RNI No.: UPENG/2014/59232

A COMPLETE HEALTH JOURNAL

DOUBLE HELICAL

Double Helical

February- March 2026

VOL X, Issue- VIII, Rs. 200

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DOUBLE HELICAL
A COMPLETE HEALTH MAGAZINE
Volume X Issue VIII
February- March 2026

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Tel: 0120-4165606 / 9953604965.

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Life, Care, and Difficult Choices

Dear Readers,

This month, **Double Helical** takes up a subject that is as emotional as it is complex—euthanasia. Our cover story is not just about a legal judgment; it is about a family's long struggle, a patient's silent suffering, and a society learning to confront uncomfortable questions.

The Supreme Court's decision in the case of Harish Rana brings the debate into sharp focus. After living for 13 years in a permanent vegetative state, sustained entirely by medical support, the Court allowed withdrawal of life-sustaining treatment, recognising that continuing intervention was only prolonging suffering, not life in any meaningful sense.

This raises a deeply human question: is it enough for the body to survive, or must life also have awareness, dignity, and some quality? Modern medicine has the power to extend life, but it does not always restore it. And when recovery is no longer possible, families and doctors are left navigating a difficult space between hope and reality.

India has taken cautious steps by allowing passive euthanasia under strict safeguards. But this is not the end of the debate—it is the beginning of a more honest conversation. We need clearer systems, stronger ethical frameworks, and, above all, sensitivity towards patients and families who face such decisions.

Alongside this, another important and equally sensitive issue in this issue is the debate around the HPV vaccine

The article raises uncomfortable but necessary questions. Cervical cancer typically develops decades after exposure, yet most vaccine trials have followed participants for less than ten years. This gap between expectation and evidence needs careful attention. The concern is not about rejecting prevention, but about ensuring that public health decisions are based on strong, long-term data rather than urgency or publicity.
The piece also revisits troubling episodes from past trials in India, where ethical lapses and inadequate safeguards raised serious concerns. It reminds us that trust in healthcare cannot be taken for granted—it has to be earned through transparency, accountability, and rigorous science.

At the same time, the larger message is clear: prevention must go beyond vaccines. Awareness about safe practices, hygiene, and responsible behaviour remains equally important in reducing the burden of disease.
These debates—on euthanasia and vaccination—may seem very different, but they are connected by a common thread: the need to balance science with ethics, and policy with people.

The rest of the issue brings into focus the changing health profile of India and the region. Metabolic diseases such as diabetes, obesity, and hypertension are rising rapidly across Asia, driven by lifestyle changes , urbanisation, and stress. These are no longer - diseases of old age; they are appearing earlier and lasting longer, increasing the risk of serious complications.

Similarly, the growing concern around chronic kidney disease (CKD) underscores the urgent need for systemic reform. Experts now warn that CKD could become one of the leading causes of life years lost globally by 2040. The call for dedicated national guidelines, early detection, and equitable access to dialysis and transplantation reflects a larger truth: healthcare cannot remain reactive; it must become anticipatory.

At the other end of the spectrum lies the silent but significant rise of hypertension among children—once considered an adult disease. The shift is emblematic of changing lifestyles, where early exposure to unhealthy diets, inactivity, and stress is manifesting in chronic conditions at younger ages. Left unchecked, these trends threaten to create a generation burdened with lifelong morbidity.

Equally concerning is the growing prevalence of infertility in urban India. With nearly 30 million couples affected, and increasing reliance on assisted reproductive technologies, infertility is no longer a private struggle but a public health issue. It reflects broader societal changes—delayed parenthood, lifestyle stress, environmental factors—and calls for both medical innovation and social sensitivity.Meanwhile, the global cancer burden continues to rise, with projections indicating a near doubling of cases by 2050. The theme of World Cancer Day 2026—"United by Unique"—reminds us that while cancer is universal, responses must be localised, equitable, and patient-centred. Access to early diagnosis, treatment, and palliative care remains uneven, particularly in low- and middle-income regions.

Taken together, these stories reflect a healthcare system in transition. We are dealing with new diseases, new technologies, and new dilemmas. But the core challenge remains the same: how do we make healthcare more humane? The answer lies not just in better hospitals or advanced treatments, but in how we approach care itself. It lies in listening to patients, supporting families, questioning assumptions, and making decisions that are both scientifically sound and ethically responsible.

The euthanasia debate, in many ways, brings this into sharp relief. It forces us to think about what it means to live well—and what it means to die with dignity. As we move forward, healthcare must not lose sight of its most important purpose: to care, not just to cure.

Happy reading!

Thanks and regards

Amresh K Tiwary,
Editor-in-Chief

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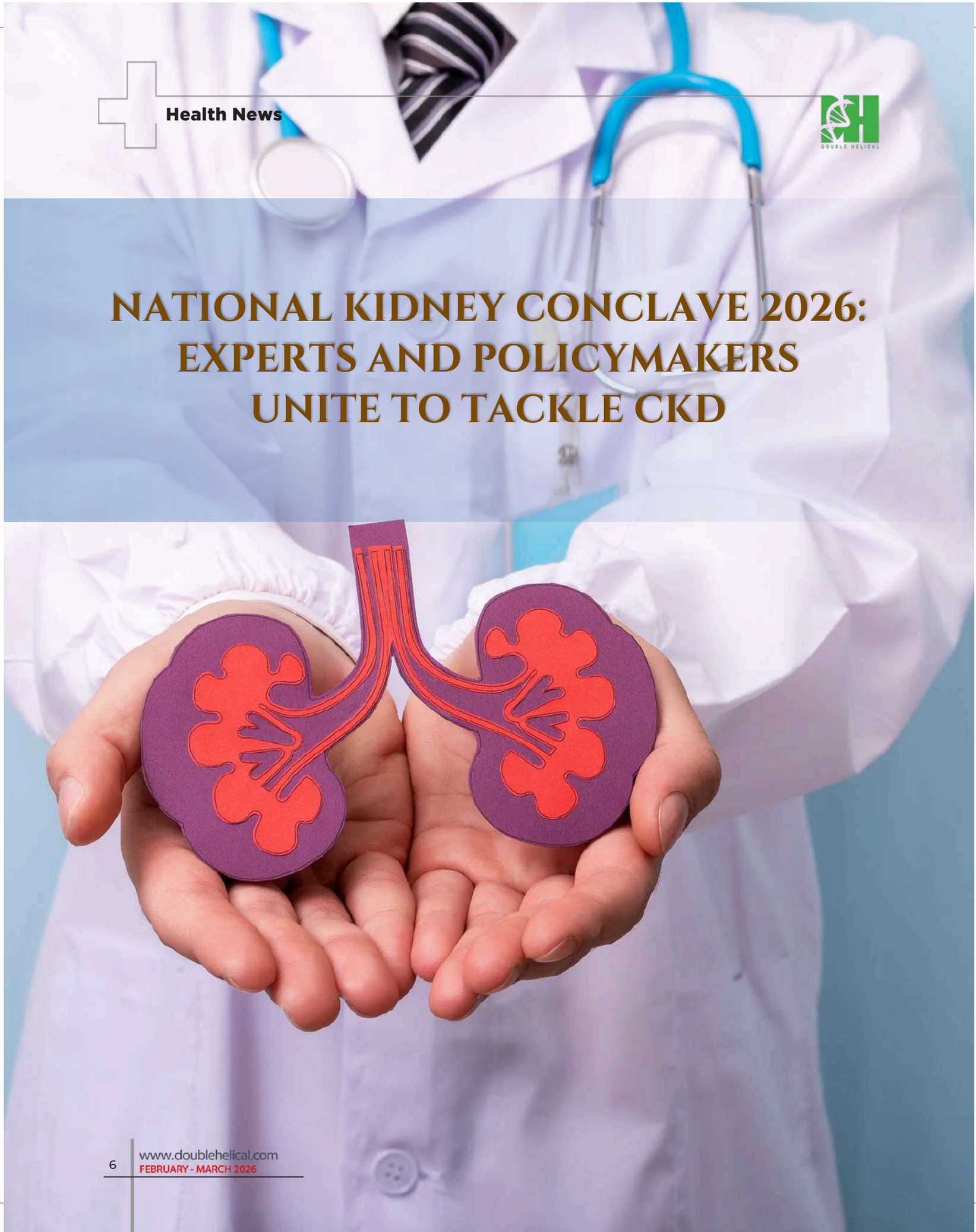
DYNASTY

NATIONAL KIDNEY CONCLAVE 2026: EXPERTS AND POLICYMAKERS UNITE TO TACKLE CKD



The Kidney Warriors Foundation successfully organized its maiden KWF Conclave 2026, commemorating 50 years of nephrology in India,, ahead of World Kidney Day recently.

Experts called for dedicated national CKD guidelines and a stronger, coordinated response to address the rising disease burden. The conclave brought together leading nephrologists, policymakers, and patient advocates, while also recognising 24 doctors for excellence in nephrology.

According to the World Health Organization (WHO), CKD is expected to become the fifth leading cause of life years lost by 2040. To address the rising burden of CKD and the urgent need to strengthen early detection and transplant access, KWF brought together leading kidney doctors, policymakers, hospital leaders, pharma and healthcare innovators, and patient advocates. Over the past five decades, India's kidney-care ecosystem has evolved from limited specialty services to a comprehensive framework spanning prevention, dialysis, transplantation, research, and long-term patient support.

The event was graced by Chief Guest Anupriya Patel, Minister of State for Health & Family Welfare and Chemicals & Fertilizers, Government of India, who called CKD a "silent pandemic" and emphasised strengthening early detection and equitable dialysis access. She highlighted the growing public health challenge posed by CKD and detailed the progress of the Pradhan Mantri National Dialysis Programme (PMNDP), which provides free dialysis services at district hospitals. She also launched Hindi translation of two books, "The Kidney Warrior – Edition 2" and "CKD Prevention Program Advocacy and Guidance" authored by Vasundhara Raghavan. The books aim to provide inspiration and practical guidance and are available in both English and Hindi to ensure wider accessibility.

During her keynote address, Anupriya Patel identified CKD as one of the biggest causes of mortalities. "Kidney health is a very serious issue which demands attention and deserves to be a health priority in our country. We want to promote healthier lifestyles, screening, and early diagnosis, and the last step is promoting ensuring equitable access to dialysis services as well as transplant care," she said. Vasundhara Raghavan, Founder, Kidney Warriors Foundation, said, "CKD can no longer be viewed only as a complication of diabetes or hypertension and managed under generic NCD guidelines. In 2026, CKD is far more complex — driven by genetic disorders, emerging glomerular diseases, childhood anomalies, and environmental factors. Through discussions on early detection, transplant access, innovation, and patient- centred care, we have reinforced the urgent need for dedicated national CKD guidelines that prioritise prevention, equitable access, and holistic support — not just dialysis and transplant care. This conclave is a clear call to action, uniting the government, nephrologists, patients, and industry to drive a stronger, coordinated national response to CKD in India." The Conclave featured specialised panel discussions on the evolution of nephrology in India and way forward. Experts deliberated on strengthening India's CKD response through improved policy integration, stronger public health systems, expanded access to dialysis and transplantation and early detection to reduce late diagnosis. Discussions also covered innovation in kidney care, including organ donation awareness and the role of emerging technologies and AI, along with sessions on post-transplant management and mental health support for patients and caregivers.

KWF stands as one of India's largest independent networks of kidney patients, caregivers, healthcare professionals, and volunteers.

Dr Urmila Anandh, Head of Nephrology, Amrita Hospital, emphasised how modern environmental factors are creating new challenges for kidney health. She said, "There is a dramatic change in causes of CKD and a change which is coming into a focus is obesity. Obesity is now becoming a disease and almost 10 per to 30 per cent of patients who are obese actually have some form of kidney disease."

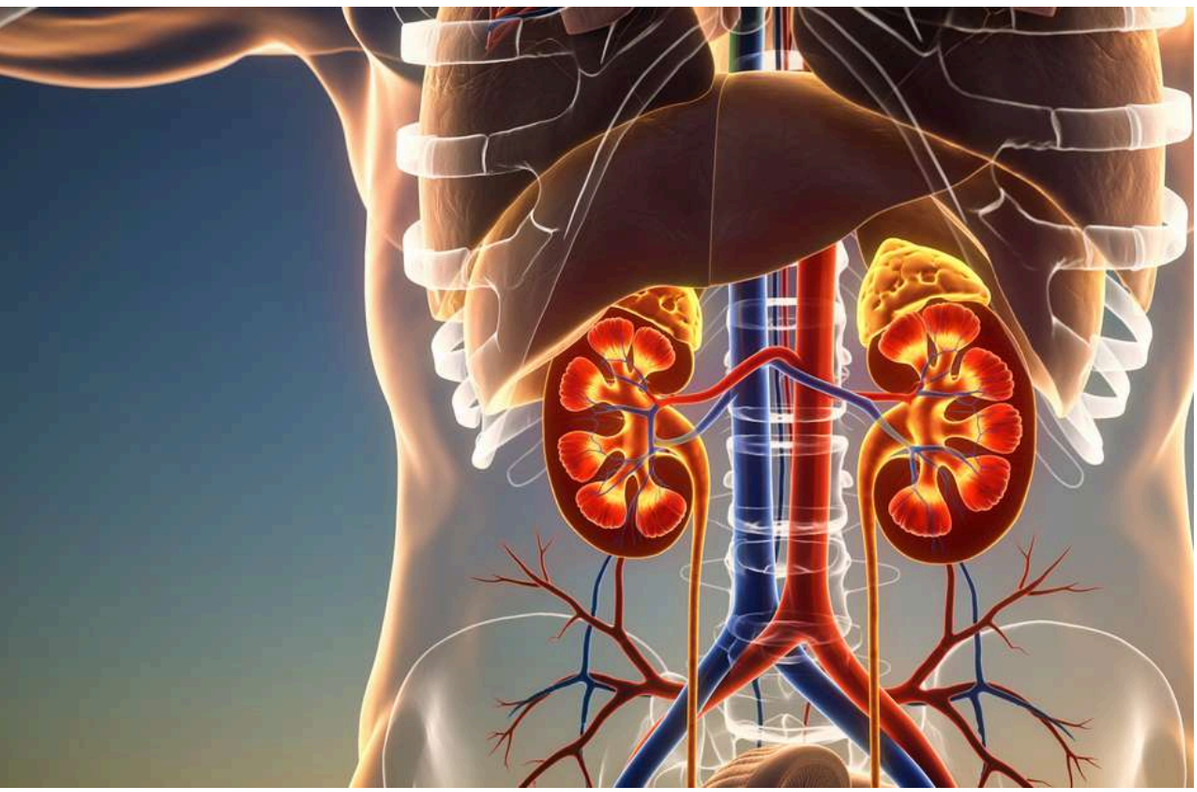
Dr Vivekanand Jha, Executive Director of the George Institute, called for a strategic shift in how the medical community approaches screening. He said, "I would suggest that we move away from using the word screening to early detection. It is important that we as physicians and other members involved in the healthcare community first recognise and identify who are the people who are at increased risk of developing kidney disease."

Dr Saurabh Sharma from Safdarjung Hospital focused on the daily realities of dialysis and introduced a vital management philosophy for patients: " The 3D is a wonderful framework which stands for self-Determination, Diet, and Discipline."

Dr Sanjeev Gulati, Chairman, Nephrology at Fortis Hospitals, New Delhi, provided a balanced perspective on the integration of technology where he mentioned, "AI will not replace kidney doctors but yes kidney doctors with AI will replace kidney doctors who are not using AI."

Dr Kristin George from Aster Hospital addressed the complexities of life after surgery, reminding the audience that maintenance is an ongoing journey. He said, "Transplant we all know is the best treatment for end-stage kidney disease but unfortunately transplant is not a miracle cure."

Patient advocate Mrs Reetuparna Banerjee shared her lived experience where she said, “Our kidneys, when in trouble, whisper to us in the form of different signs and if we listen to them, get diagnosed and treated on time, we can delay dialysis for good 10 to 15 years.”



and mental health support, while bringing together government, clinicians, the medical fraternity, and patient advocacy groups under a single vision to address India's growing CKD burden.

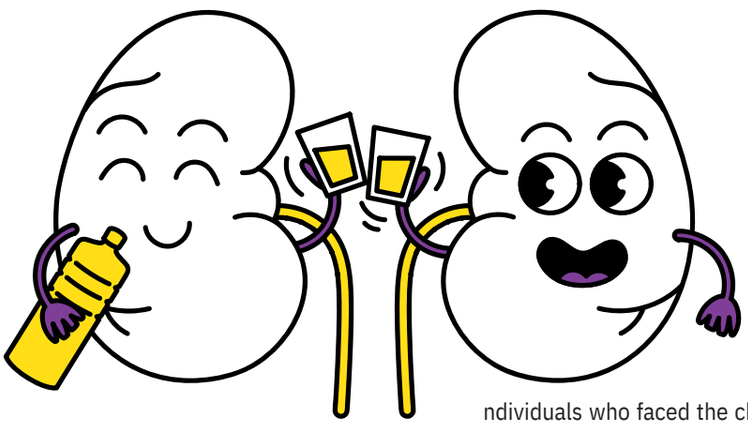
ABOUT KIDNEY WARRIORS FOUNDATION

The Kidney Warriors Foundation (KWF) is a national, patient-led organisation representing the collective voice of India's kidney community. Established in 2017 by kidney patients, caregivers, and their families, KWF emerged from the personal experiences of individuals who faced the challenges of CKD and recognised the urgent need for a united platform to advocate, support, and empower.

