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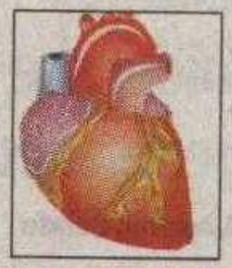
# IIT-I develops technology to boost safety & reliability of ECG devices, pacemakers

TIMES NEWS NETWORK

**Indore:** Indian Institute of Technology, Indore (IIT-I), has developed a technology aimed at enhancing the safety and reliability of electrocardiogram (ECG) devices and pacemakers by detecting genuine and counterfeit ECG detector chips. The technology specialises in the domains of VLSI semiconductors and biomedical engineering.

Many ECG devices and pacemakers encounter reliability challenges, which can occasionally result in undetected diagnostic errors, potentially impacting patient outcomes, said IIT-I in a statement issued on Wednesday.



The innovation includes a vital feature that differentiates between genuine and counterfeit ECG detector chips prior to their manufacture or integration into devices, thereby ensuring the dependability of ECG devices and cardiac pacemakers and minimising the risks of misdiagnosis and errors that can result in suboptimal treatment, IIT-I said.

IIT-I director Professor Suhas Joshi said, "Nowadays, accurate detection of cardiovascular diseases and conditions is more critical than ever. ECG devices, which are fundamental for monitoring heart conditions, function by capturing the heart's electrical signals through electrodes. These signals are then interpreted by healthcare professionals to evaluate heart health. Additionally, ECG detectors are integral components of cardiac pacemakers, which help regulate heart rhythms in patients. Hence, reliability of ECG readings is vital."

The institute secured a patent from the Indian Patent Office.

Principal Investigator Professor Anirban Sengupta, a faculty at IIT-I said, "This technology not only secures the chips used in ECG devices but also guarantees that these devices contain authentic chips marked with a unique fingerprint hallmark. Such innovations can revolutionise the medical sector by enabling the development of secure and trustworthy ECG devices. Advancements in technology hold the potential to transform cardiovascular health monitoring by delivering more reliable ECG devices and cardiac pacemakers. The ultimate aim is to address existing limitations in the diagnostic process, ensuring patients receive accurate and effective medical care while improving overall outcomes."