



# **ILSI India's Pioneering Work**

***1997-2024***

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**ILSI India** has had an interesting journey over the last 27 years. ILSI-India has been in the forefront of activities relating to **food and water safety**, nutrition, **risk sciences** and agricultural sustainability in India and other countries in the SAARC region. The high quality of the scientific information generated at its **Workshops**, **Conferences**, **Research Programs** and **Publications** have provided guidance to the scientists from **Government**, **Industry** and **Academia** on the actions to be undertaken in their areas of work. Capacity building activities conducted by national and international experts have imparted the necessary skills to the participants.

# **Focus Areas of Scientific Work**

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- **Nutrition and Health for All**
- **Lifestyle for improving Health and Environment**
- **Improving Food and Water Safety**
- **Building Agriculture Sustainability**
- **Enhancing Food and Nutrition Security**
- **Exploring new frontiers of science – Brain Health, Gut Microbiome, Nutritional Diagnostics, Personalized Nutrition, Food Processing Technologies, New Plant Breeding Technologies, Biotechnology, Nanotechnology, Best Practices for Human Intervention Trials for New Food & Food Ingredients, Personalized/Precision Nutrition.**
- **Climate Change and its impact on Food and Nutrition Security and Water Availability and Food Safety.**

# **Contribution of Some of the Key Scientific Activities Pioneered by ILSI India**

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# NUTRITION

- **Generating evidence based science for adopting Food Based Approaches including Micronutrient Fortification of Foods to Address the Challenge of Eliminating Micronutrient Malnutrition - Since 1999.**
- **Bringing Attention to Vitamin D Deficiency and Its Adverse Impact on Health and Role of Fortification in Dealing with this Problem – Since 2010.**
- **Addressing Lifestyle and Diet Related Issues including Metabolic Disorders for Different Segments of Population Including Children, Adolescents, Elderly, Pregnant and Lactating Mothers, Persons affected by HIV/AIDS on the One Hand and Sports Persons on the Other - Since 1997.**
- **Creating Awareness on Consumption Levels of Fat, Sugar and Salt by Indian Population and Strategy for Reducing their Consumption to Levels Recommended by ICMR – Since 1998.**
- **Examining the Role of Healthy Gut Microbiome in Promoting Health and Immunity and Role of Functional Foods Including Probiotics, Prebiotics and Postbiotics in Strengthening Gut Microbiome – Since 2009.**
- **Initiating Discussions on New and Innovative Approaches for Improving Public Health such as Nutritional Diagnostics, Personalized Nutrition, Alternative Proteins and Bioactive Molecules – Since 2017.**
- **Addressing Issues related to Best Practices for Ethical Conduct of Human Intervention Studies for New Foods & Food Ingredients (Novel Food/ Ingredients/ Processes/ Technology/ Claim Substantiation)- Since 2023.**
- **Creating Awareness on Personalized / Precision Nutrition for Sustainable Health -From Theory to Practice- Since 2023.**

# FOOD AND WATER SAFETY

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- **Preparation of Vision 2025 on Water Quality Management: South Asian Perspective – Since 2002.**
- **Addressing the Importance of Harmonization of Food Regulations in SAARC Countries – Since 1997.**
- **Drawing Attention towards Modernizing Food Control System in SAARC Countries and Establishing Need for Strong Infrastructure and Training of Manpower for Offering Safe Food to Consumers – Since 2000.**
- **Preparing the Blueprint for Surveillance and Monitoring System for Food Safety in India – 2007-08.**
- **Highlighting the importance of use of Packaging Materials to ensure that food are safe as also drawing Guidelines for ensuring that Safe Packaging Materials are used – Since 2006.**
- **Examining the need for using Food Additives and their Safety Protocols – Since 1997.**
- **Imparting Skills in Good Food Laboratory Practices – Since 2016 .**
- **Looking at Alternatives to Animal Testing for promoting Food Safety and recommending Way Forward- Since 2017.**