Today, KWF stands as one of India's largest independent networks of kidney patients, caregivers, healthcare professionals, and volunteers — united in their mission to improve lives through awareness, advocacy, access, and action.

Another patient advocate, Shantanu Saha shared his lived experience with Autosomal Dominant Polycystic Kidney Disease (ADPKD), "I have lived with chronic kidney disease for nearly three decades and have undergone two transplants and a bilateral nephrectomy. With dialysis costing around ₹60,000 per month in most hospitals, this incurable disease places an unbearable financial burden on families. The government must ensure financial support for all dialysis patients, regardless of where they receive treatment, so that life-saving care remains accessible."

The event also recognised pioneers in kidney care and honoured 24 leading doctors for excellence in nephrology, including Padma Shri Dr Hemant Kumar, Padma Shri Dr Devendra Singh Rana, and Dr Sanjeev Gulati, along with several individuals for their significant contributions to kidney care in India.



The conclave concluded with a call for a unified, holistic approach to kidney care, emphasising routine screening, organ donation awareness

THE FINAL MERCY

In a landmark judgment, the Supreme Court delivered justice in favour of Harish Rana's elderly parents who had fought for years to let their son go with dignity, recognising that continued medical treatment, including Clinically Assisted Nutrition and Hydration, only prolonged his suffering

BY ABHIGYAN

The Supreme Court of India recently allowed the withdrawal of life support for Ghaziabad-based Harish Rana in a euthanasia case. The 32-year-old had been in a coma for 13 years.

Harish Rana was a 20-year-old BTech student in 2013 when he suffered a catastrophic fall, resulting in a severe traumatic brain injury (diffuse axonal injury). This left him in

a permanent vegetative state (PVS) with quadriplegia and 100 percent permanent disability. For over 13 years, he has been entirely bedridden, unable to see, hear, speak, eat, or respond to his environment. His survival depends entirely on medical interventions, including a tracheostomy tube for airway management, a urinary catheter, and Clinically Assisted Nutrition and Hydration (CANH) delivered via a surgically placed Percutaneous Endoscopic Gastrostomy (PEG) tube.

Earlier, Harish's parents, his devoted primary caregivers, first approached the Delhi High Court seeking to initiate the process for withdrawing his life-sustaining treatment under the Common Cause guidelines. The High Court dismissed the petition, holding that since Harish was not on a mechanical ventilator and could breathe on his own, he was not being kept alive by "external aid," and therefore, the guidelines did not apply.

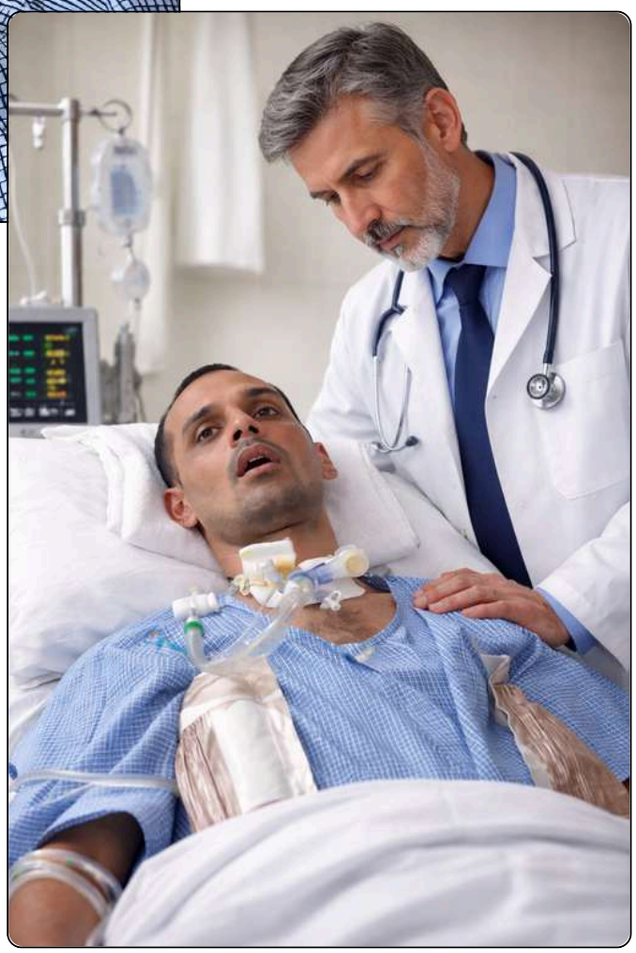
> "The Supreme Court activated the Common Cause framework. It directed the constitution of a Primary Medical Board, which visited Harish at home and reported that his chances of recovery were "negligible."

Aggrieved, the parents appealed to the Supreme Court. The Court initially disposed of the matter by ensuring the Union government provided enhanced home-care support. However, when Harish's condition deteriorated further, requiring another hospitalisation and tracheostomy, his parents exercised the liberty granted by the Court and filed a Miscellaneous Application. Their core prayers were to constitute the medical boards as per the Common Cause guidelines and for a declaration that CANH (administered via a PEG tube) constitutes "medical treatment," making it eligible for withdrawal.

What is Euthanasia?

Euthanasia is the painless killing of a patient suffering from an incurable and painful disease or who is in an irreversible coma.

In India, euthanasia is one of the most debated issues in the legal arena because it exists at the intersection of medical ethics , institutional policies, and individual self-determination. The Supreme Court has always sought to interpret the constitutional provisions as broadly as possible to ensure the maximum welfare of the people. Consequently, the Supreme Court has incorporated the right to die with dignity into the Indian Constitution as an important aspect of the right to life.-



Recognising the gravity of the situation, the Supreme Court activated the Common Cause framework. It directed the constitution of a Primary Medical Board, which visited Harish at home and reported that his chances of recovery were "negligible."

It then directed AIIMS, New Delhi, to constitute a Secondary Medical Board. This board, after a thorough examination, confirmed that Harish was in an "irreversible permanent vegetative state" for the past 13 years and that continued CANH, while required for survival, would "not aid in improving his medical condition or repairing his underlying brain damage." The Court also facilitated interactions with the family. The parents, now elderly, expressed their agonising decision with profound clarity: they have done everything humanly possible for 13 years, their son has no quality of life or awareness, and continuing treatment only prolongs his suffering and indignity. Their decision was a selfless act of love, taken in what they genuinely believed to be his best interests. Ultimately, the Supreme Court delivered justice in favour of Harish Rana's parents.

-The apex court analysed the applicability of euthanasia in various rulings and finally legalised passive euthanasia in the Aruna Shanbaug case, bringing great relief to terminally ill patients. It is illegal to treat a conscious, sane adult without their consent. Patients in a permanent vegetative state (PVS) who are unlikely to improve cannot make decisions about the treatment they receive. Ultimately, the court will decide in the patient's best interest.

The entire human existence is a complicated process, evolving to be who we are and how we live through a complicated web of events. Animals cannot decide on simple or difficult matters in life; we can choose, and we may achieve our goals through hard work. Imagine living a life in which you are breathing, your heart rate, body temperature, and sleep cycles are functioning, but you are unable to talk or act, and you are unaware of your surroundings and yourself. You may even lose conscious intention. This clarifies why someone would be in a vegetative condition.

> **Harish Rana's elderly parents, expressed their agonising decision with profound clarity: they have done everything humanly possible for 13 years, their son has no quality of life or awareness, and continuing treatment only prolongs his suffering and indignity.**

When the brain stem and hypothalamus continue to function but the cerebrum stops working, this is known as a vegetative state. Everyone aspires to lead a fulfilling life.

In ancient Greece and Rome, assisted dying was admissible in some situations. For illustration, in the Greek city of Sparta, babies with birth defects were put to death. The father of medicine, the Greek physician Hippocrates, opposed this act of killing as a breach of the bond between physician and patient Numerous ancient texts , including the Bible, the Koran, and the Rig Veda, mention self-destruction or suicides committed on religious grounds.

The Mahabharata and the Ramayana are also full of instances of religious self-destruction. Govardana and Kulluka, while writing commentaries on Manu, observed that a man might undertake the Mahaprabhu (great departure) on a trip that ends in death when he is incurably diseased or meets with a great mischance, and that this is not opposed to Vedic rules, which prohibit suicide.

Muslims are against euthanasia. They believe that all mortal life is sacred because it is given by Allah and that Allah chooses how long each person will live. Christians are largely against euthanasia. Sikhs derive their ethics largely from the teachings of their book, Guru Granth Sahib, and the Sikh Code of Conduct. The Sikh Gurus rejected suicide as a hindrance to God's plans. -

> In India, euthanasia is one of the most debated issues in the legal arena because it exists at the intersection of medical ethics, institutional policies, and individual self-determination. The Supreme Court has always sought to interpret the constitutional provisions as broadly as possible to ensure the maximum welfare of the people.

-In Jainism, voluntary death is practiced by Jains where a person freely gives up food and drink so that they are starved till death.

In India, the contention whether the 'right to live' includes within its dimensions the 'right to die' came for consideration for the first time in 1987. It was in the case of the State of Maharashtra vs. Maruti Shripati Dubal , wherein the Bombay High Court held that everyone should have the freedom to -

- dispose of their life as and when they desire. There had been conflicting opinions of various courts across India, with the Andhra Pradesh High Court , in P. Chenna Jagadeeswar vs. State of Andhra Pradesh, holding that an attempt to commit suicide is legal and constitutionally valid.

But then, in P. Rathinam vs. Union of India, the Supreme Court of India for the first time time formulated fifteen questions and raised the issue - "whether an Indian citizen resident in India has a right to die?" At the end of the judgment, it was held that "attempt to commit suicide" is an outdated, cruel, and illogical provision. Thus, it is violative of Article 21 of the Constitution of India and is void and unconstitutional.

The ruling in P. Rathinam's case was overturned in Gian Kaur vs. State of Punjab, a significant ruling in the history of euthanasia. The Supreme Court ruled that a person's "right to life" does not -

> **In the landmark case of Aruna Ramachandra Shanbaug vs. Union of India and Ors., passive euthanasia was legalised under stringent guidelines, revolutionising the field of medicine. India now allows passive euthanasia thanks to this historic ruling.**

- include their "right to die," adding that Article 21 forbids reducing a person's natural life expectancy. Providing a decent existence till death, including a dignified manner of passing away, was part of it.

The case of Naresh Marotrao Sakhre vs. Union of India established that Section 309 of the Indian Penal Code does not apply to acts of euthanasia, suicide, or attempts at mercy killing. There are factual and legal distinctions between the two ideas. Whatever the circumstances surrounding its commission, euthanasia, sometimes known as mercy killing, is nothing more than homicide.

In the landmark case of Aruna Ramachandra Shanbaug vs. Union of India and Ors., passive euthanasia was legalised under stringent guidelines, revolutionising the field of medicine. India now allows passive euthanasia thanks to this historic ruling.

Justice M. Jagannadha Rao served as chair of the Law Commission that produced the 196th Report on "Medical Treatment to Terminally Ill Patients" (protection of patients and medical professionals). This report was created with patients with terminal illnesses or those in a prolonged vegetative state in mind, giving them the opportunity to pass away naturally.

The guidelines outlined in this report are international in nature, as courts in the United Kingdom, the United States of America, Ireland, Scotland, Canada, Australia , and New Zealand all apply the same standards to competent patients.

Harish Rana is no more now

So, euthanasia, sometimes known as "mercy killing," is a sensitive and divisive topic in India. Section 309 of the Indian Penal Code, which forbids attempted suicide and aiding and abetting suicide, presently forbids active euthanasia in India. However, passive euthanasia — which is refusing life support or ending life-sustaining medical treatment — is permissible in some situations.

Overall, the legal and ethical implications of euthanasia in India are complex and require careful consideration and discussion. It remains to be seen whether euthanasia laws will evolve in the future to reflect changing attitudes and beliefs.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Double Helical Roundtable Calls for Regulatory Reforms to Advance UHC

Trehan Group, a prominent real estate developer, in association with Association of Healthcare Providers India (AHPI) recently organised Double Helical's Round Table Conference on "Regulatory Reforms Regulating Private Sector in Achieving Universal Health Coverage" in Gurgaon

By Team Double Helical

The conference witnessed a galaxy of eminent persons who gathered to celebrate medical excellence, care, compassion, and empathy for patients—values epitomised by deserving doctors, healthcare institutions, and diverse organisations. Participants deliberated on the regulatory reforms needed to strengthen sustainable private sector participation in India's health system.

An impressive gathering comprising the "who's who" of the healthcare industry, alongside distinguished guests from different walks of life,witnessed the brain storming conclave .The event was organised by Double Helical magazine with the support of the Association of Healthcare Providers (AHPI) India and the Consortium of Accredited Hospitals Organisation (CAHO).

Addressing the Pillars of UHC

The conference emphasised "Improving Availability & Affordability of Healthcare for the Common Man," where leaders from government, academia, the community, the industry, and international agencies discussed lasting solutions to enable India to reach the goal of providing universal health coverage (UHC). The thought-provoking roundtable discussed how to define UHC in terms of availability, accessibility, - affordability, and acceptability (quality). According to health experts present at the scientific seminar, India has roughly 1.5 beds per 1,000 population, which is significantly lower than the WHO norm of 3.5 beds per 1,000 population. Therefore, the country needs to more than double its number of beds. Accessibility remains a critical issue, as most tertiary care beds are confined to Tier-I cities and some Tier-II towns. This leaves Tier-III and rural areas without adequate tertiary care services, forcing populations to travel long distances to avail themselves of

these services. Furthermore, affordability continues to be a major area of concern.

Leadership and Participation

these services. Furthermore, affordability continues to be a major area of concern.

The session was chaired by Dr A K Agarwal (Professor of Excellence, Medical Advisor at Apollo Hospital, and former Dean of Maulana Azad Medical College) and Dr Suneela Garg (Advisor to ICMR and Professor of Excellence in Community Medicine at Maulana Azad Medical College). It was moderated by Dr Vijay Agarwal, President of CAHO.

The ceremony was graced by renowned gastroenterologists, hepatologists, translational scientists, researchers, and media professionals, including:

- Dr Giridhar J. Gyani, Director General, AHPI India
- Dr Chandrakant Pandav, Padma Shri Awardee and Former Head of Community Medicine, AIIMS
- Dr Madan Gopal, Advisor and Head, National Health System Resource Centre
- Dr Narin Sehgal, Secretary, AHPI Delhi Chapter
- Cdr Navneet Bali, Executive Director and CEO, Clearmedi Healthcare
- Dr Amit Bhushan Sharma, Director and Unit Head of Cardiology, Paras Hospital
- Dr S P Yadav, CMD, Pushpanjali Hospital
- Dr J C Passy, Dean, World College of Medical Science and Research
- Dr Sanjiv Gulati, Senior Nephrologist, Fortis Hospital
- Dr Sunil Khetrapal, DDG, AHPI
- Amresh Kumar Tiwary, Editor-in-Chief, Double Helical

The Role of the Private Sector

With private providers accounting for 55.3 per cent of hospitalisation cases and 65.8 per cent of treated ailments in India, healthcare leaders emphasised

DOUBLE HELICAL ROUND TABLE CONFERENCE

Private Sector Delivers 55% of Hospitalisations, 65.8% of Treated Ailments; Roundtable Calls for Regulatory Reforms to Advance UHC*

that achieving UHC requires structured policy alignment between public financing and private sector capacity. Data presented during the session showed that private general hospitals represent the single largest provider category, accounting for 27 per cent of current health expenditure (NHA 2021-22). In comparison, government general hospitals account for 18 per cent, while pharmacies constitute 19 per cent. Despite this heavy dependence on private care, out-of-pocket expenditure still accounts for 39.4 per cent of total health expenditure (2021-22), highlighting persistent gaps in financial risk protection. Participants noted that UHC must be approached as a system-wide commitment, rather than a binary "public-versus-private" debate.


