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Vigyan Setu e-magazine

Contents

About Vigyan Setu e-Magazine

A quarterly, bilingual publication by Vigyan Setu Foundation that bridges the gap between science and society. Curated with creativity, curiosity, and critical thinking, this e-magazine features insightful articles, creative expressions, and real-world applications of science, technology, and innovation. It aims to nurture scientific temper, celebrate young minds, and spotlight emerging researchers whose work is shaping a sustainable future.

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About the Cover

Natural Coral Bridge, Neil Island, Andaman

*By **Editorial Team***

The Natural Coral Bridge at Laxmanpur Beach No. 2 on Neil Island (Shaheed Dweep) in the Andaman and Nicobar Islands, is a striking coastal formation shaped over time by waves, tides, coral growth, and erosion. Locally called the "Howrah Bridge" or "Rabindra Setu", this natural arch reveals the quiet artistry of geological processes and the fragile beauty of marine ecosystems.

Best viewed during low tide, the surrounding rock pools expose corals, shells, small fish, crabs, sea cucumbers, and other intertidal life, making the site a living classroom where geology, biodiversity, and conservation meet.

Photo credit: Google Images

From the Editor's Desk

By **Dr. Neha Sharma**

This Vigyan Setu issue you read, refuses to be confined to a single idea. It spans across the full breadth of human experience: from the algorithms shaping our future to the ancient wisdom quietly sustaining our present; from the food on a child's plate to the noise that is threatening our hearts.

And yet, a single thread runs through all ten contributions. Every article in its own way, asks the same question: *are we paying attention?*

Technology on Trial

We open with a provocation. Is Artificial Intelligence really the villain we have made it out to be? Avneet Kaur Sooch argues, with striking clarity, that the panic surrounding AI is neither new nor unique. It is simply the latest chapter in a long history of societies fearing their own tools. AI, she reminds us, is a mirror. What it reflects is entirely up to us.

Staying with the theme of young minds and their futures, Dr. Dinesh Kumar offers a practical, grounded guide to study excellence. Not through shortcuts, but through the disciplined habits of curiosity, consistency, and self-awareness.

Roots and Recipes

Amol Sharma's exploration of indigenous knowledge and modern science is quite a timely piece in this collection. At a moment when technological solutions are sought for every crisis, he gently reminds us that many answers already exist in the stepwells our ancestors built, in the seeds our farmers saved, in the forests our communities protected. Progress, he writes, does not always mean reinvention. Sometimes it means remembering.

Anurita Koul takes us further into this territory through the lens of food. India's cuisines, she shows us, are not merely recipes. They are philosophy, identity, and consciousness made edible. To eat mindfully in India, is already to practise science.

Voices the World Must Hear

Poonam Rautela's article on noise pollution is the most urgent piece, and the most personal. She writes not as a distant observer but as someone who has watched communities suffer the consequences of sound levels that exceed our biological tolerance and refuses to wait for government action. The decibels are rising so the question is whether we will act before the silence becomes permanent.

The Science of Everyday Health

Three articles turn the lens toward the health challenges that live closest to home, the ones we brush past daily, sometimes literally.

Dr. Wahied Khawar Balwan's article on dental caries is a reminder that tooth decay is not merely a cosmetic inconvenience, but a microbial disease shaped by diet, hygiene, and the choices we make every day. In a nation where junk food is cheaper than fruit and oral health visits remain rare, his message is both clinical and urgent.

The article on dengue fever by Dr. Lankesh Yashwant Bhaisare, Dr. Desh Deepak Chaudhary, and Dr. Vinod Vishnuji Madavi is key to public health. The authors trace the journey from mosquito bite to disease control, reminding us that the battle against dengue is ultimately for cleaner, more attentive communities.

Mr. Kuldeep Gupta contributes a deeply compassionate piece. His article on child nutrition is eye-opening: 200 million children affected by malnutrition, not in a world of scarcity, but in a world of abundance misallocated. He reminds us that what we put on a child's plate in their first five years shapes not just their body but their brain, their mood, and their entire future.

Nature, Seen and Unseen

Dr. Divyendu Sen's article on the Green Desert is the kind of piece that changes how you see a city street. A tree is not automatically a contribution to biodiversity; a green city is not automatically an ecological one. The distinction between planting trees and nurturing life is subtle but profound and one that our urban planners urgently need to understand.

Closing with Celebration

We close with a possibility. Vigyan Parv 2026 invited young girls from across India to present science drawn from their own surroundings. The response - 144 participants, six national awardees, and countless ideas rooted in local observation. This is a reminder that scientific curiosity does not wait for laboratories. It begins in the backyard, the kitchen garden, and the schoolyard.

Science, this issue reminds us, happens when a child asks why, when a community protects a grove, when a teacher chooses understanding over memorisation, and when a foundation believes that bridging science and society is not just a mission; it is a practice, renewed with every page.

> ***Science is not something that happens elsewhere.***
> ***It happens here, now; whenever a child asks why.***

We hope this issue leaves you asking more questions than it answers. That, after all, is what science is for.

Note: The upcoming issue is a thematic edition focused on *Environment and Sustainability*.

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Is Artificial Intelligence (AI) Really the Villain?

By **Avneet Kaur Sooch**

Every time a new technology arises, people tend to panic. This has been encountered before, historically not once, not twice, but every single time. There is a cycle termed the Tech Panic Cycle, which repeats every time a new tool is introduced (Grady & Castro, 2023).

The first stage is known as 'Trusting Beginnings', which is when the tool is not yet public. Hence, the exposure as well as the fear is low. However, critics have already begun targeting possible hypothetical harms. The second stage is known as 'Rising Panic', when the product goes public, and the fear spreads fast. Media and journalists stress the issues with sensationalism, clickbait coverage, and rarely presenting an unbiased opinion. The third stage is 'Deflating Fears', when the public slowly embraces the tool and accepts its benefits, while doomsayers slowly lose their voice. The fourth and final stage is 'Moving On'; here, the technology normalises with the next new technology arriving.

When challenged about failed doomsayers' predictions, alarmists argue that this technology is unique and extraordinary, but that's what they said every single time. This pattern can often be seen repeated in various historical examples, such as when the printing press arrived, professional copyists panicked about losing their jobs, but in fact, ended up creating an entire publishing industry. When electricity came, people called electrical wires 'death wires', fearing instant death. Fast-forwarding to today, electricity is common knowledge. When computers arrived, computerphobia spiked in the 1980s with rising fears of mass unemployment. US employment continued to grow despite fears that automation would eliminate jobs. According to Frey and Osborne's (2013) Oxford study, 47% of all US jobs were predicted to be at risk of automation, but mass unemployment never happened. Instead, a structural shift in the labour market was seen, where jobs did not disappear but changed. This pattern even has a name: 'Luddite Fallacy'. It refers to the mistaken belief that new tech causes permanent mass unemployment, while the reality is that it only causes temporary structural shifts. In countries like India, where job security insight is already high, this fear gets amplified even more. Quite evidently, society as well as the markets adapted to every tech tool before, and the tech apocalypse has never arrived.

What AI Actually is and What it isn't

AI is just a tool, like a hammer; it all depends on how you use it after having the privilege of holding it. Large Language Models (LLMs) are not conscious thought; they are pattern recognition of data that humans themselves have exposed them to. No consciousness or moral agency is involved; hence, no hidden agenda by the tool itself can be justified. There's also this category error where people fight AI as if it were a human being instead of

a system. As a tool, it already declares its own biggest limitation - "I can make mistakes. Double check important info." I would like to represent it simply by a metaphor, just like a knife does not kill but the person using it does, a tool is never responsible, the hand holding it is. We often forget the basics while chasing complexity. The very definition of a machine is simple - a tool that makes our lives easier. That is what AI is.

Using beyond its purpose is, again, a human choice and mistake. A therapist listens, feels, and understands human complexity, whereas a judge weighs values, context, and conscience. These roles demand something AI fundamentally lacks emotional depth and moral accountability. Expecting AI to replace these is not just unrealistic; it is our own immaturity as users. AI was never meant to make our personal decisions, navigate our emotions, or define our values. Centuries ago, an inventor created a knitting machine that could relieve workers from manual labour, but the Queen rejected it, fearing it would make the workers unemployed. According to one study, only 10% of labour roles access major sectors that are impacted by AI (Akpan & Adebayo, 2025). AI cannot replicate human sensorimotor and judgment-based tasks, a phenomenon known as Moravec's Paradox (Akpan & Adebayo, 2025). AI is meant to complement creativity rather than replace it solely. The aim should be a balance between human creativity and mechanical precision. The Bureau of Labour Statistics states that AI will create 17 million more jobs than it eliminates by 2030 (Akpan & Adebayo, 2025). So, if AI is just a tool with no agenda, then where is the real problem? **The answer is human beings.**

The Problem was Never the Tool

Misuse of such a tool should be subject to human accountability. AI basically reflects the society we live in. If there's a bad output, it means, with no doubt, that there must be a bad input or a bad intention of the user, as it only does what humans instruct it to do. The real danger is not even AI acting alone, as it is hyped up on social media; instead, it is humans weaponising AI. Social media just amplifies fear and not facts, creating panic without taking action or at least presenting unbiased information. It again directly reflects the Tech Panic Cycle. The irony is that humans are often more dishonest and manipulative than AI ever is; it is quite evident from what we see around.

The real concerns that exist are cybersecurity, deepfakes and intellectual property. These are valid issues, but completely different from imagined doomsayers' concerns. Unfortunately, the panic about the hypothetical issues overpowers the real issues, making them get ignored in the noise. Deepfakes are synthetic media that are realistic enough to mimic voices and faces convincingly. World Economic Forum ranks misinformation and disinformation among the world's top risks

(World Economic Forum, 2025). Generative AI could drive US fraud losses from $12.3 billion in 2023 to $40+ billion by 2032 (Naffi, 2025). Even students are using deepfake technology to create harassing content of classmates and teachers. Medical professions are facing a "crisis of evidence", which refers to the deepfake videos of doctors promoting medical scams. Arguments that AI will degrade science and ethics relied entirely on false claims about the technology. Software companies were accused of AI secretly listening to users, which was proved wrong. A US Senator claimed in 2023 that ChatGPT taught itself advanced chemistry by saying, "Something is coming. We aren't ready." This also turned false. ChatGPT only patterns existing data fed to it by humans and can't teach itself something. Every single example of AI harm traces back to a human decision. So, the solution is not fear or complete restriction but adaptation.

Adapt or Stay Afraid

Survival of the fittest: this has always been how the world works. Every generation had to adapt to new tools such as scribes, factory workers and computer operators. Those who adapted survived, and those who didn't were left behind. This tool is no different. Georgetown CSET report claims technical skills become outdated in less than 5 years on average (Oschinski et al., 2024).

