



PURNABRAHMA

PREVENT MALNUTRITION

Part -2



APRIL - JUNE 2025
YEAR 5 / VOLUME -2

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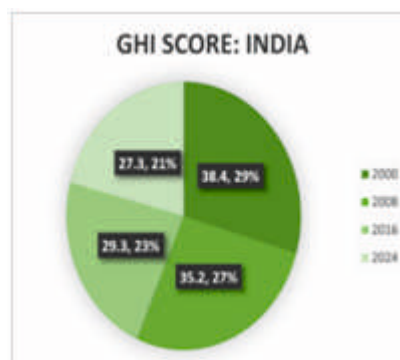
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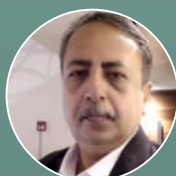
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Senior Food Consultant
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And Coordinator CASMB



CASMB MEMBER ACHIEVEMENTS

Our valued CASMB member Mr. Mihir Desai at L&T powai to represent the importance of millets. Congratulations to them and the team!



Gr8 sports pvt ltd won prestigious Startup Maharati award under sports and Gaming Category in the recently concluded Startup Mahakumbh organized by DPIIT Govt of India at New Delhi. GR8 Sports India Pvt Ltd, based in Anantnag, Kashmir, is the only ICC-approved cricket bat manufacturer from the region. Specializing in high-quality Kashmir willow bats and cricket gear, the company is ISO 9001:2015 certified with a global footprint. Led by Fawzul Kabiir and Mohammad Niazul Kabir, it actively promotes Kashmir's sports industry on the world stage. GR8 Sports has sponsored major events like Legends League Cricket 2024 and supplied gear for ICC Cricket World Cups.



CASMB ACTIVITIES



CASMB is proud to partner with Vitafoods India, with Dr. Prabodh Halde leading the inaugural function.



Impactful session at Vitafoods by CASMB on "From Vision to Reality: Entrepreneurial Journeys, Career Pathways & the Role of Education"



A powerful discussion on the future of ready food processing, bridging technology, agriculture, and investment to build a sustainable and efficient food ecosystem. Moderated by Mr. Nilesh Lele.



Dr Prakash Kondekar, CASMB Advisor, With Mr Raddad Aljuad, Saudi Arabia. WTC Dubai, Middle East Energy 2025 conference



Participated at Inter Food Tech Expo 2025 at BEC



AFST Mumbai recently hosted a Capacity Building and Women Empowerment Programme. CASMB is Support Partner for this program

Dr. Prabodh Halde

**Chairman
Chamber for Advancement of
Small and Medium Businesses,
CASMB**



Malnutrition remains one of the most pressing challenges threatening the well-being of our future generations. While the Indian Constitution does not explicitly state a "right to food," Article 21 guarantees the right to life with dignity, and Article 47 directs the State to improve nutrition levels and public health. The National Food Security Act (NFSA), 2013, further anchors this by legally entitling citizens to access subsidized food. However, malnutrition is not just about undernutrition — it also includes overnutrition. Alarming, 22% of urban children are overweight, and this too is a form of malnutrition. In our pursuit of economic progress, we must not ignore the critical importance of balanced nutrition, which remains the foundation of a healthy society.

The government has launched commendable initiatives such as the Eat Right India campaign, the 1000 Days Nutrition Program, mid-day meals, and food fortification schemes. But today, malnutrition is not merely a governmental concern—it is a societal issue. Every citizen, institution, and organization must come together to promote awareness, especially among schoolchildren and young mothers. Emphasizing traditional foods, locally grown ingredients, and millet-based meals is essential to restore nutritional balance. At CASMB, we believe that investing in nutritional education is not just a health agenda—it is nation-building. Together, let us strive to create a healthier, stronger, and more resilient India

Dr. Prabodh Halde

**Chairman, Chamber for Advancement of Small &
Medium Businesses (CASMB)**



CHAMBER FOR ADVANCEMENT
OF SMALL & MEDIUM BUSINESSES

Nilesh Lele

**President,
Chamber for Advancement
of Small and Medium
Business (CASMB)**



Malnutrition, a condition arising from an imbalanced intake of nutrients, remains a critical challenge for many developing and underdeveloped countries. It not only affects individual health and productivity but also hampers a nation's overall economic and social development.

Children suffering from malnutrition are at a higher risk of stunted growth, weakened immune systems, and poor cognitive development. These effects are often irreversible and significantly reduce their potential to succeed in school and contribute productively to the workforce later in life. This leads to a cycle of poverty and under achievement that can persist across generations.

For countries, widespread malnutrition reduces labour productivity, increases healthcare costs, and limits economic output. Malnourished populations are more prone to illness, reducing the working age population's capacity and increasing dependency ratios. According to the World Bank, countries can lose up to 11% of GDP annually due to malnutrition through reduced productivity and increased health burdens.

Addressing malnutrition requires coordinated investments in agriculture, education, sanitation, and healthcare. By improving food security and access to essential nutrients, countries can build a more capable population — laying the foundation for long-term economic growth and national development.

Mr. Nilesh Lele

President,
**Chamber for the Advancement of Small and
Medium Business (CASMB)**



PURNABRAHMA

**Nidhi Godbole
Deshpande**

Sub-Editor CASMB
Senior Food Consultant
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"Smart Eating, Small Cost: A Solution to Malnutrition"

Malnutrition remains one of the most pressing global health challenges, often mistakenly associated solely with food scarcity. In truth, it is frequently a result of poor food choices, lack of awareness, and limited access to nutritious yet affordable options. The good news? Smart eating on a small budget is not only possible—it's one of the most effective strategies to combat malnutrition.

Smart eating means choosing foods that are rich in essential nutrients without breaking the bank. Local fruits, vegetables, whole grains, legumes, and eggs are often more affordable and nutritious than processed alternatives. Planning meals ahead, reducing food waste, and embracing seasonal produce are small

changes that can have a big impact on both health and spending.

Community education also plays a critical role. When families understand nutrition basics—like balancing carbohydrates with proteins and vitamins—they can make smarter choices within their means. School lunch programs, local co-ops, and urban gardens are examples of initiatives that bring this knowledge and accessibility together.

In an age where food prices rise and incomes struggle to keep pace, “smart eating at small cost” isn't just a motto—it's a sustainable solution to malnutrition. With informed choices and community support, we can nourish lives and empower healthier futures.

Nidhi Godbole Deshpande

Sub-Editor CASMB
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PURNABRAHMA

Dr. Umesh Kamble

Secretary
Chamber for Advancement of
Small & Medium Businesses
(CASMB)



Unseen but Serious: Addressing Hidden Hunger around Us

Dear Readers,

When we think of malnutrition, we often picture underweight children or lack of food. But there's a quieter, often overlooked form—**hidden hunger**—caused not by lack of calories, but by a lack of essential vitamins and minerals. Even individuals who appear healthy may suffer from this form of malnutrition, which can lead to weakened immunity, poor learning, and long-term health issues.

In a country like ours, where meals are shared with care and tradition, how can such gaps exist? The answer lies in **low dietary diversity**, over-reliance on refined foods, and limited awareness. Vulnerable groups such as children, women, and the elderly are especially at risk.

As a community, it's time we rethink what it means to eat "well." Simple steps like including iron-rich greens, fortified staples, and local seasonal produce in our diets can make a big difference. Schools, Anganwadis, small food businesses, and even families all have a role in ensuring that nutrition reaches every plate—not just in quantity, but in quality.

Let us use this platform to build awareness, support local efforts, and advocate for nutrition that truly nourishes. Because tackling malnutrition isn't just a health issue, it's a step toward a stronger, smarter, and more resilient nation.

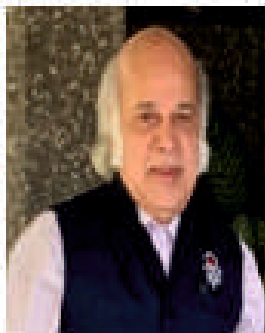
Warm regards,

Dr. Umesh Kamble

Secretary
Chamber for Advancement of Small & Medium
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Dr. Prakash Kondekar

**Advisor, CASMB
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Hon Director, Indian Institute
of Naturopathy, Mumbai.
Fellow of Royal Society of
Health (London)**



Malnutrition in India relates to three factors. Income inequality, how the total sum of money paid to people is distributed among them. Wealth inequality, how the total sum of wealth owned by people is distributed among the owners. And consumption inequality, *how the total sum of money spent by people is distributed among the spenders*. Each of these can be measured between two or more nations, within a single nation or between and within sub-populations. According to latest study, global earnings inequality has decreased substantially since 1970. During the 2000s and 2010s, the share of earnings by the world's poorest half doubled.

There can be individuals, who are dependent on others for their nourishment, like infants, children, elderly and prisoners. Furthermore, like mentally retarded since they are not aware of what they are eating. People who are suffering from various diseases or have undergone various surgeries are susceptible to interferences with appetite or food uptake which can lead to malnutrition.

Malnutrition also includes undernutrition e.g. wasting, stunting, underweight, an adequate vitamins, minerals, overweight, obesity as also diet related non communicable diseases. There can be other types of malnutrition, like Protein-energy malnutrition, Kwashiorkor (a disease marked by severe protein malnutrition) and swelling in extremities and Marasmus (severe loss of body fat and muscle).

So once the causes of malnutrition are known it will not be difficult to control or prevent it. Otherwise it can affect the quality of life of a person, health of a person's immune system, healing capabilities and ability to maintain independence.

According to a 2020 study, global earnings inequality has decreased substantially since 1970. During the 2000s and 2010s, the share of earnings by the world's poorest half doubled.