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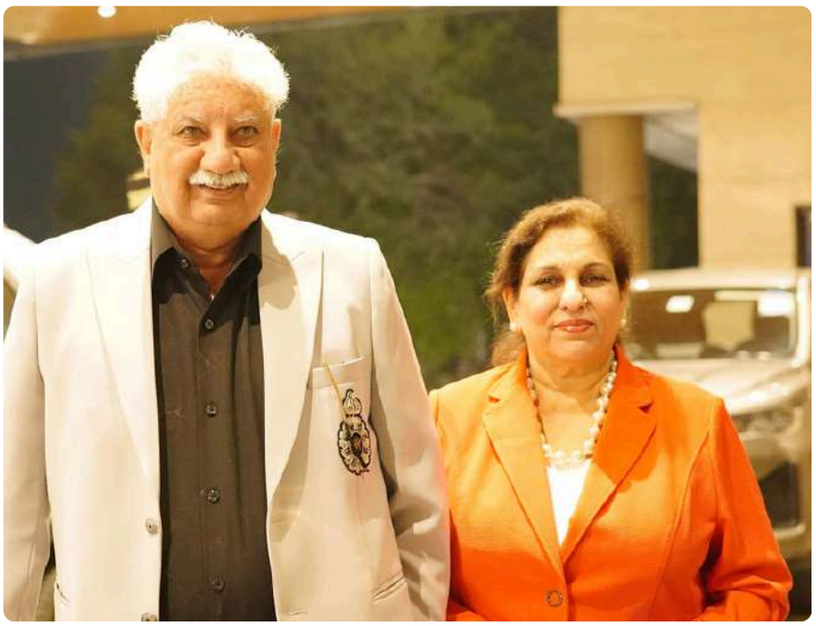
Key Recommendations and Future Outlook

Dr Girdhar Gyani stressed that clear regulation, standard quality benchmarks, and timely reimbursement are essential to ensure equitable access while maintaining operational sustainability. Dr. Madan Gopal emphasised the need for strategic purchasing, contracting, and payment reforms to effectively leverage private sector capacity.

Concerns were raised regarding financial pressures. Dr. Narin Sehgal called for rationalised and harmonised regulatory frameworks to improve the ease of doing business, while Cdr Navneet Bali cautioned that price controls and reimbursement delays could deter investments in advanced infrastructure.



Harsh Trehan, CMD of Trehan Group, reiterated that predictable regulation and transparent quality standards are crucial for sustained private sector participation in government-backed programs.

To conclude the event, the Trehan Group launched a new healthcare-oriented luxury project in Gurgaon, offering special discounts for healthcare professionals. The organizers stated that key recommendations from the roundtable will be compiled into a structured policy submission to the Ministry of Health and Family Welfare to accelerate progress toward equitable and sustainable UHC.

PLAYING WITH DAUGHTERS' LIVES

The average age of cervical cancer is 50—four decades after the shot. No trial has followed recipients that long. Seven tribal girls are already dead from unethical vaccine trials. Yet we're rushing to roll this out to millions.

BY DR AMITAV BANERJEE

Two years back, a struggling starlet and model, Poonam Pandey, had her one minute of fame. The news of her death from cervical cancer at the young age of 32 years sent shock waves. A couple of days later, she rose like a phoenix from "death," creating a sensation. What was the method in this madness? According to her, she enacted this drama for a noble cause: to draw attention to cervical cancer, which affects a large number of women in the country. Her stunt was similar to the mother coaxing her child to go to sleep, else "Gabbar," the dacoit , will come — to borrow the phrase from the popular Hindi movie **Sholay**: ***Beta so ja nahin to Gabbar aa jayega!*** She perhaps wanted to shock all girls into taking the Human Papilloma Virus (HPV) vaccine , else they may die from cervical cancer: ***Vaccine le le, nahin to "Cervical Cancer" aa jayega!***

For many, this frivolity left a bad taste in the mouth. Was it a coincidence that a day before the news of her death, on 01 February 2024, the Union Budget announced its intention to push for preventive vaccination against cervical cancer for girls aged 9 to 14 years? Keep in mind that the average age of getting cervical cancer is 50 years, about four decades later. Will the promise of the vaccine to prevent cervical cancer hold good four decades down the line? These are some serious questions which cannot be wished away by frivolous stunts. We need solid evidence. Propaganda is short-lived and often backfires. What is the current evidence?

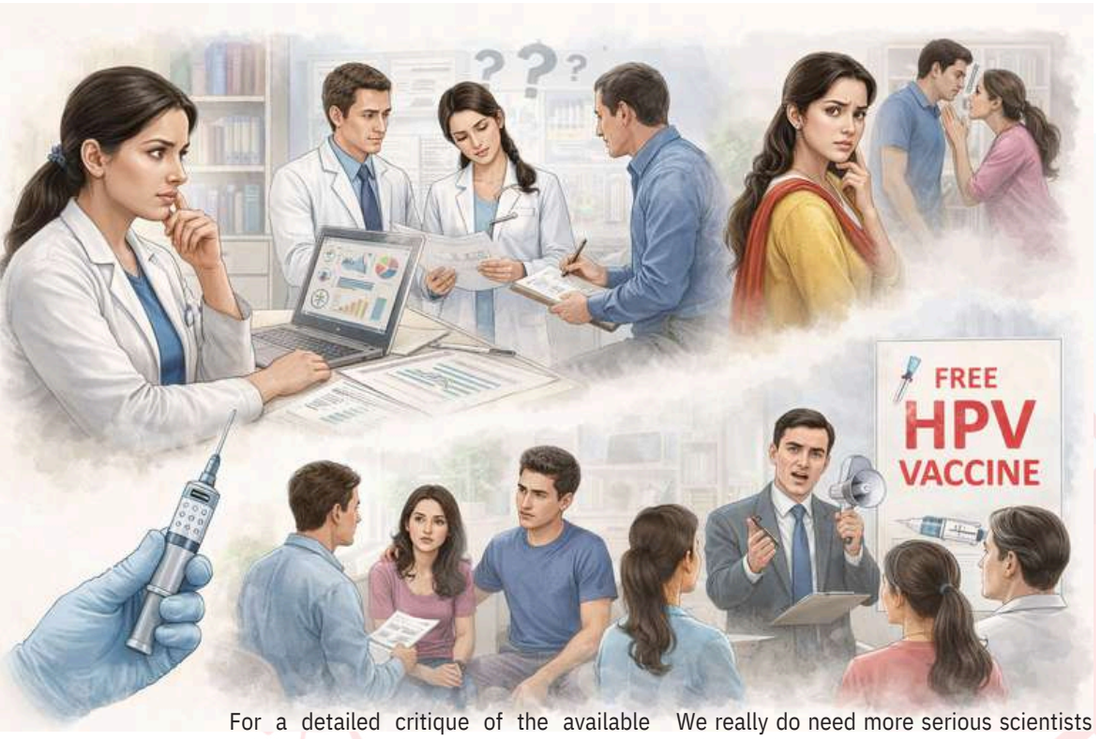
Current Evidence Linking HPV Virus to Cervical Cancer and the Uncertainties

The concept of prevention by vaccination is based on the fact that one of the causes of cervical cancer is the HPV virus, which has over 200 types. Types 16 and 18 have been associated with precancerous lesions of cervical cancer, while types 6 and 11 are associated with genital warts. Other HPV strains linked to cervical cancer are, 31, 33, 35, 39, 45, 51, 52, 56, 58, and 59.

The natural history of these precancerous lesions does not follow a straight path. The majority of these lesions are self-limiting and clear without treatment. Therefore, using these proxy markers instead of the main outcome, i.e. , cervical cancer , can overestimate the efficacy of the HPV vaccines. Most trials have followed up the vaccine recipients for less than a decade , using surrogate markers such as clearance of HPV virus and antibody response.

All these endpoints are a poor substitute for predicting cervical cancer decades later. Another limitation is that the measure of efficacy of most HPV vaccine trials has been the relative risk instead of the attributable risk , which depends on the prevalence of HPV virus infection in a particular population , which has shown wide variations from 2 per cent to 50 per cent, being highest in commercial sex workers and people with HIV/AIDS.

> ***Most trials have followed up the vaccine recipients for less than a decade, using surrogate markers such as clearance of HPV virus and antibody response. All these endpoints are a poor substitute for predicting cervical cancer decades later.***



For a detailed critique of the available evidence, one should refer to a peer-reviewed paper by Rees and colleagues in the prestigious Journal of the Royal Society of Medicine, titled, "Will HPV vaccination prevent cervical cancer?" The authors conclude there is great uncertainty whether the vaccine prevents cervical cancer. Another disconcerting feature of the HPV virus is that it has 200 types, and the vaccine covers only a few types. We do not know whether vaccine pressure can cause other strains not covered by the vaccine to become dominant , becoming a risk for cervical cancer. Because of these uncertainties, even the manufacturers of the vaccines recommend that even after taking the HPV vaccine , women should keep undergoing periodic screening with PAP smear for early detection of cervical cancer.

Serious Work, Including Social Research on Sexual Behaviour, Needed Before Promotion and Propaganda

We really do need more serious scientists doing serious research to resolve these issues instead of film stars and public figures, including "celebrity doctors," promoting vaccines in the manner of advertisementsfor fast foods. Fast foods have their downside, leading to obesity and a number of chronic diseases. Similarly, vaccines promoted like fast foods without careful research can have their downside. Some efforts are required to promote good health, including safe sex , to prevent cervical cancer. The HPV virus is sexually transmitted , just like other sexually transmitted diseases such as syphilis, gonorrhoea, HIV/AIDS, Hepatitis B , and Hepatitis C. The risk factors for HPV infection and cervical cancers are multiple sex partners, unprotected sex, poor genital hygiene, and repeated pregnancies. A holistic approach to preventing all sexually transmitted diseases, including HPV infection , would be to educate young boys and girls about responsible and safe sexual behaviour during their lifetime.

Would getting an HPV vaccine protect against HIV, for which there is no vaccine?

One can use this scientific information to stress among the youth the need for responsible sexual behaviour.

Falling Trends of Cervical Cancer in India Call for Proper Risk- Benefit Evaluation, Before Rushing for Mass Rollout. Caution Called for in the Context of Past Misadventures

A recent paper by Singh and co-workers published in BMC Cancer , shows that the trend of cervical cancer is declining in India for the past three decades. Presently, there are an estimated seven deaths per lakh population per year from cervical cancer , down from 13 , three decades ago. The AIDS pandemic during this period is likely to have created awareness about safe sex , in addition to better living standards , including genital hygiene , all adding up to the steep fall in cervical cancer in many states of India. Shouldn't we wait and watch the declining trend further instead of including the HPV vaccine in the UIP in the midst of so many uncertainties? Or , by pushing mass vaccination , do we muddy the waters , which will destroy all evidence by elimination of the control group , which is essential to establish the efficacy or harm, if any, of the HPV vaccine?

Past Misadventures During Clinical Trials Among Teenagers

The latter assumes significance in view of the chequered history of the HPV trials in India. The Bill and Melinda Gates Foundation , through its Program for Appropriate Technology in Health (PATH), conducted trials among vulnerable tribal girls in Andhra Pradesh and Gujarat from 2009 to 2010. To bypass ethical issues, the investigators labelled the trials as observational instead of a clinical trial. During the trial, seven girls out of the 26,000 who took the HPV jabs , died. The girls were residents of a government hostel for tribal children. The investigators , including scientists from the ICMR , denied that the deaths were due to the vaccine.

As a result of public outcry, the trial was halted. The tragedy was investigated by a Joint Parliamentary Committee. The Committee tabled its report — the 72nd Report titled, "Alleged Irregularities in the conduct of studies using human papilloma virus ** (HPV)** vaccine," — on August 30, 2013 , to both houses of parliament. The committee found many major irregularities and indicted the Gates Foundation, the ICMR , and the researchers for dereliction of duty. Interestingly, the current Minister of Health and Family Welfare, J P Nadda , was a member of the 72nd Joint Parliamentary Committee that attributed the death of 7 girls to the unethical trials of the HPV vaccine. The committee also spelled out the gross irregularities in the trial , concluding that crash commercial interest was the motive pushing the HPV vaccine. Unfortunately, public memory - including that of the Health Minister, seems to be short. Professionals like doctors promoting the vaccine unconditionally also seem to be unaware of the uncertain evidence of efficacy and the botched - up trials leading to the deaths of seven vulnerable tribal girls. The glitz and glamour of high-pressure marketing is poised to brush these uncomfortable truths under the carpet. One should not erase from public memory that seven tribal teenagers out of 26,000 jabbed died during unethical trials of the HPV vaccine. they not taken the vaccine , their chances of death from cervical cancer decades later would have been 7 out of 100,000 , as estimated from current statistics. Compare this with seven out of 26,000 who died during the trial.

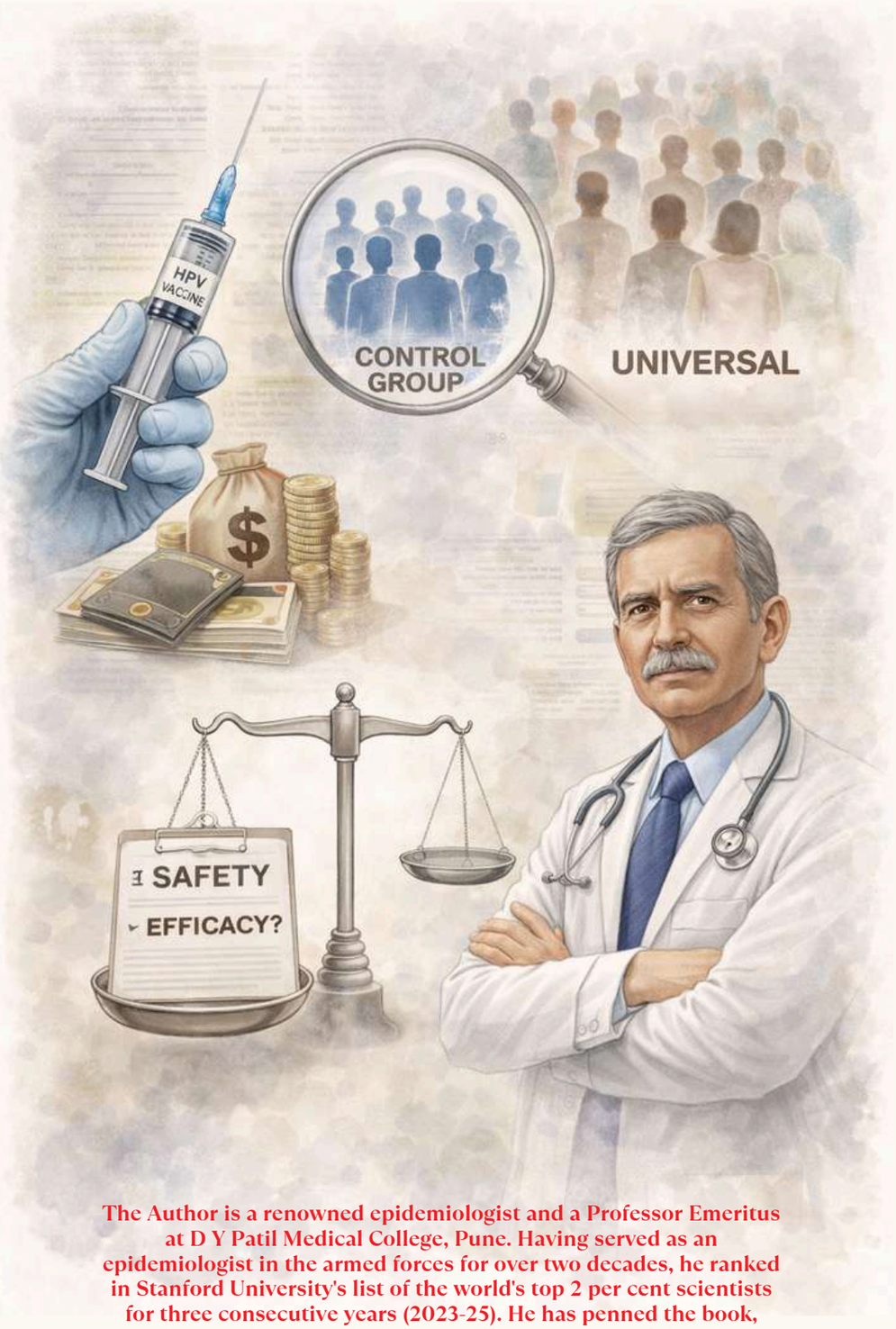
This should be a red signal to be heeded before mass HPV vaccine rollout in unholy haste , given that we do not have a robust adverse events following immunisation (AEFI) monitoring system in the country.

Given these shortcomings , it is unlikely that adverse events from the HPV vaccine would be captured adequately. We cannot roll out superfast trains on dilapidated old tracks.