There is a need for continuous retraining and upskilling throughout workers' careers. AI literacy must be integrated into the existing curriculum for incoming professionals. Even over-reliance on AI tools may hinder skill development; hence, balance must be maintained. Frey & Osborne (2013) reported that acquiring creative and social skills is what AI cannot replicate. A great example of adaptation is COVID-19; during that phase, 305 million jobs were at risk, with 94% workers impacted globally, but economies still recovered, and people adapted (ILO, 2020). If humans survived a global pandemic, they could certainly adapt to a tool.

In India, especially, the opportunity is massive if we choose adaptation over fear. Policymakers should recognise when they are amid a tech panic. Restrictions and regulations targeting misuse, such as deepfakes, fraud and misinformation, instead of attacking the tool itself, as that would be like banning knives because someone misused one. It should be realised that this time is not different, same panic and same solution, this tool should be adapted and regulated wisely.

The age of AI is filled with opportunities along with responsibilities, and those who learn to use it wisely will not just survive but may even lead. The question was never whether AI would change the world. The question is: Will you adapt to it?

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Article 2 Education · Youth

Best Study Practices to Score Good Marks in Exams

By **Dr. Dinesh Kumar**

Whether gearing up for competitive exams or school / board exams, following a structured routine and building habits like planning, organizing and time management can help students achieve their goals.

Here are 20 effective study strategies every student should consider.

Planning and Organization

1. Simple to Complex

Build confidence by starting with easier concepts before progressing to complex ones. Break difficult topics into smaller parts.

2. Time Management

This is one of the most important things to take care of. Start by maintaining a timetable for a steady and healthy study pattern. Make a chart of their daily routine, adjust the study timings accordingly. Try to put little breaks in between that give the mind rest to start afresh. By scheduling daily routines incorporating studies in an interval of 3-4 hours, one can effectively create a balanced study plan.

3. Create a Study Plan

Whether gearing up for board exams or competitive exams, having a meticulously designed study plan is an imperative way to ensure good marks. Divide subjects by day, put time away for revision at the beginning of each day, and stick to the plan to avoid daily re-strategizing.

4. Regular Short and Long Tests

Regular short and long tests can be daily 2–5 minute oral tests, weekly 10 marks tests, and monthly 20-25 marks tests. By preparing for and performing in such tests, students build confidence and get a highlight of weak areas.

Learning Strategies

5. Address Weak Points

Identify and systematically work on weaker concepts rather than avoiding them. Discuss any mistakes and make a note of weak concepts to work on them. Include tough subjects in the study plan to not feel the burden towards the end. Seek guidance from teachers or buddy groups.

6. Understand Concepts Rather Than Memorize

Having clear concepts helps retention better than rote learning. Always get doubts cleared so core concepts and fundamentals are crystal clear. Use visualization and storytelling as well as other techniques.

7. Activity-Based Learning

Classroom teaching should not be boring. It should have varied tones, be humorous and be activity-based. At least one activity or teaching aid per class makes the lecture pleasant and fruitful.

8. Find Scoring Sections

In every exam there is at least one section where one can easily score marks with minimal effort. Help students find these scoring sections and train to ace them within lesser time.

9. Create Personal Study Notes

Read a topic, then rewrite it in your own words. Maintain a separate notebook per subject, highlight important topics, draw graphs and flow charts wherever necessary. Study notes prepared this way can prove extremely useful.

> ***"Learning concepts with the help of flow charts and diagrams makes it easier to understand and revise. An image attracts the mind more and is easier to remember than text alone."***

Study Environment and Well-being

10. Group Study

Studying in groups can be another engaging method. Invite some of your friends for a group study session. It encourages revision and mutual explanation of concepts, boosting motivation during stressful exam periods.

11. Parental Communication

Apart from parent-teacher meetings, regularly contact parents, especially when a student is frequently absent or performance is declining, helps identify and solve underlying problems.

12. Teach Others

Teaching a topic to someone else is a well-tested technique for gaining clarity. During group study sessions, divide concepts and take turns teaching them. This strengthens knowledge and helps in scoring good marks.

13. Minimize Smartphone Usage

Set struct limits on mobile phone use during study periods and especially while preparing for exams. Avoid social media weeks before exams. Even 5 minutes of scrolling easily becomes an hour. Spending a lot of time on social media makes it difficult to focus on studies.

14. Consistent Revision

Spend 10 minutes at the end of each study day reviewing material covered. Schedule dedicated revision and practice days before the final exam.

15. Don't Neglect English

English is a highly scoring subject. Do not underestimate the power of English scores. Even one hour of daily revision three days a week can yield marks above 85.

Exam Preparation

16. Practice Sample Papers and Mock Tests

Past year sample papers and mock tests are specially designed to help gear up for exam day. Set a timer, take a sample paper, and give the test as they would on the actual day. Identify time-consuming sections and develop strategies.

17. Take Regular Breaks

Take a 20-minute break after every 2 hours of study. Meditate, go for a walk or do light physical activity to feel refreshed. Without breaks, constant pressure and stress accumulates.

18. Avoid Overconfidence

Confidence is great but overconfidence is self-destructive. Revise strong areas frequently so they are easy to recall in exams. Do not avoid any topics. Proper and regular revision is key.

19. Build a Study Space

Have a dedicated, quiet, organized room or space free from distractions. This could be a study room, your balcony, terrace area, or even a local library.

20. Check Theory and Practical Notebooks Regularly

At least once a week, notebooks must get checked to ensure that proper records of classroom study are being maintained.

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Indigenous Knowledge and Modern Science: Partners in Sustainability

By **Amol Sharma**

"The future will be secure not merely because of what we invent, but also, because of what we remember."

Introduction

As the world confronts challenges such as climate change, declining biodiversity, water scarcity, and food insecurity, humanity is searching for sustainable ways of living. Scientific advances and technological innovations are undoubtedly essential in addressing these problems. Yet, in this quest for solutions, there is an increasing realization that valuable knowledge already exists within communities that have lived in harmony with nature for generations.

Long before satellites monitored weather patterns or laboratories analysed soil quality, indigenous communities had developed sophisticated ways of understanding their surroundings. Through observation, experience, and continuous interaction with nature, they evolved practices that ensured the responsible use of resources without compromising the needs of future generations. Today, modern science is beginning to recognize that these traditional systems of knowledge are not relics of the past but valuable assets for building a sustainable future.

Rather than standing in opposition, indigenous knowledge and modern science can complement one another. Their partnership offers a pathway toward development that is environmentally responsible, socially inclusive, and economically viable.

Understanding Indigenous Knowledge

Indigenous knowledge refers to the wisdom, practices, and skills that communities have accumulated over centuries through direct interaction with their environment. It is often passed down orally from one generation to another and is deeply rooted in local culture, customs, and traditions.

This knowledge encompasses diverse areas such as agriculture, water conservation,

medicine, biodiversity management, weather forecasting, and disaster preparedness. Unlike standardized scientific methods, indigenous knowledge is location-specific and closely adapted to local ecosystems.

For example, communities living in arid regions have historically devised ingenious ways to collect and store rainwater. Mountain communities have developed farming practices suited to steep slopes, while forest-dwelling populations possess detailed knowledge about medicinal plants and wildlife behaviour.

Such systems demonstrate that sustainability was not merely an academic concept for these societies; it was an integral part of everyday life.

Modern Science and the Search for Sustainable Solutions

Modern science has transformed human civilization by providing tools to understand natural phenomena and develop technologies that improve quality of life. Advances in biotechnology, remote sensing, artificial intelligence, renewable energy, and environmental science have created unprecedented opportunities for sustainable development.

Scientific research enables precise measurements, controlled experimentation, and the validation of theories. It provides evidence-based solutions and facilitates the large-scale implementation of technologies. However, despite its remarkable achievements, science alone cannot address every challenge without considering local contexts and cultural realities.

Many development initiatives have failed because they overlooked the knowledge and participation of local communities. Sustainability requires solutions that are not only scientifically sound but also socially acceptable and economically feasible. This is where the integration of indigenous knowledge becomes particularly significant.

Agriculture: Lessons from Traditional Wisdom

Agriculture offers one of the clearest examples of the synergy between traditional practices and modern science.

For centuries, farmers cultivated diverse crop varieties, practiced mixed farming, and followed natural methods of pest control. These techniques helped maintain soil fertility and reduced dependence on external inputs. In contrast, intensive agriculture, though highly productive, has often led to soil degradation, water depletion, and loss of biodiversity.

Today, agricultural scientists are increasingly studying traditional farming systems to develop climate-resilient practices. Crop diversity maintained by indigenous communities provides genetic resources that help scientists breed varieties resistant to pests, diseases, and changing climatic conditions.

Similarly, organic farming, once considered old-fashioned, has gained renewed importance as researchers recognize its potential to improve soil health and reduce environmental pollution. Traditional methods combined with modern technologies such as soil testing, weather

forecasting, and precision irrigation can create more sustainable agricultural systems.

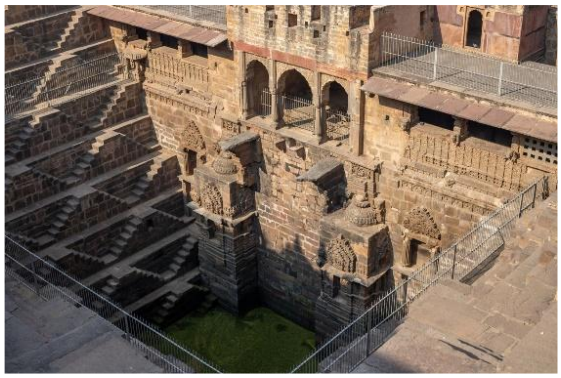
Figure 1: *Combining age-old farming practices (top) with scientific innovations (bottom) can improve productivity while protecting natural resources.*

Water Conservation: Ancient Wisdom in Modern Times

Water scarcity is emerging as one of the most pressing global concerns. Interestingly, many traditional societies developed efficient methods for managing water resources long before modern engineering existed.

Across India, communities constructed stepwells, tanks, ponds, and rainwater harvesting structures suited to local geographical conditions. These systems not only stored water but also replenished groundwater and supported ecosystems.

Today, hydrologists and environmental planners are rediscovering the value of these traditional techniques. Several regions have successfully revived ancient water bodies with the help of scientific studies and community participation. By combining modern mapping technologies with traditional practices, it is possible to create sustainable water management systems that are both effective and affordable.



