSS food marketing



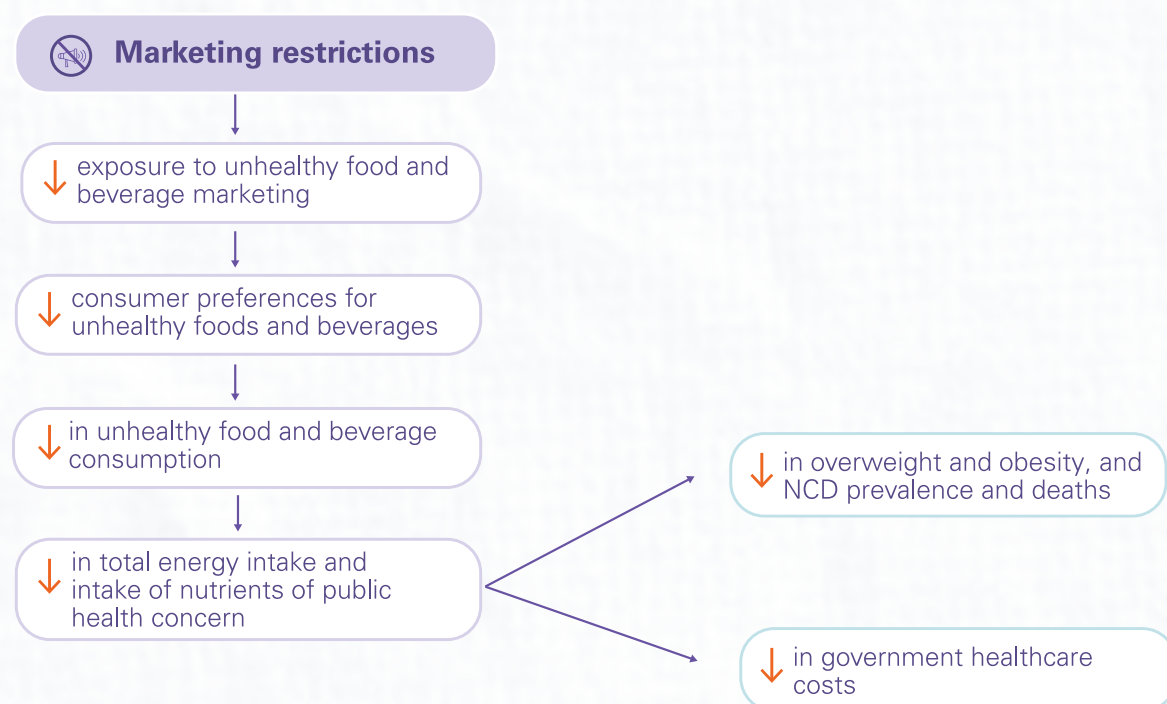
Source : Policy Brief : Marketing of Unhealthy Foods and Non-Alcoholic Beverages to children <https://www.unicef.org/media/116691/file/Marketing%20restrictions.pdf>

In India, approximately 90 per cent of advertisements shown on children and youth television channels were for HFSS foods,⁸ while 92.6 per cent of parents reported the availability of HFSS foods and beverages in and around schools and colleges.⁹ During major cricketing events, more than 80 per cent of advertisements featured unhealthy foods and beverages.¹⁰

Solution

Figure 2 illustrates the pathway through which policies restricting the marketing of unhealthy foods and beverages can reduce consumption of these products and subsequently improve population health outcomes.

Figure 2. How do policies that restrict the marketing of unhealthy foods and beverages work?



Source : Policy Brief : Marketing of Unhealthy Foods and Non-Alcoholic Beverages to children <https://www.unicef.org/media/116691/file/Marketing%20restrictions.pdf>

Chile

- In 2016, Chile banned the use of figures and characters popular among children, children's music, toys and situations representing children's daily lives in food advertising under Chile's Law of Food Labelling and Advertising.
- The law restricted HFSS food advertisements on television between 06:00 and 22:00 hours.
- Child-directed advertising strategies declined significantly following implementation of the law (from 36 per cent in 2015 to 21 per cent in 2017).¹¹
- Consumption of high-sugar beverages declined by 20–30 per cent following implementation of the law.

South Korea

- South Korea prohibited HFSS food advertisements on televisions between 05:00 and 19:00 hours and during children's television programmes.
- The number of unhealthy food advertisement placements declined significantly by 81 per cent between 2009 and 2010.¹²

United Kingdom

- The United Kingdom restricted television advertisements for HFSS foods directed at children aged 4–15 years before 21:00 hours.
- Children’s exposure to HFSS food advertisements declined by 37 per cent in 2007 compared with 2005.¹³

Norway

- In 2026, Norway implemented strict regulations prohibiting the digital marketing of unhealthy foods and beverages to children under 18 years of age.¹⁴

Current regulatory landscape for food advertising in India⁹

S. no.	Policy/guideline	Issuing authority	Applies to digital media	Limitations in regulating unhealthy food advertising to children
Mandatory				
1	Guidelines for Prevention of Misleading Advertisements and Endorsements for Misleading Advertisements, 2022 (Consumer Protection Act, 2019)	Central Consumer Protection Authority	Yes	Regulates misleading advertisements across media platforms. However, it does not restrict the marketing of HFSS foods to children, define unhealthy foods or include specific provisions on digital targeting, gaming or influencer marketing of food products.
2	Advertising Code of the Prasar Bharati (2022) under the Prasar Bharati (Broadcasting Corporation of India) Act, 1990	Ministry of Information and Broadcasting	Limited	Regulates advertising on public broadcasting platforms. However, it does not comprehensively address the marketing of unhealthy foods to children across different media and settings.
3	Information Technology (Intermediary Guidelines and Digital Media Ethics Code) Rules, 2021	Ministry of Electronics and Information Technology	Yes	Regulates online platform accountability and harmful content moderation. However, it does not regulate food marketing practices or targeted advertising of unhealthy foods to children.

S. no.	Policy/guideline	Issuing authority	Applies to digital media	Limitations in regulating unhealthy food advertising to children
4	Food Safety and Standards (Safe Food and Balanced Diets for Children in School) Regulations, 2020	Food Safety and Standards Authority of India	Limited	Prohibits the advertisement and marketing of HFSS foods within school premises and proposes restrictions within a 50-metre radius of school campuses. However, the provisions relating to the 50-metre restriction were exempted from immediate enforcement and have yet to be operationalized through a separate notification. ● Regulation 3(5) assigns responsibility to school authorities to ensure that no person sells or offers for sale foods high in saturated fat, trans-fat, added sugar and sodium within school premises or within 50 metres of the school campus. ● Regulation 5(1) restricts the advertisement and marketing of such foods to schoolchildren within 50 metres of the school campus.
5	Food Safety and Standards (Advertising and Claims) Regulations, 2018	Food Safety and Standards Authority of India	Limited	Regulates misleading nutrition and health claims. However, it does not restrict the marketing of unhealthy foods to children or address digital marketing techniques such as advergames and influencer promotions.

S. no.	Policy/guideline	Issuing authority	Applies to digital media	Limitations in regulating unhealthy food advertising to children
6	Telecom Commercial Communications Customer Preference Regulations, 2018	Telecom Regulatory Authority of India	Limited	Regulates unsolicited commercial communications. However, it does not specifically address the marketing of unhealthy foods to children.
7	Norms of Journalistic Conduct, 2010 under Press Council Act, 1978	Press Council of India	Limited	Regulates ethical journalism and media conduct. However, it does not address HFSS food advertising to children.
8	Infant Milk Substitutes, Feeding Bottles and Infant Foods (Regulation of Production, Supply and Distribution) Act, 1992	Ministry of Women and Child Development	Limited	Regulates the promotion of infant milk substitutes and related products. However, it does not address the marketing of HFSS foods or the broader advertising of unhealthy foods to children.
Self-regulatory				
9	ASCI Code for Self-Regulation in Advertising (Food and Beverage Advertising Guidelines), 2023	Advertising Standards Council of India	Limited	Relies on voluntary self-regulation without legal enforceability. Compliance depends on industry participation and does not adequately address digital advertising ecosystems.
10	Guidelines for Influencers Advertising in Digital Media, 2021	Advertising Standards Council of India	Yes	Requires disclosure of paid promotions. However, it does not restrict influencers from promoting HFSS foods to children or adolescents or establish nutrient-profiling criteria for unhealthy foods.
11	Cable Television Networks Rules, 1994 (amended 2021)	Ministry of Information and Broadcasting	Limited	Regulates broadcast television advertising. However, it does not adequately cover digital platforms, streaming services, social media, or targeted online advertising directed at children.

S. no.	Policy/guideline	Issuing authority	Applies to digital media	Limitations in regulating unhealthy food advertising to children
12	Universal Self-Regulation Code for Online Curated Content Providers, 2020	Internet and Mobile Association of India	Yes	Focuses primarily on content classification and regulation for online curated content platforms. However, it does not specifically regulate unhealthy food advertising or child-directed HFSS food marketing.
13	Indian Broadcasting Foundation Content Code and Certification Rules, 2011	Indian Broadcasting Foundation	Limited	Focuses primarily on broadcasting standards and content regulation. However, it does not specifically address unhealthy food advertising directed at children.
14	Code of Ethics and Broadcasting Standards, 2008	News Broadcasters and Digital Association	Limited	Focuses on media ethics and broadcasting standards. However, it does not include specific provisions restricting HFSS food advertising directed at children.

The absence of a clear regulatory definition of HFSS foods creates regulatory ambiguity, limiting the effective implementation and enforcement of marketing restrictions and other policies aimed at reducing the consumption of unhealthy foods. Evidence from other countries also demonstrates that the marketing restrictions can reduce children's exposure to unhealthy food marketing and contribute to reduced consumption of unhealthy foods.

Policy analysis

1. India currently has 14 policy instruments relating to the regulation of food advertising.
2. Of these, eight are mandatory regulatory instruments requiring formal adoption and implementation, while six operate through voluntary self-regulatory mechanisms.
3. Voluntary, industry-led self-regulatory approaches have demonstrated limited effectiveness, whereas mandatory regulations provide stronger accountability, monitoring and enforcement mechanisms.¹⁵

4. The Food Safety and Standards (Safe Food and Balanced Diets for Children in School) Regulations, 2020 are the only policy instrument that specifically addresses the school food environment and restricts the sale and marketing of HFSS foods within schools. Their strengths include the following:
 - The Regulations recognize children as a vulnerable population requiring protection from exposure to unhealthy foods within educational settings.
 - They adopt a preventive public health approach by addressing not only the direct sale of HFSS foods but also indirect marketing practices such as branding, sponsorships, incentives and promotional activities within schools.
 - They also propose restrictions on the sale and marketing of HFSS foods within a 50-metre radius of school campuses, thereby seeking to create healthier food environments around schools.
 - However, the Regulations also have several limitations:
 - The Regulations remain only partially implemented. The provisions relating to the 50-metre restriction under Regulations 3(5) and 5(1) were exempted from immediate enforcement and have yet to be operationalized through a separate notification.
 - Enforcement mechanisms, monitoring procedures and penalty provisions are not comprehensively defined, which may limit effective implementation.
5. The Guidelines for Prevention of Misleading Advertisements and Endorsements for Misleading Advertisements, 2022 constitute the only cross-media policy instrument in India that indirectly addresses advertisements for HFSS foods targeting children. The Guidelines have several strengths:
 - They are broad in scope and apply across multiple forms, formats and media platforms.
 - They address emerging advertising concerns such as bait advertisements, free-claim advertisements and child-targeted advertisements.
 - They prohibit advertisements for junk foods during programmes or on channels intended exclusively for children.
 - They restrict celebrity endorsements of products that require health warnings cannot legally be purchased by children.
 - They prohibit unsubstantiated health claims and advertisements that encourage practices detrimental to children's physical or mental well-being.
 - Despite these strengths, the Guidelines have important limitations that reduce their effectiveness in restricting children's exposure to HFSS food marketing:
 - They do not provide a clear statutory definition of junk foods or HFSS foods.

- They do not clearly define terms such as “programme” or “channel intended exclusively for children”, creating ambiguity in interpretation.
- They do not clearly define what constitutes advertisements that “address,” “target” or “use” children.
- They provide limited clarity on the scope of “brand extension” and “indirect advertisement”, potentially allowing surrogate or embedded marketing practices to circumvent the Guidelines.
- They do not comprehensively address digital marketing techniques such as influencer promotions, advergames, algorithm-driven targeting and immersive advertising directed at children.

Policy recommendations

1. Adopt a standardized regulatory definition of HFSS foods

An evidence-based and consistent regulatory definition of HFSS foods is needed to ensure clarity, uniformity and consistency in the identification of HFSS foods, implementation, monitoring and enforcement of regulations relating to unhealthy foods, including restrictions on their marketing.

2. Notify and operationalize the pending provisions of the Food Safety and Standards Authority of India (FSSAI) school regulations

The Government should immediately notify and operationalize the pending provisions of the Food Safety and Standards (Safe Food and Balanced Diets for Children in School) Regulations, 2020, particularly Regulation 3(5), which assigns responsibilities to school authorities for preventing the sale of HFSS foods on school premises, and Regulation 5(1), which prohibits the advertisement, marketing and sale of HFSS foods within schools and within a 50-metre radius of school gates.

3. Strengthen the Guidelines for Prevention of Misleading Advertisements and Endorsements for Misleading Advertisements, 2022

India should strengthen and expand the Guidelines for Prevention of Misleading Advertisements and Endorsements for Misleading Advertisements, 2022 by developing a comprehensive, legally binding framework to regulate the marketing of HFSS foods to children across all media platforms. The framework should prohibit child-targeted marketing techniques, including cartoon characters, celebrity endorsements, influencer promotions, advergames, reward-based advertising, branded educational materials, immersive digital marketing and algorithm-driven personalized advertising.

4. Replace voluntary self-regulation with mandatory regulatory measures

Mandatory regulations should replace voluntary and other self-regulatory mechanisms. Digital platforms, social media intermediaries, content creators, gaming companies and food delivery platforms should share legal responsibility for monitoring and restricting HFSS food advertising directed at children and adolescents.