# RISK ASSESSMENT

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- **Improving Knowledge Base in Risk Assessment through organization of Expert Consultations, Workshops and Training Programs on Nutrient Risk Assessment, Chemical and Microbiological Risk Assessment, GM Foods and Plants, Detection Methods for GM Foods and Plants and Pesticide Residues – Since 1999.**
- **Drawing attention towards “Nutrient Risk Assessment -Vitamins, Minerals, And Bioactive Compounds”- Since 2022-23**

## NEW TECHNOLOGIES FOR FOOD AND NUTRITION SECURITY

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- **Looking at Safety and Benefits of New Technologies which can improve Food Safety, contribute towards Agriculture Sustainability, improve Nutrient Delivery Mechanism, improve Food Processing and Packaging such as: New Plant Breeding Technologies, Biotechnology, Nanotechnology, High Pressure Processing etc., Examining Safety and Benefits of Alternative Proteins; Functional Foods and Gut Microbiome – Since 1999.**

# CLIMATE CHANGE AND IMPACT ON FOOD SAFETY AND NUTRITION SECURITY

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- **Examining the impact of Climate Change on Water Availability, Agriculture Productivity, Food and Nutrition Security and drawing the Strategy for Mitigation and Remediation. Also identifying steps to bring Lifestyle Changes to reduce Carbon Footprints. Examining the use of innovative technologies for developing new varieties of Food Crops, Vegetables and Fruits which require less of land and water and use of eco-friendly Packaging Materials- Since 2013**

# **FEW EXAMPLES OF IMPACT OF KEY SCIENTIFIC ACTIVITIES PIONEERED BY ILSI INDIA**

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- **Micronutrient Fortification of Foods initiated for addressing Malnutrition Problem in India and other countries in South Asian Region through organization of more than 40 Conferences and Research and with Support from Government, Industry & Academia.**  
**More recently ILSI India work on importance of Vitamin D for Health has led to acceptability and use for fortification/supplementation.**
- **Expansion in Government programs for improving Nutrition Status of children and adolescents through expansion of Integrated Child Development Services (ICDS) and Mid- Day Meal (MDM) programs in India.**
- **Use of “Nutrition and Hydration Guidelines for Excellence in Sports Performance” prepared by ILSI India and used by Sports Authority of India.**
- **Harmonization of Food Regulations and facilitating Modernization Food Control System in SAARC Countries.**
- **Inputs for Surveillance and Monitoring System for Food Safety in India.**

# **FEW EXAMPLES OF IMPACT OF KEY SCIENTIFIC ACTIVITIES PIONEERED BY ILSI INDIA**

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- **Establishing Guidelines for ensuring that Safe Packaging Materials are used leading to separate Packaging Regulations in India.**
- **Adoption of Scientific Approach for use of Food Additives by drawing attention to Safety Protocols and enabling their use such as Colors, Low Calorie Sweeteners and Probiotics.**
- **Creating Knowledge Base in Risk Assessment.**
- **Capacity Building in Good Food Laboratory Practices and enabling FSSAI to evolve Model Training Programs.**
- **Adoption of New Technologies for improving Agriculture Productivity.**

**ILSI – India addresses Critical and Emerging Scientific Issues and ensures that only Quality, Impactful Science is pursued.**

- **K-FFIG**

**This unique ILSI India Knowledge Center on Functional Foods, Immunity and Gut Health (K-FFIG) is focusing on sharing relevant research and technological developments in the area of Human Microbiome and Functional Foods including Prebiotics, Dietary Fiber and Probiotics. It provides a Knowledge Sharing Platform and Conducts Surveys, Undertake Studies and Organizes Seminars/ Conferences/ Workshops.**

**A “Data Resource Center” has been created that provides a collection of recent studies (more than 500 since 2017) published in Peer Reviewed Journals on Functional Foods including Probiotics and Prebiotics and Gut Health and Microbiome.**