> **Seven tribal teenagers out of 26,000 jabbed died during unethical trials of the HPV vaccine. Had they not taken the vaccine, their chances of death from cervical cancer decades later would have been seven out of 100,000, as estimated from current statistics. Compare this with seven out of 26,000 who died during the trial.**

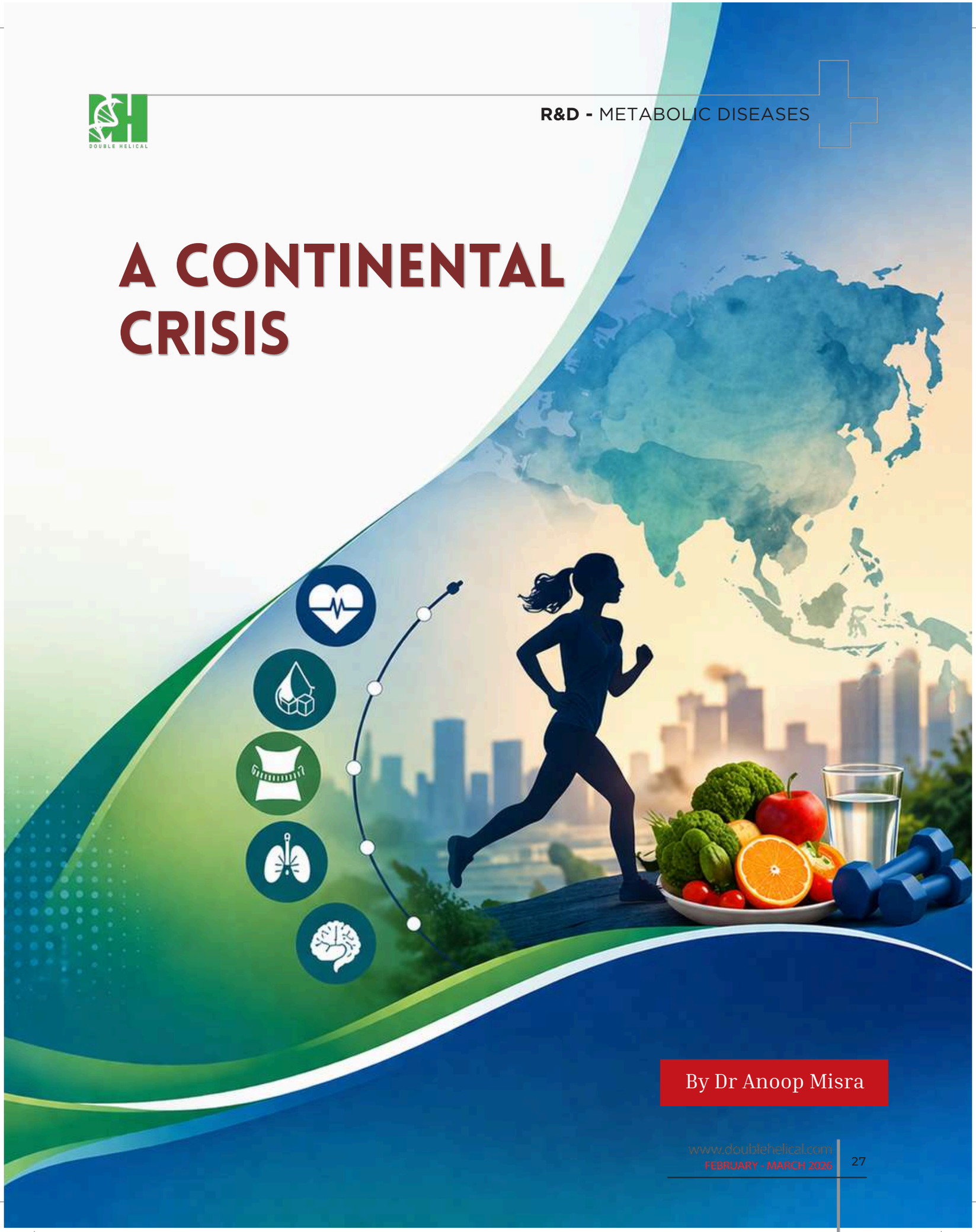
The Way Forward

Given the uncertainties, it would be premature to include the HPV vaccine in the Universal Immunisation Programme at huge cost and resources, with the taxpayer's money. Let it be in the market for those who want to go for it. This strategy will also generate a control group for long-term appraisal of efficacy and safety. Universal rollout, on the other hand, will erase the control group , and we may never have the answers to these uncertainties.



The Author is a renowned epidemiologist and a Professor Emeritus at D Y Patil Medical College, Pune. Having served as an epidemiologist in the armed forces for over two decades, he ranked in Stanford University's list of the world's top 2 per cent scientists for three consecutive years (2023-25). He has penned the book, Covid-19 Pandemic: A Third Eye.A different version of this "devil's advocacy" was published in the proceedings of the Indian Medical Association's Academy of Medical Specialties Conference, AMSCON 2025

A CONTINENTAL CRISIS



By Dr Anoop Misra

A LANDMARK STUDY SPANNING THREE DECADES REVEALS A DRAMATIC SURGE IN METABOLIC DISEASES ACROSS ASIA. HOWEVER, WIDESPREAD ADOPTION OF BALANCED DIETS, REGULAR PHYSICAL ACTIVITY, AND PROACTIVE CLINICAL SURVEILLANCE CAN SIGNIFICANTLY REVERSE THE TIDE

A landmark study recently conducted by Zhang and colleagues, co-authored by the author, provides a sobering look at the health trajectory of the continent.

Analysing data spanning from 1990 to 2023, the research demonstrates that the burden of metabolic diseases has increased exponentially over the past three decades in Asia. This upward trend shows no signs of slowing down; experts project that these figures will continue to rise through 2030. Currently, five major non-communicable diseases (NCDs) are driving this surge, fundamentally altering the public health landscape of the region and placing unprecedented pressure on healthcare infrastructure. uncertainties, even the manufacturers of the vaccines recommend that even after taking the HPV vaccine , women should keep undergoing periodic screening with PAP smear for early detection of cervical cancer.

The Interconnected "Big Five" in South Asia

In South Asia, the crisis is defined by five specific metabolic diseases and risk factors that are increasing sharply. These include high blood pressure, obesity (high body mass index), high cholesterol, type 2 diabetes, and fatty liver disease. Among

In South Asia, the crisis is defined by five specific metabolic diseases and risk factors that are increasing sharply. These include high blood pressure, obesity (high body mass index), high cholesterol, type 2 diabetes, and fatty liver disease. Among these, high blood pressure represents the most significant disease burden in the Asia--Pacific region, closely followed by obesity and abnormal cholesterol levels. Diabetes is also rising at an alarming rate, affecting millions of people in India and neighbouring countries. Of particular concern to clinicians is the fact that these conditions are appearing at much younger ages than in previous generations, leading to longer lifetimes of managed illness and higher risks of early complications.

Bhavya Arora

Metabolic diseases share common roots. As illustrated by a typical clinical case of advanced metabolic multimorbidity, their convergence often leads to catastrophic outcomes including heart attacks, strokes, kidney failure, and irreversible liver damage.

Drivers of Metabolic Dysfunction

The roots of this modern epidemic are deeply embedded in the rapid urbanisation and socio-economic shifts occurring across Asian nations. As traditional lifestyles give way to modern conveniences, unhealthy diets—characterised by the high consumption of processed foods, sugary drinks, and high-fat meals—have become the norm. This nutritional transition is compounded by a significant reduction in physical activity, as more individuals spend prolonged periods sitting at desks or engaged with digital devices. These factors, combined with escalating stress levels, disrupt the body's delicate hormonal balance. The result is a widespread increase in body weight and metabolic impairments that damage the heart, liver, kidneys, and blood vessels.

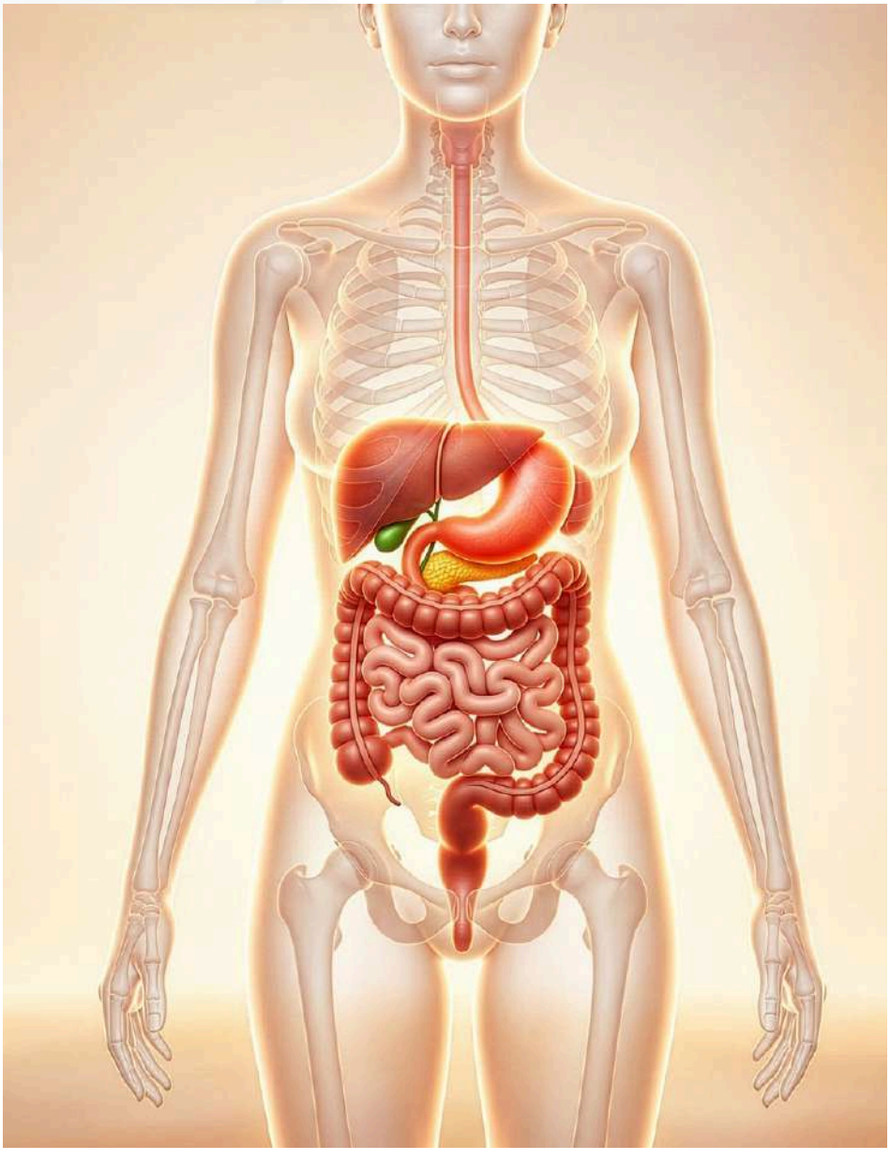
These conditions are dangerous because they disrupt the body's normal metabolism and increase the risk of several serious diseases that affect the heart, liver, kidneys, and blood vessels. Rapid urbanisation, unhealthy diets, reduced physical activity, and increasing stress levels are major reasons for this trend. As people consume more processed foods, sugary drinks, and high-fat diets while spending more time sitting at desks or using digital devices, body weight and metabolic problems are increasing.

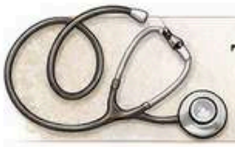
A Cascade of Health Complications

These metabolic conditions do not exist in isolation; they are intricately linked in a dangerous physiological cycle. For instance, obesity significantly heightens the risk of developing diabetes, hypertension, and fatty liver disease simultaneously. When left unmanaged over time, this cluster of disorders leads to catastrophic health events, including heart attacks, strokes, kidney failure, and permanent liver damage. The ripple effect of these complications extends beyond the individual, placing an exhausting financial and emotional burden on families and creating a sustainability crisis for national health-care systems.

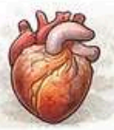
Case Illustration: The Reality of Metabolic Multimorbidity

A 56-year-old male presented with fatigue, increased urination, increased thirst, breathlessness on minimal exertion, and swelling of feet. He had a long-standing history of smoking (over 20 years), a sedentary lifestyle, and poor dietary compliance with high intake of refined carbohydrates and processed foods. On examination, his weight was 110 kg, corresponding to a body mass index (BMI) of 43 kg/m² (severe obesity). Blood pressure was elevated at 160/100 mmHg. His laboratory investigations revealed: fasting blood glucose: 210 mg/dL; HbA1c: 9.5% (poor glycaemic control); lipid profile: elevated triglycerides (blood fat) and low HDL cholesterol. The ultrasound abdomen showed enlarged liver with size of 19 cm, fibroscan (test to measure liver stiffness) demonstrated evidence of damage in liver. The patient was diagnosed with: poorly controlled type 2 diabetes, uncontrolled blood pressure (hypertension), severe obesity (BMI >40 kg/m²), high blood cholesterol (hypercholesterolemia), and fatty liver with marked stiffness [metabolic dysfunction-associated steatotic liver disease (MASLD) with fibrosis]. This case illustrates advanced metabolic multimorbidity, characterised by the coexistence of type 2 diabetes, hypertension, severe obesity, dyslipidaemia, and metabolic dysfunction-associated steatotic liver disease, all conditions which require major lifestyle and drug changes. These conditions share common pathophysiological mechanisms primarily insulin resistance, excess fat in abdomen, and chronic low-grade inflammation and typically cluster together, amplifying overall risk of heart disease and death in this context. In alignment with the findings of Zhang et al., 2026, the burden of these five metabolic diseases and risk factors has increased substantially across the Asia-Pacific region over the past three decades and is a measure of concern.





The "Big Five" Metabolic Threats in South Asia

Metabolic Disease / Risk Factor	Primary Drivers	Health Risks & Complications
1. High Blood Pressure (Hypertension) 	• High salt intake • Stress • Sedentary lifestyle, • Obesity	  • Stroke • Heart failure • Chronic kidney disease
2. Obesity (High BMI) 	• Processed, calorie-dense foods, • Sugary drinks • Lack of physical activity	  • Type 2 Diabetes: Sleep apnea • Sleep apnea • Joint disorders
3. Type 2 Diabetes 	• Insulin resistance, • Genetic predisposition • Excessive sugar/carb intake	  • Blindness (retinopathy) • Heart disease
4. High Cholesterol (Dyslipidaemia) 	• Trans fats, saturated fats • Lack of exercise	  • Plaque buildup • Heart attacks • Vascular blockages
4. High Cholesterol (Dyslipidaemia) 	• Trans fats, saturated fats • Lack of exercise	  • Heart attacks • Liver failure
5. Fatty Liver Disease (MASLD)	• Excess body weight • High sugar consumption • Metabolic syndrome	  • Liver cirrhosis • Liver failure

> **Despite the sobering statistics, health experts stress that the metabolic crisis is not inevitable. The cornerstone of prevention lies in sustainable lifestyle change: maintaining healthy weight through balanced, home-cooked meals rich in whole grains, pulses, fruits, and vegetables, while eliminating sugary drinks and processed snacks.**

The Path to Prevention and Long-term Health

Despite the daunting statistics, there is a clear path forward through preventative lifestyle measures. Weight loss is essential for people who are obese. Maintaining a healthy body weight remains the cornerstone of metabolic health.

People should eat a balanced diet that includes more fruits, vegetables, whole grains, pulses, and home-cooked foods while reducing fried foods, processed snacks, and sugary beverages. Regular physical activity such as brisk walking, cycling, yoga, or simple resistance exercises for at least 30--45 minutes most days of the week can help control weight, blood sugar, and blood pressure.

The Importance of Clinical Vigilance

Beyond diet and exercise, a holistic approach to health must include adequate sleep, effective stress management, and the avoidance of smoking and excessive alcohol consumption. Proactive medical surveillance is equally vital; regular health check-ups to monitor blood sugar, cholesterol, blood pressure, and body weight can help detect problems early and identify metabolic shifts before they become irreversible. By integrating these simple yet powerful habits into daily life, individuals and communities can effectively halt the progression of metabolic diseases and secure a healthier future for South Asia.

(The author is Chairman, Fortis-C-DOC Centre of Excellence for Diabetes, Metabolic Diseases and Endocrinology, New Delhi; Chairman, National Diabetes, Obesity and Cholesterol Foundation (N-DOC); and President, Diabetes Foundation (India) (DFI). Inputs provided by Bhavya Arora, a Clinical Nutritionist & Certified Diabetes)

Reference:

H. Zhang et al.; Burden of metabolic diseases, 1990-2023, with forecasts to 2030 for the Asia-Pacific region; Metabolism 179 (2026) 156575

THE SILENT SPIKE

Once considered an adult-only ailment, hypertension is now quietly affecting children as young as newborns. It can lead to devastating consequences if left unchecked. Read on to know what you need to do to safeguard your child's health.

By Dr HP Singh /Dr Sachin Bhargav

A growing habit of sedentary lifestyle, lack of exercise, heavy consumption of fast food, , and intake of steroids either during pregnancy or from any other sources may lead to the problem of high blood pressure, commonly called hypertension, in children—and even in newborns.