5. Strengthen monitoring, grievance redressal and enforcement mechanisms

Clear monitoring, grievance redressal and penalty mechanisms should be established across regulatory authorities to strengthen enforcement of restrictions on unhealthy food advertising and address cross-platform violations. These mechanisms could include independent surveillance systems and periodic audits.

6. Strengthen intersectoral coordination

Coordination among the FSSAI, the Central Consumer Protection Authority, the Ministry of Information and Broadcasting, the Ministry of Electronics and Information Technology and other relevant authorities should be strengthened to create a harmonized regulatory framework for the marketing of HFSS foods to children.

References

1. Story, M., and S. French, 'Food Advertising and Marketing Directed at Children and Adolescents in the US', *International Journal of Behavioral Nutrition and Physical Activity*, vol. 1, 2004, p. 3.
2. Smith, R., B. Kelly, H. Yeatman and E. Boyland, 'Food Marketing Influences Children's Attitudes, Preferences and Consumption: A systematic critical review', *Nutrients*, vol. 11, no. 4, 2019.
3. Boyland, E., et al., 'Association of Food and Nonalcoholic Beverage Marketing with Children and Adolescents' Eating Behaviors and Health: A systematic review and meta-analysis', *JAMA Pediatrics*, vol. 176, no. 7, 2022.
4. Sivathanu, Brijesh, 'Food Marketing and Its Impact on Adolescents' Food Choices', *Indian Journal of Marketing*, vol. 47, no. 8, 2017, pp. 46–60.
5. Rawal, T., et al., 'What Influences Food Choices of Adolescents in India and How Their Food Environment Can Be Improved?', *BMC Nutrition*, vol. 11, 2025, p. 225.
6. Russell, S. J., H. Croker and R. M. Viner, 'The Effect of Screen Advertising on Children's Dietary Intake: A systematic review and meta-analysis', *Obesity Reviews*, vol. 20, no. 4, 2019, pp. 554–568.

7. Harris, J. L., J. A. Bargh and K. D. Brownell, 'Priming Effects of Television Food Advertising on Eating Behavior', *Health Psychology*, vol. 28, no. 4, July 2009, pp. 404–413.
8. Bassi, S., et al., 'Content Analysis of Food Advertisements on Popular Indian Television Channels among Children and Youth: A cross-sectional study', *Journal of Global Health Reports*, vol. 5, 2021, e2021089.
9. Bassi, S., et al., 'Food Environment in and around Schools and Colleges of Delhi and National Capital Region (NCR) in India', *BMC Public Health*, vol. 21, 2021, p. 1767.
10. Singh, P. K., et al., 'Cricket, Commerce, and Public Health: Promotion of tobacco, alcohol, and high in fat, sugar, and salt products', *Frontiers in Digital Health*, vol. 7, 2025, 1503680.
11. Mediano Stoltze, F., et al., 'Prevalence of Child-Directed Marketing on Breakfast Cereal Packages before and after Chile's Food Marketing Law: A pre- and post-quantitative content analysis', *International Journal of Environmental Research and Public Health*, vol. 16, no. 22, 2019, 4501.
12. Kim, S., et al., 'Restriction of Television Food Advertising in South Korea: Impact on advertising of food companies', *Health Promotion International*, vol. 28, no. 1, 2013, pp. 17–25.
13. World Health Organization, 'Protecting Children from the Harmful Effects of Food and Drink Marketing', WHO, Geneva, 2014, <www.who.int/news-room/feature-stories/detail/protecting-children-from-the-harmful-effects-of-food-and-drink-marketing>, accessed 20 June 2026.
14. World Health Organization Regional Office for Europe, 'Norway's New Legislation Shields Children from Marketing of Unhealthy Foods', WHO Regional Office for Europe, Copenhagen, 23 March 2026, <www.who.int/europe/news/item/23-03-2026-norway-s-new-law-shields-children-from-marketing-of-unhealthy-foods>, accessed 18 May 2026.
15. United Nations Children's Fund, 'Marketing of Unhealthy Foods and Non-Alcoholic Beverages to Children', Policy brief, UNICEF, New York, 2022.

4. STRENGTHENING AWARENESS THROUGH FRONT-OF-PACK NUTRITION LABELLING

Introduction

The food retail environment offers an unprecedented selection of foods high in fat, sugar and salt (HFSS) that may contribute to the excessive consumption of unhealthy diets. HFSS foods are a major risk factor for overweight, obesity and non-communicable diseases (NCDs). According to the World Health Organization (WHO), non-communicable diseases (NCDs) caused at least 43 million deaths in 2021, accounting for 75 per cent of all non-pandemic-related deaths globally. Cardiovascular diseases accounted for at least 19 million deaths, followed by cancers (10 million), chronic respiratory diseases (4 million) and diabetes (more than 2 million).¹

The prevalence of overweight and obesity is increasing rapidly in India. According to the National Family Health Survey (NFHS-6, 2023–24), 23.5 per cent of adults aged 15–49 years are overweight or obese. Compared with NFHS-5, the prevalence increased from 22.9 per cent to 27.3 per cent among men and from 24.0 per cent to 30.7 per cent among women, highlighting the growing burden of unhealthy diets and obesity in the country.²

The Indian market for ultra-processed foods (UPFs) has expanded rapidly over the past two decades. Retail sales of UPFs increased from US\$0.9 billion in 2006 to US\$37.9 billion in 2019, representing an average annual growth rate of 33.1 per cent.¹ Consumer demand has continued to accelerate, with UPF sales increasing by approximately 150 per cent between 2009 and 2023, highlighting the growing penetration of these products into Indian diets.³ Furthermore, beverages and processed foods accounted for 9.84 per cent of total monthly household consumption expenditure in India, reflecting their increasing contribution to household food expenditure.³

Multisectoral engagement is essential to promote healthy diets and reduce the growing burden of NCDs. The United Nations Children’s Fund (UNICEF) suggests that awareness

and information is one of the key strategy and recommends implementing mandatory interpretive front-of-pack nutrition labelling (FoPNL) as part of a comprehensive package of policies to promote healthy diets and prevent overweight, obesity and diet-related NCDs. FoPNL provides consumers with simple, clear and easily interpretable nutrition information at the point of purchase, enabling healthier and more informed food choices. It also encourages product reformulation and contributes to healthier food environments.⁴

Types of FoPNL

FoPNL systems provide simplified nutrition information on the front of food packages to help consumers make healthier food choices. Based on the information presented, FoPNL systems can be broadly classified into nutrient-specific systems and summary indicator systems.

Nutrient-specific systems

Nutrient-specific labels provide information on one or more nutrients of concern.

- **Interpretive FoPNL:** These labels provide nutrient information together with an interpretation or recommendation regarding the nutritional quality of a product. Examples include warning labels, traffic light labels, and ‘high in’ nutrient warning symbols.
- **Non-interpretive FoPNL:** These labels present factual nutrition information without interpretation or judgement. Examples include Guideline Daily Amount (GDA) and Reference Intake labels.

Summary indicator systems

Summary indicator systems combine information from multiple nutrients into a single overall score or symbol that reflects the nutritional quality of a product. Examples include the Health Star Rating (HSR) and Nutri Score systems (see Table 1).

Evidence consistently demonstrates that interpretive FoPNL systems are more effective than non-interpretive labels in improving consumers’ understanding, enabling healthier food choices, and encouraging product reformulation. Accordingly, WHO recommends mandatory interpretive FoPNL as part of a comprehensive package of policies to promote healthy diets and prevent overweight, obesity and diet-related NCDs. Numerous countries have now implemented mandatory or government-endorsed FoPNL systems, with warning labels emerging as the predominant regulatory approach globally (see Table 2).

Table 1. Major types of FoPNL adopted globally

Type	Significance	Adopted by	Components
Traffic light 	May provide conflicting information because a product can simultaneously receive both red and green indicators.	United Kingdom (2006); Ecuador (2014); Iran (2017); Sri Lanka (2016 for beverages and 2019 for foods).	Traffic light-style colour coding for salt, sugar, fat and saturated fat: green for low, amber for medium and red for high levels.
Summary indicators 	Presents summary information on nutrients of concern. Multiple numerical values may make the label difficult for consumers to interpret. This format is generally preferred by the food industry.	New Zealand and Australia adopted the Health Star Rating (2014); France (2017) and Belgium (2020) adopted Nutri Score.	Overall nutritional rating. These systems include: (i) Health Star Rating (0.5–5 stars); and (ii) Nutri Score (A–E).
Reference intake or guideline daily amount 	Presents summary information on nutrients of concern. Multiple numerical values may make the label difficult for consumers to interpret. This format is generally preferred by the food industry.	Malaysia and Thailand. Also adopted voluntarily by industry bodies in several countries.	Information on energy and nutrient content, together with the percentages of the daily reference intake per serving.
Warning label 	Simple to understand and considered the most advanced interpretive labelling approach.	Chile (2016); Peru (2019); Mexico, Israel and Uruguay (2020); Brazil and Colombia (2022); Canada (to be implemented).	Nutrient-specific warnings conveyed through symbols, colours, shapes and graphics.

Source: Cover Story, Devil in the Details, Down To Earth, 16–30 September 2021.

Table 2. FoPNL systems implemented globally

Type of FoPNL	Countries
Guideline Daily Amount	Thailand (2007); Mexico (2014)
Traffic Light Labelling	Ecuador (2013); Iran (2015); Sri Lanka (2016); United Kingdom (2013)
Health Star Rating	Australia (2014); New Zealand (2014)
Nutri Score	Belgium (2019); France (2017); Germany (2020); Luxembourg (2021); Netherlands (2024); Singapore (2022); Spain (2021)
Warning Label	Argentina (2022); Brazil (2022); Canada (2022); Chile (2016); Colombia (2021); Israel (2020); Mexico (2020); Peru (2019); Uruguay (2021); Venezuela (2020)
Key Hole Logo	Denmark (2009); Iceland (2013); Lithuania (2014); Norway (2009); Sweden (2009)
Healthier Choice Logo	Brunei (2017); Malaysia (2017); Singapore (1998); Thailand (2016)
Slovenian Heart Foundation Logo	Slovenia (1993)
Finnish Heart Foundation Heart Symbol	Finland (2000)
Nigerian Heart Foundation Heart Check	Nigeria (2005)
Choices Logo	Belgium (2007); Czech Republic (2011); Netherlands (2016); Poland (2008)
Danish Whole Grain Logo	Denmark (2009)
Colour-coded FoPNL	South Korea (2011)
Energy Value in Cylinder Format	Philippines (2012)
Nutrition Seal ('Sello Nutritional)_)	Mexico (2014)
Weqaya Logo / Healthy Living Logo	United Arab Emirates (2015); Croatia (2015)

Global evidence on the impact of FoPNL

A growing body of evidence demonstrates that interpretive FoPNL improves consumers' understanding of nutrition information, facilitates healthier food choices, and encourages product reformulation.

The WHO Nutrition Labelling: Policy Brief identifies nutrition labelling as an effective policy measure for promoting healthier diets and reducing obesity. It recommends mandatory nutrition declarations, interpretive FoPNL and the regulation of nutrition and health claims to help consumers make healthier food choices.⁵

A systematic review and meta-analysis of 14 experimental and real-world studies found that “high in” warning labels significantly reduced the sugar (−0.67 g/100 g), energy (−4.43 kcal/100 g) and sodium (−33.8 mg/100 g) content of purchased products compared with no label, while traffic light labels reduced sodium content by 34.9 mg/100 g. In contrast, Health Star Rating (HSR), Nutri Score, and Guideline Daily Amount (GDA) labels showed little or no significant effect on purchasing behaviour.⁶

Evidence from Chile, Mexico, Peru, Uruguay, Brazil, Colombia and Canada demonstrates that mandatory warning labels improve consumers' ability to identify unhealthy products, reduce purchases of HFSS foods, and encourage manufacturers to reformulate products to avoid exceeding warning-label thresholds.^{7–9}

FoPNL in India

In India, FoPNL was recommended by an expert committee constituted by the Food Safety and Standards Authority of India (FSSAI). A study commissioned by FSSAI and conducted by The Nutrition Alchemy (TNA) assessed 1,306 packaged food and beverage products across approximately 36 categories from 30 food and beverage companies. The analysis found that 95.6 per cent of products exceeded at least one WHO South-East Asia Region Nutrient Profile Model threshold, while approximately 62.5 per cent exceeded thresholds for three or more nutrients, highlighting the widespread availability of HFSS foods in India's packaged food supply.¹⁰

A randomized field experiment involving 2,869 Indian adults found that all FoPNL formats improved consumers' ability to identify unhealthy packaged foods compared with no label. Warning labels were the most effective, with 60.8 per cent of participants correctly identifying unhealthy products, compared with 54.8 per cent for traffic light labels, 55.0 per cent for GDA labels, 45.0 per cent for HSR, and 39.1 per cent in the control group. These findings support warning labels as the preferred FoPNL format for India.¹¹

A study conducted by the Indian Council of Medical Research – National Institute of Nutrition (ICMR–NIN) across five regions of India evaluated consumer responses to five FoPNL formats among 3,231 participants aged 10–60 years in New Delhi, Jorhat (Assam),

Kolkata, Pune and Hyderabad. Although Nutri Score (NS) was the most liked and preferred format, warning labels (WL) and multiple traffic lights were considered the most reliable. The study found that while summary indicator systems such as NS and HSR were most effective in helping consumers choose healthier products within a category, warning labels (WL and NS) were considerably more effective in discouraging the purchase of moderately unhealthy foods, as the presence of even a single warning label prompted more cautious purchasing behaviour.¹²

At a stakeholders' meeting held on 15 February 2022, the FSSAI announced its intention to introduce a voluntary HSR-based FoPNL system for packaged foods. This decision was informed by findings from a nationally representative randomized controlled study involving 20,564 participants, commissioned by FSSAI and conducted by the Indian Institute of Management Ahmedabad (IIM-A). The study compared six FoPNL formats and concluded that HSR was the most preferred and easily understood format among Indian consumers. Based on these findings, the Scientific Panel on Labelling and Claims/Advertisements recommended the introduction of the Indian Nutrition Rating (INR), based on the HSR model, which was approved at the FSSAI meeting held on 13 July 2022. Subsequently, in September 2022, FSSAI published the Draft Food Safety and Standards (Labelling and Display) Amendment Regulations, 2022, proposing a voluntary INR star rating system for packaged foods.¹³ As of 2026, these draft regulations have not been finalized.