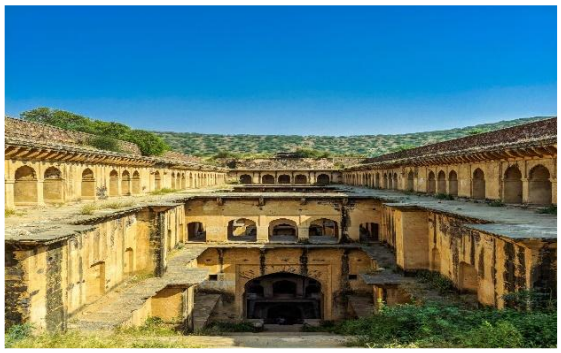


Figure 2: *Traditional water harvesting structures demonstrate how communities managed water sustainably long before modern engineering.*

Biodiversity Conservation Through Community Participation

Indigenous communities have long recognized the importance of maintaining ecological balance. Sacred groves, protected forests, and customary restrictions on hunting are examples of practices that contributed to biodiversity conservation.

Modern ecological research has shown that many areas managed by indigenous

communities' harbour remarkable biological diversity. In several cases, these regions have become refuges for endangered species and important reservoirs of genetic resources.

Conservation scientists now acknowledge that protecting ecosystems requires collaboration with local communities rather than excluding them. Community-based conservation initiatives have demonstrated that traditional knowledge and scientific management can work together to preserve biodiversity while supporting local livelihoods.

Figure 3: *Community-managed forests and sacred groves have played an important role in conserving biodiversity.*

Traditional Medicine and Scientific Validation

For thousands of years, people have relied on medicinal plants and natural remedies to treat illnesses. Traditional healers possess extensive knowledge regarding the properties and uses of various plant species.

Modern pharmacology has benefited enormously from such knowledge. Numerous medicines have their origins in compounds discovered in plants traditionally used by indigenous communities. Scientific research helps identify active ingredients, determine appropriate dosages, and ensure safety.

However, it is equally important to recognize the intellectual contributions of indigenous communities and protect their rights. Ethical collaboration and fair sharing of benefits are essential to ensure that traditional knowledge holders receive due recognition.

Climate Change Adaptation and Local Knowledge

Communities that have lived close to nature often possess a remarkable understanding of environmental changes. Their observations regarding rainfall patterns, seasonal cycles, animal behaviour, and ecosystem dynamics can provide valuable insights into climate variability.

Scientists are increasingly incorporating local knowledge into climate adaptation strategies. Combining satellite data with community observations can improve early warning systems and strengthen disaster preparedness.

For example, coastal communities have traditionally used natural indicators to anticipate storms, while mountain populations have adapted to changing weather conditions through specific agricultural practices. Such experiences can

complement scientific models and contribute to more effective responses to climate change.

Figure 4: *Local observations and scientific tools together strengthen climate resilience and disaster preparedness.*

Innovation Does Not Always Mean Reinvention

There is a common misconception that innovation requires completely new ideas. Some of the most successful innovations emerge from improving and adapting existing practices.

Innovation can occur when traditional wisdom is examined through the lens of scientific inquiry. Low-cost technologies inspired by indigenous practices often prove more sustainable and accessible than expensive alternatives.

Examples include eco-friendly construction techniques, natural dyes, biofertilizers, and renewable energy solutions tailored to local conditions. Such innovations not only reduce environmental impacts but also empower communities by building upon their existing knowledge and skills.

Inclusive Development Through Knowledge Partnerships

Sustainable development cannot be achieved if large sections of society remain excluded from decision-making processes. Indigenous communities, despite their contributions, have often been marginalized and their knowledge undervalued.

Inclusive development requires recognizing communities as partners rather than passive beneficiaries. Their participation in research, policy formulation, and resource management can lead to solutions that are more equitable and culturally appropriate.

Educational institutions and scientific organizations are increasingly promoting participatory approaches that encourage dialogue between researchers and local communities. Such collaborations enrich both scientific understanding and social development.

When people become active contributors to knowledge creation, development becomes more democratic and sustainable.

Challenges in Integrating Indigenous Knowledge and Science

Although the benefits of integration are widely acknowledged, several challenges remain.

Traditional knowledge systems are often undocumented and vulnerable to loss due to rapid social and cultural changes. Younger

generations may gradually become disconnected from their heritage. Furthermore, differences in methodologies and perspectives can create misunderstandings between scientists and local communities.

Issues related to intellectual property rights and benefit sharing also require careful consideration. Respect, trust, and ethical collaboration are essential to ensure that indigenous knowledge is not exploited or misappropriated.

Building bridges between different knowledge systems demands openness, humility, and mutual learning.

A Shared Vision for the Future

The twenty-first century calls for a new understanding of progress. Development should not be measured solely by economic growth but also by ecological balance, social justice, and human well-being.

Modern science provides powerful tools, while indigenous knowledge offers wisdom shaped by generations of experience. Together, they form a partnership capable of addressing some of humanity's most complex challenges.

The goal should not be to replace one system with another but to create a dialogue between them. Such a partnership recognizes that knowledge can emerge from laboratories as well as from forests, farms, mountains, and villages.

As humanity strives toward a sustainable future, perhaps the greatest lesson is that innovation and tradition are not rivals. They are companions on the same journey.

Conclusion

Sustainability is not merely about preserving resources; it is about preserving relationships between people and nature, between past and future, and between different ways of knowing. Indigenous knowledge and modern science, when brought together with mutual respect, can offer solutions that are practical, inclusive, and enduring.

In an era characterized by rapid technological advancement, it is worth remembering that wisdom does not always reside in machines and equations alone. Sometimes, it also resides in stories passed down through generations, in practices refined by centuries of experience, and in communities that have learned to live with nature rather than against it.

The path toward sustainable development will become stronger and more inclusive when humanity embraces both innovation and inheritance. For the challenges of tomorrow, we need not choose between tradition and science. Instead, we must recognize that their partnership may hold the key to a more balanced and sustainable world.

"True progress lies not in forgetting our roots, but in allowing ancient wisdom and modern knowledge to grow together for the benefit of all."

Amol Sharma
Teacher, Govt Middle School Pathwal, Sallan Kathua

India: The Country Where Every Dish Whispers A Story of Love, Tradition, and Spirit

By **Anurita Koul**

India is abundant in natural resources and an agriculture-based nation. It has been ever rich in food grains and seasonal fruits and vegetables. This is what makes it much lavish in cuisines and food. India offers a vast variety of cuisines and food items. Each state of India has vivid cuisines to offer that makes India country with varied flavours. Cuisine tells a heartfelt story, from spicy dishes to comfort of sweet bite on the plate. Whether we are devouring a creamy pasta or slurping a soulful soup or trying something totally new, all these flavours bring people together and make every moment special. Every meal is no doubt a chance to laugh, share and with diversity.

In fact, the food and cuisines of India are internationally renowned, people across the world come to taste the rich flavour of various Indian cuisines. For Indians, food is not just a physical necessity of the human body. They are strongly attached with people's spiritual, emotional and social significance realm. Foods are considered sacred and people literally worship it, because in India food plays a major role in life as it directly constructs/ affects the mind and soul of the person.

Food is an energy and this energy is directly interrelated with consciousness, hence, to attain the purity and clarity of consciousness one should follow the purity in food also. One of the ancient Upanishad stated that the human mind is consisted of the food, the subtle part of food that we intake moves upwards and creates, the mind of the person. In fact, the Indian philosophy dictates that "we are what we do eat". One's food habits and the kind of food one consumes creates our attitudes and behaviour and those are directly reflected through our personalities. That is why Vegetarianism is the earliest recommended food trend in the Indian philosophy.

In fact, if one really wants to lead a Yogic life and wants to attain the highest perception/clarity of consciousness then food is the foremost factor that he must take into consideration. Indians worship the food and believe in the fundamental fact that Food is ever essential for physical, spiritual, emotional and social development of a person.

Indian food represents a multifaceted fabric woven over five millennia of cross-cultural interaction and culinary development. This complex history reflects the blending of various people and cultures, which has produced a wide range of tastes and local specialties. It would be thus right to state that Indian Cuisine is a spectrum of various culinary traditions. Each region of India: North or South, East or West, has its variations, with distinctive ingredients, ways

of cooking, and cultural practices that are local and unique to each place. Indian cuisine is incredibly diverse, with regional specialties showcasing unique flavours and cooking techniques. From the spicy curries of the south to the rich, buttery dishes of the north, each region boasts a distinct culinary identity. The Cuisines of India are unique to every region, with special ingredients and unique cooking methods. Exploring Indian food is like a journey with no destination, yet full of uniqueness, history and local customs.

The union territory of Jammu and Kashmir is not only known for its breathtaking landscapes and cultural richness but also for its diverse and flavourful cuisine. Broadly, the cuisine of Jammu and Kashmir can be categorized into Kashmiri and Dogri styles, each offering a unique culinary experience.

Kashmiri Cuisine: Aromas, Spices and Traditions

Kashmiri cuisine, especially in the Kashmir Valley, is rich, aromatic, and heavily meat based. It has evolved from the ancient traditions of the Kashmiri Pandits and has also been shaped by Persian and Central Asian culinary practices. The hallmark of this cuisine is its use of unique spices such as fennel, dry ginger, saffron, and asafoetida, which lend distinct flavours to the dishes.

One of the most famous aspects of Kashmiri cuisine is the Wazwan, a traditional multi-course feast that can include up to 36 elaborate dishes, mostly prepared with mutton. It is not just a meal but a ceremonial affair, especially during weddings and festivals.

Dogri Cuisine: Simplicity Served with Soul

The cuisine of the Jammu region, often referred to as Dogri cuisine, is less spicy but equally flavourful. It emphasizes pulses, grains, and vegetables, reflecting the agricultural lifestyle of the Dogra people. Unlike the meat-heavy cuisine of Kashmir, Dogri cuisine features a balance of vegetarian and non-vegetarian dishes.

The cuisines of Jammu and Kashmir reflect the cultural richness and diversity of the region. While Kashmiri cuisine dazzles with its royal Wazwan and bold flavours, Dogri cuisine offers comfort and variety through its simple yet wholesome dishes. Together, they form a culinary landscape that is as diverse and captivating as the land itself. For anyone exploring Indian regional food, the tastes of Jammu and Kashmir are not to be missed.