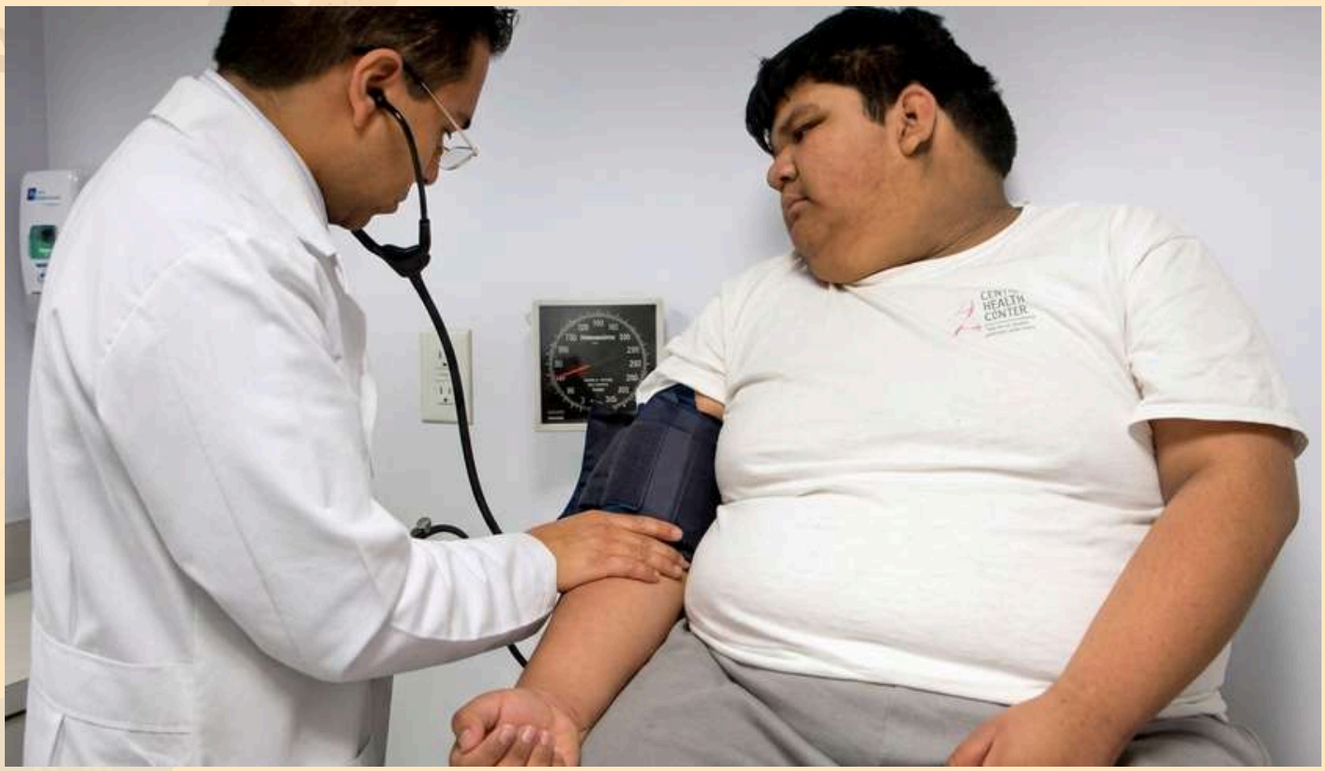
The problem may go undetected because, many times, there are no symptoms or signs of this disease. If left untreated, hypertension can lead to heart failure, vision problems, kidney failure, paralysis, and stroke early in life. It is a general belief that high blood pressure (hypertension) is a problem that affects only adults. Contrary to this belief, hypertension can be present at any age, even in newborns and young children. When parents learn that their child has hypertension, it is very natural for them to deny the possibility due to their ignorance. It is the responsibility of the paediatrician and the paediatric nephrologist to clear their doubts and to initiate an appropriate management plan.

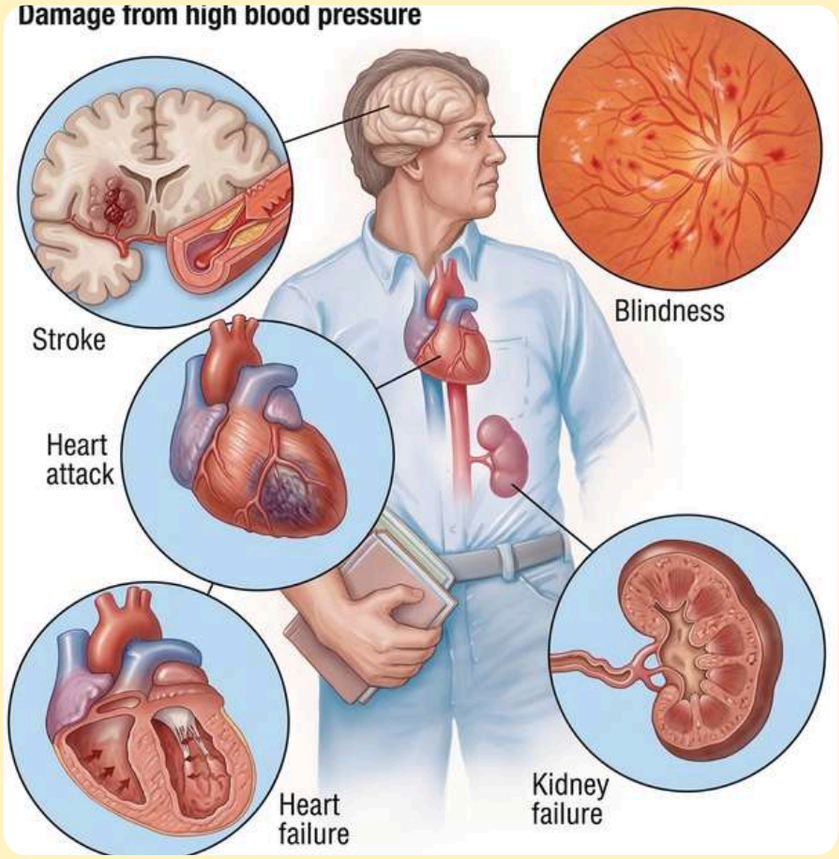
Blood pressure is the force of the blood against the walls of blood vessels as the heart pumps blood to various parts of the body. If this pressure becomes too high, the child is said to have high blood pressure or hypertension. As in adults, a child's BP is read as two numbers. The first number, or systolic BP, is the pressure when the heart is pumping blood to various parts of the body. The second number, or diastolic BP, is the pressure when theheart is resting between beats. Diastolic BP is lower than systolic BP. A child is considered to be hypertensive when either the systolic, diastolic, or both blood pressures are high.

> Contrary to popular belief, high blood pressure does not spare the young. Approximately 2-5 per cent of children suffer from hypertension, and the majority are unaware they have it. The condition is especially prevalent among obese children, where rates soar to 10-30 per cent.

> Often symptomless in its early stages, undetected hypertension can silently damage the heart, kidneys, eyes, and brain—leading to stroke or heart failure even in childhood. Regular check-ups, especially for children with risk factors like low birth weight, kidney disease, or a family history of hypertension, are essential for early detection.

The obese children are more prone to hypertension. If hypertension is allowed to continue or become worse over years, the prolonged extra pressure in the blood vessels can lead to heart failure, stroke, damage to eyes and kidney even in children.





> **A child's blood pressure is not measured by adult standards. It varies with age, sex, and height, and is considered high only when it consistently exceeds the 95th percentile on standardised charts.**

Normal BP is lower in children than in adults. BP increases with age and body size. Normal BP for a child will depend on the child's age, sex and height. We compare your child's BP to readings given on BP charts which lists normal BP or high BP for boys and girls based on their height and age. A child is said to be hypertensive if his average systolic or diastolic BP is more than 95th percentile (according to the standardized charts) for age, genderand height on more than 3 occasions. The doctor is the best person to read and interpret the charts.

To label a child as hypertensive, BP charts have been issued by the fourth US task force report on hypertension .These are charts consulted by doctors to arrive at a conclusion whether the child has hypertension or not. -

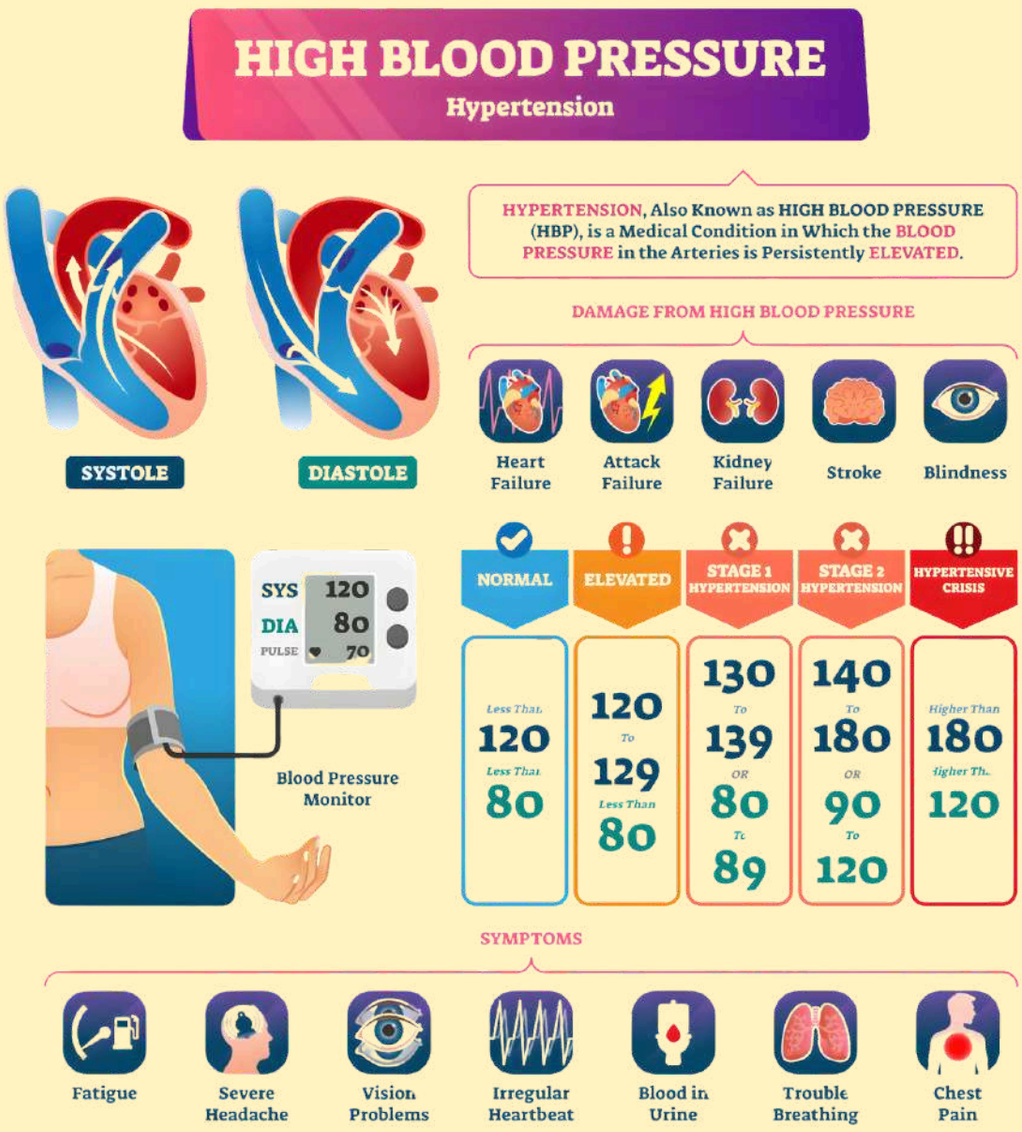
Since these charts are difficult to interpret and not easily available to parents,it is recommended that if your child's BP is beyond the values listed in the table here for the specific age group, you need to consult your doctor(paediatrician/paediatric nephrologist)

CHILD BLOOD PRESSURE (BP) – WHAT IS NORMAL?

Age (years)	BP(mm Hg)
0 – 5 years	100/70
5 – 10 years	120/80
>10years	130/90

Since these charts are difficult to interpret and not easily available to parents,it is recommended that if your child's BP is beyond the values listed in the table here for the specific age group, you need to consult your doctor(paediatrician/paediatric nephrologist)

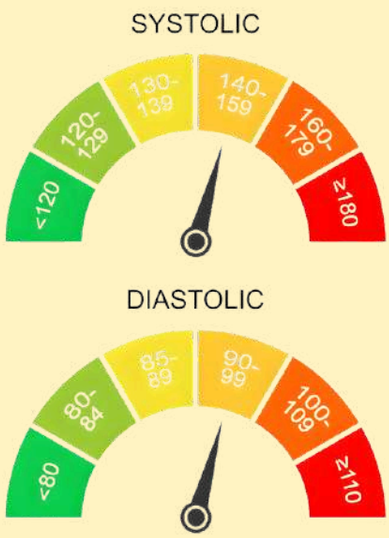
CHILD HYPERTENSION – LEVELS, RISKS & WHEN TO CHECK BP



Hypertension has been graded according to the B.P readingslike Prehypertension: - Blood pressure is > 90th percentile but <95th percentile (as per BP chart). Children in this range of BP should be carefully followed up as they grow up. And stage 1 hypertension (Unsafe):- BP exceeds 95th percentile up to 5 mm above 99th percentile. Blood pressure in this range should be rechecked at least twice in the next 1-3 week or even earlier. Stage 2 hypertension (Dangerous):- BP exceeds 5 mm or more above the 99th percentile. Confirmation should be made at the same visit.

Children who are more than 3 years and are seen at health care setting (for example cold, cough or fever) should have their blood pressure measured. Children who are less than 3 years should get their BP cheeked if they have:

BLOOD PRESSURE CATEGORIES



- History of low birth weight, prematurity or requirement of neonatal intensive care,
- History of heart disease by birth
- History of recurrent urinary tract infection
- History of blood or protein loss in urine
- History of any kidney disease in the past
- Family history of kidney disease
- History of organ transplantation
- History of receiving medicines which can cause high blood pressure/kidney damage.

The usual symptoms of hypertension are headache (sometimes throbbing in nature), flushing, giddiness, bleeding from nose, vision disturbances, poor school performance, irritability, blood or protein in urine, passing urine more or less frequently and weight loss. In some cases hypertension can be without symptoms and therefore those children who are obese, have history of neonatal intensive care stay, or have kidney/ heart disease or cardiac disease should have their blood pressure checked.

> **For quick reference, parents should be concerned if BP readings cross 100/70 in children under five, 120/80 in those aged five to ten, and 130/90 in older children. If readings are high, they must be confirmed with the correct cuff size–too small or too large a cuff can give false results.**

Generally it is preferred to check the blood pressure when the child is sitting comfortably in a chair with feet on the ground and the arm at the level of the heart. The BP cuff should be of the right size for the child's age. The width of thecuff bladder (rubber inside the outer cloth) should be 40% of the arm circumference midway between the shoulder and elbow joint and the length should be double the width. Another simple way is to get a bladder cuff whose width covers ¾ of the upper arm. If the cuff size is not appropriate the blood pressure

readings may come falsely high or low. However if an appropriate cuff size is not available the next bigger size can be used. Cuff sizes with a width of 4 cm, 9cm, 10cm, 13cm, and 20cm are available in the market.

The usual symptoms of hypertension are headache (sometimes throbbing in nature), flushing, giddiness, bleeding from nose, vision disturbances, poor school performance, irritability, blood or protein in urine, passing urine more or less frequently and weight loss. In some cases hypertension can be without symptoms and therefore those children who are obese, have history of neonatal intensive care stay, or have kidney/ heart disease or cardiac disease should have their blood pressure checked.

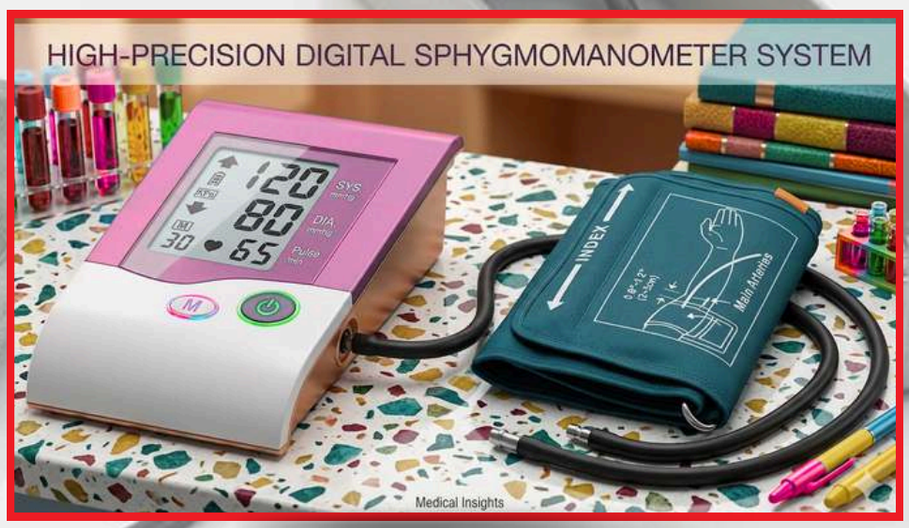
Mercury instruments are the best for checking blood pressure, but as they are being phased out, aneroid devices are being used more commonly and they are fairly accurate, but they require frequent calibration.Automatic BP machines are also being used.If an automatic (digital) blood pressure machine is being used and blood pressure readings come high, then they need to be confirmed with mercury or aneroid device.

AUTOMATIC BP MONITORING DEVICE

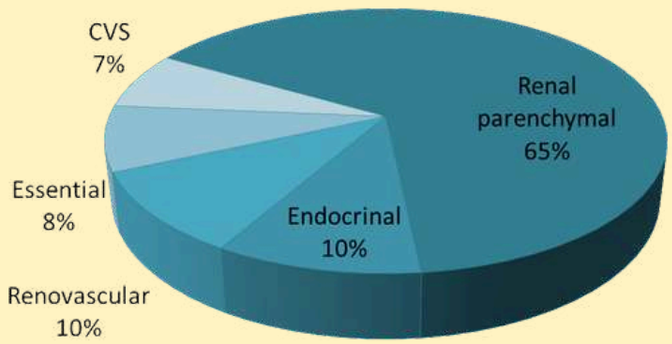
Ambulatory Blood Pressure Monitoring (ABPM)means blood pressureis recorded over a 24 hours period by a BP monitor where cuff is tied to the arm and a small digital blood pressure machine is attached to a belt around the waist. The child carries on his/her normal activities in the day and sleep with it, while the machine is on. The machine takes the blood pressure readings at regular intervals usually every 15-30 minutes during the day and night. The monitor should be kept on throughout the night. At the end of 24 hours the cuff and the machine are removed and given to the hospital for analysis of readings.

