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This accomplishment has culminated in the creation of a comprehensive genetic map of India, which holds immense potential for clinicians and researchers alike.

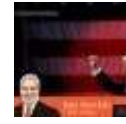
Written by **Anonna Dutt** [Follow](#)

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The entire dataset -- which adds up to 8 petabytes of data -- will be stored at the Indian Biological Data Centre (IBDC) and will be made available as a digital public good or research.

THE GOVERNMENT'S ambitious **Genome India initiative** achieved a significant milestone Tuesday as researchers completed sequencing 10,000 healthy genomes from different regions of the country, representing 99 distinct populations. This accomplishment has culminated in the creation of a comprehensive genetic map of India, which holds immense potential for clinicians and researchers alike.

“Sequencing 10,000 genomes and creating an Indian repository is a big achievement. The first whole human genome sequence was announced in 2003. It was completed over 13 years at the cost of \$3 billion. The technology has come a long way, allowing us to sequence thousands of genomes in a matter of months,” said DBT Secretary Dr Rajesh Gokhale.

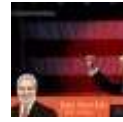
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An analysis of just 5,750 of the genomes has helped researchers identify 135 million genetic variants found in India. “Some of these variations occur only in certain pockets of the population, while some are commonly found across large parts of the population. This data can now be associated with their physical traits or disease history. This can help us identify disease indicating variants, for example ones that may be causing certain cancers or rare diseases,” said Prof Y Narahari, one of the

two people leading the project and a senior scientist at the Indian Institute of Science, Bengaluru.

“It can also help in identifying resistance indicating variants, for example genes that might make certain medicines or anaesthetics ineffective in certain populations. It can also help identify targets for diagnostics and therapeutics,” said.

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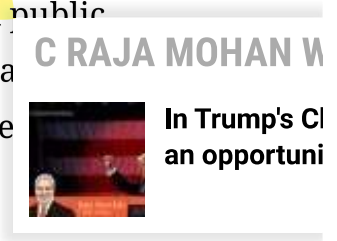
Prof K Thangaraj, who also leads the project and is a senior scientist at the Centre for Cellular and Molecular Biology in [Hyderabad](#), said: “We need an India-specific database because mutations found here might not be present globally. Take for example, a mutation MYBPC3 that leads to cardiac arrest at a young age is found in 4.5% of the Indian population but is rare globally. Or, another mutation called LAMB3 that causes a lethal skin condition is found in nearly 4% of the population near Madurai but it is not seen in global databases.”

“These are some mutations we already know of. With a complete map, we can identify more,” said Prof Thangaraj.

Union Minister for Science and Technology Dr Jitendra Singh said: “India is the largest genetic lab in the world. This data can help drive the biology sector in the country as well. India’s bio-economy has grown 13 folds in the last 10 years from \$10 billion in 2014 to over \$130 billion in 2024. It will spearhead India’s future growth.”

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The entire dataset — which adds up to 8 petabytes of data — will be stored at the Indian Biological Data Centre (IBDC) and will be made available as a digital public good or research. Inaugurated in 2022, the IBDC is the country's only database. Prior to that Indian researchers had to host their biological datasets on American or European servers.



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Anonna Dutt

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Anonna Dutt is a Principal Correspondent who writes primarily on health at the Indian Express. She reports on myriad topics ranging from the growing burden of non-communicable diseases to the impact of climate change on health. [... Read More](#)

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Entertainment February 27, 2024 20:40 IST

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