The Supreme Court of India has emphasized the urgent need to strengthen FoPNL, directing FSSAI to expedite its recommendations in 2025 and subsequently asking the regulator in 2026 to consider introducing clear warning labels for foods high in sugar, salt, and saturated fat.¹⁴

Industry engagement

FoPNL enables consumers to quickly assess the nutritional quality of packaged foods, supporting healthier purchasing decisions while encouraging manufacturers to reformulate products to improve their nutritional profile. Its implementation also has implications for the food-service sector, including hotels, restaurants and quick-service restaurants (QSRs), by influencing ingredient sourcing, quality assurance and regulatory compliance.

Successful implementation of FoPNL requires meaningful engagement with government, industry, academia and civil society. Industry stakeholders often express concerns about implementation costs, the potential impact on sales of HFSS products, and implications for business competitiveness and employment. Policymakers should therefore ensure transparent stakeholder consultations, provide clear implementation guidance and strengthen the evidence base to address concerns related to feasibility, effectiveness and economic impact.

Additional implementation challenges include developing an appropriate nutrient-profiling model, establishing scientifically robust thresholds for classifying HFSS foods, selecting an effective labelling format and ensuring adequate regulatory capacity, transparency, monitoring, and financial and human resources for enforcement. Addressing these challenges will be critical to the successful implementation and long-term effectiveness of FoPNL.

Recommendations

1. Implement mandatory FoPNL for all pre-packaged foods

Mandatory FoPNL should be introduced for all pre-packaged foods to enable consumers to make informed food choices and strengthen public health protection. Voluntary labelling is unlikely to achieve adequate population-level impact.

2. Adopt interpretive warning labels as the preferred FoPNL system

International experience indicates that warning labels are the most effective FoPNL format for improving consumers' understanding and enabling the rapid identification of HFSS foods. India should adopt a simple interpretive warning-label system that is consistent with global best practices.

3. Establish a mandatory regulatory framework for FoPNL

A clear, mandatory regulatory framework should define the scope, implementation timeline, monitoring mechanisms and enforcement provisions for FoPNL, while ensuring transparency and minimizing conflicts of interest throughout policy development and implementation.

4. Adopt the ICMR–NIN HFSS cut-offs as the regulatory basis for FoPNL

The HFSS cut-offs specified in the ICMR–NIN Dietary Guidelines for Indians (2024) should be adopted as the scientific basis for classifying HFSS foods. Using nationally endorsed thresholds would ensure consistency across FoPNL, taxation, food marketing regulations and other nutrition policies, while providing clear criteria for identifying unhealthy packaged foods.

References

1. World Health Organization Country Office for India, *The Growth of Ultra-Processed Foods in India: An analysis of trends, issues and policy recommendations*, WHO Country Office for India, New Delhi, 2023.
2. International Institute for Population Sciences, *National Family Health Survey (NFHS-6), 2023–24: India fact sheet*, IIPS, Mumbai, 2026, <nfhssiips.in/nfhsuser/nfhs6.php>, accessed 25 June 2026.
3. Ministry of Statistics and Programme Implementation, *Household Consumption Expenditure Survey (HCES) 2023–24 fact sheet*, Government of India, New Delhi, 2025.
4. United Nations Children’s Fund, *Front-of-Pack Nutrition Labelling of Foods and Beverages*, UNICEF, New York, 2021, <unicef.org/media/116686/file/Front-of-Pack%20Nutrition%20Labelling>, accessed 26 June 2026.
5. World Health Organization, ‘Nutrition Labelling’, Policy brief, World Health Organization, Geneva, 2022.
6. Croker, H., J. Packer, S. J. Russell, C. Stansfield and R. M. Viner, ‘Front of Pack Nutritional Labelling Schemes: A systematic review and meta-analysis of recent evidence relating to objectively measured consumption and purchasing’, *Journal of Human Nutrition and Dietetics*, vol. 33, no. 4, 2020, pp. 518–537.
7. Pan American Health Organization, *Front-of-Package Warning Labeling: Evidence and country experiences*, Pan American Health Organization, Washington, D.C., 2024.
8. World Cancer Research Fund International, *Building Momentum: Lessons on implementing robust front-of-pack food labels*, World Cancer Research Fund International, London, 2024.
9. Global Food Research Program, *Front-of-Pack Labeling around the World*, University of North Carolina, Chapel Hill, N.C., 2025.
10. Pandav, C., L. S. Taillie, D. R. Miles, B. A. Hollingsworth and B. M. Popkin, ‘The WHO South-East Asia Region Nutrient Profile Model Is Quite Appropriate for India: An exploration of 31,516 food products’, *Nutrients*, vol. 13, no. 8, 2021, p. 2799.
11. Singh, S. K., et al., ‘Front-of-Package Labels on Unhealthy Packaged Foods in India: Evidence from a randomized field experiment’, *Nutrients*, vol. 14, no. 15, 2022, p. 3128.

12. Gavaravarapu, S. M., et al., 'Report on Assessing Effectiveness of Front-of-Pack Nutrition Labels (FoPNL) for Pre-Packaged Processed Foods in India – A study on formats, acceptability and potential use', ICMR-National Institute of Nutrition, Hyderabad, 2023, <nin.res.in/survey_reports/fopnl_report.pdf>, accessed 27 June 2026.
13. Food Safety and Standards Authority of India, 'Draft Food Safety and Standards (Labelling and Display) Amendment Regulations, 2022' (Notification No. 44272/2022/REGULATION/FSSAI) [Internet], FSSAI, New Delhi, 2022, <fssai.gov.in/upload/uploadfiles/files/Draft_Notification_HFSS_20_09_2022.pdf>, accessed 26 June 2026.
14. 3S and Our Health Society v. Union of India and Another, Writ Petition (Civil) No. 645 of 2022, Supreme Court of India, New Delhi, 9 April 2025.

5. HEALTH TAXES IN INDIA: WHY, WHAT AND HOW?

Why health taxes?

The rising burden of unhealthy diets

India is undergoing a rapid nutrition transition. Between 2006 and 2019, the market for ultra-processed foods (UPFs) increased from US\$0.9 billion to US\$38 billion – an almost 40-fold increase – driven by expanding digital retail, aggressive marketing and shifting consumer preferences.¹

Processed foods contribute an estimated 10–30 per cent of the total caloric intake among Indians,² while the UPF sector recorded a compound annual growth rate (CAGR) of 13.4 per cent in retail sales value between 2011 and 2021.¹ In India 9.84 per cent of household income is spent on beverages and processed foods.³

Unhealthy diets are a primary driver of non-communicable diseases (NCDs), including hypertension, diabetes, obesity, chronic kidney disease and stroke, which impose substantial health, human capital and economic costs on individuals, families and the state.⁵

The case for fiscal policy

Governments have both the rationale and the tools to intervene. Consumption of foods high in fat, sugar and salt (HFSS) generates externalities – costs collectively borne by society through healthcare spending – as well as internalities – whereby individuals' choices may undermine their own long-term health. Taxation of unhealthy foods, alongside subsidies for healthier alternatives, is a well established policy mechanism for addressing both.

India is undergoing a rapid nutrition transition. Between 2006 and 2019, the market for ultra-processed foods (UPFs) increased from US\$0.9 billion to US\$38 billion – an almost 40-fold increase – driven by expanding digital retail, aggressive marketing and shifting consumer preferences.



India's Economic Survey 2025–26⁶ and the World Health Organization (WHO)¹ both recognize the urgent need to address the rising consumption of HFSS foods and promote healthier diets, alongside complementary measures such as restrictions on the marketing of unhealthy foods to children and front-of-pack nutrition labelling (FoPNL).

What does the evidence show?

The modelling study: Key findings

A modelling study published in PLOS Medicine (January 2026) by Roche, Zhu, Olney et al. provides the most comprehensive and up-to-date evidence on the health and economic impacts of taxing foods high in fat, sugar and salt (HFSS) in India.⁴ Drawing on data from the nationally representative Household Consumption Expenditure Survey (HCES) 2022–2023 (261,746 households),³ the study modelled two taxation scenarios – 28 per cent goods and services tax (GST) (highest tax rate previously) and 40 per cent GST (highest tax rate in the latest GST structure) – using the Health-GPS microsimulation model over a 30-year period (2024–2053).

40 per cent GST on HFSS foods

Apply a 40 per cent GST rate – the highest rate in the current GST structure – to all HFSS foods and beverages, as defined by the Food Safety and Standards Authority of India's (FSSAI) draft HFSS definition.⁷

Result: India could reduce the incidence of diet-related diseases by 1.72 per cent, avert roughly 0.63 million disability-adjusted life years (DALYs) annually, save around US\$601 million in healthcare expenditure each year and generate cumulative health-system savings of nearly US\$18 billion over 30 years.

How might HFSS taxation work in India?

Health impacts

Health impacts

Sodium and BMI reduction



Under a **40 per cent** GST scenario, average daily sodium intake falls by 45.8 mg per person (1.6 per cent below baseline).



BMI decreases by **0.17 kg/m²** across the population after 30 years of policy implementation (2053).



High-income populations experience the largest absolute reductions, reflecting higher baseline HFSS consumption.

Disease reduction
(40 per cent GST over 30 years)

- Approximately **9.2 million** fewer cases of five major diseases*
- Approximately **11.9 million** fewer cases of hypertension nationwide
- Nearly **19 million** DALYs averted from five major diseases*

Economic impacts



Total health expenditure savings: **US\$18.0 billion** over 30 years



Annual savings equivalent to ~0.6% of India's total health spending or about **US\$0.44 per capita**



Government revenue from food and beverages increases by **92%** under 40% GST with immediate effect



Household food spending rises by only **~1%** on average (0.9% for low-income households and 1.3% for high-income households)

*Includes ischaemic heart disease, chronic kidney disease, stroke, diabetes and asthma.

	Immediate effect of implementation		Result for five key diseases* over 2024–2053		
Income group	Change in household expenditure on food and beverage	Change in GST revenue from food and beverage	Cumulative reduction in incidence (per 100,000 population)	Reduction in DALYs per 100,000 population	Reduction in total health expenditure (US\$ billion)
Low income	+0.9%	+92%	377	795	18
Middle income	+1.0%		603	1,405	
High income	+1.3%		915	2,059	

***Note:** Includes ischaemic heart disease, chronic kidney disease, stroke, diabetes and asthma.

International precedents

- **Hungary:** Taxation of foods and beverages high in sugar, salt and caffeine led 59 per cent of consumers to reduce or change consumption of taxed products, demonstrating positive changes in purchasing behaviour.⁸
- **Mexico:** Taxation of unhealthy foods and sugar-sweetened beverages reduced purchases of taxed foods by 5–6 per cent and purchases of taxed beverages by 6 per cent during the first year, with the greatest reductions observed among lower-income households.⁹
- **United Kingdom:** Taxation of sugar-sweetened beverages contributed to a 44 per cent reduction in the amount of sugar sold through soft drinks between 2015 and 2019, encouraging product reformulation and supporting healthier consumer choices.¹⁰
- **South Africa:** Taxation of sugar-sweetened beverages reduced purchases of taxed beverages and significantly decreased the amount of sugar purchased from beverages.¹¹
- **Colombia:** Taxation of UPFs and sugar-sweetened beverages led to a 4.3 per cent reduction in the consumption of UPFs and a 2.9 per cent reduction in the consumption of sugar-sweetened beverages within one year, while also generating substantial public revenue.¹²

National taxation of HFSS foods

- **India (September 2025):** The GST Council increased the GST rate on sugar-sweetened and carbonated beverages to 40 per cent, placing them in the highest GST slab applicable to “sin goods”. The revised rate applies to aerated waters and beverages containing added sugar, sweeteners or flavouring. The measure was introduced as part of broader GST reforms to discourage unhealthy consumption patterns and address the growing burden of diet-related NCDs in India.⁹
- **Kerala (2016–17):** A 14.5 per cent state-level fat tax was associated with reduced fast-food sales.

How should India act?

The GST architecture: An opportunity ready to use

India's GST framework, introduced in 2017, already differentiates food products by tax rate. Most HFSS foods are currently taxed at 12 per cent or 18 per cent – well below the “sin goods” rate of 40 per cent applied to aerated beverages and tobacco products. The September 2025 GST restructuring reduced the number of tax slabs and formalized the 40 per cent rate for sin goods, covering only aerated and caffeinated beverages and selected tobacco products. Extending this rate to all HFSS foods represents a logical next step with potentially significant public health benefits.

Policy recommendations



Formalize and finalize a regulatory HFSS definition

The absence of a finalized HFSS regulatory definition remains a key implementation gap. Policymakers should urgently consider adopting a clear, legally enforceable and science-backed definition of HFSS foods to enable consistent application across taxation, labelling, advertising and school food policies.



Extend the 40 per cent GST rate to all HFSS foods using a consistent HFSS definition

Align GST rates on HFSS foods with the existing “sin goods” rate of 40 per cent. Adopt an operational HFSS classification framework to identify unhealthy foods that contribute to disease burden. The evidence shows that this single measure could prevent approximately 9.23 million disease cases over 30 years and save an estimated US\$18 billion in healthcare expenditure.



Earmark a portion of HFSS tax revenue for nutrition programmes

A 92 per cent increase in food and beverage tax revenue under the 40 per cent scenario could create substantial new fiscal space. A portion of this revenue should be earmarked for adolescent nutrition programmes, healthy school food-environment initiatives and community-level nutrition interventions, thereby aligning fiscal policy with nutrition programme strategies.



Implement mandatory front-of-pack nutrition labelling (FoPNL)

Health taxes are most effective when consumers can easily identify HFSS foods. Implementing mandatory FoPNL, as proposed by the FSSAI, would complement the price signal created by health taxes by enabling consumers to identify less healthy products quickly and make healthier, more informed food choices.