For the machine to work properly, it is important to make sure that the tube attached to the machine is not twisted or bent. As a parent you are instructed to maintain a diary, to note the timing of going to bed, medication and general activities.There are a number of reasons why a doctor advises 24 hour ABPM , which are to find out if the high BP reading in the clinic is higher than the reading away from clinic e.g. home - (called white coat hypertension), to see how well the medicines are working and whether they are controlling the blood pressure all the time and to see whether blood pressure at night is less than the recording during day time.

In majority of young children an underlying cause of hypertension can be identified e.g. kidney, heart, blood vessels, hormone problems, tumour or drugs. Diseases of the kidney are the most common cause of hypertension in children. Primary or essential hypertension, commonly seen in adults, is becoming common in children, who are obese or over weight.



CAUSES OF HYPERTENSION



INDICATIONS FOR DRUG TREATMENT IN HYPERTENSION

a) **Stage 1** hypertension persisting even 6 months after lifestyle modifications or those who have any preexisting kidney disease

b) **Stage 2** hypertension

c) **Damage** to eye, kidney, heart, or brain has occurred

d) **Pre hypertension in a child** with chronic kidney disease, diabetes or lipid abnormalities

If a cause for hypertension is diagnosed, appropriate treatment can be initiated and the child may have normal blood pressure afterwards.

For few reasons, a child may have to remain on anti-hypertensive medicines throughout the life. Once a child is diagnosed to have hypertension, it is very important to evaluate any underlying disease and to find out risk factors for essential hypertension like obesity, smoking, alcohol, etc. In addition tests are required to find out if any complication (involvement of eye, heart or kidney) hasoccurred or not. The common tests which may be required arekidney function tests, hormone levels, lipid profile, urine examination, ultrasound and doppler test of kidney, kidney scan, echocardiogram, ECG and eye examination. Most children with essential hypertension require lifestyle modification swhich include weight reduction, meditation, yoga, exercise, low salt diet. Other risk factors like smoking, alcohol, steroids, oral contraceptives, sleep apnea should also be controlled. For secondary hypertension, surgery helps in certain cases,e.g. if any tumour is causing hypertension, then it needs to be removed surgically. Timely detection helps in appropriate treatment of hypertension and its cause and helps to prevent end organ damage in adult life.

LIFE STYLE MODIFICATION

NORMAL BLOOD PRESSURE VALUES OF BOYS ACCORDING TO AGE AND HEIGHT

NORMAL BLOOD PRESSURE VALUES OF GIRLS ACCORDING TO AGE AND HEIGHT

BOYS

Age (yr)	Systolic BP (mm Hg)					
	← Percentile of Height →					
BP percentile	5th	10th	25th	50th	75th	90th
	5th	10th	25th	50th	75th	90th
1	60	81	83	97	98	89
90th	97	99	101	103	105	106
	98	101	102	104	108	110
	105	106	101	113	114	114
90th	102	108	110	112	113	113
95th	101	101	101	107	104	108
	114	115	116	117	118	114
	111	112	116	118	117	118
90th	111	112	118	119	121	124
95th	117	117	118	119	112	113
	116	117	118	119	114	115
99th	117	118	119	121	123	123
99th	117	118	120	122	125	127

Age (yr)	Systolic BP (mm Hg)					
	← Percentile of Height →					
BP percentile	5th	10th	25th	50th	75th	90th
	5th	10th	25th	50th	75th	90th
1	60	81	83	98	99	99
90th	97	99	101	101	105	106
	98	101	101	105	108	110
	105	106	101	113	114	114
90th	102	110	110	111	113	114
95th	111	114	111	116	117	118
	114	115	116	116	118	114
99th	117	118	119	117	113	114
99th	117	118	120	122	125	127
99th	117	118	120	122	125	122
99th	117	118	114	116	116	117
	117	118	117	119	121	123
99th	117	118	120	121	123	125
99th	117	120	120	122	125	127

GIRLS

Age (yr)	Systolic BP (mm Hg)					
	← Percentile of Height →					
BP percentile	5th	10th	25th	50th	75th	90th
	5th	10th	25th	50th	75th	95th
1	97	97	54	54	54	54
90th	97	97	54	55	57	67
	90	91	54	55	67	67
	105	105	67	66	66	66
90th	97	97	54	55	67	66
95th	90	91	60	61	62	66
	105	101	111	113	111	114
	103	111	111	113	112	113
90th	101	111	112	116	116	117
95th	101	111	111	111	111	118
	114	112	113	113	117	118
99th	114	115	116	118	117	118
99th	117	118	118	112	117	117

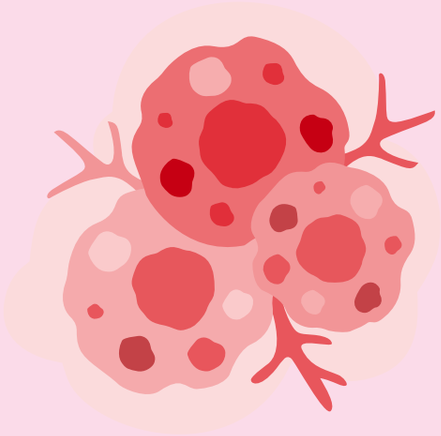
Age (yr)	Systolic BP (mm Hg)					
	← Percentile of Height →					
BP percentile	5th	10th	25th	50th	75th	90th
	5th	10th	25th	50th	75th	95th
1	97	97	54	54	54	54
90th	97	97	54	55	56	68
	90	91	54	55	67	67
	105	101	65	66	66	66
90th	101	101	111	111	113	118
95th	101	114	115	116	117	118
	114	115	118	115	117	117
99th	114	112	114	112	113	118
99th	117	118	118	117	112	117
99th	117	118	118	119	121	127
99th	117	118	118	114	123	123
	117	117	114	119	124	125
99th	117	117	118	112	123	122
99th	117	117	118	115	145	147

> **"EARLY DIAGNOSIS, LIFESTYLE CHANGES, AND TIMELY MEDICAL INTERVENTION CAN REVERSE OR MANAGE HYPERTENSION, PREVENTING LIFELONG COMPLICATIONS."**

TAKEAWAYS

Childhood hypertension is no longer a rarity—it is a growing concern that demands parental awareness and proactive care. From maintaining a healthy weight and active lifestyle to regular blood pressure monitoring, small steps can make a big difference. Whether the cause is lifestyle-related or stems from an underlying condition like kidney disease, early detection is the key to protecting your child from a lifetime of health struggles. Consult your paediatrician, and take action before the silence becomes dangerous.

WORLD CANCER DAY



UNITED BY UNIQUE

THE THEME OF WORLD CANCER DAY 2026 REMINDS US THAT WHILE CANCER IS A GLOBAL THREAT, EACH COUNTRY, EACH COMMUNITY, AND EACH PERSON AFFECTED FACES DISTINCT REALITIES, AND EFFECTIVE RESPONSES MUST THEREFORE BE SHAPED COLLECTIVELY WHILE IMPLEMENTED LOCALLY.

By
Dr Catharina Boehme

Cancer remains one of the leading causes of death globally and continues to cause immense suffering for individuals and families. In the WHO South-East Asia Region, the year 2022 alone recorded an estimated 2.24 million new cancer cases according to updated GLOBOCAN data, and 1. 5 million deaths, including over 60,000 cases among children. These figures represent a 15 percent increase from previous estimates, underscoring the accelerating crisis. Despite advances in science and care, the burden continues to rise, and the number of new cases and deaths is projected to almost double by 2050 if current trends persist.

This year, the theme of World Cancer Day —" United by Unique "— reminds us that while cancer is a global threat, each country, each community, and each person affected by cancer faces distinct realities. Effective responses must therefore be shaped collectively and implemented locally.

> **1.In the WHO South-East Asia Region, the year 2022 alone recorded an estimated 2.24 million new cancer cases and 1.5 million deaths, including over 60,000 cases among children. These figures represent a 15 percent increase from previous estimates, underscoring the accelerating crisis.**

A Regional Strategy for Action

Guided by the WHO South-East Asia Regional Strategy for Comprehensive Cancer Prevention and Management 2024–2030, WHO is supporting countries to develop national cancer control plans, strengthen cancer registries, improve the quality of early diagnosis and treatment, and expand access to palliative care. The strategy provides a roadmap for member states to address the full continuum of cancer care—from prevention and early detection to treatment, survivorship, and end-of-life care.

Collaboration remains key. In partnership with the International Atomic Energy Agency (IAEA) and the International Agency for Research on Cancer (IARC), WHO is supporting Member States with baseline situation analysis and recommendations to guide cancer control planning and investments. Further, platforms such as the South-East Asia Regional Childhood Cancer Network (SEAR-CCN) and the South-East Asia Cancer Grid (SEACanGrid) are strengthening institutional collaboration across countries. SEACanGrid also supports the adaptation of evidence to the local contexts of countries in the Region. These networks facilitate the sharing of best practices, telemedicine consultations, and joint research initiatives that would be impossible for individual countries to undertake alone.

The usual symptoms of hypertension are headache (sometimes throbbing in nature), flushing, giddiness, bleeding from nose, vision disturbances, poor school performance, irritability, blood or protein in urine, passing urine more or less frequently and weight loss. In some cases hypertension can be without symptoms and therefore those children who are obese, have history of neonatal intensive care stay, or have kidney/ heart disease or cardiac disease should have their blood pressure checked.

Mercury instruments are the best for checking blood pressure, but as they are being phased out, aneroid devices are being used more commonly and they are fairly accurate, but they require frequent calibration.Automatic BP machines are also being used.If an automatic (digital) blood pressure machine is being used and blood pressure readings come high, then they need to be confirmed with mercury or aneroid device.

Innovation and Leadership Across the Region

Across the Region, countries are demonstrating innovation and leadership. Thailand's Cancer Anywhere initiative enables people with cancer to access treatment at any public hospital nationwide, eliminating geographical barriers to care. India is expanding its network of day-care chemotherapy centres in district hospitals, bringing treatment closer to patients in rural areas, while Bhutan's population-based cancer registry provides data from the entire country to inform targeted prevention programmes and strengthen care outcomes and survival. Bhutan's registry is particularly notable as one of the few nationwide, population-based cancer registries in the Region, capturing data from even the most remote Himalayan communities.

Under the Global Initiative for Childhood Cancer, Myanmar has improved access to treatment through a satellite centre network that connects peripheral hospitals with specialised urban centres, Nepal has introduced free childhood cancer treatment for families below the poverty line, and Sri Lanka has developed a standalone national policy for childhood cancer —the first of its kind in the Region.

> "The South-East Asia Region's overall mortality-to-incidence ratio is nearly double that of high-income countries—67 percent compared to 35 percent—and is three times higher for childhood cancer. This means a child diagnosed with cancer in South-East Asia is three times more likely to die than a child in a high-income country."

The Persistent Gaps

Yet major challenges remain. The South-East Asia Region's overall mortality-to-incidence ratio is nearly double that of high-income countries —67 percent compared to 35 percent— and is three times higher for childhood cancer. This means a child diagnosed with cancer in South-East Asia is three times more likely to die than a child in a high-income country. -

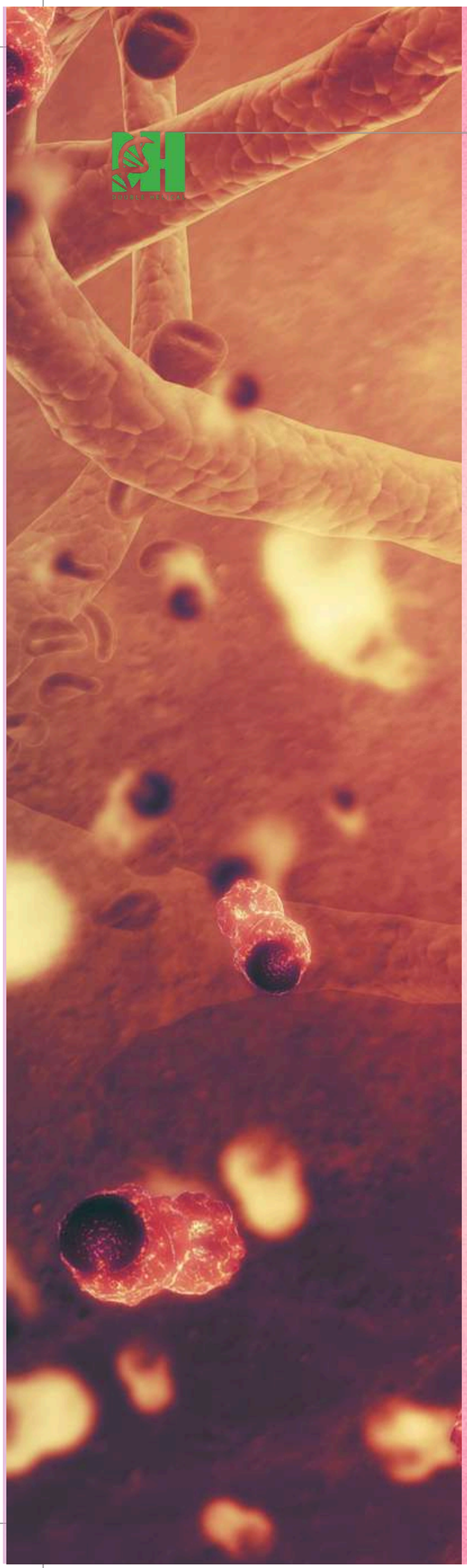
Not all countries have developed national cancer control plans, screening coverage for specific cancers such as breast, cervical, and oral cancers is below recommended levels, and access to diagnosis and management services remains uneven, both across and within countries. Rural populations, in particular, face significant barriers to accessing timely diagnosis and treatment, often traveling hundreds of kilometres for basic cancer care.

Accelerating Action: A Call to Governments

Achieving substantial and persistent progress will require continued political commitment and long-term investment. To accelerate action, governments, partners, and civil society are urged to:

- **Increase predictable and sustainable investment in cancer control, with a target of allocating at least 5 percent of national health budgets to cancer services.**
- **Strengthen early diagnosis and ensure affordable treatment for priority cancers such as childhood, breast, cervical, and oral cancers, including through expanded screening programmes and public awareness campaigns.**
- **Expand partnerships and further leverage platforms such as SEACanGrid to build capacity and improve quality of care across the Region.**
- **Promote equitable access to essential cancer services, including radiotherapy, chemotherapy, and palliative care, with a focus on reaching marginalised and underserved populations.**
- **Implement tobacco control measures and HPV vaccination programmes to prevent cancers at their source.**

> On World Cancer Day, we reaffirm our commitment to a people-centred approach, placing individuals, families, and communities at the heart of our efforts. This means listening to patients and their families, understanding their unique needs and challenges, and designing health systems that respond with compassion and competence.



A People-Centred Vision

On World Cancer Day, we reaffirm our commitment to a people-centred approach, placing individuals, families, and communities at the heart of our efforts. This means listening to patients and their families, understanding their unique needs and challenges, and designing health systems that respond with compassion and competence. United by Unique, we can change the course of cancer in the Region and build a healthier and more equitable future, free from avoidable suffering.

Across the Region, countries are demonstrating innovation and leadership. Thailand's Cancer Anywhere initiative enables people with cancer to access treatment at any public hospital nationwide, while India is expanding its network of day-care chemotherapy centres in district hospitals, bringing treatment closer to patients in rural areas.

What Is World Cancer Day?

World Cancer Day took place on February 4. It is observed annually on this date to raise global awareness, improve education, and catalyse personal, collective, and government action against the disease.

Origins: The day was officially established in 2000 at the World Summit Against Cancer for the New Millennium in Paris, where global leaders united to declare cancer a priority public health issue.

