

On the Eve of Doctor's Day, Dr. Jitendra Singh illuminates the practice of precision medicine in the future

Says India is Developing Homegrown Solutions to Address Global Health Challenges through gene therapy, nuclear medicine and other emerging technologies

India's unique genetic diversity, scientific ecosystem and emerging technologies are driving the next generation of affordable, patient-centric healthcare: Dr. Jitendra Singh

Genome India Mission Laying Foundation for Personalised Healthcare in India: Dr. Jitendra Singh

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On the eve of Doctor's Day, Union Minister of State (Independent Charge) for Science & Technology, Earth Sciences, and MoS PMO, Personnel, Public Grievances, Pensions, Atomic Energy and Space, Dr. Jitendra Singh, who is himself a noted physician and diabetologist, illuminated the practice of "precision medicine" in the future and said India is steadily developing homegrown solutions for global health challenges through gene therapy, nuclear medicine and other emerging technologies, positioning itself as a global hub for cutting-edge healthcare innovation.

Dr Jitendra Singh said India's vast genetic diversity, heterogeneous disease profile and rapidly expanding scientific capabilities offer an unprecedented opportunity to develop Indian data for Indian treatment for Indian patients, while contributing affordable and globally relevant healthcare solutions.

Interacting at a special Doctors' Day Conclave, Dr. Jitendra Singh said healthcare is entering a transformative era where treatment will increasingly be tailored to an individual's genetic profile, lifestyle and environmental factors. He said precision medicine and personalised healthcare will redefine the future of medical practice by enabling more accurate diagnosis, targeted therapies and improved patient outcomes.

The Minister said India's diversity itself has become one of its greatest scientific strengths. Unlike countries with relatively homogeneous populations, India presents an extraordinary range of genetic variations and disease patterns across different regions, creating immense opportunities for biomedical research. He said this unique advantage enables India not only to address its own healthcare challenges but also to develop solutions that can benefit the global community.

Dr. Jitendra Singh said the Genome India Mission has already completed genome sequencing of over 10,000 individuals and is progressing towards building one of the world's largest genomic databases. He said this scientific foundation will accelerate the country's transition towards precision medicine while strengthening research into genetic disorders, rare diseases and personalised therapies.

Referring to recent scientific achievements, Dr. Jitendra Singh said Indian researchers have successfully demonstrated gene therapy for haemophilia, marking a significant milestone in indigenous medical innovation. He added that gene medicine and nuclear medicine are emerging as some of the most promising areas of healthcare and will fundamentally transform disease management in the years ahead through highly targeted and patient-specific treatment.

The Minister said India's research ecosystem has also acquired a stronger institutional framework through the Anusandhan National Research Foundation, which integrates modern science with social sciences, humanities and India's traditional knowledge systems. He said this multidisciplinary approach reflects India's own model of scientific development while encouraging innovation that addresses national priorities alongside global challenges.

Dr. Jitendra Singh said Artificial Intelligence has emerged as a powerful enabler across the healthcare ecosystem. From genome sequencing and biomedical research to disease diagnosis, medical education and telemedicine, AI is significantly reducing the time required to analyse complex medical data while enhancing the quality of clinical decision-making. He said technology-enabled hybrid healthcare models are connecting patients in remote areas with specialists, expanding access to quality healthcare across the country.

The Minister said recent policy reforms have opened new opportunities for advanced research in nuclear medicine and related disciplines by encouraging greater collaboration between government institutions, academia and the private sector. He said institutions such as Tata Memorial Centre are undertaking pioneering work in nuclear medicine for cancers and other life-threatening diseases, creating new possibilities for safer and more precise treatment.

Dr. Jitendra Singh said India is also witnessing a major shift in pharmaceutical innovation. After decades of largely manufacturing medicines discovered elsewhere, the country has now begun developing new drugs through indigenous research, clinical trials and innovation. He said the successful development of India's first indigenously researched antibiotics for drug-resistant infections demonstrates the country's growing capability to deliver globally relevant healthcare solutions.

Highlighting the rapid growth of India's biotechnology ecosystem, the Minister said initiatives such as the BioE3 Policy and the Bio-RIDE Mission are accelerating research, bio-manufacturing and healthcare innovation while promoting stronger partnerships among research institutions, academia, startups and industry. He added that India's medical devices sector is also producing globally competitive technologies that are strengthening affordable healthcare delivery both within the country and abroad.

Dr. Jitendra Singh described Ayushman Bharat as one of the world's most inclusive public health assurance programmes, providing financial protection even for individuals diagnosed with serious pre-existing illnesses. Alongside the rapid expansion of government medical colleges, digital health infrastructure and telemedicine, he said these initiatives are steadily strengthening India's healthcare network and improving access to quality medical services.

Calling preventive healthcare the next major national priority, Dr. Jitendra Singh said India is witnessing a growing burden of non-communicable diseases such as diabetes, cancer and fatty liver disease, many of which are increasingly affecting younger age groups. He said early detection, regular screening, public awareness and timely intervention will play a decisive role in protecting the health of the country's youth and achieving the vision of Viksit Bharat @2047.

The Minister said India's healthcare transformation has earned growing global recognition in recent years. From indigenous vaccines and genomics to precision medicine, biotechnology and advanced medical research, India is increasingly being recognised as a trusted destination for affordable, high-quality healthcare. He said the country is attracting patients from across the world while simultaneously contributing innovative and cost-effective solutions to global health challenges.

Concluding the interaction, Dr. Jitendra Singh expressed confidence that continued investments in science, innovation and collaborative research, supported by close partnerships between government, academia and industry, will establish India as a global leader in next-generation healthcare. He said India's scientific progress reflects the larger vision of Prime Minister Narendra Modi's Vishwa Bandhu Bharat, where the country serves humanity through accessible, affordable and world-class healthcare driven by indigenous innovation.





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