Strengthen restrictions on the marketing of HFSS foods to children and adolescents

Taxation of HFSS foods should be complemented by comprehensive restrictions on the marketing and advertising of HFSS foods to children and adolescents. Together, these measures reduce both the affordability and the appeal of unhealthy foods, helping to discourage unhealthy consumption patterns and promote healthier dietary behaviours from an early age.



Consider zero-rating GST on fruits, vegetables and pulses

Removing GST entirely on fruits, vegetables and pulses (effectively creating a subsidy) could complement HFSS taxation by encouraging healthier substitutions. Although this would reduce tax revenue, it could improve dietary equity and support India's most nutritionally vulnerable populations.

References

1. World Health Organization Country Office for India, *The Growth of Ultra-Processed Foods in India: An analysis of trends, issues and policy recommendations*, WHO Country Office for India, New Delhi, August 2023.
2. Sharma M, A. Kishore, D. Roy, K. Joshi, 'A Comparison of the Indian Diet with the EAT-Lancet Reference Diet', *BMC Public Health*, vol. 20, no. 1, 29 May 2020, p. 812.
3. Ministry of Statistics and Programme Implementation, Government of India, *Household Consumption Expenditure Survey: 2023–24 fact sheet* [Internet], Ministry of Statistics and Programme Implementation, New Delhi, 2026, <www.mospi.gov.in/sites/default/files/publication_reports/HCES%20FactSheet%202023-24.pdf>, accessed 5 May 2026.
4. Roche, M., et al., 'Taxation of Foods High in Fat, Sugar, and Sodium in India: A modelling study of health and economic impacts', *PLOS Medicine*, vol. 23, no. 1, 1 January 2026, e1004572.
5. Monteiro, C. A., et al., 'Ultra-Processed Foods and Human Health: The main thesis and the evidence', *Lancet*, vol. 406, no. 10520, 6 December 2025, pp. 2667–2684.
6. Government of India, Ministry of Finance, *Department of Economic Affairs, Economic Survey 2025–26*, Government of India, New Delhi, February 2026.
7. Food Safety and Standards Authority of India, 'Labelling & Display Amendment Draft Regulations, 2022' (44272/2022/REGULATION-FSSAI) [Internet], FSSAI, New Delhi, 2022, <fssai.gov.in/upload/uploadfiles/files/Draft_Notification_HFSS_20_09_2022.pdf>, accessed 25 June 2023.
8. World Health Organization Regional Office for Europe, *Assessment of the Public Health Product Tax*, WHO Regional Office for Europe, Copenhagen, 2015.
9. Colchero, M. A., J. Rivera-Dommarco, B. M. Popkin and S. W. Ng, 'Association between Tax on Sugar-Sweetened Beverages and Soft Drink Consumption in Adults in Mexico', *BMJ*, vol. 369, 2020, m1311.
10. Bandy, L. K., et al., 'Reductions in Sugar Sales from Soft Drinks after Implementation of the Soft Drinks Industry Levy', *PLOS Medicine*, vol. 17, 2020, e1003025.
11. Stacey, N., et al., 'Changes in Beverage Purchases Following the Implementation of South Africa's Health Promotion Levy', *Lancet Planetary Health*, vol. 5, 2021, pp. e200–e208.
12. Global Health Advocacy Incubator, 'Colombia's Health Taxes Are Working', Global Health Advocacy Incubator, 2026, <<https://www.advocacyincubator.org/news/2026-02-26-colombias-health-taxes-are-working>>, accessed 26 June 2026.
13. Press Information Bureau, Government of India, 'Recommendations of the 56th Meeting of the GST Council Held at New Delhi', Press release, PIB, New Delhi, 2026, <www.pib.gov.in/PressReleasePage.aspx?PRID=2163555®=3&lang=2>, accessed 24 May 2026.

6. HEALTHIER OILS FOR A HEALTHIER INDIA: RESHAPING DIETARY FATS TO PREVENT NON-COMMUNICABLE DISEASES

Dietary fats are essential nutrients that perform critical biological functions, including the absorption of fat-soluble vitamins, hormone regulation and central nervous system function. However, as diets shift in response to rapid urbanization, changing lifestyles and increased consumption of processed and out-of-home foods, the role of fats and oils has become increasingly important to public health.¹

Once viewed primarily as a concentrated source of energy, dietary fats are now recognized as key determinants of health outcomes, with the potential to both protect against and contribute to the rise of non-communicable diseases (NCDs).² In India, this transition is unfolding within a rapidly changing food system, where the types, sources and uses of fats are undergoing significant transformation.³

India's challenge: A double burden of quantity and quality

India is experiencing a rapid rise in diet-related non-communicable diseases (NCDs), including hypertension, obesity, dyslipidaemia and diabetes. National data from the Indian Council of Medical Research–India Diabetes (ICMR-INDIAB) study⁴ highlight dietary patterns characterized by:

- high intake of low-quality carbohydrates;
- increasing consumption of saturated and industrially produced trans fats; and
- edible oil consumption that is nearly double the recommended level.

Once viewed primarily as a concentrated source of energy, dietary fats are now recognized as key determinants of health outcomes, with the potential to both protect against and contribute to the rise of non-communicable diseases (NCDs). In India, this transition is unfolding within a rapidly changing food system, where the types, sources and uses of fats are undergoing significant transformation.



These risks are not driven solely by individual dietary choices. They are also shaped by the ways in which edible oils are produced, distributed and consumed across the country.

Structural realities of India's edible oil system

India's edible oil sector reflects a persistent structural imbalance between demand and domestic supply. In 2023–24, domestic production reached 12.18 million tonnes and met only approximately 44 per cent of national demand, due to a sharp rise in per capita consumption. As a result, the country continues to rely heavily on imports, particularly palm oil.⁵

Over time, traditional oils such as mustard, groundnut, sesame and coconut have gradually been displaced by industrially processed oils, including palm, soybean and sunflower oils, as well as partially hydrogenated fats/oils (PHO). Consumption patterns are also highly region-specific and strongly influenced by price and availability, which can limit access to healthier or locally preferred oils.

These structural shifts in production and consumption directly influence the types and quality of fats consumed and can have important implications for population health.

Understanding fat quality: Why it matters

Beyond total intake, the health effects of dietary fats depend largely on their composition. Scientific evidence distinguishes clearly between different types of fats and their physiological effects.⁶

- **Trans fats** are strongly associated with cardiovascular disease risk. They increase low-density lipoprotein (LDL – “bad”) cholesterol and reduce high-density lipoprotein (HDL – “good”) cholesterol and should contribute less than 1 per cent of total energy intake.
- **Saturated fats** are associated with increased cardiovascular disease risk. They increase LDL cholesterol, lower HDL cholesterol, and should contribute to <10 per cent of total energy intake.
- **Unsaturated fats**, including monounsaturated fatty acids (MUFAs) and polyunsaturated fatty acids (PUFAs), are protective and improve lipid profiles when they replace saturated fats.

However, fat quality is not determined only by the type of oil used. Cooking practices also play a critical role. Even healthier oils can become harmful when repeatedly heated or used for deep frying, leading to oxidation and the formation of toxic compounds.⁷ Health outcomes therefore depend on both the biochemical characteristics of dietary fats and the ways in which they are used in everyday food preparation.

What makes an oil healthy?

Quality indicators: Free fatty acids, peroxide value, anisidine value, total oxidation, smoke point and total polar compounds.

Beneficial compounds: Tocopherols and tocotrienols, phytosterols, gamma-oryzanol, carotenoids and polyphenols.

Safety risks: Chemical contaminants, including pesticides and heavy metals; process contaminants, including 3-MCPD and glycidyl esters; trans fats; and oxidation resulting from overheating and reuse.

Innovations in processing: Cold pressing, enzymatic degumming, nitrogen blanketing, improved refining controls and advanced packaging systems.

Regulation and standards: Compliance with established safety and quality standards by FSSAI.

Choosing the right oil: Fat composition^{8,9}

Type of oil	Key fatty acid
Groundnut oil Olive oil Rice bran oil	Oleic acid (MUFA)
Sunflower oil Safflower oil	Linoleic acid (PUFA; omega 6)
Soybean oil Sesame oil	Linoleic acid (PUFA; omega 6) and oleic acid (MUFA)
Coconut oil	Lauric acid (SFA)
Mustard oil	Linoleic acid (PUFA; omega 6) and linolenic acid (PUFA; omega 3)

Choosing the right cooking method

Method of cooking	Oils to be used
Deep frying ⁸	Groundnut oil Coconut oil
Frying ^{8,10,11}	Groundnut oil Rice bran oil Refined olive oil Coconut oil Mustard oil
Low-heat cooking ^{8,12,13}	Sunflower oil Soybean oil Safflower oil
Tempering ¹¹	Mustard oil
Dressing/raw use ¹⁴	Extra virgin olive oil Safflower oil

Regulatory framework: FSSAI standards for edible oils

India's food safety system, led by the Food Safety and Standards Authority of India (FSSAI), establishes standards for the regulation of edible oils.¹⁵

Vertical standards define compositional, quality and safety parameters specific to each oil (e.g., fatty acid profile and purity).

Horizontal standards applicable across all edible oils



India has also taken significant steps to eliminate industrially produced trans fats by limiting trans-fat content to less than 2 per cent in fats and oils. In addition, initiatives such as the Repurpose Used Cooking Oil (RUCO) have been introduced to support the safe management of used cooking oil.¹⁷

However, regulatory standards alone are insufficient to promote healthier dietary practices without clear guidance on the appropriate use of oils in everyday cooking.

Beyond regulation: The role of the food environment

While regulations define standards, dietary behaviours are largely shaped by the food environments in which people make choices.

Across India, unhealthy oils often become the default option in street foods, small eateries and processed foods due to their lower cost and widespread availability.¹⁸ The frequent

reheating and reuse of cooking oils in food establishments further increases exposure to harmful compounds.

Although initiatives such as RUCO aim to improve the management of used cooking oil, implementation gaps remain significant. Surveillance is limited, especially in informal food settings, and awareness among both vendors and consumers remains low.¹⁹

At the same time, children and adolescents are increasingly exposed to energy-dense, nutrient-poor foods that are high in unhealthy fats. These early dietary exposures can shape long-term food preferences and significantly increase the risk of NCDs later in life.

Transforming India's edible oil system across the value chain

Policy levers

- **Regulation:** Enforce legal limits on trans fats; strengthen labelling and safety standards
- **Fiscal measures:** Support small and medium-sized enterprises (SMEs) to adopt healthier oils; introduce taxes on unhealthy fats
- **Procurement:** Use healthier oils in PM POSHAN, school meals and other government programmes; create demand for healthier oils

Value chain challenges

- **Agriculture:** Limited diversification; import dependence
- **Processing:** Gaps in blending technology; poor quality control
- **Industry:** Dominance of palm oil and vanaspati; cost-driven formulations
- **Retail:** Dominance of informal retail; reuse of cooking oil
- **Consumer:** Low awareness; price sensitivity; habit-driven choices

Interventions

- **Upstream production:** Diversify crops; improve seed varieties; provide training for farmers
- **Regulatory compliance:** Enforce RUCO guidelines; strengthen regulatory and manufacturing practices
- **Technological innovation:** Strengthen industry–research linkages to support technology development and innovation in oil blending
- **Vendor training:** Limit the reuse of oil; incentivize safe practices by diverting used cooking oil from the food value chain
- **Consumer awareness:** Improve awareness of oil type, quantity of oil and fats recommended to be consumed, and appropriate cooking methods

Outcomes

- **Reduced health risks:** Reduced risk of heart disease and obesity
- **Safer food environments:** Improved quality of street foods
- **Sustainable practices:** Stable supply chains and sustainable sourcing

Beyond regulation: Recommendations for food environments

1. Strengthen the link between fats and NCD prevention

There is strong evidence linking the type, source and frequency of dietary fat intake, particularly saturated and trans fats, with cardiovascular diseases.⁶ Policies should reinforce dietary guidelines that limit total fat intake to ≤ 30 per cent of total energy.

2. Improve the availability and affordability of healthier oils

Unhealthy oils often dominate food environments because of their lower cost, greater accessibility and widespread use in processed and informal foods. Policy action is needed to improve the availability of healthier oils and ensure that they are accessible to households, food vendors, restaurants and the processed food sector.

3. Promote safe oil use and cooking practices

Health outcomes depend not only on the type of oil used but also on how oils are used during food preparation. Policies should promote awareness of appropriate oil selection for frying, tempering and raw use, as well as guidance on limiting repeated heating of used oil in households and food establishments.

4. Strengthen regulatory and market systems

While FSSAI standards address safety and adulteration, challenges remain in enforcement, monitoring and the management of repeated oil use. Strengthening surveillance systems, supporting innovation to preserve oil quality (such as the use of antioxidants and improved storage conditions) and incentivizing safe practices in manufacturing and retail are critical.

5. Build an integrated and enabling food environment

Nutrition literacy, agricultural policy, industry standards and community awareness must be aligned to create an enabling food environment. Collaboration among nutritionists, public health experts, agriculturists and policymakers is essential to ensure that healthier oils are both available and appropriately used across food environments.