On 24 March 2025, the United Nations General Assembly (UNGA) adopted a resolution to extend United Nations Decade of Action on Nutrition (the Nutrition Decade), originally from 2016–2025, to 2030. This extension aims to maintain the political momentum to end malnutrition in all its forms by 2030 at global, regional and national levels and to align its objectives with the 2030 Agenda for Sustainable Development.

The resolution was adopted during the 62nd UNGA plenary meeting and received large support, with 158 Member States voting in favour and 139 Member States co-sponsoring. The

resolution reiterates the Nutrition Decade's vision to build a world where all countries, organizations and others working on nutrition coordinate actions and strengthen collaboration so that all people, at all times and at all stages of life, have access to affordable, diversified, safe and healthy diets. The Decade aims to accelerate progress towards the global nutrition and diet-related noncommunicable disease targets and prioritize nutrition at the highest political level.

The resolution also calls on the Food and Agriculture Organization of the United Nations (FAO) and the World Health Organization (WHO) to continue to lead and monitor the implementation of the Decade and to further strengthen efforts in advancing the global nutrition agenda.

"The world is off track to end hunger and malnutrition by 2030 and all countries need to scale up implementation of national commitments and increase investments for nutrition. Therefore, the decision by the General Assembly to extend the Decade for Action on Nutrition is an important step and would be well supported by the alignment of the 6 World Health Assembly global nutrition targets to 2030. WHO remains committed to fully deliver its mandate in this crucial endeavour," said Werner Obermeyer, Director of the WHO Office at the United Nations.

Ending hunger and all forms of malnutrition is among the most urgent and pervasive development challenges. Most countries face multiple burdens of malnutrition and diet-related NCDs such as cardiovascular diseases, diabetes, cancer and obesity. The UN Decade of Action on Nutrition is a commitment by United Nations' Member States to undertake sustained and coherent implementation of policies, programmes and increased investments to eliminate malnutrition in all its forms and in all countries, leaving no one behind.

The Decade of Action on Nutrition supports coordinated country action across six areas:

- sustainable, resilient food systems for healthy diets
- aligned health systems providing universal coverage of essential nutrition actions
- social protection and nutrition education
- trade and investment for better nutrition
- safe, supportive environments across all ages
- Strengthened governance and accountability for nutrition.

Extending the Nutrition Decade will allow FAO and WHO to continue reporting on nutrition action and inform the General Assembly on progress through biennial reports for the next five years.

The adoption of this resolution coincides with the Nutrition for Growth Summit, taking place 27–28 March 2025 in Paris where the global nutrition community will be discussing how to align policies and resources to close the funding gap for nutrition.

Thus Malnutrition prevention is a joint responsibility of everybody. ■

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“Can Millets be one of the solutions to prevent Malnutrition?”

Chef Sumit Ghadiyali

Brand Consultant and Executive Chef, (Pune)



During the monsoon season when the rains would pour down and the air would be thick with humidity. My Grandma used to soak the pearl millets overnight, and then cook them with split lentils, vegetables, and a dash of turmeric. The aroma wafting from the kitchen would be incredible!

As a child, I'd devour the khichdi, not knowing its nutritional benefits. But now, I realize how pearl millets helped build my immunity and kept me healthy. Pearl millets are rich in fiber, proteins, and minerals like iron, calcium, and potassium. They're also gluten-free and have a low glycaemic index.

In many rural areas, millets like pearl millet are a vital part of the diet, providing essential nutrients and helping prevent malnutrition. Millets can help combat:

1. Micronutrient deficiencies
2. Digestive issues
3. Chronic diseases like diabetes and heart disease

By incorporating millets into our diets, we can promote overall health and well-being. My grandmother's pearl millet khichdi is more than just a dish – it's a testament to the power of traditional foods in promoting health and well-being.

Nutritional Benefits of Millets:

1. **High in Fiber:** Millets are rich in dietary fiber, which can help promote digestive health by regulating bowel movements, preventing constipation and by supporting healthy gut bacteria

2. **Rich in Minerals:** Millets are good sources of minerals like iron, calcium, and potassium, essential for maintaining healthy bones, blood, and overall bodily functions.
3. **Good Source of Protein:** Millets contain a significant amount of protein, the benefits of millets as a protein source include supporting muscle health and growth, providing essential amino acids and complementing other protein sources in a balanced diet. Millets can be a great addition for vegetarians and vegans.
4. **Gluten-Free:** Millets are naturally gluten-free, making them an excellent alternative for people with gluten intolerance or celiac disease.

Addressing Malnutrition:

1. **Micronutrient Deficiencies:** Millets can help address micronutrient deficiencies, particularly in iron, calcium, and other essential minerals like potassium, magnesium, and zinc.
2. **Sustainable Food Source:** Millets are drought-resistant crops that can thrive in challenging environmental conditions, making them a sustainable food source.
3. **Food Security:** Promoting millet cultivation and consumption can enhance food security, particularly in regions where malnutrition is prevalent.

Potential Solutions:

1. **Incorporating Millets into Diets:** Encouraging the incorporation of millets into daily diets can help improve nutritional outcomes.
2. **Millet-Based Products:** Developing millet-based products, such as flour, snacks, and breakfast cereals, can increase accessibility and convenience.
3. **Sustainable Agriculture:** Promoting sustainable agriculture practices for millet cultivation can help ensure environmental sustainability and food security.

Challenges and Opportunities:

1. **Awareness and Education:** Raising awareness about millets nutritional benefits can indeed help increase their adoption and promote healthier eating habits. Some ways to spread awareness includes social media campaigns, cooking

workshops, health and wellness events and collaborations with nutritionists and influencers. By sharing the benefits of millets, we can encourage more people to incorporate them into their diets!

2. Infrastructure and Support: Investing in infrastructure and support systems for millet cultivation, processing, and marketing can help scale up production and consumption. Some potential initiatives includes irrigation system, processing facilities, storage and warehousing, market linkages and farmer training programs. By strengthening the millet value chain, we can make millets more accessible and affordable for consumers.

3. Policy Support: Governments can indeed play a crucial role in promoting millets. Some potential initiatives include subsidies for millet farmers, inclusion in public distribution systems, support for millet processing and marketing, awareness campaigns and research and development funding. By implementing supportive policies, governments can help increase millet production and consumption, ultimately promoting food security and sustainable agriculture.

In conclusion, millets have the potential to be a valuable solution to prevent malnutrition due to their nutritional benefits, sustainability, and potential for food security. By promoting millet cultivation, consumption, and awareness, we can work towards improving nutritional outcomes and addressing malnutrition.

My Grand mother's recipe:

Bajra Khichdi (Pearl Millet)

Ingredients:

1 cup bajra (pearl millet)

1 cup masoor dal

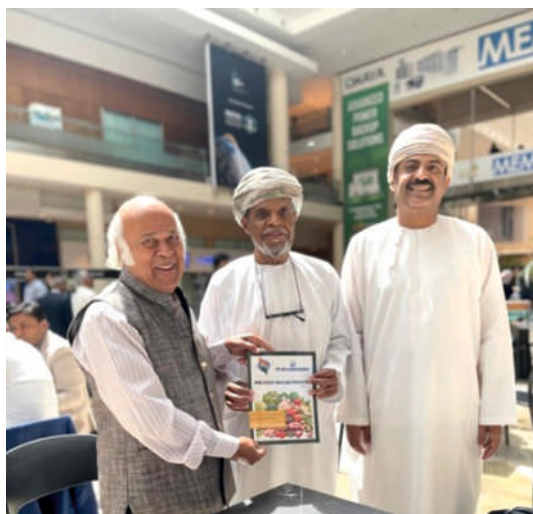
2 cups water Salt to taste

Optional: gheel, spices (like cumin, turmeric), vegetables

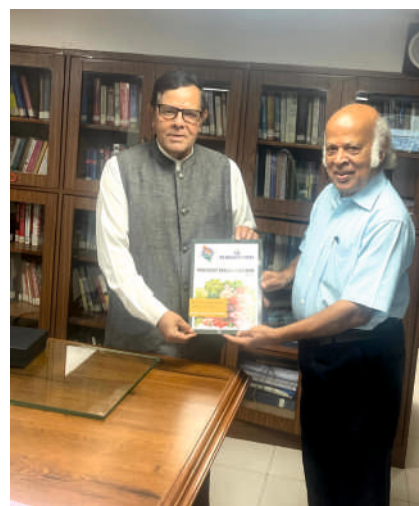
Instructions:

1. Rinse bajra and masoor dal, then cook together in water until soft.
2. Add salt and optional vegetables & spices.
3. Serve hot, optionally with ghee.

This comforting dish is nutritious and easy to digest!



Dr Prakash Kondekar, CASMB Advisor, With Mr Yacoub Yousuf Bilal CEO Advanced Project Management and his Manager, Muscat, Oman... During Middle East Energy 2025, conference, Dubai World Trade Centre, 8th April 2025



Presented Purnabramha Magazine present issue on Malnutrition, to Shri Swadheen Khashtriya IAS(RTD), Chairman IIPA Mantralay.

Malnutrition in India: A Roadblock to Development and How We Can Overcome It

Srirupa Guha

Senior Nutritionist,
Mumbai



Did you know that more than one-third of the world's malnourished children still live in India, even though the country's GDP has increased by 50% since 2013? Most of them are under the age of five. Malnutrition remains a serious threat that affects millions of lives and holds back the nation's progress.

Let's understand malnutrition:

Malnutrition occurs when the body does not get the right balance of nutrients needed to function properly. It has three key forms:

1. **Undernutrition** – When the body does not receive enough nutrients, leading to conditions like Marasmus and Kwashiorkor due to protein-energy malnutrition.
2. **Overnutrition** – When there is an excessive intake of one or more nutrients, contributing to obesity, diabetes, and other lifestyle-related diseases.
3. **Hidden Hunger** – A condition where the body lacks essential nutrients such as iron, vitamin A, and zinc. The effects may not be immediately visible, but it can lead to serious health problems like anaemia.