Anurita Koul
Headmistress, Army Public School Damana, Jammu

ध्वनि प्रदूषण: गंभीर संकट से सुरक्षा पर चिंतन

समावेशी विकास के लिए सकारात्मक वैज्ञानिक दृष्टिकोण: आवाजें जो चुपचाप हमें खामोश कर रही हैं

By ***पूनम रौतेला***

मानव अपनी उत्पत्ति से लेकर आज तक विकास का एक लंबा सफर तय कर चुका है। इस सफर में अपनी बुद्धिमत्ता से मानव ने जीवन के हर पक्ष को पहले से कहीं ज्यादा उन्नत और बेहतर बनाने की कोशिश की है। विज्ञान और तकनीक के शीर्ष पर विराजमान हमारी मौजूदा पीढ़ी एक ऐसे दौर से गुजर रही है जहां समय के साथ प्रतिस्पर्धा करना और पीछे मुड़कर देखने की कोशिश भी ना करना आदत बनती जा रही है, और यही आदत ऐसी गंभीर समस्याओं को जन्म देती है जिसके दुष्परिणाम सिर्फ मानव जाति को ही नहीं बल्कि पूरे जीव जगत और पर्यावरण को भुगतने पड़ते हैं।

ऐसी ही एक गंभीर समस्या है "शोर" जिसे विज्ञान की भाषा में "ध्वनि प्रदूषण" कहा जाता है। हमारी गतिविधियों में अनचाही आवाजों से बना यह शोर स्थाई हो गया है। सड़क यातायात, हवाई अड्डे, रेलवे स्टेशन, कल-कारखाने, विवाह समारोह, सार्वजनिक सभाएं, चुनाव प्रचार... इन सब की आवाजें हमारी रोज़मर्रा की जिंदगी का हिस्सा बन गई हैं और गंभीर बात ये है कि धीरे-धीरे खामोशी से यह शोर हमारी जिंदगियों को खामोश करता जा रहा है।

हममें से ज्यादातर लोग रोज समाचारों, अखबारों और टीवी पर देखते-सुनते हैं कि कुछ मौतें अचानक हो रही हैं। इनमें से काफी ऐसी हैं जो किसी समारोह, डांस-फ्लोर, मंच या गेट-टूगेदर में आनंद के क्षण बिता रहे लोगों के अचानक गिर जाने से हो रही हैं। उनके आसपास आपको वो खलनायक जरूर दिखेगा जो आज शोर का पर्याय बन चुका है..... "डीजे" या बहुत सारे बड़े स्पीकर वाला म्यूजिक बैंड।

कहने को यह उपकरण खुशी के अवसरों पर गीतों और नृत्यों की हमारी भारतीय परंपराओं को बनाये रखने के लिए संगीत उपलब्ध कराता है, पर वास्तविकता यह है कि इस भयानक ध्वनि स्रोत ने आनंदमय संगीत के मायने ही बदल दिए हैं। इन आवाजों को एक सीमा तक सहा भी जा सकता है, लेकिन आवाजों के साथ जो कम्पन पैदा होता है उसे किसी भी सूरत में सहन करना नामुमकिन है।

यही कम्पन अब वैश्विक चुनौती बन गया है, क्योंकि लगातार जारी विभिन्न देशों के मध्य युद्धों में इस्तेमाल किये जाने वाली अत्याधुनिक मिसाइल, ड्रोन और एयर स्ट्राइक के विभिन्न हथियारों से उत्पन्न ध्वनि लगातार बड़े पैमाने पर मानवीय अस्तित्व के लिए संकट खड़ा कर रही है।

इस कम्पन की आवृत्ति हमारे हृदय की धड़कन को सीधा प्रभावित करती है, रक्तचाप को उच्चतम स्तर तक पहुंचा देती है और हृदयाघात की संभावना को ९०% तक बढ़ा देती है। कुछ स्थितियों में यह संभावना १००% तक पहुँच जाती है और ऐसी जिंदगियाँ हमेशा के लिए खामोश हो जाती हैं।

कुछ समय पहले उत्तर प्रदेश के सुल्तानपुर जिले में डीजे के असहनीय शोर से १४० मुर्गियों का हृदयाघात से मर जाना हमारी आंखें खोल देने के लिए काफी है। बहुत तेज आवाज जानवर और पक्षियों में तीव्र तनाव पैदा कर उनकी हृदय गति को रोक सकती है, उनकी प्रजनन क्षमता तक को प्रभावित करती है और यही मानव के लिए भी सत्य है।

वैज्ञानिक शोध और चिंताएं

विभिन्न वैज्ञानिकों ने बड़ी जनसंख्या पर शोध और विश्व स्वास्थ्य संगठन द्वारा जारी किये गए आंकड़ों के आधार पर ध्वनि प्रदूषण को बेहद गंभीर खतरा बताया है।

विश्व स्वास्थ्य संगठन सामान्य मनुष्य के लिए ६० डेसीबल तक की ध्वनि को हानि रहित मानता है। वैज्ञानिकों ने एक बड़ी जनसंख्या पर शोध के बाद दैनिक जीवन में शोर की तीव्रता के आंकड़े जारी किये हैं:

शोर का स्रोत	तीव्रता
यातायात	७०-१०० डेसीबल
वायु यातायात	५०-१३० डेसीबल
निर्माण कार्य	८०-११५ डेसीबल
रात्रि गतिविधियां (बार, पार्टी)	१०० डेसीबल
कृषि कार्य	९०-९८ डेसीबल
घरेलू कार्य	२०-११० डेसीबल

स्पष्ट है, जीवन में रोज़मर्रा की गतिविधियां ६० डेसीबल के ऊपर की तीव्रता तक पहुँचती है, और यदि लंबे समय तक शोर के संपर्क में रहा जाए तो गंभीर स्वास्थ्य संकट उत्पन्न होते हैं।

एक और चौंकाने वाला तथ्य यह है कि शोर के साथ यदि वायु प्रदूषण मिल जाए तो स्थिति इतनी गंभीर हो जाती है कि ब्रेन स्ट्रोक का खतरा कई गुना बढ़ जाता है। हवा में मौजूद महीन कण और सामान्य ध्वनि मिलकर इस खतरे को ११% तक बढ़ा देते हैं और अगर ध्वनि शोर की तीव्रता पकड़ ले तो यह खतरा कई गुना बढ़ जाता है।

दुनिया के १०० सबसे प्रदूषित शहरों में से ७४ भारत में हैं। इसलिए शोर सचमुच भारत में गंभीर खतरा बनता जा रहा है। एक शोध के अनुसार वर्ष २०५० तक पूरे विश्व में लगभग २.५ करोड़ लोग शोर के कारण सुनने की क्षमता खो चुके होंगे, ऐसा अनुमान व्यक्त किया गया है।

विज्ञान कहता है कि ७० से ९० डेसीबल आवृत्ति वाली ध्वनि के बीच लगातार रहने वाला व्यक्ति बहरेपन की तरफ जा रहा होता है।

शोर के दुष्परिणाम

१) शारीरिक: श्वसन समस्याएं, उच्च रक्तचाप और धड़कन, सर दर्द, गैस, हृदयाघात

२) मनोवैज्ञानिक: चिंता, अवसाद, एंग्जायटी, हिस्टीरिया, थकान (जानवरों में भी)

३) अनिद्रा: ३० डेसीबल से अधिक शोर नींद नहीं आने देता और फिर अनिद्रा की बीमारी हो जाती है।

४) व्यवहार: गुस्सा, चिड़चिड़ापन, आक्रामक व्यवहार

५) संज्ञानात्मक: याददाश्त कमजोर होना, एकाग्रता की कमी

इसके अलावा यदि गर्भवती महिलाएं ४ महीने तक ७० से ९० डेसीबल की ध्वनि में लगातार रहें तो बच्चा बहरा भी पैदा हो सकता है।

यह तो ९० डेसीबल तक की ध्वनि का दुष्प्रभाव है। क्या आप जानना चाहेंगे कि डीजे जो आवाज पैदा करता है, उसकी आवृत्ति कितनी होती है? १२० से २०० डेसीबल..... हमारी सहनशक्ति से बहुत बाहर और इसीलिए १०० फीसदी घातक।

समावेशी विकास – हमारी जिम्मेदारी

समावेशी विकास की वैज्ञानिक अवधारणा कहती है कि हमें तकनीकी उन्नति के साथ उन स्रोतों को सीमा में बाँधने का प्रयास अवश्य करना चाहिए जो मानवीय जीवन के लिए खतरा पैदा करें।

इसलिए इन आवाजों को सीमाओं में बांधना हमारी ही जिम्मेदारी है। जो आवाजें हमारी जिंदगियां निगल रही हैं, उनका खामोश होना जरूरी है। डीजे पर पूर्ण प्रतिबंध और ध्वनि विस्तारक यंत्रों की आवाजों को सीमा में बांधना .... ये जरूरी अभियान हमें खुद चलाने होंगे क्योंकि इसके लिए अगर हम प्रशासन या सरकार के आदेशों का इंतजार करेंगे तो इनकी आवृत्ति हमें उन तक शिकायत तक पहुँचाने का मौका नहीं देगी।

इसके अलावा अपनी रोज़मर्रा की जिन्दगी में शोर को सीमित करना बिल्कुल और पूरी तरह हम पर निर्भर है। मोहल्ले में होने वाले कीर्तन, प्रार्थना और अन्य धार्मिक आयोजन इससे मुक्त रखे जा सकते हैं। हर आयोजन में माईक या ध्वनि विस्तारक यंत्रों का प्रयोग आवश्यक नहीं है, क्योंकि उनका होना जिंदगी के लिए घातक है।

यकीन मानिए.... इस डिजिटल युग में यह भयानक गूंज अब बेहद खतरनाक और जानलेवा हो गई है। आइए संकल्प लें कि जहां भी ऐसी आवाजें आपको परेशान करें, आपकी सहनशक्ति को आजमाएं; वहां एकजुट होकर उन्हें तुरंत खामोश करने के लिए तैयार हो जाएं ताकि जिंदगियाँ खामोश होने से बची रहें।

पूनम रौतेला
प्रधानाचार्या, सोशल एक्टिविस्ट, झालावाड़

Article 6 Health · Oral Hygiene

Dental Caries: A Hygiene-Related Disease

Prevention is Better Than Cure

By **Dr. Wahied Khawar Balwan**

Dental caries, also called tooth decay, are a microbial disease of the teeth that results in decalcification of calcified tissue and dissolution of uncalcified tissues (Soft Tissue) of the teeth.

The word 'caries' derives from Latin meaning 'rot' or 'decay'. It is considered a disease of modern civilization. Pre-historic humans rarely suffered from it due to their fibrous, unprocessed diet.

Causes of Dental Caries

Dental carriers have multifactorial causes in initiation and progression. It is a dynamic and complex process. Many theories have been proposed for the cause of dental caries but most widely accepted one is Miller's acidogenic theory. According to Miller's acidogenic theory, dental caries is a chemo-parasitic process. The microorganisms, diet and tooth surface play a role.