- **Expert Committee on Personalized / Precision Nutrition.**
- **Scientific Advisory Committee on Gene Editing (I-SAGE).**
- **Network for Checking Post Harvest Losses (I- NET).**
- **Committee on Nanotechnology (I-CoN).**
- **Task Force on Nutrition and Brain Health (NABHI).**

# **K-FFIG Resource Centre**

<http://www.ils-india.org/kffig.htm>

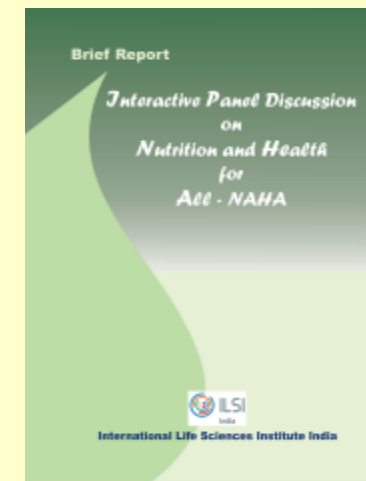
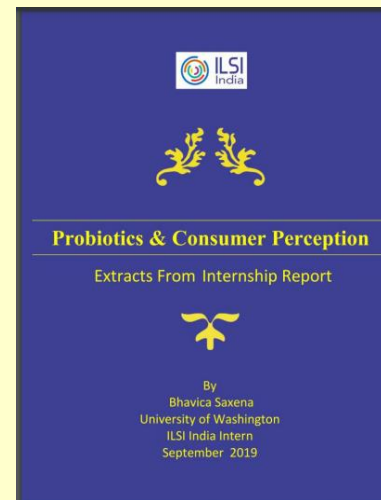
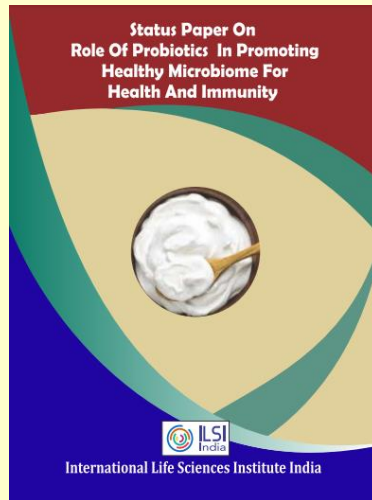
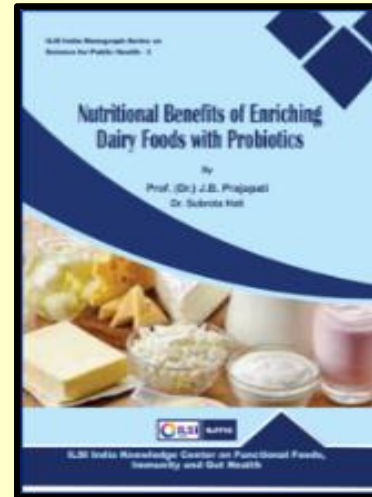
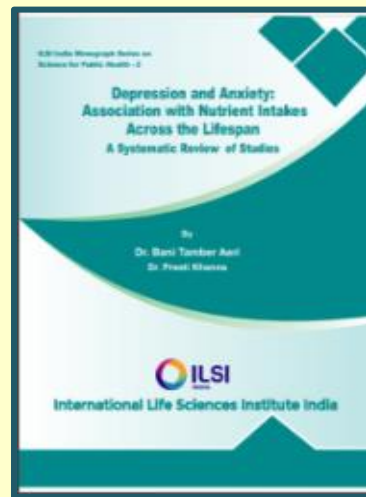
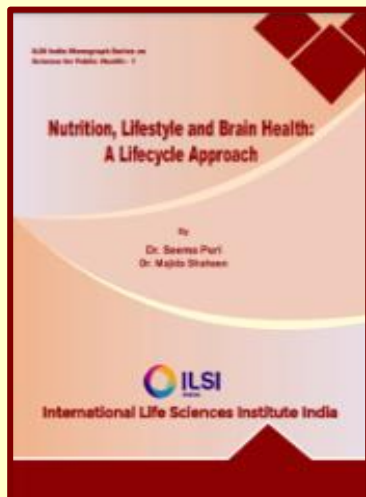
## **Recent Studies (Peer Reviewed Journals) – 1145 Studies & Publications**