Malnutrition has severe consequences, including stunted growth, weakened immunity, and an increased risk of non-communicable diseases like heart disease and diabetes. According to global estimates from 2020, 149 million children under five were stunted, 45 million were wasted, and 38.9 million were overweight or

obese. Alarming, around 45% of child deaths worldwide are linked to undernutrition, with India ranking 111th in the Global Hunger Index with the highest child wasting rate (18.7%).

Let's see what's happening in India-

The National Family Health Survey (NFHS-5) of 2023 presents a grim picture of malnutrition in India:

- **35.5% of children under five** are stunted (too short for their age),
- **19.3% are wasted** (too thin for their height), and
- **32.1% are underweight** (low weight for age).

Economic disparity plays a major role in undernutrition. Families with low-income struggle to access and afford nutritious food, leading to poor health, slower brain development, and lower productivity. At the same time, overnutrition is rising among financially stable individuals who consume excess nutrients while leading sedentary lifestyles. Lack of awareness about balanced nutrition also contributes to hidden hunger, increasing the risk of various deficiencies and diseases.

Let's find out impact of malnutrition on health:

One of the most dangerous effects of undernutrition and hidden hunger is a weakened immune system. Malnourished individuals are more prone to infections, slower recovery, and increased risks of heart and digestive issues. Additionally, anaemia, a condition caused by iron, vitamin B12, and folic acid deficiency, is widespread, affecting 64.4% of Indian women and children. Anaemia has serious implications, particularly for young girls, pregnant women, and lactating mothers, affecting both current and future generations.

How individuals can take action:

Addressing malnutrition is not just the responsibility of the government; every individual can contribute. Here's how:

1. **Spreading Nutrition Awareness** – Promoting correct nutrition education and advocating for healthy eating through workshops and group discussions. Apart from that simple recipes should also be demonstrated to make it more practically feasible.
2. **Encouraging Balanced Diets** – Teaching communities about the importance of consuming locally available, nutrient-rich foods

and fortified staples like fortified rice and salt.

3. **Supporting Community Nutrition Programs** – Encouraging maternal nutrition, exclusive breastfeeding for the first six months, and early childhood and adolescent care.
4. **Promoting Home and Community Gardening** – Growing seasonal fruits and vegetables to improve household food security.
5. **Utilizing Nutraceuticals and Supplements** – Wherever possible, using supplements and nutraceuticals to address deficiencies, especially in vulnerable communities.

Government Initiatives to Combat Malnutrition

The Indian government has taken significant steps to address malnutrition through various schemes, including:

- **Anganwadi Services** – Providing nutritional support to children, pregnant women, and lactating mothers.

- **Scheme for Adolescent Girls** – Addressing the nutrition needs of teenage girls.
- **Pradhan Mantri Matru Vandana Yojana (PMMVY)** – Offering financial assistance to pregnant women for better nutrition and care.
- **Integrated Child Development Services (ICDS)** – A comprehensive program for child nutrition and development.

Let us put a Collective Effort for a Healthier Future

Malnutrition is a major health crisis that requires a multi-pronged approach. While government schemes play a crucial role, individual actions and community-driven initiatives can create a lasting impact. By making small but effective changes, such as promoting balanced diets, reducing food waste, and supporting nutrition advocacy, we can take a step toward a healthier and well-nourished India. Together, we can fight malnutrition and ensure a brighter, healthier future for the coming generations. ❑



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of Health(London)



Dubai from 6th to 9th April 2025. The event was held under the patronage of the UAE's Ministry of Energy and Infrastructure. The show provided the world class platform for energy innovation and positions Dubai as a key player in the global energy transition. With a legacy of 14 years across Europe, North America and India the show set to electrify the Middle East. The dynamic conference brought together industry leaders, innovators, academics and policymakers, making it the premier knowledge sharing platform. Dr Kondekar, personally handed over copies of our Purnabrahma Magazines to the representatives of Dubai, China, Oman, Egypt, SaudiArabia, Myanmar, Pakistan, UK, Europe, Turkey, USA South Africa, Czech and India. Here are few participants whom Purnabrahma Magazines were handed over. Innovative solar solutions, including high efficiency modules, energy-efficient inverters and smart grid integration, are shaping, the growth of renewables.

At the invite from Middle East Energy 2025, Dubai, Dr. Prakash Kondekar, visited World Trade Centre



Preventing Malnutrition: Comprehensive strategies to eradicate the silent killer of economy

Amith Raj

Editor And Writer

A country's economy is dependent on its productivity, which in turn depends on the overall health of its population in the productive category. Being healthy is not only beneficial to an individual but also to the country. Therefore, a country must ensure its population is healthy so that they are productive in the long run and contribute to the growth of its economy. However, the overall health of an individual is determined by several factors such as:

- Social status
- Economic status
- Dietary preferences
- Lifestyle
- Environmental
- Geographical
- Access to food, water and safe sanitation

An excess or a lack or absence of any of one or more of the above conditions results in undernutrition or overnutrition. Individuals who are either undernourished or obese (overnourished), face the risk of poor performance in different aspects of life. As a result, they may end up becoming unproductive. The percentage of such individuals present in its society indicates the health of that respective country. India is one of the countries in the world with a record-high number of undernourished populations.

According to the WHO definition, an imbalance, deficiency, or excess of nutrients or energy intake in an individual can be termed as 'malnutrition'. Malnutrition is of the following types.

1. Undernutrition
2. Overweight, obesity or diet-related conditions
3. Micronutrient-related malnutrition

According to the 2024 Global Hunger Index, India has a

"serious" malnutrition rate with a prevalence of **undernourishment at 13.7%, child stunting at 35.5%, and child wasting at 18.7%**. This ranks India at the 105th place out of 127 countries on the index.

Below are the key points concerning malnutrition in India in 2024:

- **Global Hunger Index ranking:** 105th
- **Undernourishment rate:** 13.7%
- **Child stunting rate:** 35.5%
- **Child wasting rate:** 18.7%

The above data lays great emphasis on the fact that the area of malnutrition needs immediate and great attention. This is imperative if the country must continue on its path towards achieving its goal of becoming the third-largest economy.

Since multiple factors affect the nourishment of an individual, addressing malnutrition requires the efforts of the individual, family and government intervention. This article looks into the strategies and measures that each stakeholder can take to prevent and eradicate malnutrition.

A. At the individual level:

Here are some ways to prevent malnutrition:

1. **Eat a balanced diet:** Eat a variety of foods from the four main food groups: fruits and vegetables, starchy foods, milk and dairy foods, and meat, fish, eggs, and beans.
2. **Eat regularly:** Try to eat three small meals a day and two to three snacks if your appetite is poor.
3. **Drink after meals:** Avoid drinking water before or during meals, as this can make you feel full and prevent you from consuming adequate varieties and amounts of food thereby depriving you of the nutrients.
4. **Take oral nutritional supplements:** If you are not getting enough nutrients from food alone, you can consider taking macro or micronutrient supplements after consulting your physician.
5. **Consult a healthcare provider:** A doctor or registered dietitian can help

you create a healthy eating plan.

6. **Get regular exercise:** Regular exercise can lower the risk of diet-related complications.
7. **Eat less when overweight or obese:** Eat less food, especially high-energy foods and drinks.
8. **Drink water instead of sugary beverages:** Avoid sugary beverages.
9. **Eat only when hungry:** Avoid eating meals or snacks while watching TV.
10. **Lose weight gradually:** It's safer to lose weight gradually on a healthy, balanced diet than on a special slimming diet.

B. At the government level:

Key strategies to combat malnutrition in India:

- Enhance food security and availability:
 - ◆ Promote diverse and nutrient-rich crops through sustainable farming practices.
 - ◆ Improve agricultural infrastructure to increase food production and reduce food waste.
 - ◆ Ensure affordable access to essential food items like fruits, vegetables, and protein sources.
 - ◆ Ensure equitable distribution of food across regions.
 - ◆ Providing subsidized food to vulnerable populations, and promoting diverse and nutritious food options.
 - ◆ Implement food fortification programs to address micronutrient deficiencies.
- Enhance nutrition education and awareness:
 - ◆ Conduct community-based awareness campaigns on healthy eating habits, especially during pregnancy and lactation.
 - ◆ Educate communities about balanced diets, breastfeeding practices, and proper food hygiene.
 - ◆ Utilise media platforms to disseminate information about balanced diets.

- ◆ Empower women to make informed food choices for their families.
- ◆ Train healthcare workers and Anganwadi workers to provide nutrition counselling.
- Targeted interventions for vulnerable groups:
 - ◆ Strengthen existing programs like the Integrated Child Development Scheme (ICDS), Poshan Abhiyan, and Mid-Day Meal Scheme to provide supplementary nutrition to pregnant women and young children.
 - ◆ Implement programs specifically addressing adolescent girls' nutritional needs.
 - ◆ Implement targeted interventions for particularly vulnerable regions and communities.
 - ◆ Monitor and address malnutrition in tribal and remote areas.
 - ◆ Provide nutritional supplements where necessary.
- Improve sanitation and hygiene practices:
 - ◆ Implement WASH (Water, Sanitation, and Hygiene) programs and promote access to clean water and sanitation facilities to prevent spreading infections that can exacerbate malnutrition.
 - ◆ Educate communities on proper hygiene practices.
- Address underlying socioeconomic factors:
 - ◆ Implement poverty reduction programs to increase household income.
 - ◆ Promote women's empowerment and education to improve decision-making regarding nutrition.
- Strengthen healthcare systems:
 - ◆ Regular monitoring of children's nutritional status through growth monitoring.
 - ◆ Early detection and treatment of malnutrition through regular checkups, especially for pregnant women and young children.
 - ◆ Integrate nutrition counselling into existing healthcare services.