Role of Microorganism

The mouth is full of bacterial species and many of them play a role in causing dental caries. The main role is by bacteria *Streptococcus mutans* which initiates the caries process. The other bacteria, *Lactobacillus acidophilus* plays a role in caries progression and *Actinomyces* is implicated in root caries.

Role of Diet

Carbohydrate foods are the main substrates for microorganisms. Sticky food like chocolates and other carbohydrates are more caries produced than any other food.

Role of Tooth Surface

Retentive and difficult areas to clean like pit and fissure, grooves, crowded and mal-aligned teeth, sides of the teeth which contact other teeth and partially erupted impacted tooth (wisdom tooth) can cause food retention and these areas of the teeth are more prone for dental caries.

Caries-an acidogenic process

Any retentive carbohydrate food left for reasonable time in the teeth surfaces are attacked by the bacteria of the mouth. Bacteria by the fermentation process produces acid from the food (refined and sticky carbohydrates), usually the major acid produced is lactic acid. These acids act upon the teeth to produce dental caries (cavitation).

Dental plaque is a biofilm made of bacteria and salivary proteins. It is formed on the teeth that are not adequately cleaned. It plays a role in dental caries by locating the bacteria and carbohydrate on the tooth surface so that fermentation and acid formation takes place.

Dental caries affects all age groups with teeth, both the age groups with teeth, both genders in all races and all socio-economic groups. Poor oral hygiene and food habits play a major role. Sticky carbohydrate foods, especially junk food and snacks get stagnated in the tooth surfaces. If they are left retained for long time, it can initiate dental caries. Children do get more dental care because of carving sweets and chocolates.

The types of dental caries can be Acute caries and Chronic caries based on duration, Smooth surface caries, Pit and fissure caries & Root caries based on surfaces, Infant-Nursing bottle caries, Adolescent caries & Senile caries-old age based on age, Enamel caries, Dentinal caries & Cemental caries based on location of the tissue involved.

In the initial stages caries are chalky white because of decalcification. Later, it becomes dark either black or brown because of accumulation of debris and staining of the surface.

Caries activity starts from the surface and starts involving the deeper tissues which results in loss of the decayed tissue causing cavity.

When caries involve only enamel there is no pain, when it reaches dentine causes sensitivity and when reaches pulp which has nerve fibers there will be pain because of inflammation of pulp. It is called pulpitis.

Signs and Symptoms of Dental Caries

An individual must do self-examination of teeth in front of the mirror and look out for any changes like discoloration of teeth especially black or brown color. If there is stagnation of food or any other obvious cavity on the surface of tooth can be dental caries. Sensitivity and pain are felt in the later stages if the caries is deep. In advanced stages the tooth itself will be grossly destroyed with only root stumps remaining.

Dental caries is a disease of modern civilization. Pre-historic humans rarely suffered from dental caries because of their food habits. They ate raw uncooked foods which were mostly fibrous. Even now studies in primitive tribals show low incidence of dental caries. Refined and sticky carbohydrate food which forms the diet in modern society is the main cause of dental caries.

If any changes in the teeth as mentioned in signs and symptoms of dental caries are noticed, then it is better to seek a professional approach by visiting a dentist.

Dental caries results in loss of teeth. The functions of teeth are for good appearance, speech and chewing. All these functions get affected. Healthy teeth are needed for a pleasant smile which is foremost for self-confidence and appearance. A person without teeth cannot pronounce words accurately. For digestion of food, it must be chewed before swallowing. A person without teeth cannot chew food, leading to indigestion.

Treatment

Teeth with caries cavity and not involving the pulp can be treated conservatively by doing filling. Various materials are used like silver amalgam, cements and resins. Cosmetic fillings can restore the tooth to its original color, shape and function. If the caries involves the pulp, then Root Canal Treatment (RCT) must be done to relieve the pain and save the tooth. The RCT treated tooth must be protected by an artificial crown. If the caries is extensive and grossly destructive then the tooth must be extracted and replaced by artificial teeth.

Prevention

Maintenance of oral hygiene is vital to prevent dental caries and for overall general health. Brushing teeth with standardized toothbrushes and toothpastes to be done both in the morning and night. Rinsing the mouth after every meal and drinking water helps to remove the food debris. Chlorhexidine mouth washes, interdental brushes and dental flosses can be used in selected cases. Sugarless chewing gums containing xylitol helps to prevent dental caries. Fluorinated toothpaste helps to reduce caries attack in children. Overall good oral hygiene is mandatory to prevent dental caries.

"Poor oral hygiene and sticky junk food habits are the primary drivers of dental caries in modern society and they are entirely preventable."

Conclusion

Prevention is better than cure. Efforts and care should be taken from childhood to prevent dental caries by maintaining good overall oral hygiene. Healthy fibrous food should be taken. Minimize or avoid the intake of sticky junk food. Everyone should do self-examination to notice any changes like black discoloration and cavity in the tooth. If there is any suspicion of dental caries, it is better to visit a dentist to restore and save the tooth.

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Article 7 Health · Infectious Diseases

Dengue Fever: Unraveling the Journey from Mosquito Bite to Disease Control

By *Dr. Lankesh Y. Bhaisare, Dr. Desh Deepak Chaudhary & Dr. Vinod V. Madavi*

Introduction

Dengue is a viral disease spread through the bite of infected female Aedes mosquitoes, commonly known as the "tiger mosquito." These mosquitoes usually bite during the daytime, especially in the early morning and late afternoon.

Today, dengue has become one of the fastest-growing mosquito-borne diseases in the world. Millions of people are affected every year, and the number of cases has increased significantly over the past two decades. The disease is now common in many tropical and subtropical countries, including India.

Dengue is most often found in cities, towns, and rapidly developing areas where stagnant water allows mosquitoes to breed. Water stored in drums, tanks, coolers, flowerpots, discarded tyres, and other containers can become ideal breeding sites for dengue mosquitoes.

Many people infected with dengue may not show symptoms or may experience only mild fever and body aches. However, some cases can become severe and life-threatening if not identified and treated early. Severe dengue may cause bleeding, breathing difficulties, shock, and organ damage.

There is currently no specific medicine that cures dengue. Early diagnosis, adequate fluid intake, rest, and timely medical care are the best ways to prevent serious complications and save lives.

Transmission

Dengue virus (DENV) is primarily transmitted to humans through the bite of infected female mosquitoes, particularly *Aedes aegypti*, which is considered the most important vector of the disease.

Mosquito-to-Human Transmission

Dengue virus (DENV) is primarily transmitted to humans through the bite of infected female mosquitoes, particularly *Aedes aegypti*, which is considered the most important vector of the disease.

Other Modes of Transmission

In rare cases, dengue virus transmission has been reported through blood transfusions, organ transplants, and the administration of blood-derived products. Furthermore, transovarial transmission has been observed in mosquitoes, where infected female mosquitoes transmit the virus directly to their progeny. This mechanism may play a role in sustaining the virus within mosquito populations even in the absence of active human infections.

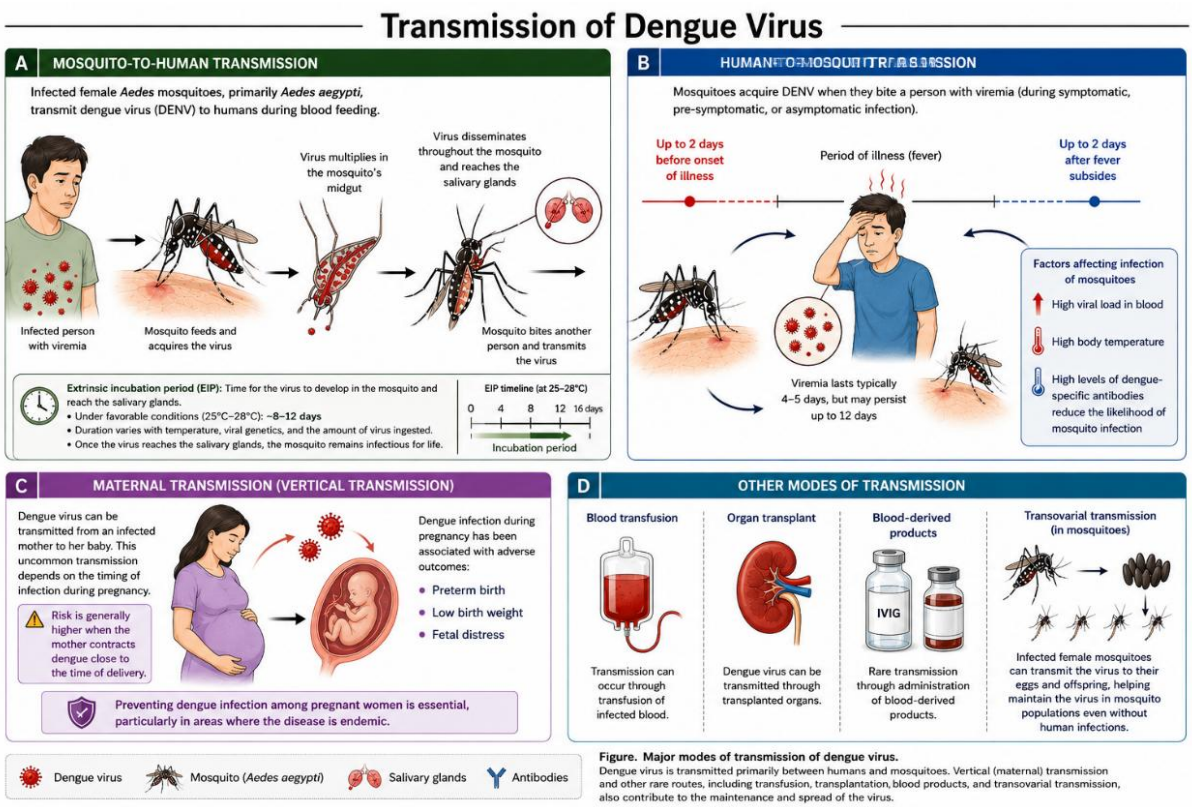
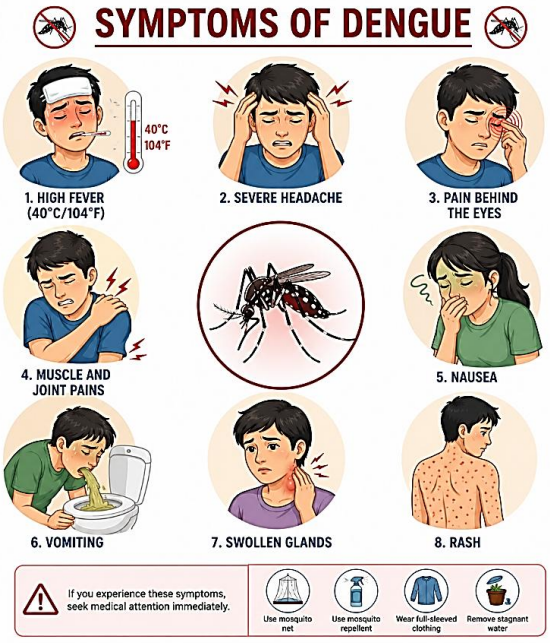