- **Microbiome and Gut Health – 352 Studies**
- **Immunity and Probiotics – 180 Studies**
- **Prebiotics – 65 Studies**
- **Functional Foods – 106 Studies**
- **Gut Microbiome and Neurological and Neuropsychiatric Disorders- 100 Studies**
- **Gut Microbiome and Antimicrobial Resistance - 60 Studies**
- **Gut Microbiome and Antimicrobial Resistance- 76 Studies**
- **Select Latest Indian Studies on Functional Foods: Probiotics, Bioactives, Specific Product Based etc. – 119 Studies**
- **Postbiotics – 87 Studies**

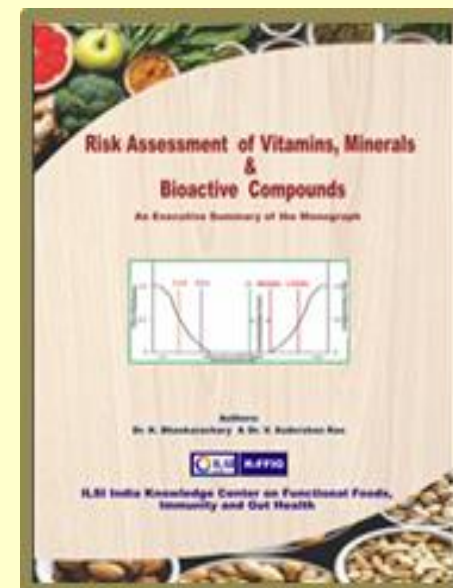
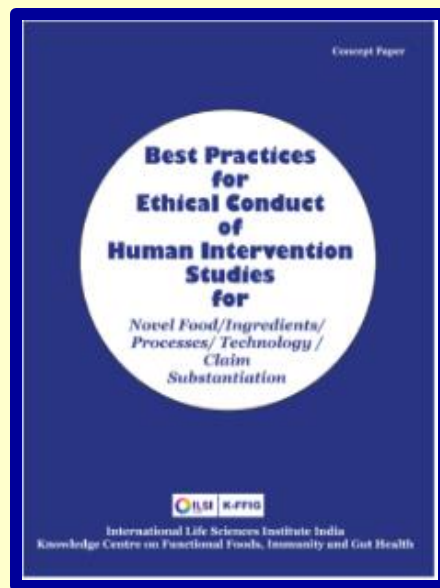
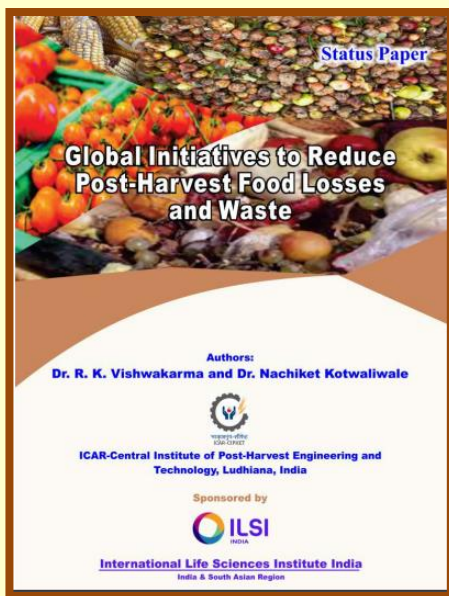
# ILSI INDIA

## LATEST PUBLICATIONS



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Online ISSN: 2160-3855, Print ISSN: 2376-7007  
**Functional Foods in Health and Disease** Home Editorial Team Issues

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**Use of probiotics for nutritional enrichment of dairy products**  
 Suvrata Hies, JB Praakar