References

1. Purushotham, A., A. Aiyar and S. von Cramon-Taubadel, 'Processed Foods, Socio-Economic Status, and Peri-Urban Obesity in India', *Food Policy*, vol. 117, 1 May 2023, 102450.
2. Billingsley, H. E., S. Carbone and C. J. Lavie, 'Dietary Fats and Chronic Noncommunicable Diseases', *Nutrients*, vol. 10, no. 10, 30 September 2018, p. 1385.
3. Mani, I., and A. V. Kurpad, 'Fats & Fatty Acids in Indian Diets: Time for serious introspection', *Indian Journal of Medical Research*, vol. 144, no. 4, October 2016, pp. 507–514.
4. Anjana, R. M., et al., 'Dietary Profiles and Associated Metabolic Risk Factors in India from the ICMR-INDIAB Survey-21', *Nature Medicine*, vol. 31, no. 11, November 2025, pp. 3813–3824.
5. Press Information Bureau, Government of India, 'National Mission on Edible Oils: Strengthening India's edible oil ecosystem', PIB, New Delhi, 8 December 2025, <pib.gov.in/PressReleasePage.aspx?PRID=2200287>.
6. World Health Organization, *Saturated Fatty Acid and Trans-Fatty Acid Intake for Adults and Children: WHO guideline*, World Health Organization, Geneva, 2023.
7. ICMR-National Institute of Nutrition Expert Committee, *Dietary Guidelines for Indians – 2024*, ICMR-National Institute of Nutrition, Hyderabad, 2024.
8. Pascual, S. A., B. Nieva-Echevarría and E. Goicoechea-Oses, 'Vegetable Oils and Their Use for Frying: A review of their compositional differences and degradation', *Foods*, vol. 13, no. 24, 23 December 2024, p. 4186.
9. Tian, M., Y. Bai, H. Tian and X. Zhao, 'The Chemical Composition and Health-Promoting Benefits of Vegetable Oils – A review', *Molecules*, vol. 28, no. 17, 1 September 2023, p. 6393.
10. Siddiqua, T., I. Uddin, M. R. Hasan and R. Begum, 'Effect of Heating and Re-Heating on Physico-Chemical Properties of Rice Bran Oil and Soybean Oil', *Journal of Agriculture and Food Research*, vol. 15, 1 March 2024, 100979.
11. Manchanda, S. C., and S. J. Passi, 'Selecting Healthy Edible Oil in the Indian Context', *Indian Heart Journal*, vol. 68, no. 4, 19 May 2016, p. 447.
12. Katragadda, H. R., A. Fullana, S. Sidhu and Á. A. Carbonell-Barrachina, 'Emissions of Volatile Aldehydes from Heated Cooking Oils', *Food Chemistry*, vol. 120, no. 1, 1 May 2010, pp. 59–65.

13. Mitrea, L., et al., 'The Physicochemical Properties of Five Vegetable Oils Exposed at High Temperature for a Short-Time-Interval', *Journal of Food Composition and Analysis*, vol. 106, 1 March 2022, 104305.
14. Ambra, R., S. Lucchetti and G. Pastore, 'A Review of the Effects of Olive Oil-Cooking on Phenolic Compounds', *Molecules*, vol. 27, no. 3, 20 January 2022, p. 661.
15. Food Safety and Standards Authority of India, *Food Safety and Standards (Food Products Standards and Food Additives) Regulations, 2011 – Section 2.2: Fats, oils and fat emulsions*, FSSAI, New Delhi, 2011.
16. Food Safety and Standards Authority of India, *Food Safety and Standards (Prohibition and Restrictions on Sales) Amendment Regulations, 2021*, FSSAI, New Delhi, 2021.
17. Food Safety and Standards Authority of India, 'Repurpose Used Cooking Oil (RUCO): Ecosystem for safe disposal and repurposing of used cooking oil', FSSAI, New Delhi, 2018.
18. Gupta, V., S. M. Downs, S. Ghosh-Jerath, K. Lock and A. Singh, 'Unhealthy Fat in Street and Snack Foods in Low-Socioeconomic Settings in India: A case study of the food environments of rural villages and an urban slum', *Journal of Nutrition Education and Behavior*, vol. 48, no. 4, 2016, pp. 269–279.
19. Goveas, N., O. C. Kurian, M. A. Mukhopadhyay, Niharika and D. Sarkar, *Diversion of Used Cooking Oil into the Food Stream: A study of four Indian cities*, Observer Research Foundation, New Delhi, 2022, <orfonline.org/public/uploads/posts/pdf/20221221121537.pdf>.

7. POPULATION-LEVEL SALT REDUCTION: A KEY PUBLIC HEALTH STRATEGY TO REDUCE NON-COMMUNICABLE DISEASES

Why does this matter?

Excess dietary salt intake is one of the leading causes of high blood pressure and significantly increases the risk of cardiovascular diseases (CVDs), including heart attack and stroke.^{1,2,3} In India, high salt intake contributes to more than 1.75 lakh preventable deaths annually.^{4,5} Salt is one of the most important modifiable dietary risk factors, making population-level salt reduction a highly effective and cost-efficient public health intervention.^{6,7} The World Health Organization (WHO) recommends a range of sodium-reduction strategies as “best buys” and estimates a return of approximately US\$13 for every US\$1 invested.⁸

Despite national dietary guidelines and WHO recommendations to limit salt intake to less than 5 g per day (equivalent to 2 g of sodium), average consumption in India remains between 8 and 11 g per day, nearly double the recommended level.⁹ India has committed to a 30 per cent reduction in population salt intake by 2030,¹⁰ yet progress remains slow, requiring urgent policy action.

Evidence: Why excess salt is harmful

- Salt consists of approximately 40 per cent sodium and 60 per cent chloride. It is the excess intake of sodium that is linked to high blood pressure.
- One in three Indian adults has high blood pressure.¹¹ However:
 - Half are unaware of their condition.¹¹
 - Only 1 in 10 has controlled blood pressure.¹¹

Salt is one of the most important modifiable dietary risk factors, making population-level salt reduction a highly effective and cost-efficient public health intervention. The World Health Organization (WHO) recommends a range of sodium-reduction strategies as “best buys” and estimates a return of approximately US\$13 for every US\$1 invested.



- High sodium intake is one of the primary drivers of hypertension and is compounded by low potassium intake.³
- Even a small reduction in sodium intake can have substantial benefits:
 - A 1 g per day reduction lowers systolic blood pressure by approximately 2.4 mmHg²
 - A 2 mmHg reduction in systolic blood pressure (BP) can reduce deaths from:
 - stroke by 10 per cent; and
 - heart disease by 7 per cent.
- A modelled 5 per cent reduction in sodium intake could prevent:⁶
 - approximately 1.7 million CVD cases;
 - approximately 7 lakh chronic kidney disease cases; and
 - approximately 3 lakh deaths over 10 years in India.

Pathways: How excess salt enters Indian diets

Household sources account for approximately 70–80 per cent of salt intake in India. These include:⁹

- salt added during cooking; and
- salt added at the table.

The remaining 20–30 per cent of salt intake comes primarily from two sources:^{12,13}

a) Food consumed outside the home

- Public food programmes, including the Integrated Child Development Services (ICDS) and PM POSHAN (hot cooked meal and take-home rations)
- Restaurants and institutional food services, including office canteens, hospitals, railways and airlines.

b) Packaged and processed foods

Salt exposure begins early in life, often without consumers being aware of it, shaping lifelong taste preferences and dietary habits.¹²

Global best practices: What works

Government-led, multi-component strategies have been the most effective approaches to reducing population salt intake.

United Kingdom

- Voluntary but structured salt targets for industry^{14,15}
- Gradual reformulation (“quiet reform”)
- Public awareness campaigns
- **Result:** Population salt intake declined from 9.5 g per day (in 2001–2002) to 8.1 g per day (in 2009)

Chile

- Mandatory front-of-pack warning labels^{16–19}
- Restrictions on the sale, marketing and promotion of foods high in sodium, sugar, saturated fat or calories in schools
- **Result:**
 - 37 per cent reduction in sodium purchased from “high-in” packaged foods
 - Significant food reformulation and high compliance

South Korea

- National sodium-reduction plan across homes, schools, restaurants and industry^{20,21}
- Result:
 - 33 per cent reduction in sodium intake over a decade
 - Declines in blood pressure and hypertension prevalence

India’s policy opportunity

India has a strong foundation for salt reduction but requires stronger integration and scale-up.

- Salt reduction remains insufficiently integrated into the National Programme for Prevention and Control of Non-Communicable Diseases (NP-NCD).⁹
- As 70–80 per cent of salt consumption in India occurs at the household level, replacing regular edible salt with low-sodium salt substitutes (LSSS) could be an effective strategy for reducing intake. However, low awareness and challenges related to availability, affordability and acceptability limit uptake.²²
- Public food programmes and procurement policies remain under-leveraged.^{6,9}
- Policies addressing the increasing consumption of packaged foods, including front-of-pack nutrition labelling (FoPNL), fiscal policies, food reformulation and marketing restrictions need to be implemented and strengthened further.^{1,6}

- Salt reduction and iodine fortification are complementary, not conflicting, and should be implemented in a coordinated manner to protect against iodine deficiency disorders.²³

Key policy recommendations

1. Reduce salt intake at the household level

- Integrate behaviour change communication (BCC) on salt reduction into the NP-NCD programme, including strengthening public awareness through community- and facility-based initiatives such as the Food Safety and Standards Authority of India's (FSSAI) "Aaj Se Thoda Kam" campaign and the use of Salt Boards in public institutions.²⁴
- Promote dietary diversity and increased consumption of potassium-rich foods, including fruits and vegetables.
- Encourage the safe use of LSSS, supported by:
 - improved access and acceptability, supported by further implementation research; and
 - subsidies to improve affordability.

2. Reduce salt intake through publicly funded food distribution programmes

- Introduce quantified salt standards in public food programmes.
 - Establish per-beneficiary salt limits for PM POSHAN, ICDS and take-home ration/ready-to-cook foods.



- Include salt limits in standard recipes and procurement norms.
- Extend standards to hospital diets and other institutional food settings.
- Build the capacity of cooks and food-service staff.
- Engage railways, airlines, workplaces, schools and hospitals in implementing salt-reduction standards.

3. Reduce salt intake from processed and packaged foods

- Implement FoPNL to help consumers identify foods high in sodium.
- Restrict the marketing of foods high in fat, sugar and salt (HFSS) to children.
- Promote gradual industry reformulation to reduce sodium content.
- Explore fiscal policies to reduce the consumption of HFSS foods and promote healthier diets.

Key policy message

Reducing salt intake is one of the most impactful, feasible and cost-effective strategies for preventing hypertension and cardiovascular diseases in India. Coordinated action across households, public programmes and the food industry is essential to achieve national and global salt-reduction targets.

References

1. Campbell, N. R., et al., '2022 World Hypertension League, Resolve to Save Lives and International Society of Hypertension Dietary Sodium (Salt) Global Call to Action', *Journal of Human Hypertension*, vol. 37, no. 6, June 2023, pp. 428–437.
2. Filippini, T., M. Malavolti, P. K. Whelton, A. Naska, N. Orsini and M. Vinceti, 'Blood Pressure Effects of Sodium Reduction: Dose–response meta-analysis of experimental studies', *Circulation*, vol. 143, no. 16, 20 April 2021, pp. 1542–1567.
3. Kim, B. S., M. Y. Yu and J. Shin, 'Effect of Low Sodium and High Potassium Diet on Lowering Blood Pressure and Cardiovascular Events', *Clinical Hypertension*, vol. 30, no. 1, 2 January 2024, p. 2.
4. Prabhakaran, D., P. Jeemon and K. S. Reddy, 'Cardiovascular Diseases in India – Challenges and opportunities', *Circulation*, vol. 133, no. 16, 2016, pp. 1605–1620.
5. Institute for Health Metrics and Evaluation, *Global Burden of Disease 2021: Findings from the GBD 2021 study*, IHME, Seattle, Wash., 2024.

6. Trieu, K., et al., 'Estimated Health Benefits, Costs, and Cost-Effectiveness of Implementing WHO's Sodium Benchmarks for Packaged Foods in India: A modelling study', *Lancet Public Health*, vol. 9, no. 11, 2024, pp. e852–e860.
7. World Health Organization, *Global Report on Hypertension: The race against a silent killer*, World Health Organization, Geneva, 2023, <cdn.who.int/media/docs/default-source/country-profiles/hypertension/hypertension-2023/hypertension_ind_2023.pdf>.
8. World Health Organization, *Saving Lives, Spending Less: A strategic response to noncommunicable diseases*, WHO, Geneva, 2018, <iris.who.int/server/api/core/bitstreams/5a181c5b-1c03-4fb1-b1a6-f3f422c012fb/content>.
9. Shivashankar, R., et al., 'India's Tryst with Salt: Dandi march to low sodium salts', *Indian Journal of Medical Research*, vol. 158, no. 3, 2023, pp. 233–243.
10. Ministry of Health and Family Welfare, Government of India, *National Multisectoral Action Plan for Prevention and Control of Common Noncommunicable Diseases*, Government of India, New Delhi, 2018, <mohfw.gov.in/sites/default/files/National%20Multisectoral%20Action%20Plan%20%28NMAP%29%20for%20Prevention%20and%20Control%20of%20Common%20NCDs%20%282017-22%29_1.pdf>.
11. India Hypertension Control Initiative, 'IHCI Factsheet', India Hypertension Control Initiative, <ihci.in/resources/hypertension-best-practices/ihci-factsheet>.
12. Popkin, B. M., and A. Laar, 'Nutrition Transition's Latest Stage: Are ultra-processed food increases in low- and middle-income countries dooming our preschoolers' diets and future health?', *Pediatric Obesity*, vol. 20, no. 5, May 2025, e70002.
13. World Health Organization Country Office for India, *The Growth of Ultra-Processed Foods in India: An analysis of trends, issues and policy recommendations*, WHO Country Office for India, New Delhi, 2023, <who.int/publications/i/item/9789290210672>.
14. He, F. J., H. C. Brinsden and G. A. MacGregor, 'Salt Reduction in the United Kingdom: A successful experiment in public health', *Journal of Human Hypertension*, vol. 28, no. 6, June 2014, pp. 345–352.
15. Wyness, L. A., J. L. Butriss and S. A. Stanner, 'Reducing the Population's Sodium Intake: The UK Food Standards Agency's salt reduction programme', *Public Health Nutrition*, vol. 15, no. 2, 2012, pp. 254–261.
16. Taillie, L. S., et al., 'Changes in Food Purchases after the Chilean Policies on Food Labelling, Marketing, and Sales in Schools: A before and after study', *Lancet Planetary Health*, vol. 5, no. 8, 2021, pp. e526–e533.