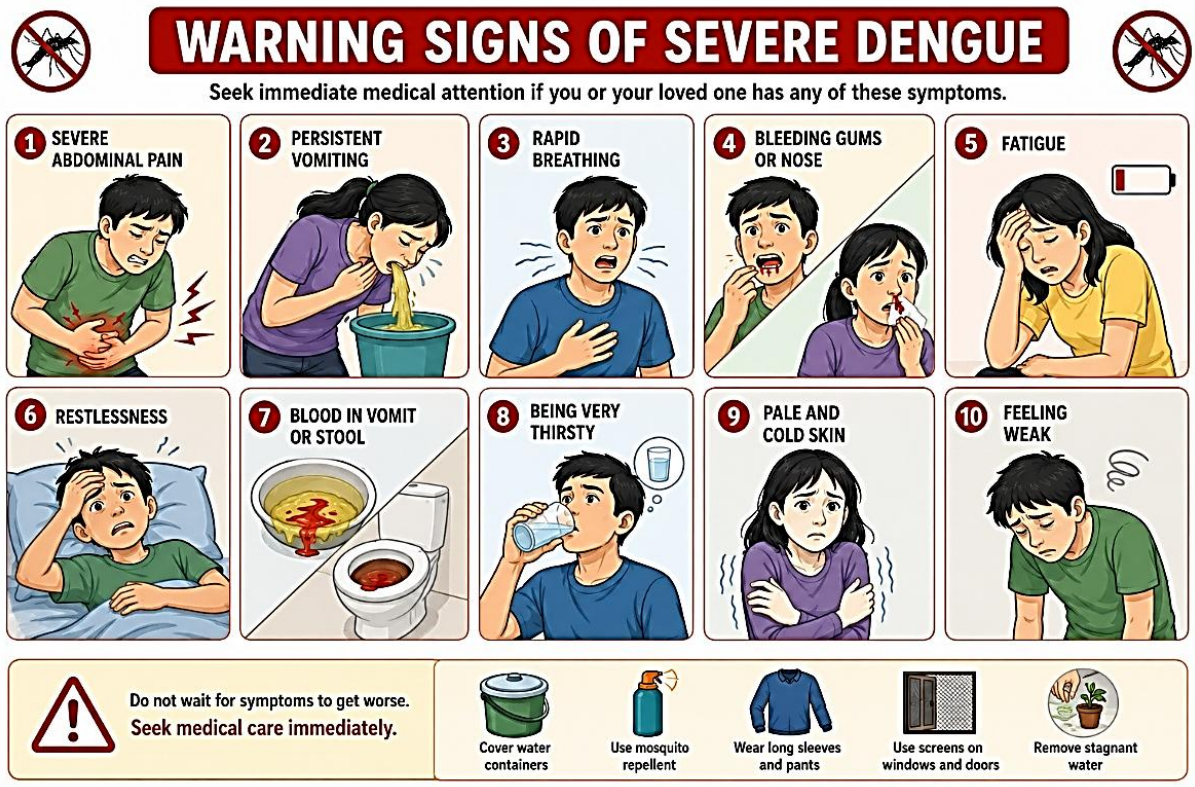
Figure. Major modes of transmission of dengue virus.
Dengue virus is transmitted primarily between humans and mosquitoes. Vertical (maternal) transmission and other rare routes, including transfusion, transplantation, blood products, and transovarial transmission, also contribute to the maintenance and spread of the virus.

Symptoms

Most dengue infections are either asymptomatic or cause only mild illness, with most individuals recovering completely within one to two weeks. However, in a small proportion of cases, the disease can progress to a severe form that may result in life-threatening complications or death. When symptoms develop, they typically appear 4–10 days after infection and persist for approximately 2–7 days. Common clinical manifestations include:



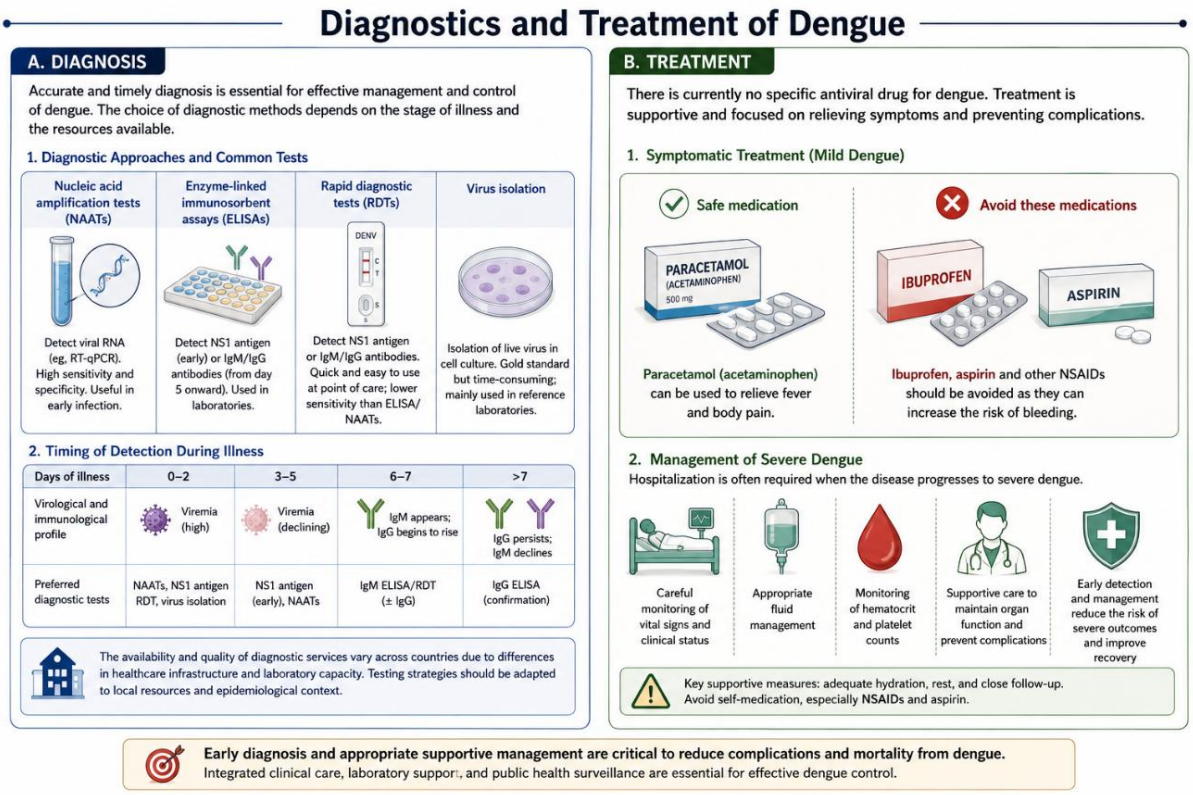
Individuals who are infected for the second time are at greater risk of severe dengue. The symptoms of severe dengue often come after the fever has gone away and may include:



People with these severe symptoms should seek care immediately. After recovery, people who have had dengue may experience fatigue for several weeks.

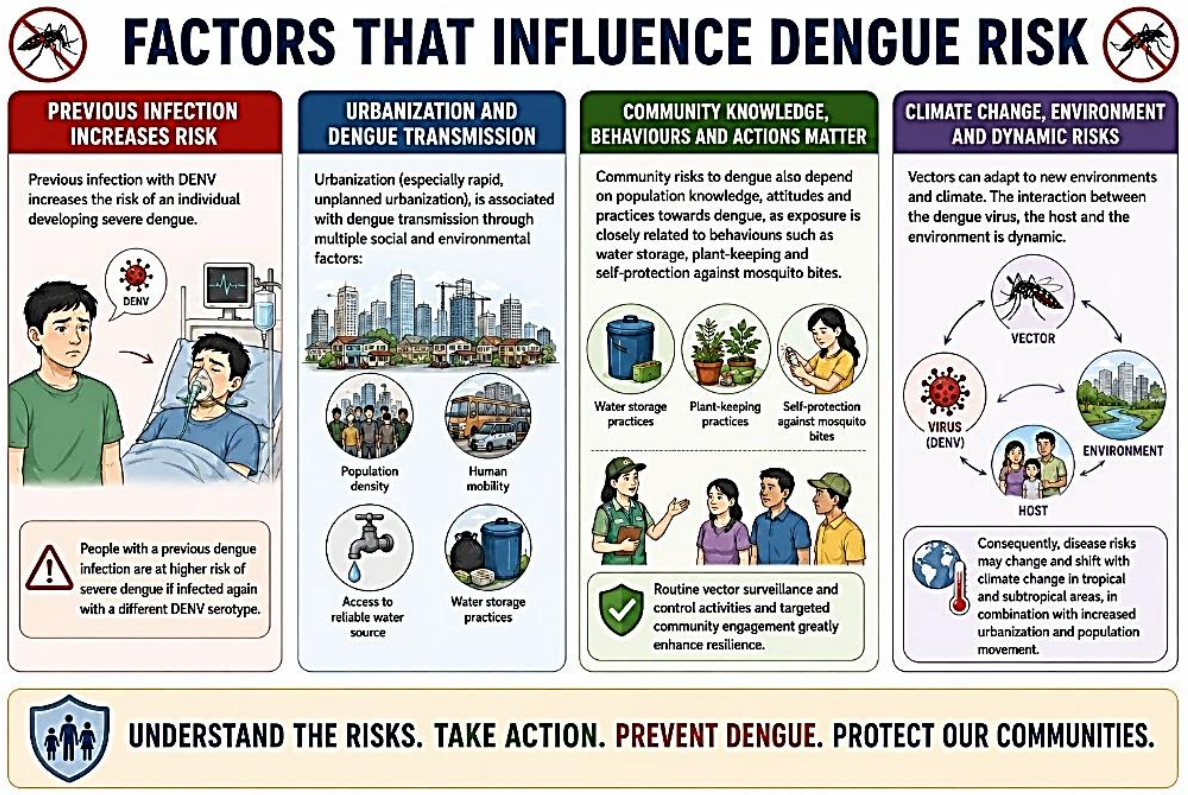
Diagnostics and treatment

Although dengue is a major public health concern, there is currently no specific antiviral drug available to treat the infection. Therefore, treatment mainly focuses on managing symptoms and preventing complications. Fever and body pain can be safely relieved with paracetamol (acetaminophen). However, medications such as ibuprofen and aspirin should be avoided because they can increase the risk of bleeding, a serious complication associated with dengue. In cases where the disease progresses to severe dengue, hospitalization is often required. These patients need careful monitoring, proper fluid management, and supportive medical care to reduce the risk of severe complications and improve recovery outcomes.