**Abstract**

Several food products, prepared with the help of beneficial microbes, can fit into the current definition of probiotics which have been consumed by mankind since ancient times. Beneficial microbes are the agents that produce many fermented foods and beverages, which are popular in different parts of the world. Information about the use of products with healthy microbes are given in Vedic literature and are also described in ancient Egyptian and European treatises. However, systematic studies on probiotics started after the publication of the book, *Prolongation of Life*, by El Metchnikoff in 1907. Our review discusses the use of probiotics as food and general products given a substantial role. This review intends to compile and analyze the literature pertaining to the use of probiotics as food products, especially for nutritional enrichment. The review will focus on the key issues required to establish the requirements to ensure the efficacy and safety after grain-fermentation, process standardization, product formulation, bio-stability of the cells and strains, and the effect of processing, etc. Current literature also examines the mechanisms of action for probiotic function and the development of novel probiotic foods with health claims and meet specific nutritional requirements through fermentation are necessary to better understand the products and its application.

**Keywords:** Probiotics, prebiotics, nutritional enrichment, fermented foods, bio-stability, efficacy, regulation, safety, functional food

Full Text (Access) [Full Article]  
 DOI: 10.31989/ffhd.v12i12.1013

ISSN 0975-7027  
**IJCH**  
 (A National Journal of Indian Association of Preventive & Social Medicine)

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Home > Archive > Vol. 52(6) 2022 > Current Issues

**Role of probiotics and vitamins in maintaining a healthy gut microbiome: recent advances**

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 110007, New Delhi, India

**Abstract**

While the concept of probiotics is a new, several latest approaches to developing probiotic products are reviewed. Probiotics and the mechanism is now being translated as having a diversity of great work, under a very broad term. Along with the well known and established health benefits for blood pressure, associated diarrhea and viral symptoms, asthma, overweight, autoimmune, acute pancreatitis, the cellular and organ regeneration, probiotics are now considered as beneficial for maintaining blood lactating as well. This new branch of disease management is now termed as functional nutraceuticals and these nutraceutical products are referred to as probiotics. It is important to identify specific strains of probiotic and characterize them and conduct controlled clinical trials to establish their benefits. With emerging data related to role of vitamins in modulating the gut microbiome, combining gut and probiotic and nutraceuticals is likely to result in powerful functional foods leading to better immunity.

DOI: 10.31989/ijch.v52i6.10207

**Keywords:** Probiotics, Immunology, Gut, Brain, Gut, Depression, Anxiety

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Full Text (Access) [Full Article]  
 DOI: 10.31989/ijch.v52i6.10207

**REPORT**

**Safety and Benefits of Nanotechnology**  
 Agriculture, Water Safety, Food & Food Safety, Nutrition, Packaging

ILSI India  
 International Life Sciences Institute India

**K-FFIG Research Briefs**  
 22<sup>nd</sup> January 2023

ILSI K-FFIG  
 Knowledge Center on Functional Foods, Immunity and Gut Health

**SPOTLIGHT**

Review Article on "Use of Probiotics for Nutritional Enrichment of Dairy Products" sponsored by ILSI India K-FFIG, has been published in the *Functional Foods in Health and Disease Journal*, Volume 12, No. 12, December 2022. The authors are: Suvrata Hies, JB Praakar, Anand K. Srinivasan, and G. Srinivasan. The article is available at: <https://doi.org/10.31989/ffhd.v12i12.1013>

**ABOUT K-FFIG**

K-FFIG is a research center in New Delhi in October 2009. The Executive Committee as a Think Tank, involving stakeholders from Government, Academia and Industry, that work towards sharing relevant research and technology development in the area of human nutrition and functional foods.