17. Reyes, M., et al., 'Changes in the Amount of Nutrient of Packaged Foods and Beverages after the Initial Implementation of the Chilean Law of Food Labelling and Advertising: A nonexperimental prospective study', *PLOS Medicine*, vol. 17, no. 7, 2020, e1003220.
18. Rebolledo, N., et al., 'Changes in the Critical Nutrient Content of Packaged Foods and Beverages after the Full Implementation of the Chilean Food Labelling and Advertising Law: A repeated cross-sectional study', *BMC Medicine*, vol. 23, no. 1, 2025, p. 46.
19. Rebolledo, N., et al., 'Food Industry Compliance with the Display of Front-of-Package Warning Labels at the Final Phase (2020) of Chile's Labeling and Advertising Law', *American Journal of Public Health*, vol. 114, no. 12, December 2024, pp. 1398–1405.
20. Park, H. K., et al., 'Progress on Sodium Reduction in South Korea', *BMJ Global Health*, vol. 5, no. 5, 1 May 2020, e002028.
21. Rhee, M. Y., et al., 'A Decade of Challenges and Progression in Sodium Intake Reduction in South Korea', *European Heart Journal*, vol. 46, suppl. 1, 5 November 2025.
22. Sehgal, R., et al., 'Awareness and Availability of Low Sodium Iodized Salt: Results from formative research of Promoting Uptake of Low Sodium Iodized Salt by Rural and Urban Households in India – The PLURAL study', *Nutrients*, vol. 16, no. 1, 30 December 2023, p. 130.
23. Nutrition International, World Health Organization, Iodine Global Network and Resolve to Save Lives, *Consultative Meeting on Harmonising Iodine Nutrition with Salt Reduction*, New Delhi, 2024.
24. Food Safety and Standards Authority of India, 'Reduction of Fat, Sugar and Salt – "Aaj Se Thoda Kam" Campaign', Eat Right India, FSSAI, New Delhi, <eatrightindia.gov.in/reduction-fat-sugar-salt.jsp>.

8. ADVANCING POTASSIUM-ENRICHED LOW-SODIUM SALT SUBSTITUTE STRATEGIES FOR HYPERTENSION CONTROL IN INDIA

Introduction

Potassium-enriched low-sodium salt substitutes (LSSS) could be a key strategy to reduce the burden of hypertension in India.¹ Hypertension remains one of India's most pressing public health challenges and is a leading risk factor for cardiovascular diseases (CVDs) including stroke, heart attack, kidney disease, and dementia.² Despite decades of public awareness campaigns, population-level sodium reduction has achieved only limited success, largely because of concerns among consumers and the food industry about the palatability of lower-sodium diets.³

LSSS, typically formulated with 70 per cent sodium chloride and 30 per cent potassium chloride, offer a scientifically sound and acceptable solution to this challenge. Unlike conventional sodium reduction strategies, LSSS does not alter taste, making them more likely to be accepted and sustained at both the individual and community levels. International evidence, particularly from the landmark Salt Substitute and Stroke Study (SSaSS), has demonstrated significant reductions in blood pressure and cardiovascular disease markers, together with higher adherence rates, as compared to those seen with pharmaceutical interventions.⁴

LSSS, typically formulated with 70 per cent sodium chloride and 30 per cent potassium chloride, offer a scientifically sound and acceptable solution to this challenge. Unlike conventional sodium reduction strategies, LSSS does not alter taste, making them more likely to be accepted and sustained at both the individual and community levels.



Evidence base for low-sodium salt substitutes

The dual burden of excess sodium intake and potassium deficiency

Throughout most of human history, daily sodium intake was approximately 0.5 g, while potassium intake from fresh fruits and vegetables was around 10 g. Contemporary diets have dramatically reversed this pattern. Average sodium intake has increased to approximately 4 g per day (equivalent to 10 g of salt) – an eightfold increase – while potassium intake has declined due to reduced consumption of fresh fruits and vegetables.⁵

In India, the estimated mean sodium intake is $4,455.66 \pm 2,261$ SD mg per day which is more than double the World Health Organization (WHO) recommended intake of less than 2,000 mg per day. In contrast, the estimated mean potassium intake is $1,428.36 \pm 997.05$ mg per day which is less than half of the WHO recommended intake of at least 3,500 mg per day.¹

This dual nutritional transition substantially increases cardiovascular risk. Excess sodium intake and insufficient potassium intake independently contribute to elevated blood pressure, which is the leading driver of the most common fatal conditions globally, including stroke, heart attack and kidney disease. Addressing excess sodium intake and potassium deficiency simultaneously is therefore a compelling and urgent public health priority.

Why conventional sodium-reduction efforts fall short

Despite concerted global efforts, reducing population-level sodium intake through behaviour change alone has proven extremely difficult and ineffective. Many consumers perceive reduced salt intake as compromising the taste of food, leading to resistance among consumers and the food industry.

Similarly, strategies to increase potassium intake through promotion of fresh fruit and vegetable consumption face structural barriers due to changing dietary patterns associated with industrialization and globalization, including greater consumption of processed foods that are typically lower in potassium and reduced consumption of fruits and vegetables.⁶ LSSS address both challenges simultaneously through a simple, cost-effective intervention that works within existing cooking practices and dietary habits.

International evidence on efficacy and effectiveness: The SSaSS Trial

The SSaSS trial, conducted in China, provides robust scientific evidence to date on the effectiveness of LSSS. This randomized controlled trial involved approximately 21,000 participants from 600 villages, who were randomly assigned either to continue using regular salt or replace it with LSSS. Participants were followed for five years.⁴

Key findings from the SSaSS trial

The intervention had a 95 per cent probability of being cost-saving and a greater than 99.9 per cent probability of being cost-effective, measured in terms of quality-adjusted life years (QALYs).

The use of LSSS was not associated with an increased risk of serious events observed due to hyperkalaemia (elevated blood potassium levels).



Replacing regular salt with LSSS reduced the risk of stroke by 14 per cent, cardiovascular events by 13 per cent, and deaths by 12 per cent respectively.



The intervention achieved an adherence rate of 92 per cent over five years and was characterized as “highly tolerable and highly acceptable,” substantially more so than conventional approaches of reducing salt intake.



Use of lower-sodium salt substitutes: WHO guideline, 2025

WHO recommends reducing sodium intake to less than 2 g per day to lower blood pressure and reduce the risk of cardiovascular disease (strong recommendation). In this context, reducing the use of regular table salt is an important part of an overall sodium-reduction strategy. For individuals who choose to use table salt, WHO suggests replacing regular table salt with lower-sodium salt substitutes that contain potassium. This recommendation does not apply to pregnant women or children, as current evidence is insufficient to establish the safety and effectiveness of LSSS for these population groups.⁷

Evidence from India

The Salt Substitute in India Study (SSiIS), a randomized controlled trial, conducted across seven villages in rural India involving 502 participants with hypertension, demonstrated a significant reduction of 4.6 mmHg in systolic blood pressure among participants using a potassium-enriched salt substitute compared with those using regular salt over a three-month period.⁸

Formative research from the Promoting Uptake of Low Sodium Iodized Salt by Rural and Urban Households in India (PLURAL) study found that awareness of low-sodium iodized salt was low and the availability of LSSS was limited, underscoring the need for targeted demand-generation and supply-side interventions.⁹ The study also found that increasing awareness and providing subsidies could improve uptake, with 49.3 per cent of households reporting the use of LSSS following the intervention. In addition, modelling studies estimate that nationwide adoption of LSSS in India could prevent 8–14 per cent of cardiovascular deaths annually, equivalent to approximately 240,000–315,000 lives saved each year.¹⁰

National implementation: Opportunities and barriers

People in India consume almost twice the WHO recommended maximum daily sodium intake (2,000 mg per day) while consuming only about half of the recommended daily potassium intake (at least 3,500 mg per day).^{11,12} India also has a high burden of hypertension. According to the National Family Health Survey-6 (NFHS-6), 19.4 per cent of women and 22.1 per cent of men aged 15 years and above have elevated blood pressure or are taking medication to control hypertension.¹³

The beneficial effects of LSSS on blood pressure reduction are comparable to those achieved with a single antihypertensive medication.¹⁴ If implemented at the population level, LSSS could prevent hypertension among people with normal blood pressure while also lowering blood pressure among people already living with hypertension.

Furthermore, approximately 80 per cent of dietary sodium intake in India comes from food prepared at home.¹¹ This presents a unique opportunity to promote household adoption of LSSS. Unlike many dietary interventions that require changes in cooking practices or food preferences, substituting LSSS for regular table salt can be incorporated seamlessly into existing household cooking practices. Because LSSS maintain the perceived salty taste of food,¹⁵ they overcome one of the major barriers to adoption that has long undermined sodium-reduction efforts.

The four As: Addressing key barriers

The successful implementation of LSSS depends on addressing four key barriers: availability, affordability, awareness and acceptance, each requiring targeted strategies.

Availability

LSSS have a limited market presence and distribution reach, which are mostly limited to large metropolitan cities. Mainstreaming through institutional procurement channels and expanding availability across India via retail stores through industry engagement are essential first steps.

Affordability

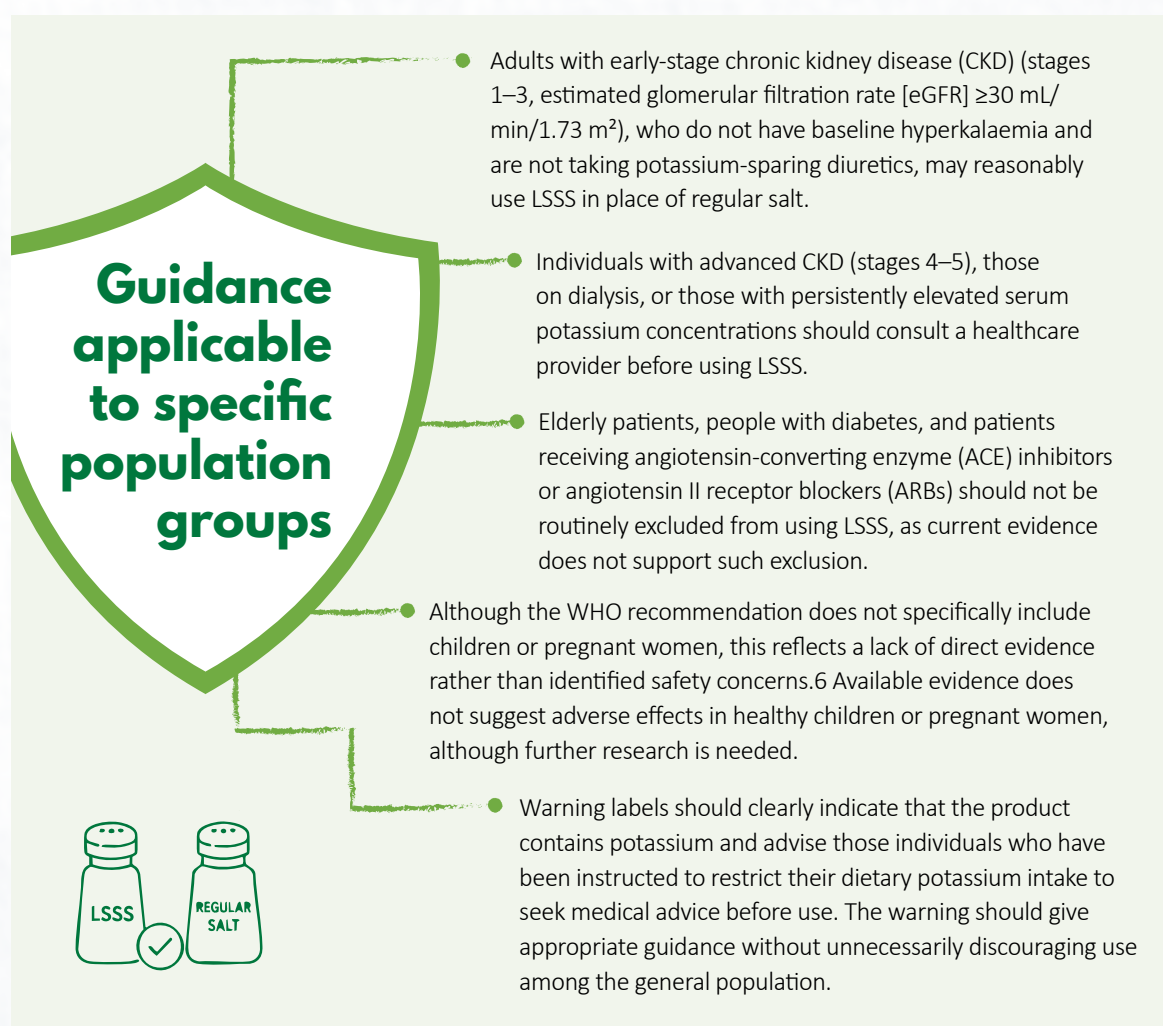
Demand generation, government bulk procurement, production incentives and other forms of policy support could substantially reduce the cost of LSSS and improve affordability for consumers.

Awareness and acceptance

Consumer awareness and acceptance of LSSS remain low, and misconceptions about their taste and safety continue to limit uptake. Targeted communication campaigns delivered through health facilities and community platforms, with the support of healthcare professionals, could help build trust and increase demand.

Safety considerations

The safety profile of LSSS is well established for the general adult population. Expert consensus indicates that the vast majority of adults can safely benefit from replacing regular salt with LSSS.¹ The following guidance applies to specific population groups:⁸



Key takeaways

1. A simple switch can have a major impact

Replacing regular salt with LSSS (70 per cent sodium chloride, 30 per cent potassium chloride) can reduce blood pressure without requiring changes to cooking practices or food preferences.

2. Adherence is not a barrier

The 92 per cent adherence rate observed over five years in the SSaSS demonstrates that LSSS are acceptable and sustainable, making them an effective complement to existing hypertension prevention and management strategies at scale.

3. Cost is a solvable challenge

Government bulk procurement, together with demand-generation strategies, can substantially reduce the cost of LSSS, transforming them from a premium product into an affordable public health commodity.

4. India has the infrastructure

Existing platforms, including the Public Distribution System (PDS), PM POSHAN, and Ayushman Arogya Mandirs (community health centres), provide established delivery channels that could support large-scale distribution of LSSS.

5. Regulation must keep pace with evidence

Developing and implementing Food Safety and Standards Authority of India (FSSAI) standards for LSSS, including product standards, labelling requirements and guidance for industry reformulation, will be critical to translating national and international evidence into population-level health benefits.