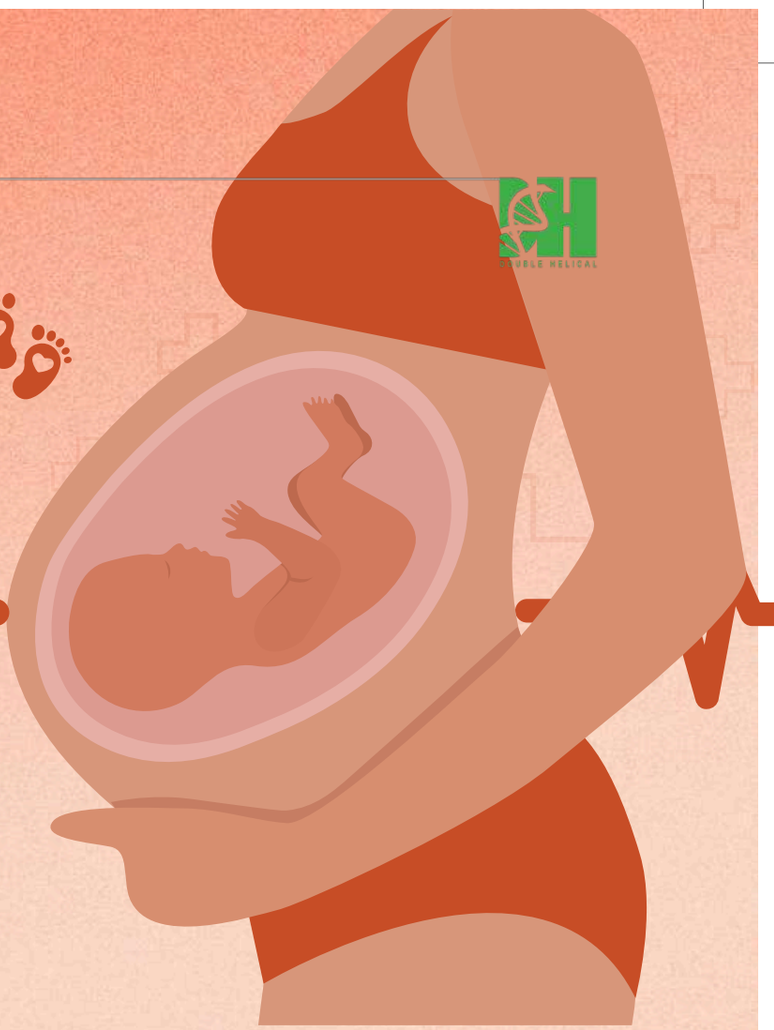
Key Highlights from 2026:

Theme: This year marks the second year of the 2025–2027 campaign theme, "United by Unique." - It focuses on a people-centred approach to care, emphasising that while every cancer journey is personal, the world is united in its goal to reduce the global cancer burden.

Global Impact: Worldwide, an estimated 20 million new cancer cases and 9.7 million deaths occurred in2022, with numbers projected to reach 35 million new cases by 2050.

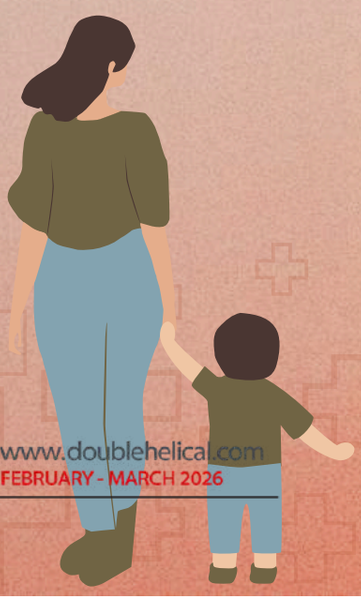
Regional Focus: The 2026 observance in South-East Asia highlights the urgent need for equitable access to cancer care, with special attention to childhood cancers and the integration of palliative care into primary health systems.

(The author is Officer-in Charge, WHO South-East Asia Region)



STRUGGLING TO REPRODUCE

> **Infertility is slowly making inroads into urban India. Consequently, the number of Indian couples turning to artificial methods to conceive has gone up considerably.**
>
> By Amresh Kumar Tiwary



As per a study conducted in nine Indian cities in which 2,562 people participated, nearly 46 percent were found to be infertile . Results from another parallel survey conducted among 100 infertility specialists showed that nearly 63 percent of the infertile couples belonged to the child-bearing age group (31-40).

As life runs on the fast lane, a phenomenon called infertility slowly makes inroads into the lives of urban India, giving more and younger couples sleepless nights and problems in having a child. It is rather ironic that from a time when family planning drives launched in the 1970s were the government's prime focus, the country has come to a point where suddenly the young and modern India seems to be caught in the ever-increasing problem of infertility.

A trip through the infertility roller-coaster seems inevitable for many such hard-hit couples who, soon after marriage, realise how uphill a task getting pregnant can be nowadays! With the crisis brewing at a rapid rate, almost 30 million couples in the country suffer from infertility, making the incidence rate of infertile couples 10 percent. Today, the number of Indian couples turning to artificial methods to conceive has gone up considerably.

However, keeping infertility at bay is not impossible at all, and all that is required is tenacity, consistency, and willpower in our day-to-day activities. But before we delve deeper into the problem, it is important to understand what exactly infertility is and how one defines it.

Every human being wishes to procreate, and historically, infertility has been like a curse for any individual affected by it. Couples may find it difficult to conceive naturally due to different reasons.

- Assisted Reproductive Technology (ART) consists of a comprehensive programme that is offered to such couples.

Infertility centres these days provide comprehensive infertility management and ART programmes to patients. The various forms of treatments like Intrauterine Insemination (IUI), In Vitro Fertilisation (IVF), Third Party Reproduction , and Intracytoplasmic Sperm Injection (ICSI) are in vogue these days.

ICSI, pronounced "eeksee" or "icksy", is an in vitro fertilisation procedure in which a single sperm is injected directly into an egg. The technique was developed by Gianpiero Palermo around 1991 in Brussels. Today it has become the treatment of choice for men with weak sperm that cannot travel themselves into the egg.

When can ICSI be performed?

Men with obstruction in their passages can father a child by using their own sperm that have been extracted by a surgeon. ICSI can also be offered to patients with previous IVF failures due to failed fertilisation

- and patients with unexplained infertility. ICSI is different from conventional insemination because we clean away the follicle cells from around the eggs and an embryologist chooses the sperm to be injected. A small number of eggs do not tolerate the injection procedure, and you can expect that about 5 per cent of eggs die as a direct result of ICSI. However, fertilisation rates, embryo quality , and pregnancy rates are the same as for couples who do not undergo ICSI.

How is ICSI performed?

The process involves the injection of a single sperm into the ooplasm of the oocyte. Following the first ICSI birth in 1992, thousands of babies have been born around the world. Sperm for ICSI can be obtained from ejaculation, even when only a few are present, or through surgical retrieval from the epididymis or testis.

Microinjection is normally performed under a specialised microscope with the aid of a micromanipulator, which allows small movements under high magnification. The scientist or embryologist sits at the ICSI station, looks either directly into the microscope or at a monitor that magnifies the image, and then injects the egg by moving two manipulators that look and function like joysticks. He holds the oocyte with one hand and injects it with the other.

IVF

Reproduction is the process in which there is fusion of the male and female gametes resulting in the exchange of genetic material, thus forming a new individual with an entirely different genotype.

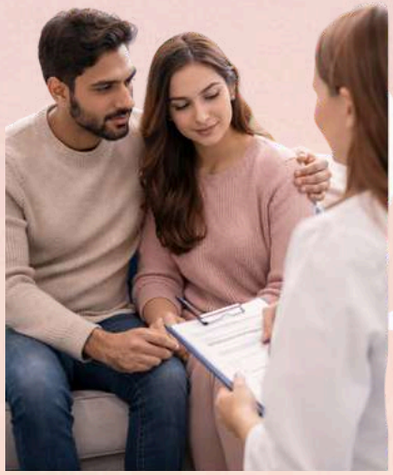
Mammals reproduce through sexual reproduction, but technology now allows mammals to reproduce "asexually" through the process of in vitro fertilisation. In this technique, the entire process of fertilisation takes place outside a woman's body. This involves extracting a woman's eggs, fertilising the eggs in the laboratory with sperm, and then transferring the resulting embryo(s) into the woman's uterus through the cervix (embryo transfer), where they can develop. Most couples transfer two embryos; however, more may be transferred in certain cases. IVF is the most common form of ART, and it is often the treatment of choice for a woman with blocked, severely damaged, or absent fallopian tubes.

Evaluation and Preparation of a Couple

Proper evaluation of an infertile couple before IVF is very important for the success of IVF and prevention of complications. Any ART procedure should be preceded by a traditional fertility workup, and at this stage it should be decided whether ART should be instituted, postponed for other treatment modalities, or refused to the couple. Once the patient has been selected to undergo ART treatment, thorough testing should be undertaken to correct any problems which may lead to IVF failure. At this stage, it should also be decided whether a specific procedure such as egg, sperm, or embryo donation is required.

Third Party Reproduction

Third party reproduction refers to the use of oocytes, sperm, embryos, or a uterus that have been provided to a couple or single individual (called intended parents) by a third person (donor) in order to help them become parents.



> **According to the current Indian guidelines on ART drafted by the ICMR, all donors except the surrogate must be anonymous to the commissioning couples.**

According to the current Indian guidelines on ART drafted by the ICMR, all donors except the surrogate must be anonymous to the commissioning couples. The ICMR guidelines also state that the activity of supplying various gametes and surrogates will not be carried out by the IVF centre, but by separate entities called ART Banks. All legal issues are also the responsibility of these banks. Once the requirement is identified, the medical fitness of the donor is assessed. After fulfilling the various formalities, the couple and their donor or surrogate are taken into the third-party programme.

Recurrent Pregnancy Loss Programme

There is nothing more painful than losing a pregnancy repeatedly! It is not only devastating for the patient but also the treating doctor! Recurrent Pregnancy Loss (RPL) is defined as a situation where a woman has lost three or more than three pregnancies. In fact, RPL may be caused by chronic infections like genital tuberculosis! Research has also shown that the majority of recurrent failures, whether at implantation or later in pregnancy, are due to impaired blood circulation within the pelvis, especially the uterus. The cause for this may vary.Doctors carry out tests to rule out the cause of RPL and accordingly treat the patient. If the patient has a genetic cause, the patient and her husband are informed about the defect and counselled regarding future implications. Endocrinal causes like PCOS can also be a reason and need to be tackled by taking insulin-lowering medication. There is no need to go through extensive testing after a single pregnancy loss. This could have happened by chance, and one should not worry about it.

Male Infertility Programme

Ever since the human race evolved on Earth, it was the female who had been seen as responsible for procreation. So, if anything was amiss, the woman was supposed to be at fault. All research focused around the development of medication and technology for female infertility. While such innovations improved success in female infertility, no attention was being given to the male counterpart. This was also because infertility was the realm of the gynaecologist! There were no special doctors for men with problems. In developing countries like India, another reason was a complete denial by men in accepting themselves to be the cause of infertility in the couple!

However, the last century saw rapid advances in the management of the infertile male, both in diagnostics and treatment. The WHO gave guidelines for a proper semen examination, and based on these, treatment protocols were developed.

Today, a male infertility programme involves not only standard testing procedures like semen analysis but also special tests to determine the fertilising potential and quality of the sperm. This is called the DNA Fragmentation Test. In patients who are azoospermic on testing, testicular fine - needle aspiration is undertaken. If this too does not show sperm in the sample, doctors proceed to a testicular biopsy. The sample is checked for sperm and, if positive, it is frozen or cryopreserved until the wife is ready for ICSI. Men who have mild male factor infertility can be offered IUI, but those with weak sperm are treated by either IVF or ICSI , and recently, by IMSI.

Infertility in Couples

By Dr Sudha Prasad

Infertility is defined as difficulty in conceiving or becoming pregnant, despite having regular sex without contraception for two years in a row. The time a couple takes to conceive could vary from days to months. In the past, infertility was largely seen as only 'a female problem', with women easily becoming the target of social stigma.

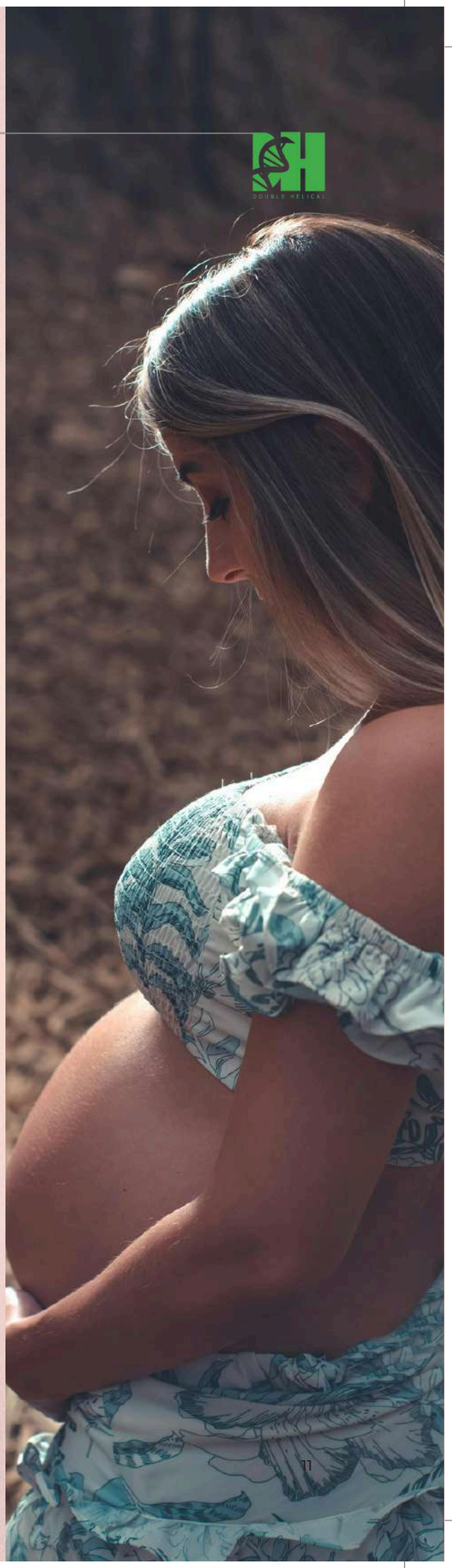
Approximately 40 per cent of infertility in couples can be attributed to male subfertility. ICSI has raised hopes for these couples. This method of treating predominantly male-factor infertility has been a breakthrough, and it has established itself as the preferred method of treatment in the field of assisted reproduction.

According to experts, assistance can be given to both men and women depending on the cause of infertility. Infertility management involves detailed investigations to reach a logical diagnosis and then specific treatment. However, such a theory no longer exists, and the time when women were solely battling the blame for being barren has become a part of a bygone era! There have been enough research revelations that have attributed the male to the cause of infertility, and there is a general realisation that implicating a woman - with prejudice would only result in ignoring the root cause of the issue. Now, one in every five men between the age group 18 to 25 is found to suffer from abnormal sperm count — one of the main causes of infertility. With the problem having become widespread, what are the reasons, one may ask? Irregular and low sperm count, hampered sperm delivery, and poor motility of sperm are prominent causes of infertility in men. Some other medical reasons such as obesity and lifestyle disorders — including diet imbalance, addiction to smoking or alcoholism, sedentary lifestyle, or mental and emotional stress — contribute to poor sperm count.

Polycystic Ovary Disease (PCOD), a condition characterised by excess production of hormones and lack of ovulation, coupled with hectic lifestyle and job stress, lead to conception problems amongst women. Primary Ovarian Insufficiency (POI) is another cause of ovulation problems. POI occurs when a woman's ovaries stop working normally before she is 40. Other than the above, changing lifestyle patterns, strenuous work schedules , and stressful surroundings are some major reasons responsible for tilting the scale towards the inability to conceive. With an increase in stress and fatigue, men and women often suffer from a steady decrease in libido , which has lately become an issue of concern for many.

surroundings are some major reasons responsible for tilting the scale towards the inability to conceive. With an increase in stress and fatigue, men and women often suffer from a steady decrease in libido , which has lately become an issue of concern for many.

High testicular temperature is increasingly cited as a cause for male infertility. Scientific studies have indicated that prolonged use of mobile phones can significantly affect male infertility. Exposure to any type of intense and prolonged radiation is known to harm sperm production.



Thus, it would be wiser for men to wear loose underwear and pants and to take frequent breaks when they work in a sitting position for periods. Resting laptop computers on the lap raises the scrotum's temperature, say researchers , and hence it is better to avoid using them on laps literally. Though physical exercise is imperative, great caution is required especially when it comes to specific sports where the testis is not properly protected in men. Testicular injuries must always be treated without any delay, lest they result in long-term consequences on fertility.

Another issue of concern is the declining libido among urban couples, which has emerged as one of the main factors affecting couples living in the cities. Hectic schedules, poor work-life balance, constant tension , and increase in travel time leading to low levels of libido and less sexual activity among couples, are the biggest hindrance to conceiving nowadays. As stress levels are usually high among urban couples, poor eating habits and an increase in medical conditions such as diabetes lead to lack of quality and quantity of sperm and eggs. Thus, habits such as smoking, tobacco consumption, frequent drinking, unhealthy food habits, and lack of exercise have to be immediately done away with.

It could also be shocking to know that products like furniture polish, all-purpose cleaners, bug sprays, bathroom cleaners, and room deodorisers may contain chemicals that could diminish conception by 33 per cent. Organic, non-toxic alternatives are always a better option. Paint thinners, household glues, and oil paints can be toxic and negatively affect fertility, increasing the risk of miscarriage when pregnant. If the 'sniff test' indicates a strong and offensive smell, it is better to avoid them. Women should be wary of paraben, a preservative found in most cosmetics, from shampoo to moisturisers to lipsticks. Parabens -belong to a group called xenoestrogens, or false oestrogens , that could induce infertility.