- Address underlying socioeconomic factors:
 - ◆ Poverty reduction initiatives to increase access to nutritious food.
 - ◆ Creating job opportunities and providing financial assistance to enable families to afford nutritious food
 - ◆ Promote gender equality and women's empowerment.
 - ◆ Improve access to education and employment opportunities.

The government of India has implemented various schemes to combat malnutrition including:

- **Integrated Child Development Services (ICDS):** Provides supplementary nutrition, health check-ups, and early childhood education to children under 6 years old. and initiatives focused on nutritional awareness and fortification of food products like iodized salt, atta, edible oil and milk, aiming to provide better nutrition to pregnant women, lactating mothers, and children across different age groups.
- **Poshan Abhiyaan:**An overarching scheme for holistic nourishment, this is the Government of India's flagship scheme to improve nutritional outcomes for children, adolescent girls, pregnant women and lactating mothers.
- **PM-POSHAN Scheme:** Previously known as the Mid-Day Meal Scheme, free, nutritious meals are provided to children in government and government-aided schools in India to improve their nutritional levels and support their education.
- **National Nutrition Mission (NNM):** A comprehensive initiative to address malnutrition through various interventions.
- **Pradhan Mantri Matru Vandana Yojana (PMMVY):** This is a maternity benefit scheme that provides financial support in the form of cash incentives to pregnant women and lactating mothers in India.
- **Mission Poshan 2.0:** This is a flagship programme of the Government of India, also known as Saksham Anganwadi and Poshan 2.0, which seeks to address the challenge of malnutrition by focusing on strengthening nutritional content, delivery, and outreach

across all states to combat malnutrition.

- **Awareness campaigns:** The 'Eat Right India' campaign aims to encourage people to eat healthy foods.
- **National Food Security Act (NFSA):** Through this act, the government provides subsidized food grains to up to 75% of the rural population and 50% of the urban population.

Conclusion

Thus, by implementing and following a multi-faceted approach which includes improving access to nutritious food through better agricultural practices and enhancing the reach and effectiveness of food security programs like the Public Distribution System (PDS), empowering communities by increasing awareness about healthy diets, strengthening healthcare systems to identify and treat malnutrition, promoting sanitation and hygiene practices and clean water access, and implementing robust government programs targeted at vulnerable populations, particularly women and children; while simultaneously addressing underlying issues like poverty, poor sanitation and inequality, we can fight and prevent malnutrition in India.

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Next-Gen Nutrition: Role of Food Industry to Prevent Malnutrition

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Introduction

Malnutrition remains a pressing global challenge, affecting populations across diverse socio-economic backgrounds. Malnutrition, particularly in early life, leads to stunted growth, weakened immunity, and cognitive impairments, affecting an individual's lifelong productivity. Preventing malnutrition ensures optimal physical and mental development, reducing the prevalence of diseases such as anaemia, rickets, and obesity-related conditions. According to the World Bank, every \$1 invested in nutrition yields up to \$16 in economic returns by improving health, education, and productivity. Treatment costs for malnutrition include hospitalization, therapeutic feeding programs, and long-term medical care, which are often significantly more expensive than preventive strategies.

Next-Gen Nutrition refers to innovative strategies and emerging trends that leverage cutting-edge research, biotechnology, and sustainable food solutions to combat malnutrition. This discussion explores the latest trends reshaping the food landscape, focusing on how these advancements contribute to preventing malnutrition and promoting global and national health.

Malnutrition: Global and National Perspective

Global Impact of Malnutrition

- **Hunger & Deficiencies:** Over 735 million people face hunger, while 2.3 billion experience food insecurity. Micronutrient deficiencies, or "hidden hunger," affect billions.

- **Health Consequences:** Malnutrition contributes to 45% of child deaths and increases the risk of infections, cognitive impairment, and chronic diseases.
- **Economic Burden:** Poor nutrition reduces global GDP by 2-3% annually due to lost productivity and healthcare costs.

Malnutrition in India: A Dual Burden

India struggles with both undernutrition and rising obesity-related diseases.

- **Child Malnutrition:** 35.5% of children under five are stunted, and 19.3% suffer from wasting (NFHS-5, 2019-21).
- **Micronutrient Deficiencies:** Anaemia affects 57% of women and 67% of children due to iron and vitamin deficiencies.
- **Rising Overnutrition:** Urbanization and dietary shifts have led to increased obesity, diabetes, and cardiovascular diseases.

Addressing the Transition for Better Nutrition – Role of Policies and Programs

The World Health Organization (WHO) has implemented several initiatives and issued guidelines to address the reduction of sodium, sugar, and fat intake, aiming to improve global health outcomes.

Sodium reduction initiatives

- **Global sodium benchmarks:** In 2021, WHO established benchmarks for sodium levels across more than 60 food categories to guide countries in reducing sodium content in processed foods.
- **Salt substitution guidelines:** In January 2025, WHO released guidelines encouraging the use of potassium-enriched salt substitutes as a strategy to lower sodium intake and reduce the risk of cardiovascular diseases.

Guidelines on sugar reduction

- **Sugar intake recommendations:** WHO recommends that both adults and children reduce their intake of free sugars to less than 10% of their total energy intake, with a further reduction to below 5% associated with additional health benefits.

Guidelines on fat reduction

- **Saturated and trans fats:** WHO advises reducing saturated fatty acid intake to less than 10% of total energy consumption and trans-

fatty acid intake to less than 1%, replacing them with unsaturated fats to lower the risk of cardiovascular diseases.

These initiatives and guidelines are part of WHO's comprehensive strategy to reduce the risk and prevent non-communicable diseases by promoting healthier dietary practices worldwide. Malnutrition has multiple causes and can be addressed at various stages of the food supply chain, from production to consumption. The food industry, policymakers, and other stakeholders can collaborate to strengthen nutrition security by leveraging these opportunities effectively.

Role of food industry in prevention of malnutrition

The food industry can contribute significantly to preventing all forms of malnutrition by implementing appropriate processing techniques to reduce nutrients of concern—such as fat, salt/sodium, and added sugar—while enhancing nutrient density to address micronutrient gaps, including iron, iodine, and essential fat- and water-soluble vitamins.

Role of the food industry in food reformulation: Reducing salt, sugar, and fat for better health

The food industry plays a critical role in reformulating food products to reduce salt, sugar, and fat while maintaining taste, texture, and shelf life. With rising concerns over non-communicable diseases (NCDs) such as hypertension, diabetes, and obesity, governments, health organizations, and food manufacturers are working together to create healthier food options.

1. Salt Reduction in Processed Foods

The food industry initiatives for salt reduction:

- *Gradual Sodium Reduction:* Companies are progressively reducing sodium content in packaged foods to help consumers adapt to lower salt levels without affecting taste.
- *Salt Substitutes & Enhancers:*
 - Potassium chloride is used as a partial replacement for sodium chloride.
 - Umami-rich ingredients (like yeast extracts, seaweed, and mushrooms) enhance flavour naturally.
 - Herb and spice blends reduce reliance on salt while improving taste.
- *Low-Sodium Variants:*
 - Salt-reduced bread, sauces, and snacks are becoming widely available.

Impact:

- Salt reduction reformulations have significantly contributed to lowering hypertension and cardiovascular risks.

2. Sugar Reduction in Packaged and Processed Foods

The role of food industry in reducing sugar:

- *Gradual Sugar Reduction & Reformulation:* Food manufacturers are gradually reducing sugar content in beverages, chocolates, and breakfast cereals.
- *Sugar Substitutes and Alternative Sweeteners:*
 - Stevia, monk fruit, erythritol, and allulose are natural, zero-calorie alternatives.
 - Fruit concentrates and date syrups are used to add natural sweetness with added fiber and micronutrients.
- *Low/No Sugar Product Variants:*
 - Zero-sugar sodas
 - Low-sugar dairy and desserts
- *Reformulated Bakery & Confectionery Products:*

Impact: Better glycemic control, lower obesity rates, and improved oral health.

3. Fat Reduction in Processed & Packaged Foods: WHO recommends less than 10% of daily calories from saturated fats and eliminating trans fats.