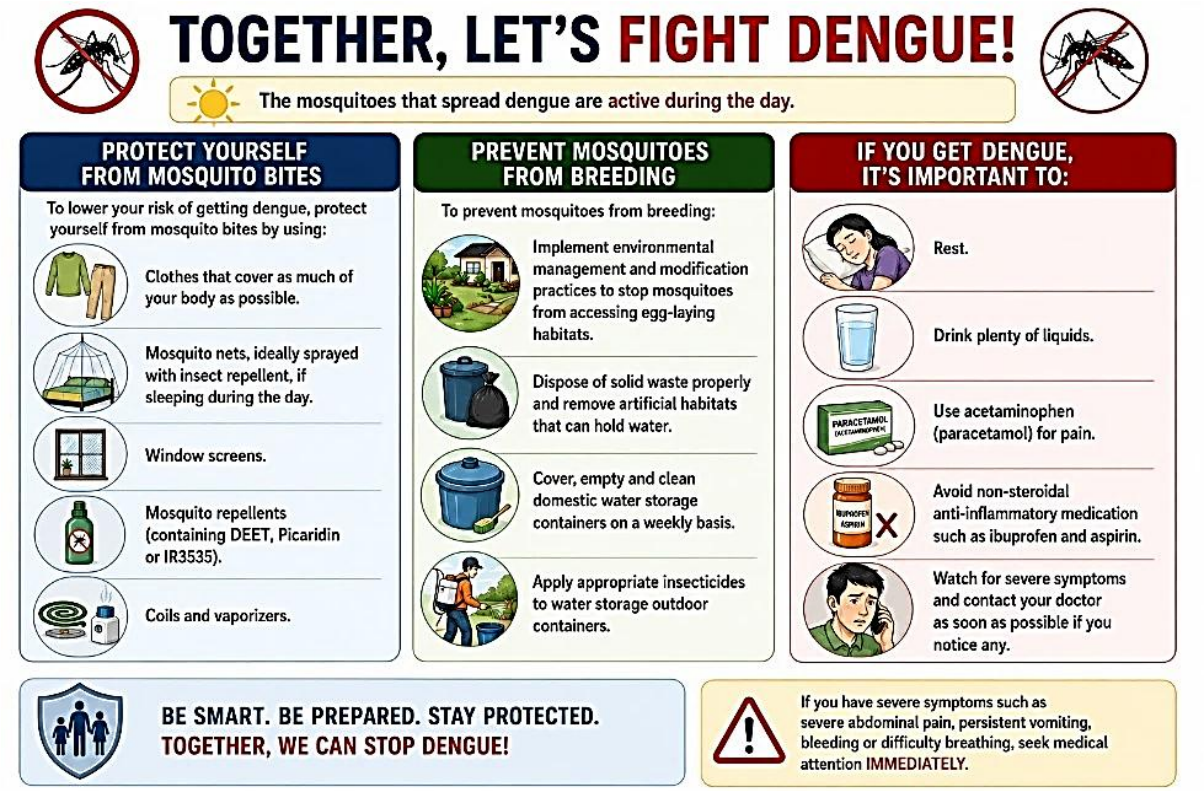
Risk factors

Previous infection with DENV increases the risk of an individual developing severe dengue.



Prevention and control

Prevention control includes the following:



At present, one dengue vaccine, QDenga, has been approved and is available in several countries. Its use is currently recommended primarily for individuals between 6 and 16 years of age living in areas with high dengue transmission. Several additional vaccines are under evaluation.

**All the Information is adopted from the source WHO website.*

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Article 8 Nutrition · Children

Nurturing the Future: A Holistic Approach to Child Nutrition and Well-being

By **Kuldeep Gupta**

In the complex tapestry of modern life, the health of our children stands as the most vital thread. Whether for a family or a nation, the well-being of the younger generation is the ultimate priority. Yet a staggering 200 million children continue to be affected by the burden of malnutrition. To address this, it is a must to look beyond the dinner plate. Holistic nutrition is not just about calories; it is about building the physical, mental, and emotional foundations that will support a child for a lifetime.

The primary objectives of holistic nutrition are:

- Supporting optimal physical growth.
- Enhancing cognitive development and learning.
- Strengthening the immune system.
- Promoting emotional and mental well-being.
- Encouraging lifelong healthy habits.

A holistic approach acknowledges that nutritious food is essential, but it is only one piece of a larger wellness puzzle.

The Three Scourges of Child Nutrition

Experts identify three primary challenges currently facing child health:

Undernutrition: Leading to life-threatening conditions like wasting and stunting, which currently affect approximately 45.5 million children under five.

Hidden Hunger: A widespread deficiency in micronutrients (like Vitamin A, B complex, iron, and iodine) that affects at least one in two children globally.

The Obesity Epidemic: A growing prevalence of overweight children, driven by an "obesogenic" environment of sedentary lifestyles and processed foods.

The Critical Window: Before Age Five

The most crucial time for a child's development is before the age of five, as this is when the brain's development rate is at its fastest. Proper nutrition during these years forms the physical and emotional foundation for an entire life, reducing the risk of non-communicable diseases such as diabetes and hypertension in adulthood.

Food for Thought: Nutritional Psychiatry

An emerging field known as Nutritional Psychiatry highlights the profound connection between food, mood, and behaviour. Research indicates that a lack of certain macro and micronutrients such as zinc, magnesium, selenium, and B vitamins, can adversely affect brain function and psychological health. Conversely, adequate nutrition ensures children remain happy, cheerful, and energetic throughout the day.

When we feed a child, we aren't just feeding their muscles; we are feeding their moods. A diet rich in whole foods supports smooth brain functioning and psychological resilience.

Navigating the Modern "Food Trap"

Why is malnutrition so persistent in an age of abundance? The sources point to several societal shifts:

Globalization and Urbanization: Families have shifted toward unfamiliar, fast-food-style meals and convenience foods, often losing touch with traditional nutritional wisdom.

The Time Crunch: With more mothers entering the workforce, many families face a "time and energy crunch," leading to a reliance on instant foods and takeaways that lack homemade wholesomeness.

The Marketing Paradox: In many regions, a packet of nutrient-deficient chips costs the same as a nutritious banana (roughly Rs 5). Children, driven by habit-forming salty and sweet tastes, often choose the former.

Misleading Labels: The industry is rife with "so-called healthy" alternatives. Unregulated marketing often guides gullible buyers toward products that are high in salt, sugar, and preservatives.

The Expert Roadmap: 12 Steps to Holistic Well-being

Based on the ICMR-NIN (National Institute of Nutrition) Dietary Guidelines 2024 and advice from leading practitioners, here is a comprehensive roadmap for parents:

- Build Early Habits: Habits formed in infancy last a lifetime. Introduce a variety of food groups early to ensure a balanced diet.
- The Golden Six Months: Exclusively breastfeed for the first six months. When introducing complementary foods, ensure the right quantity and consistency.
- The Sugar/Salt Rule: Monitor intake strictly. Avoid adding sugar or excess salt to a child's diet until they are at least two years old. Avoid ultra-processed foods entirely if possible.
- Local and Seasonal is Best: Traditional, local foods are cheaper, more nutritious, and better for the environment.
- Green and Lean: Include milk, green leafy vegetables, and fruits to provide essential antioxidants and prebiotics.
- Hydration over Sodas: Water is the best drink. Replace sugary carbonated beverages with natural options like coconut water, lemon sharbat, or buttermilk.
- Responsive Feeding: Turn off the screens. Interact with the child during meals to foster a positive relationship with food.

- No Force-Feeding: A child knows when their belly is full. Respect their internal hunger cues to avoid creating a negative association with eating.
- Sanitation and Hygiene: Proper nutrition is impossible without clean water and hygienic food preparation to prevent infections that drain nutrients.
- Protein Quality: Ensure the diet contains high-quality protein for muscle and tissue growth.
- Physical Activity: Children need at least 60 minutes of physical activity daily. This builds stamina, improves appetite, and helps dissipate energy in a positive way.
- Family Mealtimes: Families that eat together stay together. This practice improves a child's communication skills and academic performance.

A Collective Responsibility

The Nurturing Care Framework reminds us that for children to reach their full potential, they need more than just food; they need safety, security, and opportunities for playful learning.

Malnutrition is a complex problem, but the solution begins with awareness and small, daily choices. As we celebrate the potential of our youth, let us remember the golden rule: "Prevention is better than cure". By prioritizing holistic nutrition today, we are not just feeding a child; we are nurturing the leaders, thinkers, and innovators of tomorrow.

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Article 9 Environment · Biodiversity

ग्रीन डेजर्ट: शहरों की नई पर्यावरणीय चुनौती

"विश्व पर्यावरण दिवस (५ जून) विशेष"

By डॉ. दिव्येन्दु सेन

हाल ही में तमिलनाडु में राजमार्गों और सड़क डिवाइडरों पर लगाए जा रहे कॉनोकार्पस (*Conocarpus*) वृक्षों को लेकर पर्यावरणविदों ने चिंता व्यक्त की। उनका तर्क था कि शहरों और राजमार्गों को तेजी से हरा-भरा बनाने के लिए विदेशी प्रजातियों पर बढ़ती निर्भरता स्थानीय पारिस्थितिकी तंत्र के लिए खतरा बन सकती है। यह चिंता केवल तमिलनाडु तक सीमित नहीं है। गुजरात सहित कई राज्यों में भी कॉनोकार्पस के व्यापक रोपण को लेकर बहस छिड़ी हुई है। देखने में आकर्षक और तेजी से बढ़ने वाले ये वृक्ष शहरों को हरा तो बनाते हैं, लेकिन क्या वे वास्तव में जैव विविधता को भी समृद्ध करते हैं? यही प्रश्न हमें "ग्रीन डेजर्ट" अर्थात् "हरे मरुस्थल" की अवधारणा तक ले जाता है।

ग्रीन डेजर्ट कोई औपचारिक वैज्ञानिक श्रेणी नहीं है, बल्कि पर्यावरणविदों द्वारा प्रयुक्त एक लोकप्रिय पारिस्थितिक अवधारणा है। इसका उपयोग ऐसे हरे-भरे क्षेत्रों के लिए किया जाता है जहाँ वनस्पति आवरण तो अधिक हो, लेकिन जैव विविधता और पारिस्थितिक जटिलता अपेक्षाकृत कम हो।

तेजी से बढ़ते शहरीकरण के बीच शहरों को हरा-भरा बनाने के प्रयास दुनिया भर में तेज हुए हैं। सड़क किनारे वृक्षारोपण, पार्कों का विकास, हरित पट्टियों का निर्माण और सौंदर्यीकरण परियोजनाएँ अब अधिकांश नगरों की प्राथमिकताओं में शामिल हैं। पहली दृष्टि में यह एक सकारात्मक परिवर्तन प्रतीत होता है। लेकिन क्या केवल हरियाली बढ़ा देने से कोई शहर पर्यावरणीय रूप से समृद्ध भी हो जाता है?