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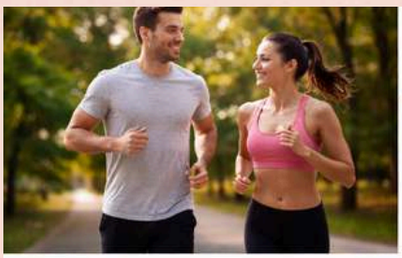
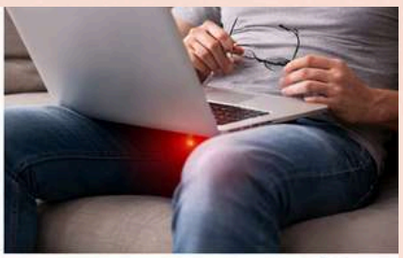
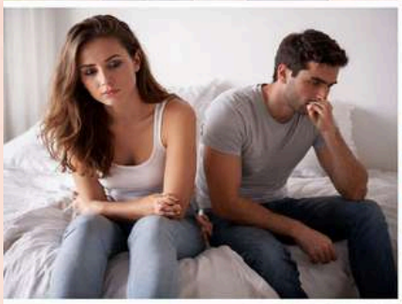
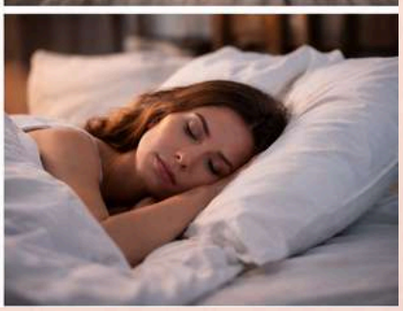
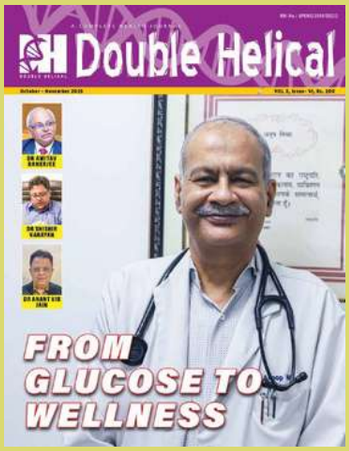




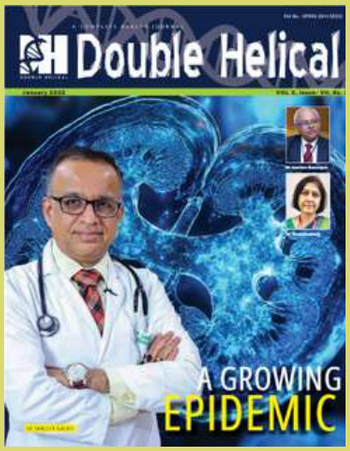



Consuming full - fat dairy products daily could help fertility. Cow's milk, especially that which is milked when the animal is pregnant, is rich in fertility-enhancing hormones. Microwaved food could be quick, but plastic containers need to be avoided. Hormones leach more when certain plastics are hot and wet. And finally, a good sleep is ideal, as 80 per cent of ovulation occurs between midnight and 4 a.m. Interrupted sleep could -weaken immunity, disrupt reproductive hormone levels, and hinder ovulation.

The author is Director of Matritava Advanced IVF & Training Centre in Vasant Vihar, New Delhi.

Your Guide to Healthy Living





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Double Helical is owned, printed and Published monthly. It is printed at Polykam offset, Naraina Industrial Area Phase 1, New Delhi-110028, and published from G-1, Antriksh Green, Kaushambi, Ghaziabad-201 010. Tel: 0120-4219575, 9953604965.
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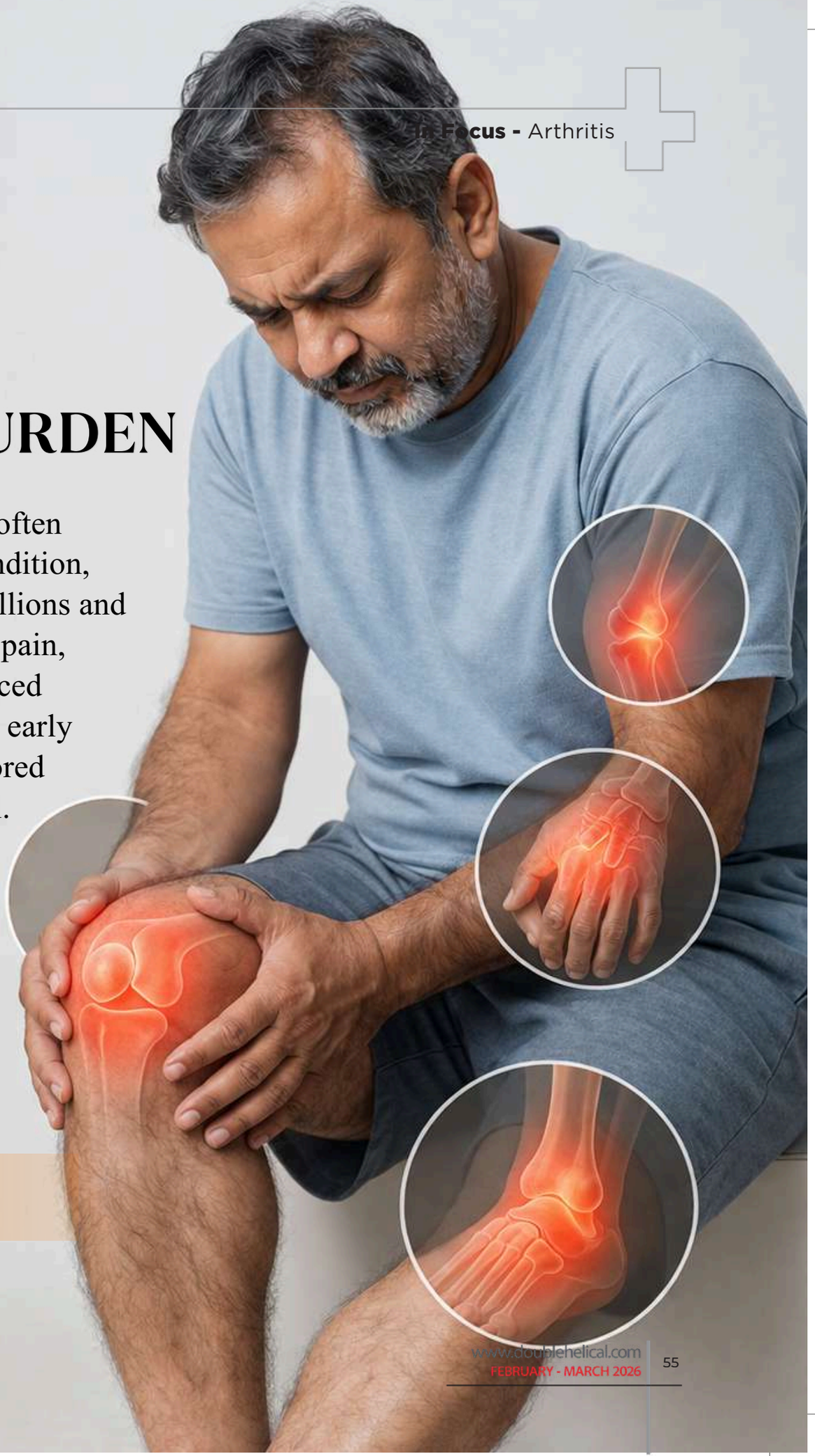
THE SILENT JOINT BURDEN

A widespread yet often misunderstood condition, arthritis affects millions and manifests through pain, stiffness, and reduced mobility—making early diagnosis and tailored treatment essential.



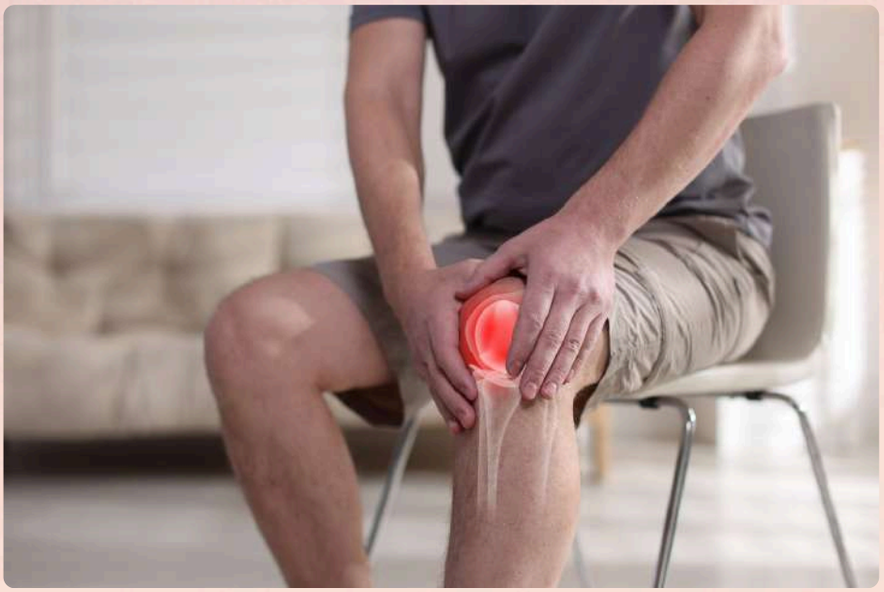
BY
ABHIGYAN/ABHINAV

If you are experiencing symptoms like aching joints, difficulty in dressing or combing hair, gripping objects, sitting or bending over, joints being warm to the touch, morning stiffness for less than an hour, pain when walking, stiffness after resting, swelling of joints, and loss of motion in a joint, you must consult an orthopaedician. You might have arthritis, as these are its common symptoms.

In common parlance, arthritis is a condition that affects more than 10% of the adult population. There are more than 100 different types of arthritis. The false notion that all forms of arthritis are alike has led people to try treatments that have little effect on their symptoms. Since each type of arthritis is different, each type calls for a different approach to treatment. That means an accurate diagnosis is crucial for anyone who has arthritis.

There are two major types of arthritis — osteoarthritis, which is the "wear and tear" arthritis, and rheumatoid arthritis, an inflammatory type of arthritis that occurs when the body's immune system does not function properly. Gout, which is caused by crystals that collect in the joints, is another common type of arthritis. Psoriatic arthritis, lupus, and septic arthritis are other types.

Osteoarthritis is also called degenerative joint disease or degenerative arthritis. It is the most common chronic joint condition. Osteoarthritis results from overuse of joints, but most commonly it is an aging phenomenon. It can be the consequence of demanding sports where joints may be injured or obesity, which places increased load on weight-bearing joints. Osteoarthritis in the hands is frequently inherited and often occurs in middle-aged women . Osteoarthritis is most common in joints that bear weight — such as the knees, hips, feet, and spine. It often develops gradually over months or even years. Except for the pain in the affected joint, you usually do not feel sick, and there is no unusual fatigue or tiredness, as seen in some other types of arthritis.



With osteoarthritis, the cartilage gradually breaks down. Cartilage is a slippery material that covers the ends of bones and serves as the body's shock absorber. As more damage occurs, the cartilage starts to wear away, or it does not function as effectively as it once did to cushion the joint. For example, the extra stress on knees from being overweight can cause damage to knee cartilage, which in turn causes the cartilage to wear out faster than normal.

As the cartilage becomes worn, the cushioning effect of the joint is lost. The result is pain when the joint is moved. Along with the pain, sometimes you may hear a grating sound when the roughened cartilage on the surface of the bones rubs together. Painful spurs or bumps may appear on the ends of the bones, especially on the fingers and feet. While not a major symptom of osteoarthritis, inflammation may occur in the joint lining as a response to cartilage breakdown.

Rheumatoid arthritis is the most common type of inflammatory arthritis. About 75% of those affected are women. In fact, between 1% and 3% of women are likely to develop rheumatoid arthritis in their lifetime.

Rheumatoid arthritis is an autoimmune disease. This means that the immune system attacks parts of the body. The joints are the main areas affected by this malfunction. Over time, chronic inflammation can lead to severe joint damage and deformities. About one

out of every five people with rheumatoid arthritis develops lumps on their skin called rheumatoid nodules. These often develop over joint areas that receive pressure, such as the knuckles, elbows, or heels.

Symptoms of rheumatoid arthritis can come on gradually or start suddenly. Unlike osteoarthritis, these symptoms are often more severe, causing pain, fatigue, loss of appetite, and stiffness.

With rheumatoid arthritis, you may feel pain, stiffness, and swelling in your hands, wrists, elbows, shoulders, knees, ankles, feet, jaw, and neck. Sometimes the pain occurs in one part of the body, but more commonly it affects multiple joints, such as the hands, knees, and feet.

With rheumatoid arthritis, the joints tend to be involved in a symmetrical pattern. That is, if the knuckles on the left hand are inflamed, those on the right hand are likely to be inflamed as well. Over time, more joints may gradually become involved, accompanied by persistent swelling that interferes with daily activities such as opening a jar, driving, working, and walking. Arthritis is a chronic pain condition, and pain relief remains the primary goal of treatment and disease management strategies. Currently, there is no cure for arthritis. Treatment is aimed at controlling symptoms and slowing disease progression. In other words, medications and therapies may have analgesic (pain-relieving), anti-inflammatory, and disease-modifying effects.

The goal is to improve quality of life and slow joint destruction. People with certain types of arthritis, such as rheumatoid arthritis, may achieve remission with treatment; however, remission is not a cure.

Researchers are continually developing new and improved treatments for arthritis. Patients are encouraged to stay informed and discuss emerging options with their doctors to determine the most appropriate course of treatment. Over-the-counter (OTC) medications for pain relief, such as acetaminophen and nonsteroidal anti-inflammatory drugs (NSAIDs) like ibuprofen or naproxen sodium, can help alleviate arthritis pain. OTC acetaminophen can reduce mild to moderate arthritis pain, particularly in osteoarthritis.

In addition to medications, supplements and topical creams available over the counter may also help alleviate arthritis pain.

Among the most popular supplements used by people with osteoarthritis are glucosamine and chondroitin. In those with moderate to severe knee pain, the combination of glucosamine and chondroitin sulfate may provide relief, although studies have not conclusively proven their effectiveness for everyone.

In addition to OTC NSAIDs, physicians may prescribe stronger NSAIDs to manage arthritis pain and inflammation. These may also be available in topical and injectable forms. Examples include diclofenac and other similar medications.

Potent anti-inflammatory agents like Synvisc One can be injected to reduce pain and inflammation. Ozone gas injections have also been clinically proven to be effective in pain relief.

> **Over 100 types, arthritis demands accurate diagnosis, as each form requires a distinct treatment approach**

STEM CELL / PLATELET RICH PLASMA (PRP) THERAPY

The stem cell/Platelet Rich Plasma (PRP) therapy involves injecting platelets from the patient's own blood bocto rebuild a damaged tendon or cartilage. It has been successful in not onlyy relieving the pain relieving ge the pain, but also in jumpstarting the healing process The patient's blood lis bood ln drawn and placed in a centrifuge for 15 minutes to separate out the platelets. The platelet-rich plasma is then injected into the tha damaged portion of the tendon or cartilage.

SURGERY PROCEDURES – LAST RESORT

The surgery procedures are used as a last resort. resorte all other surgeries, these surgeries have their own issues lke associated risks and high hospitalization and recovery times. However, the success rate for slimited to 60-70 percent.

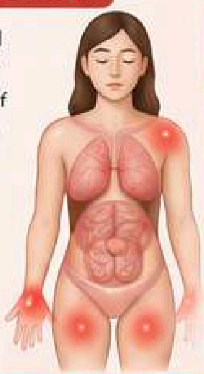
Success Rate

Limited to

60 – 70%

RHEUMATOID ARTHRITIS (RA) – SYMPTOMS AND EFFECTS

The symptoms and effects of RA may come and go. A period of high disease activity (increases in inflammation and other styper symptoms) is called a flagoa dr days or A flare cat 6s of inflammation can cause problems throughout throughout the tr body. Here RA can affect organs and od body systems leo leading to dryness, pain, redness, sensitivity to light and in eye, over bony areas. Inflammation and scarring can result oen result in hapins. ininiacards cye, capmes and starressation an shortness of breath in lungs an in lungs and inflammatiion of blood inflammation cf blood vessels tan damage in ddmage o in the nerves, skin and other organs.



EYES
Dryness, pain, redness, sensitivity to light and impaired vision.

MOUTH
Dryness and gum irritation or infection.

SKIN & LUMPS
Small lumps under the skin over bony areas.

LUNGS
Inflammation and scarring can result in shortness of breath

BLOOD VESSELS & NERVES
Inflammation of blood vessels can lead mnge the nerves, skin and other organs.

SUGGESTIONS

Early Diagnosis & Treatment
Detect RA early to prevent joint and organ damage.

Follow Medical Plan
Take prescribed medications and attend regular follow-ups.

Healthy Lifestyle
- Eat anti-inflammatory foods
- Exercise regularly
- Maintain a healthy weight

Consider PRP Before Surgery
Discuss PRP therapy with your doctor as a safe, low-risk option to promote healing and delay or avoid surgery.

PRP therapy can relieve pain and promote healing in tendon or cartilage injuries, while proper management of RA helps reduce flare-ups and protects overall health and quality of life.

> While there is no cure, timely intervention, medication, and emerging therapies can significantly improve quality of life.

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