Role of food industry in reducing fat:

- *Replacing Trans Fats with Healthier Oils:*
 - Elimination of Partially Hydrogenated Oils (PHOs): Following WHO's REPLACE strategy, India has banned artificial trans fats in food.
 - Companies are switching to high-oleic sunflower oil, rice bran oil, and olive oil.
- *Low-Fat Dairy & Meat Products:*
 - Low-fat curd, toned milk, and reduced-fat cheese.
 - Plant-based dairy alternatives (soya, almond, oat milk) are gaining popularity.
- *Baking Instead of Frying:*

<ul style="list-style-type: none">- Oven-baked chips and snacks- Air-popped popcorn instead of fried versions● <i>Emulsifiers & Fat Substitutes</i>: Dairy products use whey protein and plant-based emulsifiers to replace saturated fats while maintaining creaminess.● <i>Omega-3 Enrichment</i>: Fortified oils and eggs with added omega-3 to promote heart health. <p>Impact: Reduced heart disease risks, lower cholesterol levels, and better weight management.</p> <p>Role of food industry in enhancing the nutritional quality of foods</p> <p>1. Large-scale food fortification initiatives</p> <p>Food fortification involves adding essential vitamins and minerals to staple foods to address widespread micronutrient deficiencies.</p> <p>Industry Contributions:</p> <ul style="list-style-type: none">● Edible Oil Fortification: Fortifying cooking oils with Vitamin A & D to combat deficiencies.● Double Fortified Salt (DFS):Iron and iodine-enriched salt to address anaemia and iodine deficiency disorders.● Fortified Flour & Rice: The government has partnered with industries to produce iron, folic acid, and vitamin B12-fortified wheat flour and rice, especially for Public Distribution Systems (PDS). <p>Impact:</p> <ul style="list-style-type: none">● These initiatives have significantly contributed to reducing anaemia, goitre, and vitamin deficiencies in vulnerable populations.● The FSSAI (Food Safety and Standards Authority of India) has made fortification standards mandatory for key staples. <p>2. Biofortified and Climate-Resilient Crops</p> <p>Biofortification improves the nutritional quality of crops through breeding or genetic enhancement.</p> <p>Industry contributions:</p> <ul style="list-style-type: none">● <i>Biofortified Wheat & Millets:</i> Biofortified grains (zinc-rich wheat, high-iron pearl millet).● <i>Traditional Nutri-Cereals Revival:</i> Millet-based, nutrient-dense foods.	<ul style="list-style-type: none">● <i>Golden Rice & Iron-Rich Lentils:</i> The Indian Council of Agricultural Research (ICAR) and private-sector players are working on developing nutrient-enriched staple crops. <p>Impact: Enhancing dietary diversity and nutrient availability in staple-based diets, particularly for rural populations.</p> <p>3. Ready-to-Eat and therapeutic foods for malnourished populations</p> <p>Industrially produced Ready-to-Use Therapeutic Foods (RUTFs) and energy-dense fortified snacks are used to treat malnutrition.</p> <p>Impact: Effective in combating severe acute malnutrition (SAM) and improving child growth outcomes, particularly in rural and tribal areas.</p> <p>4. Promotion of traditional and functional foods</p> <p>Indian traditional foods are naturally rich in nutrients, probiotics, and functional health benefits.</p> <p>Industry contributions:</p> <ul style="list-style-type: none">● <i>Fermented Dairy & Probiotics:</i> Probiotic-enhanced curd, lassi, and buttermilk to improve gut health and nutrient absorption.● <i>Ayurvedic and Herbal Nutritional Products:</i> Leveraging Ashwagandha, Moringa, and Amla for immunity and micronutrient enhancement● <i>Functional Millet-Based Products:</i> Millet-based packaged foods provide protein, fiber, and essential micronutrients <p>Impact: Reviving indigenous, nutrient-dense foods that align with sustainable and culturally appropriate diets.</p> <p>5. Sustainable and alternative Protein sources</p> <p>Plant-based and alternative proteins help address protein-energy malnutrition while promoting environmental sustainability.</p> <p>Industry contributions:</p> <ul style="list-style-type: none">● <i>Plant-Based Proteins:</i> Plant-based meat alternatives to offer high-quality protein sources.● <i>Affordable Dairy Alternatives:</i> Plant-based dairy alternatives (soy, almond, oat milk) for lactose-intolerant and vegetarian consumers.
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- *Pulse and Legume-Based Innovations:* Companies are integrating chickpea, pea, and lentil protein isolates into snacks and meal kits.

Impact: Providing sustainable and affordable protein alternatives to combat protein deficiency and undernutrition.

6. Digitalization & AI-Driven nutrition solutions

AI, blockchain, and digital platforms are revolutionizing food distribution, reducing waste, and improving nutrition tracking.

Industry contributions:

- *AI-Based Personalized Nutrition Apps:* AI-driven meal planning to optimize dietary intake

based on deficiencies.

- *Blockchain for Food Supply Chain:* Improved food traceability to ensure nutrient retention and reduce food loss.
- *E-Commerce Accessibility:* Making fortified and healthy foods more accessible to rural and urban populations.

Impact: Enhancing nutrition accessibility, reducing food insecurity, and enabling personalized dietary interventions.

Conclusion: With a multi-sectoral approach, India's food industry can drive long-term improvements in national health outcomes, prevent malnutrition, and enhance overall food security for future generations. ❑



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Preventing Malnutrition: A Global Imperative for Health and Development

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Psychologist.



* The Silent Hunger *

*In shadows deep, where children play,
A silent hunger steals the day.
Their bellies ache, but there's no feast,
Malnutrition, a cruel beast....*

*With hollow eyes and brittle bones,
They walk through life, yet all alone.
The earth provides, but not enough,
To fill their hunger, make it tough....*

*A mother weeps, her hands are worn,
For every dawn, her heart is torn.
She dreams of fruits, of grains, of meat,
But only scraps beneath their feet...*

*The village cries, the city turns,
As empty bellies slowly churn.
A hunger not of will or choice,
But poverty's unbroken voice...*

*So let us rise and take a stand,
For every child, for every land...
To end this sorrow, to give them light,
And fill their world with love tonight....*

Understanding Malnutrition

Malnutrition, a significant public health issue affecting millions worldwide, is a major factor contributing to poor health outcomes, especially in developing countries. It is defined as the condition resulting from

an imbalance between the body's nutritional requirements and the intake of essential nutrients. Malnutrition manifests in various forms, including undernutrition, overnutrition, and micronutrient deficiencies. These issues are not only detrimental to the individual but also have far-reaching consequences for families, communities, and entire nations. Preventing malnutrition is therefore essential to promote public health, improve productivity, and foster sustainable development.

Types and Causes of Malnutrition

Malnutrition can be categorized into three major forms:

Undernutrition: This is the most common form of malnutrition and includes conditions such as stunting (low height for age), wasting (low weight for height), and underweight (low weight for age). It typically results from a lack of essential calories, proteins, and micronutrients.

Overnutrition: In contrast, overnutrition refers to an excessive intake of calories, leading to overweight and obesity. This form of malnutrition is often linked to an imbalance in food choices and lifestyle, including high consumption of processed foods, sugars, and fats, combined with a lack of physical activity.

Micronutrient Deficiencies: Deficiencies in vital vitamins and minerals, such as iron, iodine, vitamin A, and zinc, contribute to poor health outcomes, including weakened immune systems, blindness, developmental delays, and reduced cognitive abilities. Micronutrient malnutrition is often referred to as "hidden hunger," as it may not be immediately visible but has profound long-term consequences.

Causes of Malnutrition

There are several causes of malnutrition, many of which are interlinked. One major factor is poverty, which limits people's ability to purchase nutritious food. Without adequate financial resources, families are forced to rely on cheap, low-nutrient foods, which often results in nutritional deficiencies. Additionally, lack of education about proper nutrition plays a vital role.

Malnutrition is influenced by a wide range of social, economic, and environmental factors:

1. **Poverty:** One of the most significant causes of malnutrition is poverty. Families living in poverty often lack access to nutritious foods, healthcare, and proper sanitation. The cost of nutrient-dense foods, such as fruits, vegetables, and lean

proteins, may be prohibitive, forcing individuals to rely on cheaper, calorie-dense but nutrient-poor options.

2. **Food Insecurity:** Food insecurity, which occurs when people lack reliable access to enough nutritious food, is both a cause and consequence of malnutrition. Factors such as conflict, climate change, and economic instability can disrupt food systems, making it difficult for people to obtain the nutrients they need.
3. **Poor Feeding Practices:** Inadequate breastfeeding, poor complementary feeding for infants, and a lack of knowledge about balanced diets are also major contributors to malnutrition, particularly in young children. Malnourished children are more likely to experience developmental delays, impaired cognitive abilities, and a higher susceptibility to infections.
4. **Health and Sanitation Issues:** Inadequate healthcare and poor sanitation contribute to malnutrition by increasing the risk of infections, which deplete the body's nutritional stores. Diarrheal diseases, respiratory infections, and parasitic infections are common causes of malnutrition, especially among children under five.
5. **Cultural and Societal Factors:** In many societies, there are cultural practices that may lead to inadequate nutrition, such as the underfeeding of girls or certain dietary restrictions that limit nutrient intake. Additionally, a lack of education on nutrition can result in poor food choices and ineffective feeding practices.

Impact of Malnutrition

The consequences of malnutrition are vast and long-lasting, affecting individuals, families, and entire communities:

1. **Health Consequences:** Malnutrition weakens the immune system, making individuals more susceptible to infections and diseases. Undernutrition, for example, leads to stunted growth, developmental delays, and a higher risk of mortality, particularly in children under five. Micronutrient deficiencies, such as vitamin A deficiency, can lead to blindness, while iron deficiency anemia can impair cognitive function and physical development.
2. **Economic Burden:** Malnutrition places a substantial economic burden on society, including


the healthcare costs of treating nutrition-related diseases, such as obesity, diabetes, and cardiovascular diseases. It also reduces economic productivity due to poor health, disability, and premature mortality.

3. **Social and Psychological Effects:** Children suffering from malnutrition often face cognitive impairments and learning difficulties, affecting their ability to perform well in school. This can perpetuate a cycle of poverty and malnutrition across generations.