Recommendations

1. Integrate LSSS into the National Programme for Prevention and Control of Non-Communicable Diseases (NP-NCD) as a critical public health intervention to reduce the burden of hypertension

LSSS should be integrated into national strategies for the prevention and control of NCDs, given India's high burden of hypertension and persistently high sodium and low potassium intake. Building the capacity of healthcare providers on the appropriate use of LSSS could facilitate large-scale implementation. Coordination across relevant ministries and departments will also be essential to develop a comprehensive mechanism for promoting LSSS.

2. Mandate FSSAI standards and labelling requirements for LSSS

The draft FSSAI regulations on LSSS (2021)¹⁶ should be finalized and implemented as a priority. This should include minimum potassium chloride content specifications in line with clinically established potassium-enrichment levels, together with clear product identification for consumers. Warning statements on LSSS packages should ensure that adequate caution is provided to vulnerable people without being too restrictive for people who would otherwise benefit from using LSSS. Additionally, LSSS should be iodized at appropriate concentrations to maintain adequate population iodine intake while reducing sodium consumption.

3. Launch targeted public communication campaigns

Develop and implement sustained public communication campaigns to build awareness, generate demand for LSSS, promote their benefits and address concerns about taste and safety. Campaigns should emphasize a dual message: “Reduce your salt” and “Replace your salt with iodized LSSS”.

4. Scale up LSSS through public distribution platforms

Explore opportunities to integrate LSSS into existing platforms, such as PDS and PM POSHAN, through government bulk procurement mechanisms. Ayushman Arogya Mandirs could serve as both distribution points and community awareness hubs. Government-supported procurement and distribution could substantially reduce prices through economies of scale, thereby improving affordability.

5. Prioritize implementation research

Support ongoing and future implementation research to generate India-specific evidence on the uptake, acceptability, cost-effectiveness and health outcomes of LSSS across diverse settings. Research should also prioritize safety evaluations among vulnerable populations, including pregnant women, young children and specific patient groups, in order to enable broader evidence-based recommendations. In addition, implementation research, economic evaluations and market-shaping studies could also support efforts to promote the adoption of LSSS in India.

6. Engage industry

Engage with industry to expand the availability of LSSS and encourage wider market access. Regulatory mechanisms should also be developed to incentivize the reformulation of packaged foods using LSSS, particularly in product categories with high sodium content.

References

1. Resolve to Save Lives and The George Institute, *Consensus Statement on the Use of Potassium-Enriched Low-Sodium Salt Substitutes (LSSS) as a Public Health Intervention in India*, The George Institute for Global Health, New Delhi, 2026.
2. Mulligan, M. D., et al., 'Population Attributable Fraction of Hypertension for Dementia: Global, regional, and national estimates for 186 countries', *EClinicalMedicine*, vol. 60, 1 June 2023.
3. World Health Organization, *SHAKE the Salt Habit*, 2nd ed., World Health Organization, Geneva, 2026.
4. Neal, B., et al., 'Effect of Salt Substitution on Cardiovascular Events and Death', *New England Journal of Medicine*, vol. 385, no. 12, 16 September 2021, pp. 1067–1077.
5. Powles, J., et al., 'Global, Regional and National Sodium Intakes in 1990 and 2010: A systematic analysis of 24 h urinary sodium excretion and dietary surveys worldwide', *BMJ Open*, vol. 3, no. 12, December 2013, e003733.
6. Sharma, M., A. Kishore, D. Roy and K. Joshi, 'A Comparison of the Indian Diet with the EAT-Lancet Reference Diet', *BMC Public Health*, vol. 20, no. 1, 2020, p. 812.
7. World Health Organization, *Guideline: Use of Lower-Sodium Salt Substitutes*, World Health Organization, Geneva, 2025.
8. Yu, J., et al., 'Effects of a Reduced-Sodium Added-Potassium Salt Substitute on Blood Pressure in Rural Indian Hypertensive Patients: A randomized, double-blind, controlled trial', *American Journal of Clinical Nutrition*, vol. 114, no. 1, July 2021, pp. 185–193.
9. Sehgal, R., et al., 'Awareness and Availability of Low Sodium Iodized Salt: Results from formative research of Promoting Uptake of Low Sodium Iodized Salt by Rural and Urban Households in India – The PLURAL study', *Nutrients*, vol. 16, no. 1, January 2023, p. 130.
10. Marklund, M., et al., 'Estimated Benefits and Risks of Using a Reduced-Sodium, Potassium-Enriched Salt Substitute in India: A modeling study', *Hypertension*, vol. 79, no. 10, October 2022, pp. 2188–2198.
11. Shivashankar, R., et al., 'India's Tryst with Salt: Dandi march to low sodium salts', *Indian Journal of Medical Research*, vol. 158, no. 3, September 2023, pp. 233–243.
12. Resolve to Save Lives and The George Institute, *Low-Sodium Salt Substitutes as a Key Intervention for Prevention, Control and Management of Hypertension and Other Cardiovascular Diseases in India: A white paper*, Resolve to Save Lives and The George Institute, 2026.

13. International Institute for Population Sciences, *National Family Health Survey (NFHS-6), 2023–24: India and state/UT fact sheets*, IIPS, Mumbai, 2026, <nfhssiips.in/nfhs6.php>.
14. Ettehad, D., et al., 'Blood Pressure Lowering for Prevention of Cardiovascular Disease and Death: A systematic review and meta-analysis', *Lancet*, vol. 387, no. 10022, 5 March 2016, pp. 957–967.
15. Yin, X., et al., 'Availability, Formulation, Labeling, and Price of Low-Sodium Salt Worldwide: Environmental scan', *JMIR Public Health and Surveillance*, vol. 7, no. 7, 2021, e27423.
16. Food Safety and Standards Authority of India, 'Draft Notification on Food Safety and Standards (Food Products Standards and Food Additives) Amendment Regulations, 2021' [Internet], FSSAI, New Delhi, 6 January 2022, <fssai.gov.in/upload/uploadfiles/files/Draft_Notification_FPSFA_06_01_2022.pdf>

9. SOCIAL AND BEHAVIOUR CHANGE COMMUNICATION FOR HEALTHIER CHILDREN AND ADOLESCENTS IN INDIA

What is social and behaviour change communication (SBCC)?

Social and behaviour change communication (SBCC) is an evidence-based approach that uses innovative research such as behavioural insights communication, education, engagement strategies, community feedback mechanism and robust monitoring and evaluation strategies to influence behaviours, social norms and environments that shape health outcomes.¹ Rather than targeting only an individual's knowledge or willpower, SBCC works simultaneously across the levels at which behaviour is shaped: the individual, interpersonal relationships, the community, organizations (such as schools, workplaces and health facilities), and the policy environment that enables or constrains healthy choices.²

Why does SBCC matter for healthier children and adolescents?

India's nutrition landscape is increasingly characterized by a double burden and, in many households, a triple burden of malnutrition, with undernutrition (stunting, wasting and micronutrient deficiencies) coexisting with rising overweight, obesity and associated cardiometabolic conditions (such as hypertension and type 2 diabetes) across all age groups, including children and adolescents.^{3,4}

Overweight, hypertension and diabetes are not separate conditions with distinct causes. They share common upstream behavioural drivers, including unhealthy dietary patterns

India's nutrition landscape is increasingly characterized by a double burden and, in many households, a triple burden of malnutrition, with undernutrition (stunting, wasting and micronutrient deficiencies) coexisting with rising overweight, obesity and associated cardiometabolic conditions (such as hypertension and type 2 diabetes) across all age groups, including children and adolescents.



(high intake of salt, sugar, saturated fat and ultra-processed foods), inadequate physical activity, and obesogenic home, school and community environments.⁵

Behaviour change techniques are well established as effective and cost-effective measures for preventing these conditions and for addressing the social determinants of health. They are considerably more cost-effective than the later management or treatment of obesity, hypertension or diabetes once they become established. Because these conditions arise from complex socially, culturally and environmentally embedded behaviours rather than simple individual choices, SBCC is particularly well suited to challenge harmful social norms and change beliefs, knowledge and practices. It also helps create supportive environments that enable healthier behaviours by working across the multiple levels at which these behaviours are shaped – individual, interpersonal, community, organizational, policy – rather than relying solely on individual-level health education.²

Importantly, the early-life period – childhood and adolescence – is a critical window when dietary patterns, activity habits and attitudes towards salt, sugar and convenience foods are established and tend to persist into adulthood.² Rather than treating each condition in isolation, addressing overweight, hypertension and diabetes risk together, and early, gives India's existing child- and adolescent-focused platforms (schools, Anganwadi Centres, adolescent health clinics) a single, unified prevention opportunity to deliver a coherent, multi-risk strategy that reduces the burden of multiple cardiometabolic conditions and strengthens long-term health resilience among children and adolescents.

Children's food choices are strongly influenced by parents, caregivers and family norms. Therefore, household influences must also be addressed through multimedial outreach. An effective SBCC strategy works to influence not only individual behaviours but also broader community norms by integrating a variety of evidence-based communication approaches and behavioural insights and leveraging community engagement to promote healthier behaviours and improve child and adolescent health outcomes. At the same time, broader drivers of unhealthy food choices – such as availability and marketing of ultra-processed foods, school food environments, digital marketing, and the affordability and accessibility of healthy foods – require comprehensive communication approaches to support the adoption of healthier and more sustainable behaviours.

The socioecological model: Drivers and communication approaches

The socioecological model (SEM)⁶ maps the key behavioural drivers of overweight, hypertension and diabetes, together with corresponding communication approaches and interventions across five levels of influence. Adapted from the United Nations Children's Fund (UNICEF) Social and Behavioural Change Communications for Prevention of Childhood Overweight and Obesity: A Toolkit for Country Teams, the framework has been expanded to also include drivers and communication approaches relevant to hypertension and diabetes in the Indian context.

Solutions to prevent overweight and obesity through SBCC

SEM level	Key drivers	Communication approach	Communication initiatives
Individual 	Age, sex, inadequate physical activity, unhealthy food habits, undernutrition in early life, nutrition literacy, family history of hypertension/diabetes	Child's and adolescent's knowledge, behaviours, attitudes and beliefs towards weight, diet, physical activity, salt intake and screen time.	Lessons and educational resources on healthy eating; nutrition literacy for reading food labels; skills to resist marketing tactics; awareness of early warning signs of high BP, blood glucose (blood sugar) and healthy lifestyle
Interpersonal 	Maternal and paternal nutritional status (under- and overweight), inadequate breastfeeding practices, education status, household income, socio-economic status, obesogenic home environment, family history of NCDs.	Behaviours and attitudes of family and friends towards healthy weight, diet, physical activity and salt/sugar intake.	Discussion groups with parents on healthy eating and low-cost, locally available healthy food options; family-centred counselling on lifestyle modification for at-risk households.
Community 	Obesogenic food environment, obesogenic cultural environment, inadequate physical activity facilities, social norms around celebratory/festive foods high in salt, sugar and fat.	Norms on child weight, diet and physical activity in school networks and communities; community-level screening and referral messaging for hypertension and diabetes risk.	Community-wide multimedia campaigns to promote healthy weight, physical activity and blood-pressure/ blood-glucose awareness, reinforced at regular intervals (e.g. health camps, Village Health & Nutrition Days).
Organizational 	Obesogenic food environment, obesogenic cultural environment, inadequate physical activity facilities in schools, colleges and workplaces.	Policies and information structures in local shops, schools, cafes, restaurants etc. to support healthier diets and physical activity	Adolescent and parents' networks to reduce access to HFSS foods; school and workplace screening for overweight, raised BP and blood glucose linked to referral pathways
Policy / enabling environment 	Absence of regulatory definitions for HFSS foods; gaps in regulation of food marketing reaching children directly and indirectly (family viewing, social media, public spaces)	Policies and laws to regulate environments to support people in choosing and adopting healthier diets and physical activity, and to enable early detection of cardiometabolic risk	Guidelines for Prevention of Misleading Advertisements, 2022; FSSAI Regulations 2020 and 2018; Fit India Initiative, 2019; National Nutrition Strategy, 2017; NP-NCD, 2023; Goods & Services Tax on SSBs 2025; RBSK 2.0 Guidelines, 2026

Adapted from: United Nations Children's Fund (UNICEF). *Social and Behavioural Change Communications for Prevention of Childhood Overweight and Obesity: A Toolkit for Country Teams*; expanded to incorporate drivers of hypertension and diabetes and India-specific policy examples.

Existing SBCC-relevant policies in India

India does not yet have a single, dedicated national SBCC strategy for preventing cardiometabolic conditions. However, several national programmes, schemes and regulations already incorporate SBCC components that are relevant to the prevention of overweight, hypertension and diabetes, particularly among children and adolescents. The table below summarizes the most relevant policy instruments, their primary target groups, and the ways in which their existing SBCC components contribute to reducing cardiometabolic risk.

Policy instrument	Primary target group	SBCC relevance to overweight, hypertension and diabetes
Rashtriya Kishor Swasthya Karyakram (RKSK), 2014	Adolescents (10–19 years)	Individual counselling through Adolescent-Friendly Health Clinics (AFHCs), peer-educator-led group sessions, and quarterly Adolescent Health and Wellness Days promote healthy nutrition and physical activity. These existing platforms could also be used to deliver communication on hypertension and diabetes risk, although current messaging focuses primarily on diet and NCD prevention in general.
Ayushman Bharat – School Health and Wellness Programme (SHWP), 2018	Schoolchildren; vulnerable populations; pregnant and lactating women	Health and Wellness Ambassadors and Messengers deliver nutrition education in schools, while accredited social health activists (ASHAs) and auxiliary nurse midwives (ANMs) provide home visits and community-based screening. Together, these platforms provide opportunities for the early identification of overweight and associated risk factors, although routine blood pressure and blood glucose screening is not currently undertaken for children.
Eat Right India, 2018	All age groups, with a focus on schools	The Eat Right School programme, toolkits and mass-media campaigns (including initiatives promoting trans-fat elimination and salt reduction) directly support cardiometabolic risk reduction (salt, sugar, trans-fat). However, messaging is framed primarily around food safety and nutrition rather than explicitly around hypertension or diabetes.