क्या है ग्रीन डेजर्ट?

ग्रीन डेजर्ट ऐसे क्षेत्रों को कहा जाता है जो देखने में हरे-भरे दिखाई देते हैं, लेकिन जैव विविधता की दृष्टि से अत्यंत गरीब होते हैं। यहाँ पेड़ों और पौधों की संख्या तो पर्याप्त होती है, किंतु प्रजातीय विविधता कम होती है। परिणामस्वरूप पक्षियों,

तितलियों, मधुमक्खियों, कीटों तथा अन्य जीवों के लिए भोजन और आवास के अवसर सीमित हो जाते हैं। दूसरे शब्दों में, यह हरियाली केवल दृश्य सौंदर्य प्रदान करती है, किंतु एक स्वस्थ पारिस्थितिकी तंत्र का निर्माण नहीं कर पाती।

क्या है कारण?

शहरी क्षेत्रों में ग्रीन डेजर्ट बनने का एक प्रमुख कारण विदेशी और तेजी से बढ़ने वाली सजावटी प्रजातियों का बड़े पैमाने पर रोपण है। नगर निकाय और विकास एजेंसियाँ अक्सर ऐसी प्रजातियों का चयन करती हैं जो कम समय में घनी हरियाली प्रदान करें, कम पानी में जीवित रह सकें और जिनकी देखभाल अपेक्षाकृत सरल हो। इसी कारण पिछले कुछ वर्षों में अनेक शहरों में कॉनोकार्पस (*Conocarpus*) जैसी विदेशी प्रजातियों का व्यापक उपयोग देखने को मिला। कुछ स्थानों पर सप्तपर्णी (*Alstonia*) जैसी प्रजातियों को भी बड़े पैमाने पर लगाया गया। यद्यपि इन पौधों के अपने उपयोग हैं, लेकिन किसी एक या कुछ सीमित प्रजातियों पर अत्यधिक निर्भरता शहरी जैव विविधता के लिए अनुकूल नहीं मानी जाती।

प्राकृतिक पारिस्थितिकी तंत्र की सबसे बड़ी विशेषता उसकी विविधता होती है। एक स्थानीय वृक्ष केवल एक पौधा नहीं होता, बल्कि अनेक जीवों का घर होता है। उदाहरण के लिए, पीपल, बरगद, जामुन, नीम, पलाश और महुआ जैसे भारतीय वृक्ष अनेक पक्षियों, कीटों और परागणकर्ताओं को भोजन तथा आश्रय प्रदान करते हैं। इनके फूल, फल, पत्तियाँ और छाल विभिन्न जीवों के लिए उपयोगी होते हैं। इसके विपरीत कई विदेशी सजावटी प्रजातियाँ स्थानीय जीवों के साथ उतना मजबूत पारिस्थितिक संबंध स्थापित नहीं कर पातीं। परिणामस्वरूप हरे-भरे दिखने वाले क्षेत्रों में भी जैव विविधता का स्तर कम हो सकता है।

ग्रीन डेजर्ट का प्रभाव केवल पौधों तक सीमित नहीं रहता। जब स्थानीय पौधों की संख्या घटती है तो उनसे जुड़े कीटों और परागणकर्ताओं की आबादी भी प्रभावित होती है। मधुमक्खियों और तितलियों की संख्या में कमी परागण की प्रक्रिया को प्रभावित कर सकती है। इसी प्रकार फलदार और फूलदार स्थानीय वृक्षों के अभाव में अनेक पक्षियों को पर्याप्त भोजन नहीं मिल पाता। धीरे-धीरे संपूर्ण खाद्य श्रृंखला प्रभावित होने लगती है। इस प्रकार हरियाली दिखाई देने के बावजूद पारिस्थितिकी तंत्र की कार्यक्षमता कमजोर हो सकती है।

राजस्थान जैसे अर्धशुष्क क्षेत्रों में यह विषय विशेष रूप से महत्वपूर्ण है। यहाँ की जलवायु, मिट्टी और पारिस्थितिक परिस्थितियों के अनुरूप विकसित हुई स्थानीय वनस्पतियाँ न केवल कम संसाधनों में जीवित रह सकती हैं, बल्कि स्थानीय वन्यजीवों को भी बेहतर समर्थन प्रदान करती हैं। यदि शहरों और कस्बों में स्थानीय वृक्षों की विविध प्रजातियों का रोपण किया जाए तो इससे पर्यावरणीय संतुलन बनाए रखने में सहायता मिल सकती है। विद्यालयों, सार्वजनिक उद्यानों, सरकारी परिसरों और सड़क किनारे विकसित हरित पट्टियों में स्थानीय वृक्षों को प्राथमिकता देना इस दिशा में एक महत्वपूर्ण कदम हो सकता है।

ग्रीन डेजर्ट की समस्या का समाधान वृक्षारोपण को रोकना नहीं, बल्कि उसे वैज्ञानिक दृष्टिकोण से करना है। पर्यावरण विशेषज्ञ "राइट ट्री, राइट प्लेस" अर्थात "सही स्थान पर सही वृक्ष" की अवधारणा पर जोर देते हैं। वृक्षारोपण योजनाओं में स्थानीय प्रजातियों की विविधता बढ़ाई जानी चाहिए। साथ ही यह भी आवश्यक है कि किसी एक प्रजाति का अत्यधिक रोपण करने के बजाय मिश्रित वृक्षारोपण को बढ़ावा दिया जाए। इससे जैव विविधता को संरक्षण मिलेगा और शहरी पारिस्थितिकी तंत्र अधिक स्थायी एवं लचीला बन सकेगा।

आज जब जलवायु परिवर्तन, प्रदूषण और जैव विविधता ह्रास जैसी चुनौतियाँ हमारे सामने हैं, तब केवल हरियाली की मात्रा नहीं, बल्कि उसकी गुणवत्ता भी महत्वपूर्ण है। किसी शहर की पर्यावरणीय सफलता का आकलन केवल लगाए गए पेड़ों की संख्या से नहीं किया जाना चाहिए, बल्कि इस बात से किया जाना चाहिए कि वे पेड़ कितनी जैव विविधता को सहारा दे रहे हैं। भविष्य के सतत और पर्यावरण-अनुकूल शहर वही होंगे जो हरियाली के साथ-साथ जैव विविधता को भी महत्व देंगे।

स्थानीय जैव विविधता को समझने की एक पहल

महात्मा गांधी राजकीय विद्यालय, पचपहाड़ (जिला झालावाड़) में स्थानीय एवं देशज पौधों के प्रति विद्यार्थियों की रुचि बढ़ाने के उद्देश्य से विद्यालय परिसर में स्थित 100 से अधिक पौध प्रजातियों पर QR कोड लगाए गए हैं। विद्यार्थी मोबाइल फोन से QR कोड स्कैन कर पौधों के वैज्ञानिक नाम, कुल (Family), उपयोगिता तथा पारिस्थितिक महत्व की जानकारी प्राप्त कर सकते हैं। इस प्रकार की पहल न केवल पौधों की पहचान को सरल बनाती है, बल्कि विद्यार्थियों को यह समझने में भी सहायता करती है कि किसी क्षेत्र की वास्तविक पर्यावरणीय समृद्धि केवल हरियाली में नहीं, बल्कि वहाँ उपस्थित जैव विविधता में निहित होती है।

एक विद्यार्थी विद्यालय में पेड़ को QR कोड लगाते

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Vigyan Parv 2026 — A Report

A Programme that Celebrates Scientific Curiosity and Innovation Among Young Minds

*By **Vigyan Setu Foundation***

Vigyan Setu Foundation successfully organized Vigyan Parv 2026, a national-level online science presentation programme designed to encourage scientific inquiry, observation, and innovation among school-going girls across the country. The event was conducted under the inspiring theme, "Science from Her Environs," inviting participants to explore scientific concepts and solutions rooted in their immediate surroundings.

The response to the programme was highly encouraging, with 144 participants registering from different regions of India. The presentations reflected remarkable creativity, critical thinking, and a deep engagement with real-world scientific issues emerging from local contexts.

To ensure a rigorous and transparent evaluation process, each submission was independently assessed by a panel of three expert evaluators. The presentations were judged on six predefined parameters:

- Relevance to the theme
- Originality of idea
- Scientific understanding
- Clarity of explanation
- Observation and reasoning
- Confidence and communication skills

The evaluators assigned percentage scores, which were averaged and subsequently converted into three grades:

- Grade A (81–100%) – Award of Excellence
- Grade B (61–80%) – Award of Merit
- Grade C (Below 60%) – Participation acknowledged

Based on this assessment framework, six participants were recognized at the national level.

Award of Excellence

Miss Suhani Kiran Patel, Mumbai, Maharashtra

Award of Merit

(listed in alphabetical order of first name)

- Miss Aradhna Rajput, Jammu, Jammu & Kashmir
- Miss Avani Sharma, Bhilai, Chhattisgarh
- Miss Tanvi S. Shetty, Mumbai, Maharashtra
- Miss Utkrishta Manuja, Aligarh, Uttar Pradesh
- Miss Wamika, Bhalra Bhaderwah, Jammu & Kashmir

Vigyan Parv 2026 served not merely as a competition but as a platform for nurturing scientific temperament, encouraging evidence-based thinking, and empowering young girls to view science as a tool for understanding and improving society. The event underscored the importance of research-led approaches to addressing environmental and societal challenges through locally relevant perspectives.

Vigyan Setu Foundation congratulates all the awardees and participants for their enthusiasm and dedication. The Foundation remains committed to creating opportunities that inspire the next generation of innovators, thinkers, and changemakers, while continuing its mission of bridging science and society.

Every observation is the beginning of discovery.

Vigyan Parv celebrates the scientific spirit that transforms curiosity into meaningful action.

Vigyan Setu Foundation

Vigyan Setu Foundation®

Bridging Science and Society