Solutions for Preventing Malnutrition

Preventing malnutrition requires a multi-faceted approach such as-

1. **Promoting Education and Awareness:** One of the most effective ways to tackle malnutrition is through education. Teaching communities about the importance of a balanced diet, proper feeding practices, and the dangers of poor nutrition can help individuals make better food choices. Schools, healthcare providers, and community organizations can play a significant role in raising awareness.
2. **Improving Food Security:** Governments, NGOs, and international organizations must work together to improve food distribution systems and increase the availability of affordable, nutritious food. This can include supporting small-scale farmers, encouraging sustainable agricultural practices, and reducing food wastage.
3. **Promoting Breastfeeding and Infant Nutrition:** Breastfeeding is the most effective way to ensure proper nutrition for infants. Promoting exclusive breastfeeding for the first six months and continued breastfeeding thereafter can reduce the risk of malnutrition and provide essential nutrients for infants.
4. **Strengthening Healthcare Systems:** Accessible healthcare services are crucial in preventing and treating malnutrition. Governments should invest in health infrastructure and services, particularly in rural and underserved areas.
5. **Addressing Poverty:** Since poverty is a major driver of malnutrition, efforts to reduce poverty must be a priority. Social safety nets, job creation, and economic policies aimed at improving the livelihoods of the poor can help increase their access to nutritious food.
6. **Improving Sanitation and Water Access:** Clean water and sanitation are critical in preventing malnutrition-related illnesses. Governments and

<p>organizations must invest in water purification systems and sanitation infrastructure, particularly in developing regions.</p> <p>7. Sustainable Solutions: Ensuring access to nutritious foods, supporting local farmers, improving food distribution systems, and reducing food waste are key actions needed to prevent malnutrition.</p> <p>The Global Efforts to Prevent Malnutrition</p> <p>Preventing malnutrition requires coordinated efforts at the global, national, and local levels. International organizations, governments, and non-governmental organizations (NGOs) all play vital roles in addressing the causes and consequences of malnutrition.</p> <p>1. International Initiatives: The United Nations (UN) has recognized the importance of combating malnutrition as part of its Sustainable Development Goals (SDGs). The World Health Organization (WHO) and UNICEF have launched several programs aimed at reducing childhood malnutrition, promoting breastfeeding, and providing micronutrient supplements to vulnerable populations.</p> <p>2. National Strategies: Governments have implemented various policies to reduce malnutrition, including national nutrition policies, food fortification programs, and public health campaigns, school feeding programs to ensure children receive nutritious meals.</p> <p>3. Community Based Interventions: At the local level, community-based interventions such as promoting</p>	<p>better infant and young child feeding practices, improving access to clean water and sanitation, and providing nutrition education are crucial for preventing malnutrition.</p> <p>4. Addressing Food Systems and Agriculture: Improving food systems is critical to preventing malnutrition. This includes ensuring that food production is sustainable and that people have access to a variety of affordable, nutritious foods. Strengthening local food systems, reducing food waste, and promoting the diversification of crops can help communities access more balanced diets.</p> <p>Conclusion</p> <p>Malnutrition is a global problem that requires a comprehensive and multi-disciplinary approach to tackle. By addressing its root causes and implementing strategies to promote better nutrition, we can reduce the prevalence of malnutrition and improve the health and wellbeing of individuals worldwide. Preventing malnutrition is crucial for ensuring good health and well-being, especially for children, pregnant women, and the elderly.</p> <p>The need to address malnutrition is urgent. It is through the combined efforts of governments, organizations, and communities that we can work towards a world free of malnutrition. As we move forward, it is essential that malnutrition remains a top priority in global health agendas, as the fight against this silent crisis is critical for achieving sustainable development and improving the quality of life for millions of people worldwide. The need to prevent malnutrition is must for healthier, more productive societies and to achieve global health and development goals. </p>
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DECLARATION



- The contents of this issue is referred and compiled from various sources and Purnabrahma doesn't claim it's authenticity.
- The contents given in the article are the views of the respective authors.

Fighting Malnutrition: Addressing Myths and Promoting Facts

Ms. Asha S

Proprietrix -
Login Health Services



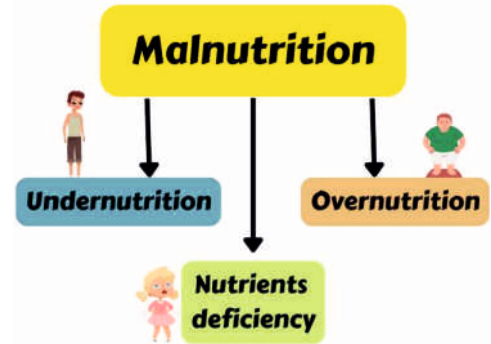
Introduction



Malnutrition remains a significant health concern that affects individuals of all age groups, leading to stunted growth, weakened immunity, and poor overall health. Addressing malnutrition requires practical, evidence-based strategies and dispelling common misconceptions about nutrition. This article highlights critical nutritional myths, the facts behind them, and actionable steps to ensure proper nourishment for everyone.

Understanding Malnutrition

Malnutrition refers to deficiencies, excesses or imbalances in a person's intake of energy and nutrients. It includes both undernutrition- marked by stunting, wasting and underweight- and overnutrition, which leads to obesity and non-communicable diseases. Preventing malnutrition is essential to promote growth, improve immunity and reduce the risk of chronic diseases.



The Importance of Balanced Nutrition

A balanced diet includes carbohydrates, proteins, fats, vitamins and minerals in appropriate quantities. Such a diet ensures energy for daily activities, growth and the body's ability to fight diseases. Malnutrition often stems from poor food choices, lack of awareness and misconceptions about healthy eating.



Breaking Down Myths Leading to Malnutrition

Myth 1: Ghee Leads to Obesity:

- **Fact:** Ghee, when consumed in moderation, provides essential fats that help absorb fat-soluble vitamins like A, D, E and K. It is particularly beneficial for children and individuals who require additional energy and nutrients for growth and recovery.

Myth 2: Pulses and Legumes Cause Gas and Should Be Avoided:

- **Fact:** Pulses are an affordable and rich source of protein, iron and fiber, crucial for combating malnutrition. Proper soaking and cooking methods reduce their gas- producing properties and make them easy to digest.

Myth 3: Milk is Only for Children:

- **Fact:** Milk is a nutrient-dense food that

provides protein, calcium and vitamins for people of all age groups. Regular consumption helps prevent deficiencies that contribute to weak bones and stunted growth.

Myth 4: Vegetables Lose Nutrients During Cooking:

- **Fact:** While overcooking reduces heat-sensitive nutrients, steaming, pressure cooking, blanching or light sauteing retains the nutritional value of vegetables. Proper cooking methods can maximize nutrient intake and improve digestibility.
- **Fact:** Exclusive breastfeeding is recommended for the first six months of life. After that, nutrient-rich complementary foods like mashed vegetables, fruits, and protein-rich dals are essential to support proper growth and prevent malnutrition.

Nutritional Practices to Prevent Malnutrition:



1. **Encourage Dietary Diversity:**
 - Include a variety of foods in daily meals, such as grains, vegetables, fruits, pulses, nuts and dairy. A diverse diet ensures the body receives all essential nutrients.
2. **Promote Nutrient-Dense Foods:**
 - Choose locally available foods rich in nutrients. For example, millets like ragi and jowar are excellent sources of calcium and iron, helping to combat anemia and weak bones.
3. **Focus on Maternal and Child Nutrition:**
 - Pregnant and breastfeeding mothers

require nutrient-rich diets to meet their energy and micronutrient needs. Providing iron, folic acid, and protein-rich foods prevents deficiencies that lead to underweight babies.

4. Fortified Foods:

- Use fortified staples such as wheat flour, rice and salt enriched with iron, vitamin A, and iodine to address hidden hunger and micronutrient deficiencies.

5. Regular Meals and Snacking:

- Ensure children and adults consume three balanced meals and healthy snacks daily. Snacks like roasted chickpeas, fruits or nuts provide energy without compromising nutrition.

6. Hydration and Nutrient Absorption:

- Drinking enough water aids digestion and nutrient absorption. Avoid excessive tea or coffee during meals as it hinders iron absorption.

7. Educating Families on Nutrition:

- Raising awareness about proper food combinations—like pairing iron-rich foods (green leafy vegetables) with vitamin C sources (lemon juice)—enhances nutrient absorption.

8. Safe Food Preparation:

- Adopting hygienic cooking and eating practices ensures nutrient retention while preventing infections that exacerbate malnutrition.

Practical Solutions for Households-



1. Affordable Balanced Meals:

- o Simple meal combinations like dal-rice, roti with vegetables and curd with fruits offer complete nutrition on a budget.

2. Incorporating Millets and Pulses:

- o Replacing refined grains with whole grains or millets adds essential minerals and fiber to the diet.

3. Smart Snacking:

- o Homemade snacks like roasted peanuts, chikkis, roasted makhana or boiled eggs provide protein and energy, particularly for growing children.

4. Home Gardening:

- o Growing vegetables like spinach, mint, herbs, carrots or tomatoes ensures access to fresh, affordable produce that supports overall nutrition.

Conclusion

Preventing malnutrition requires a focus on balanced diets, nutrient-dense foods and addressing common misconceptions around nutrition. By encouraging diverse and affordable dietary habits, educating families and incorporating fortified foods, we can take a significant step toward a healthier, nourished population. Nutrition is the foundation of a strong body and mind, and small yet consistent changes in daily eating habits can make a lasting impact in overcoming malnutrition. □

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Hidden Hunger, Visible Solutions

Revati Avhad



Abstract

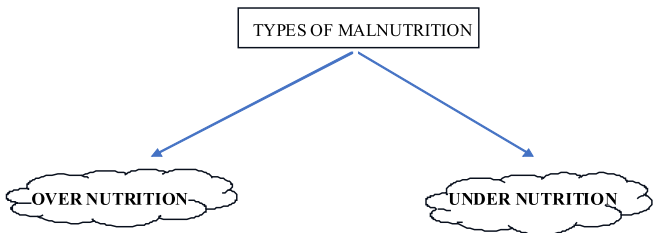
Malnutrition affects large number of people, causing various health issues. Preventing malnutrition is crucial, especially for children. Healthy eating and getting adequate nutrients for the body are key solutions. Prevention can lead to a healthier future for all.