**Visit ILSI India Website [www.ilsindia.org](http://www.ilsindia.org) to download the following:**

- ILSI India 20th Anniversary Conference on Emerging Trends in Nutrition for Health and Longevity: <https://www.ilsindia.org/20th-anniversary-conference>
- ILSI India Monograph on **Immunity and Brain Health**: <https://www.ilsindia.org/immunity-brain-health>
- ILSI India Monograph on **Immunity and Aging**: <https://www.ilsindia.org/immunity-aging>
- ILSI India Monograph on **Immunity and Gut Health**: <https://www.ilsindia.org/immunity-gut-health>
- Presentations and Proceedings of K-FFIG Seminar on **Immunity and Food and Food Safety, Nutrition and Challenges**: <https://www.ilsindia.org/k-ffig-seminar>

Contact K-FFIG Secretariat for its Activities: [kffig@ilsindia.org](mailto:kffig@ilsindia.org)

**News You Can Use**

ILSI India K-FFIG Report on **Bioactives and Functional Foods: Safety, Benefits and Challenges**

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- ILSI India 20th Anniversary Conference on Emerging Trends in Nutrition for Health and Longevity: <https://www.ilsindia.org/20th-anniversary-conference>
- ILSI India Monograph on **Immunity and Brain Health**: <https://www.ilsindia.org/immunity-brain-health>
- ILSI India Monograph on **Immunity and Aging**: <https://www.ilsindia.org/immunity-aging>
- ILSI India Monograph on **Immunity and Gut Health**: <https://www.ilsindia.org/immunity-gut-health>
- Presentations and Proceedings of K-FFIG Seminar on **Immunity and Food and Food Safety, Nutrition and Challenges**: <https://www.ilsindia.org/k-ffig-seminar>
- ILSI India Monograph on **Immunity and Brain Health**: <https://www.ilsindia.org/immunity-brain-health>
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Full Text (Access) [Full Article]  
 DOI: 10.31989/ffhd.v12i12.1013

**Roundtable on LIFE**  
 Lifestyle for Environment

on 24th November, 2021, New Delhi

ILSI India  
 International Life Sciences Institute India

**Report on Bioactives and Functional Foods**  
 Safety, Benefits and Challenges

ILSI K-FFIG  
 Knowledge Center on Functional Foods, Immunity and Gut Health

# Research / Studies

- **Status Paper on “Global Initiatives to Reduce Post-Harvest Food Losses and Waste”.**
- **Concept Paper on Best Practices for Ethical Conduct of Human Intervention Studies for Novel Food/Ingredients/ Processes/ Technology / Claim Substantiation.**
- **White Paper on “Integrated Food Chain Surveillance for Enhancing Food Safety- A Model Approach”.**
- **Monograph on Nutrient Risk Assessment -Vitamins, Minerals and Bioactive Compounds.**
- **Monograph on Nutrition, Lifestyle and Brain Health: A Lifecycle Approach.**
- **Non-Nutritive Sweeteners and their Role in Insulin Regulation and Related Metabolic Factors.**
- **Monograph on Micronutrient Status of Covid-19 Hospitalized Patients- A Systematic Review.**
- **Monograph on Depression and Anxiety: Association with Nutrient Intakes Across the Lifespan- A Systematic Review of Studies.**
- **ILSI India Monograph on Nutritional Benefits of Enriching Dairy Foods with Probiotics.**
- **Guidance Document on Basis For Labelling, Claims & Regulations For Probiotics.**

# Upcoming

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- **Systematic Reviews on Postbiotics- Under Review.**
- **Guidance Document for the Use of Traditional Knowledge for Scientific Evidence based Novel Foods and Ingredients- Under Review.**
- **Monograph on “Principles and Guidelines for the Practice of Personalized/ Precision Nutrition”- Under Peer Review.**
- **Status paper on Gene Editing Technology its current status, safety, areas of research, application in different countries and vision for India for next 10 years -Under Discussion.**

# UNITED NATIONS SUSTAINABLE DEVELOPMENT GOALS: ILSI INDIA CONTRIBUTIONS



**GOAL 2:**  
Zero Hunger



**GOAL 3:**  
Good Health and  
Well-being



**GOAL 9:**  
Industry, Innovation  
and Infrastructure



**GOAL 12:**  
Responsible Consumption  
and Production



**GOAL 13:**  
Climate Action



**GOAL 17:**  
Partnerships to achieve  
the Goal