Policy instrument	Primary target group	SBCC relevance to overweight, hypertension and diabetes
Fit India Movement, 2019	All citizens, with a focus on children and adolescents	School certification, daily physical activity initiatives and the Fit India App promote the physical activity, helping to reduce the risk of obesity, hypertension and type 2 diabetes. However, the app and associated communication materials do not currently include messaging or monitoring related to blood pressure or blood glucose risk.
Food Safety and Standards Authority of India (FSSAI) (Safe Food and Balanced Diets for Children in School) Regulations, 2020	Schoolchildren and adolescents (>22 months–18 years)	Restrict the sale, marketing and sponsorship of HFSS foods in schools and require warning boards discouraging the marketing of HFSS foods at school entrances. These regulations provide a structural intervention for reducing the risk of obesity, hypertension and diabetes, but are not accompanied by complementary individual- or community-level SBCC interventions. In addition, the absence of an enforceable regulatory definition of HFSS foods remains a limitation.
National Programme for Prevention of Non-Communicable Diseases (NP-NCD), 2023	Screening and counselling for people aged 30 years and above	NP-NCD provides the most comprehensive SBCC framework currently available, incorporating individual counselling, family-centred education, community camps and organizational outreach to promote healthier diets, physical activity, salt reduction and screening for obesity, hypertension and diabetes. However, routine screening and counselling begin at 30 years of age, children and adolescents remain outside the programme's primary target group.
Ministry of Education, Ministry of Health and Family Welfare, and FSSAI (Oil and Sugar Boards), 2025	Schoolchildren and college students	The Oil and Sugar Boards and accompanying information, education and communication (IEC) materials promote healthier dietary behaviours through simple visual messages and nutrition education, helping children and adolescents make informed food choices and supporting the prevention of obesity and other cardiometabolic risk factors.

Policy instrument	Primary target group	SBCC relevance to overweight, hypertension and diabetes
Rashtriya Bal Swasthya Karyakram (RBSK) 2.0 Guidelines, 2026	Children from birth to 18 years	The revised guidelines explicitly include obesity, hypertension, early diabetes risk and other NCD risk factors within the original 4Ds screening framework. Through Mobile Health Teams, screening is conducted at Anganwadi Centres and schools, creating the first universal child-health platform to address cardiometabolic risk directly. The programme also strengthens convergence with NP-NCD, RKSK and SHWP.

Gap

The Rashtriya Bal Swasthya Karyakram (RBSK) 2.0 Guidelines have established an important convergence with the National Programme for Prevention and Control of Non-Communicable Diseases (NP-NCD), Rashtriya Kishor Swasthya Karyakram (RKSK) and the School Health and Wellness Programme (SHWP), creating pathways for the screening, referral and management of obesity, hypertension, diabetes and other cardiometabolic risk factors among children and adolescents.

However, although NP-NCD provides a comprehensive SBCC framework for NCD prevention and management, its counselling and behaviour change approaches were designed primarily for adults. The mechanisms for delivering age-appropriate SBCC interventions to children and adolescents through RKSK and SHWP, following the identification of cardiometabolic risk factors under RBSK 2.0 remain insufficiently defined.

As a result, opportunities for tailored counselling, peer engagement, family-centred communication and school-based behaviour change support may not be fully leveraged to translate screening into sustained behaviour change and long-term risk reduction.

Recommendations

- a. **Individual level:** Adapt the NP-NCD SBCC framework for children and adolescents by developing age-appropriate counselling materials, nutrition literacy resources, food-label literacy tools and healthy lifestyle promotion materials that address overweight, obesity and cardiometabolic risk.
- b. **Interpersonal level:** Strengthen family-centred behaviour change interventions through counselling, caregiver engagement and parent-focused communication to promote healthy dietary habits, regular physical activity and reduced consumption of HFSS foods.

- c. **Community and organizational levels:** Leverage existing platforms under the RKSK, the SHWP, schools, Anganwadi Centres and AFHCs to deliver sustained SBCC interventions, peer education and healthy lifestyle promotion following screening under the RBSK 2.0 Guidelines.
- d. **Organizational level:** Operationalize the convergence between RBSK 2.0, RKSK, SHWP and NP-NCD by establishing clear referral, counselling, follow-up and support pathways for children and adolescents identified with overweight, obesity, hypertension, diabetes and other cardiometabolic risk factors.
- e. **Policy and enabling environment levels:** Complement SBCC interventions with supportive food environment measures, including effective implementation of school food regulations, promotion of healthier food choices, and reduced exposure of children and adolescents to the marketing of HFSS foods.

References

1. SBC Guidance, 'Social and Behaviour Change Communication', SBC Guidance, <sbcbguidance.org/understand/social-and-behaviour-change-communication>, accessed 24 June 2026.
2. United Nations Children's Fund, Social and Behavioural Change Communications for Prevention of Childhood Overweight and Obesity: A toolkit for country teams, UNICEF, New York, 2022.
3. Ministry of Health and Family Welfare, Government of India, United Nations Children's Fund and Population Council, Comprehensive National Nutrition Survey (CNNS) National Report, Ministry of Health and Family Welfare, New Delhi, 2019.
4. Ministry of Health and Family Welfare, Government of India, and International Institute for Population Sciences, National Family Health Survey (NFHS-6), 2023–24: India and state/UT fact sheets, IIPS, Mumbai, 2026.
5. Thapsuwan, S., et al., 'Relationship between Consumption of High Fat, Sugar or Sodium (HFSS) Food and Obesity and Non-Communicable Diseases', *BMJ Nutrition, Prevention & Health*, vol. 7, no. 1, 13 February 2024, pp. 78–87.
6. Ohri-Vachaspati, P., D. DeLia, R. S. DeWeese, N. C. Crespo, M. Todd and M. J. Yedidia, 'The Relative Contribution of Layers of the Social Ecological Model to Childhood Obesity', *Public Health Nutrition*, vol. 18, no. 11, August 2015, pp. 2055–2066.



10. VOICES OF THE YOUTH: WHAT ADOLESCENTS SAY ABOUT INDIA'S FOOD ENVIRONMENT – AND WHAT THEY RECOMMEND

Why this matters

India is home to the world's largest population of children and adolescents – every fifth person is between 10 and 19 years of age. The food choices this generation makes today will shape the country's disease burden for decades to come. Yet these choices are rarely made freely; they are influenced by advertising, pricing, school food environments, and the availability of confusing or inadequate nutrition information.

This brief moves beyond programme descriptions and focuses on one central question: What do adolescents themselves say is wrong with their food environment, and what changes do they recommend? It draws on the largest nationwide survey¹ of its kind – covering 143,878 adolescents across 36 states and union territories in India – together with adolescent testimonials and regional evidence to ensure that youth voices inform the policy agenda.

What adolescents told us

Food advertising and nutrition labelling influence food choices, but nutrition information is not presented in a way that adolescents find easy to use.



Affordability and taste are the main barriers to healthy eating.



- 49.5 per cent of adolescents identified schools as their primary source of nutrition information, far ahead of online media (20.8 per cent), home (15.1 per cent), friends (3.2 per cent) and television (3 per cent), underscoring the central role schools play in shaping nutrition knowledge.
- Adolescents' understanding of recommended physical activity levels remains limited. While 30.2 per cent believed that 30 minutes of physical activity per day is sufficient, only 15 per cent identified the recommended 60 minutes, indicating a gap in awareness of physical activity guidelines.
- 43.9 per cent of adolescents said that having more knowledge about healthy eating would help them avoid unhealthy foods, followed by higher prices for unhealthy foods (21.1 per cent) and reduced advertising of unhealthy foods (17.6 per cent).

Evidence generated through regional U-Report surveys

The report *Young People's Perspectives on Food Environments and Food Choices in South Asia (2024)*,² based on responses from 15,711 adolescents aged 13–19 years in India, together with the *Child Nutrition Report 2025: Feeding Profit – How Food Environments Are Failing Children (2025)*,³ based on responses from 64,000 young people aged 13–24 years across 171 countries, found that:

- More than 50% of respondents in India reported seeing food brands and logos within their schools, indicating substantial exposure to food marketing in school environments.

The report *Overweight and Obesity among Children and Adolescents in Bhutan, India, Maldives, Nepal and Sri Lanka (2024)*,⁴ based on data collected between August 2022 and April 2023 from 6,292 adolescents aged 13–19 years in India, found that:

- Around 50% of adolescents reported that unhealthy foods were available within schools.
- 28% reported choosing unhealthy foods because they were the only options available through school food-service facilities.
- 66% believed that unhealthy food brands and logos should not be advertised within school premises.

In their own words

Adolescent Network members from across India, engaged through the Let's Fix Our Food (LFOF) initiative, reflected the survey findings in their own words:





“Overweight and obesity are growing health concerns among adolescents because of the increased consumption of junk food and processed foods. Eating unhealthy foods can affect growth and increase the risk of diseases such as diabetes and cardiovascular disease later in life.”

Claudia Sun, Meghalaya

“Children often find it difficult to understand complex nutrition labels on packaged foods. Simpler, child-friendly labels can help children and parents make healthier and safer food choices.”

Prisha Saxena, Maharashtra

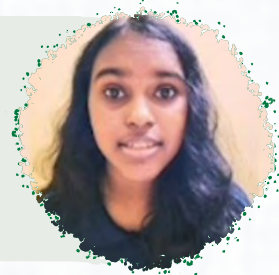


“Bright packaging, discounts and advertisements for foods high in sugar, salt and fat strongly influence children’s and adolescents’ food choices. Such advertisements contribute to obesity and other non-communicable diseases and should be regulated.”

Dakhroo Lang I Lamar, Meghalaya

“Adolescents need opportunities to speak up and share their opinions on healthy diets and nutrition. If they are taught to make healthier food choices, they can positively influence their families and friends as well.”

Meghna Jiya Nayan, Kerala



“Food taxation is usually never discussed with children of our age. Learning about taxation and related issues can help young people make better choices when buying snacks and fast foods.”

Anvesha Awasthi, Uttar Pradesh

Through the “Build Your Own Sugar & Oil Boards” youth challenge, adolescent ambassadors also translated these concerns into public messaging by highlighting the hidden sugar and oil in everyday foods, promoting local and sustainable diets, and encouraging people to look beyond claims such as “low fat” and “baked” to understand what foods actually contain.



What youth recommend

Taken together, the survey findings and adolescent testimonials point to a consistent set of priorities. This brief organizes these recommendations according to the stakeholders best placed to act.

To government

- Enforce stricter regulations on the advertising and marketing of foods high in fat, sugar and salt (HFSS) targeted at children and adolescents.
- Mandate simple, easy-to-understand front-of-pack nutrition warning labels on packaged foods high in sugar, salt and unhealthy fats – responding directly to the 62.8 per cent of adolescents who found current labels too difficult to understand.
- Strengthen monitoring and enforcement of the Food Safety and Standards Authority of India (FSSAI) regulations prohibiting the sale of HFSS foods in school canteens and within the prescribed vicinity of schools and colleges.
- Improve the affordability and accessibility of healthy foods across all population groups to address the most commonly reported barrier to healthy eating (30.7 per cent).
- Meaningfully engage adolescents as co-creators – not merely beneficiaries – of policies and programmes that affect their health and well-being.

- Develop an adolescent-specific “My Plate for the Day” to promote balanced diets along this age group.⁵
- Develop a national social and behaviour change communication (SBCC) strategy to address the individual, interpersonal, community, organizational and policy-level drivers of overweight and obesity.

To development partners

- Continue to amplify adolescent voices by providing platforms for young people to share their lived experiences and participate meaningfully in food-environment policy and programme development.
- Generate and disseminate evidence to inform the planning, implementation and monitoring of programmes and policies that promote healthier food environments.
- Invest in adolescent-led campaigns and capacity-building initiatives to advance adolescent health and well-being.
- Avoid partnerships or funding arrangements that create conflicts of interest with corporations that market HFSS foods to children and adolescents.

To educational institutions

- Adopt the Indian Council of Medical Research–National Institute of Nutrition (ICMR–NIN) “My Plate for the Day” guidance to promote safe and balanced diets within educational institutions.
- Strengthen skill-based nutrition education within the school curriculum – the primary source adolescents of nutrition information for 49.5 per cent of adolescents – to improve nutrition knowledge, encourage healthier dietary practices and promote lifelong healthy eating behaviours.
- Ensure that healthy food options in school canteens and in the vicinity of schools are affordable, accessible and easy for students to choose.
- Reinforce messages on healthy eating and regular physical activity consistently so that healthy behaviours become lifelong habits rather than one-off lessons.

References

1. Rawal, T., et al., 'What Influences Food Choices of Adolescents in India and How Their Food Environment Can Be Improved?', *BMC Nutrition*, vol. 11, 2025, p. 225.
2. United Nations Children's Fund, *Young People's Perspectives on Food Environments and Food Choices in South Asia*, UNICEF Regional Office for South Asia, Kathmandu, 2024.
3. United Nations Children's Fund, *Feeding Profit. How food environments are failing children*, Child Nutrition Report 2025, UNICEF, New York, September 2025.
4. United Nations Children's Fund, *Overweight and Obesity among Children and Adolescents in Bhutan, India, Maldives, Nepal and Sri Lanka*, UNICEF Nourishing South Asia Reports, Issue 4, UNICEF Regional Office for South Asia, Kathmandu, 2024.
5. ICMR-National Institute of Nutrition Expert Committee, *Dietary Guidelines for Indians – 2024*, ICMR-National Institute of Nutrition, Hyderabad, 2024.

Let's Fix Our Food



icmr **NIN**
INDIAN COUNCIL OF
MEDICAL RESEARCH
NATIONAL INSTITUTE
OF NUTRITION

RESOLVE
TO SAVE LIVES

unicef
for every child

**Global Health
Advocacy Incubator**

भारतीय
जन स्वास्थ्य
प्रतिष्ठान



**PUBLIC
HEALTH
FOUNDATION
of INDIA**



**World Health
Organization**
India

fssai



**DEAKIN
UNIVERSITY**

YuWaah!
The Potential of Young People