Introduction

Malnutrition is a serious issue worldwide. It is a condition where adequate nutritional requirements of the body are not met. Malnutrition not only affects individuals but has a significant impact on communities and economies. This leads to many health issues such as vitamin deficiency, bone issues, changes in skin pigmentation, hair fall, slow cardiac activity, vision issues, and many more. This article explores the critical importance of preventing malnutrition and discusses effective strategies for promoting nutritious diets. By understanding the causes and consequences of malnutrition, we can work together to prevent it.

What Is Malnutrition?

Malnutrition is an imbalance between supply of nutrients and body's demand to ensure growth and maintenance.



Over Nutrition: Excessive intake of nutrients

Under Nutrition: Insufficient intake of nutrients

CAUSES: Causes of malnutrition are classified as causes of over nutrition and causes of under nutrition

Causes Of Over Nutrition

Over nutrition can be caused by excessive eating, eating wrong food or eating particular food too much, lack of exercise, excessive consumption of dietary supplements and hormonal imbalances.

Causes Of Uner Nutrition

Inadequate food intake, nausea, stress, depression, low income, lack of knowledge about eating habits.

Symptoms

Malnutrition can cause a range of symptoms, including unintentional weight loss of about 5 to 10% or more of weight within 3 to 6 months, fatigue, losing interest in eating and weakness. Other visible signs may include dry skin, brittle hair, and poor wound healing.

In children, malnutrition can lead to slow growth, delayed development and increased possibilities to illnesses. In severe cases, malnutrition can cause swelling, muscle wasting, and even organ damage.

Additionally, malnourished individuals may experience digestive problems, such as diarrhoea or constipation. Malnourished individuals are predisposed to infections and illness to a greater extent leading to delayed healing.

Preventive Measures

Dietary Measures

- Consuming a balanced diet which includes variety of foods from all food groups, including fruits, vegetables, whole grains, lean proteins, and healthy fats
- Including nutrient-rich foods in diet such as whole, unprocessed foods like nuts, seeds, beans, and lentils
- Drinking sufficient amount of clean and good quality of water throughout the day
- Consuming carbohydrate rich diet: Carbohydrates are the most important nutrient for humans in terms of quantity and providing energy for the body. In addition to supplying the body with energy and essential fatty acids, fats also serve as a component of body structures such as cell

membranes or as a starting substance for other biologically active substances

- Consuming protein rich diet: Proteins play an important role in muscle growth and life itself. Proteins are made of about 20 amino acids. Lack of proteins leads to a loss of muscle strength
- Micronutrients cannot be produced in the body and consequently must be derived from the diet
- Vitamins are involved in various important processes, such as the structure and protection of cells, contribute significantly to the regulation of metabolism and can also be part of enzymes
- Additional to that, there are many other minerals—such as the trace elements nickel, cobalt, copper, manganese, chromium and molybdenum and ultra-trace elements such as arsenic, lead, boron and silicon which are important for growth and maintenance of the body

Lifestyle Measures

Maintaining a healthy weight through a combination of diet and exercise by engaging in physical activity for at least 30 minutes a day is very important. Getting enough sleep of 7-9 hours at night is also important for maintaining good health.

Social and Economic Measures

Ensuring access to affordable, nutritious food. Promoting and supporting breastfeeding for infants under 6 months. Educating individuals and

communities about healthy eating and nutrition are important.

Healthcare Measures

Monitoring growth and development in children helps in the early detection of malnutrition. Providing personalized nutrition advice and support. Implementing targeted supplementation programs for vulnerable populations.

Community-Based Measures

Implementing community-based nutrition programs. Promoting and supporting local food systems to improve access to fresh, nutritious food are the key.

Conclusion

Preventing malnutrition requires a multifaceted approach that involves individuals, communities, and governments. By promoting healthy eating habits, improving access to nutritious food, and supporting vulnerable populations, we can reduce the prevalence of malnutrition worldwide. It is crucial that we take action to prevent malnutrition, as it not only improves individual health but also has far-reaching benefits for communities and societies as a whole. By understanding and implementing preventive measures we can create a healthier world.

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Dr Kondekar with Nutrition Summit 2025 participants in Hotel Radisson Blue 23rd April 2025.



Dr Kondekar in Panel discussion on 23rd April 2025, Nutrition India Summit 2025, Hotel Radison Blue, with other panel members.

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Beyond the plate: Unraveling the complex web Of malnutrition

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Assistant Professor

Ishika Mehta,
Student

INTRODUCTION

According to WHO, “Malnutrition refers to deficiencies or excess nutrient intake, imbalance of essential nutrients or impaired nutrient utilization. The double burden of malnutrition consists of both undernutrition and overweight and obesity, as well as diet-related noncommunicable diseases”.

Nutrition is essential for maintaining overall health and well-being but quantity of food consumed does not necessarily determine the amount of nutrients ingested. A person can be obese yet experience malnutrition. A balanced diet refers to the intake of macronutrients, micronutrients, and trace elements suggested as per Recommended Dietary Allowances (RDA). Wholesome foods such as cereals, pulses, vegetables, and fruits provide a rich variety of macronutrients, micronutrients, and bioactive compounds, that helps to meet basic nutritional needs and offer protective health benefits.

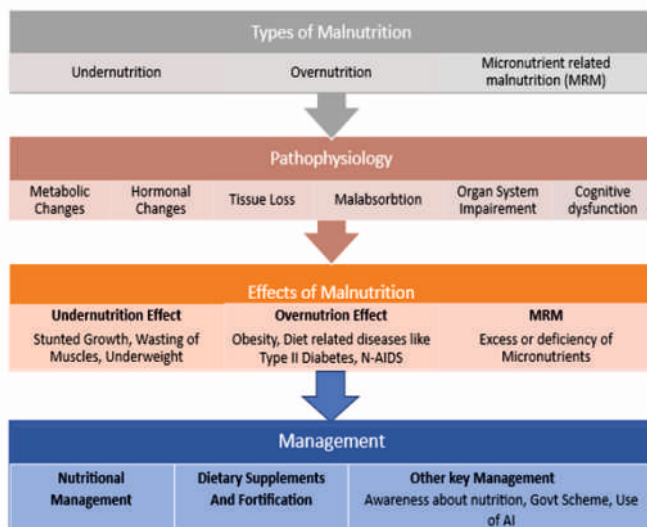


Figure 1: Pathophysiology and Care Management[1], [2]

CAUSES

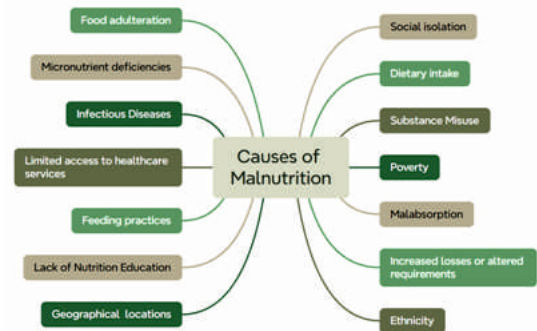


Figure 2: Causes of Malnutrition[3], [4], [5], [6], [7]

GLOBAL AND REGIONAL TRENDS IN MALNUTRITION: ASSESSING THE DOUBLE BURDEN AND HUNGER INDEX

The double burden of malnutrition (DBM), describes the coexistence of undernutrition and overnutrition within a population. Undernutrition arises from inadequate intake, poor absorption, or inefficient nutrient utilization, while overnutrition results from excessive or imbalanced nutrient consumption. Both forms often occur within the same country, community, or even household[8].

DBM distribution is shown to vary between 1% and 35.4%, with both the low- and middle-income nations having the greatest levels. Children in Asia exhibited the greatest DBM frequency, whereas teenagers in regions of Latin America had the greatest incidence[9].

Global hunger Index (GHI) is an effective tool for measuring and tracking hunger at global, regional, and national levels. It assesses hunger based on four key indicators: 1.Undernourishment 2.Child Stunting 3.Child Wasting 4.Child mortality which are directly linked with malnutrition.

According to GHI 2024, **World's GHI Score: 18.3** (Moderate) and **Somalia has highest GHI Score: 44.1** (Alarming)

In the last five years, a subsequent reduction in the GHI for Indian population was observed as shown in Figure 3.Although it's good news, consistent and conscious efforts need to be undertaken to prevent malnutrition as **India's GHI Score is 27.3 (Serious), ranked 105th out of 127countries.**



Figure 3: GHI Score of India

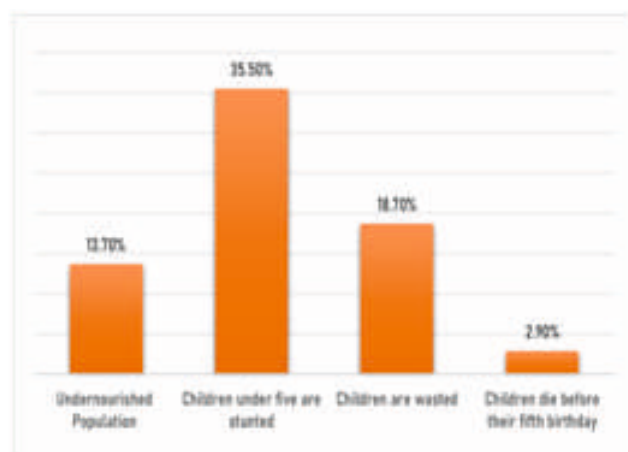


Figure 4: Distribution of malnutrition indicators in India

Health Consequences of Malnutrition: Diseases and Risks

Malnutrition is definitely not a disease but it can invite various diseases.

Tuberculosis: Malnutrition compromises immunity which increases a person's risk of contracting *Mycobacterium tuberculosis*. The probability of getting diagnosed with tuberculosis is increased by low body mass index (BMI), and deficits in protein, zinc, vitamin C, vitamin D and vitamin A, according to the research [10].

