Trust the science, not the tweets

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WHEN US President Donald Trump recently repeated the long-debunked claim linking childhood vaccines to autism, it did more than just spark outrage among scientists. The ripple of misinformation crossed borders and was amplified in India by Zoho co-founder Sridhar Vembu which reignited one of the most damaging myths in modern medicine.

For medical professionals who have witnessed the near-eradication of polio and measles through vaccines, the fear such misinformation can spark is far more dangerous than any mild reaction a vaccine might cause. In India, paediatricians and infectious disease specialists are pushing back against the misinformation, reaffirming what decades of research, data, and experience have shown that paediatric vaccines are safe, effective, and vital to protecting children's lives.

"Numerous international studies, including those by the World Health Organization (WHO), the US Centers for Disease Control and Prevention (CDC), and Unicef, have consistently shown that childhood vaccines are safe and effective. Billions of children have been vaccinated over several decades, leading to a more than 90% decline in deadly diseases like polio, diphtheria, measles, and tetanus," said Dr Ashish Sahani, principal consultant – paediatric physician at Sri Balaji Action Medical Institute, Delhi.

Every vaccine administered to infants and children undergoes age-specific testing to ensure it is both safe and effective, said Dr Ankita Baidya, head of infectious diseases at Manipal Hospital, Delhi. "Any vaccine approved for use in infants or children is always trialled in that age group to confirm safety and efficacy," she said, adding that the smallpox vaccine remains one of the most successful examples of global disease eradication through immunisation.

Before vaccines reach the public, they undergo multiple layers of preclinical and clinical testing. Preclinical trials are conducted in animals to determine safety, followed by human trials involving volunteers from different age groups. "Before approval, rigorous clinical trials involving thousands of participants evaluate safety, efficacy and potential side effects. They must pass all these stages before being cleared for public use," Dr Baidya explained.

The review process does not end with approval. "All data is thoroughly examined by global and national agencies like WHO, US FDA, and India's Drugs Controller General (DCGI). Even after approval, vaccines are continuously monitored to ensure long-term safety," Dr Sahani said. Experts said that since the introduction of vaccination, global child mortality rates have declined dramatically. "Vaccines have saved millions of lives every year. Deaths from measles, polio, diphtheria and tetanus have fallen by up to 90%. Diseases that were once fatal to children are now either controlled or eliminated in most countries," said Dr Sahani.

Dr Baidya added that diseases like chickenpox, diphtheria, whooping cough, and tetanus have seen a sharp decline globally due to widespread immunisation.

Explaining why multiple vaccines are administered during infancy, Dr Dhiren Gupta, co-director of paediatric ICU at Sir Ganga Ram Hospital, said that babies are most vulnerable to infections early in life. "Giving vaccines early protects them before they are exposed to diseases. The schedule is designed to provide maximum protection at the right time," he said. According to Dr Baidya, the developing immune system of infants requires multiple doses to build lasting protection. "Children's immune systems do not have strong memory responses against infections or vaccines initially, which is why repeated doses are necessary," she said.

Dr Sahani added that scientific research shows no negative impact on immunity from administering multiple vaccines simultaneously.