N-AIDS: Similar to AIDS and HIV, Nutritional Acquired Immunodeficiency Syndrome (N-AIDS) is a disease in which extreme malnutrition induces suppressed immunity. T-cell activity is severely diminished by protein-energy malnutrition (PEM), which makes

people more vulnerable to illnesses. Immune cell function is additionally hindered by inadequacies in vitamin A, selenium, and zinc. It is prevalent in areas devastated by famine and in those who have long-term malnutrition[11].

Type II Diabetes: Type 2 diabetes is frequently linked to overweight and obesity, yet the condition can additionally be brought on by malnutrition or deficits in certain micronutrients. Resistance to insulin, metabolic syndrome, and decreased pancreatic β -cell function are the consequences of prolonged undernutrition. It is well recognized that shortages in vitamin D, magnesium, and chromium impair the breakdown of sugar thus raise the possibility of diabetes-[12], [13].

PREVENTION OF MALNUTRITION

Nutritional Management

- Ensuring balanced diet:** Vital Micronutrients (Minerals and Vitamins) and Macronutrients (Carbohydrates, Protein and Fat) for development and well-being are provided by an adequate diet. A better way living may be fostered as well as adverse health impacts can be avoided by adopting good eating habits throughout birth to adolescence[14].
- Adequate Hydration:** For general well-being and biological processes, hydration is essential. To foster good development and growth, adopting healthy drinking practices in infancy is essential for providing enough nutrients [15].
- Early Childhood Care and Development:** The best growth potential and mental development are supported by timely treatments. A better quality of life may be promoted and adverse health impacts may be avoided by adopting good eating habits from early childhood throughout the preschool years[16].

Dietary Supplement and Fortification

- Supplements:** In susceptible groups, deficits may be avoided using dietary supplements. The goal of small-quantity lipid-based nutritional supplements (SQ-LNSs) is to avoid malnutrition by offering a variety of micronutrients in a dietary foundation which additionally provides vital fatty acids, energy, and protein[17].

5. **Fortified Foods:** One economical way to mitigate malnutrition is by attempting to fortify basic meals containing vital nutrients. Food fortification is a particular strategy that has been empirically shown to be successful in combating malnutrition[18].
6. **Functional Food:** Lack of nutrition may be avoided partially by consuming functional meals, that bring nutritional advantages above simple nourishment. Glycogen is restored, tissue from muscles is repaired, the body's immune response gets assistance, and inflammation is decreased with the right diet, which includes functional foods –[19].

Other Key Strategies

7. **Education and Awareness:** People who get nutrition education are better equipped for taking wise food decisions. Malnutrition must be addressed using proven methods that prioritize knowledge about nutrition[18].
8. **Preventing and Managing Diseases:** Malnutrition danger is decreased by efficient illness control and avoidance. The capability of healthcare organizations to provide dietary regimens, offerings, and methods which encourage proper nourishment for mothers and children is strengthened by an integrated strategy to malnutrition.

Role of Artificial Intelligence (AI) in prevention of malnutrition:

- *Early detection and diagnosis:* To anticipate and diagnose malnutrition beforehand, AI uses nutritional evaluations and information [20].
- *Personalized Nutrition and Education:* For better compliance to dietary recommendations, AI creates individualized programs according to eating habits, inheritance and user's medical data [21].
- *Monitoring and Evaluating Interventions:* AI helps assisting in improving the effectiveness of approaches, allocation of resources by assessing the efficacy of nutritional interventions ""[22].

9. **Improving Sanitation and Hygiene:** Malnutrition-causing illnesses are avoided by

being entitled to safe water and sufficient hygiene. Approaches treating undernutrition in children emphasize the importance of improving personal hygiene and sanitation in avoiding malnutrition [23].

10. **Government Initiatives for Health Improvement and Malnutrition:** Government has introduced various schemes to enhance public health. It focuses on nutrition, maternal care, and child welfare. [24].

Sr No	Government Schemes	Benefits
1	Integrated Child Development Services (ICDS)	Provides food, preschool education, and healthcare to children under six and mothers.
2	Mid-Day Meal Scheme (MDMS)	Offers nutritious meals to school children to improve health and learning outcomes.
3	National Health Policy 2017	Aims to achieve universal health coverage and better nutrition standards.
4	Anganwadi Services scheme: Children in the age group of 0-6 years Pregnant women and lactating mothers	Supports nutrition and healthcare for children (0-6 years), pregnant women, and lactating mothers.
5	Pradhan Mantri Matru Vandana Yojana (PMMVY)	Provides monetary incentives to pregnant and lactating mothers to mitigate the salary loss and to enhance health.
6	Mission Poshan 2.0	Integrates nutrition programs to improve food quality, outreach, and overall health outcomes across India.

CONCLUSION

Preventing malnutrition requires a holistic approach that includes access to healthcare, proper nutrition education, use of dietary supplements, and sustainable farming methods. Addressing key issues such as poverty, poor sanitation, and inadequate maternal care can significantly lower malnutrition rates, particularly among at-risk populations.

GHI is a useful tool for assessing hunger and malnutrition on a global scale. A high GHI score indicates serious nutritional challenges, emphasizing the need for effective interventions. Governments can lower these scores by encouraging balanced diets, fortifying essential foods, and implementing social support initiatives.

Eliminating malnutrition demands a collaborative effort between governments, communities, and international organizations. Tackling this issue not only enhances public health but also contributes to economic progress and overall well-being.

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Preventing Malnutrition: A Comprehensive Guide

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Malnutrition, a disorder caused by an inadequate or insufficient diet, remains a major global health concern. It includes both undernutrition (a lack of necessary nutrients) and overnutrition (an excess of calories and nutrients). This article goes into the complex facets of malnutrition prevention, with a focus on techniques that are relevant to a wide range of individuals and circumstances.

Understanding the Causes of Malnutrition:

Before diving into prevention efforts, it is critical to understand the intricate interplay of factors that contribute to malnutrition. Poverty and food insecurity are major causes of malnutrition, as they restrict access to nutritious meals. Poor dietary choices, such

as a high intake of processed foods and a low intake of fruits, vegetables, and whole grains, contribute to both undernutrition and obesity.

1. Health Conditions: Certain diseases and infections can reduce nutritional absorption or raise nutrient requirements, rendering people more vulnerable to malnutrition.

2. Malnutrition prevention efforts can be hampered by a lack of education and awareness about nutrition and healthy eating habits. Additionally, cultural norms and food taboos can impact dietary choices and contribute to nutritional deficiencies.

Malnutrition Prevention Strategies

Individual, communal, and national strategies can be applied, as follows:

1. Dietary diversification by promoting balanced diets: Eating a variety of foods from all food groups, including fruits, vegetables, whole grains, lean protein, and healthy fats.
2. Supporting local food production: Consume locally grown, seasonal foods, which are often more affordable and nutritious.
3. Addressing food deserts: Improving access to fresh, affordable food in areas with limited options, such as through community gardens, mobile markets, and food banks.
4. Improving food safety and hygiene: Ensuring safe food handling practices by promoting proper food storage, preparation, and cooking techniques to minimize the risk of foodborne illnesses.
5. Improving water quality and sanitation: Access to clean water and adequate sanitation facilities is crucial for preventing malnutrition and related infections.
6. Addressing underlying health conditions, implementing programs for early detection and treatment of diseases that might cause malnutrition, including infections, chronic diseases, and mental health disorders.

7. Supportive Care: Providing nutritional guidance and support to those with chronic conditions to ensure their dietary requirements.
8. Empowering community: Nutrition education programs run community-based activities to create awareness about healthy eating, food safety, and the benefits of breastfeeding.
9. Empowering women: Providing women with education and economic possibilities will help them make better decisions about food and household nutrition.
10. Community gardens and food banks: Support community-based food production and distribution efforts like community gardens and food banks.
11. Strengthening healthcare systems: and investing in primary healthcare: Strengthening primary healthcare systems to provide essential nutrition services, including growth monitoring, micronutrient supplementation, and counseling.

Specific Considerations for Different Populations

To prevent malnutrition in children,

1. Encourage exclusive breastfeeding for the first six months. Then, introduce supplemental foods while continuing breastfeeding.
2. Early childhood development programs: Establish early childhood development programs that target both nutritional and developmental needs.
3. School feeding programs: Provide nutritious meals and snacks to school-aged children to improve their nutritional status and cognitive development.

To prevent malnutrition in pregnant and lactating women,

1. Prioritize access to appropriate prenatal care, including nutritional counseling and

supplementation with key nutrients such as iron and folate.

2. Breastfeeding Support: Breastfeeding can be promoted and supported through programs like as lactation counseling and workplace policy.

To prevent malnutrition in older persons,

1. Address age-related changes such as decreased appetite and increased risk of dietary deficiencies.
2. Community Meals and Home-Delivered Meals: Make community meals and home-delivered meals available to older persons who may struggle to prepare meals on their own.

Preventing Malnutrition in People with Chronic Diseases:

1. Tailored Dietary Counseling: Offer individualized dietary counseling to people with chronic conditions like diabetes, cardiovascular disease, and cancer to ensure they achieve their nutritional needs.
2. Interdisciplinary Care: Promote interdisciplinary care that meets both the dietary and medical requirements of those with chronic conditions.
3. The role of technology in preventing malnutrition: Technology has the potential to significantly advance efforts to prevent malnutrition.

Conclusion:

Malnutrition prevention necessitates a multi-sectoral approach that targets the root causes while promoting long-term remedies. We can build a world in which everyone has access to appropriate nutrition and can live healthy and productive lives by applying a combination of nutritional interventions, health system strengthening, community empowerment, and technological advancements. ❑



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