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This ₹5 kit detects kidney disorders in 8 mins

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Indore: If things go well for IIT Indore and Bombay researchers, kidney aliments could be soon detected at home with the help of a handy testing kit not costing more than Rs5.

Indian Institute of Technology, Indore and Bombay have jointly developed a biosensor that makes it possible to detect kidney disorders in less than eight minutes.

The new biosensor, developed by IIT Bombay PhD scholar Rashmi Chaudhari, IIT Indore professor Dr Abhijeet Joshi and IIT Bombay professor Rohit Srivastava can detect both pH and urea.

Dr Abhijeet Joshi

Rashmi Chaudhari

Rohit Srivastava

The biosensor can accurately measure both pH and urea concentration levels with a single drop of urine. The three researchers who developed the biosensor believe that it will help make a point-of-care test to ascertain if kidneys are functioning normally.

Dr Abhijeet Joshi has been working towards developing such technology that can detect and monitor chronic diseases so that the cost of treatment can be reduced. "The developed biosensors were tested on samples of patients suffering from chronic kidney disease procured from KEM Hospital and Apex Kidney Care in Mumbai and it showed very accurate results. Results of the study, funded by the Department of Biotechnology (DBT) and the Department of Science and Technology (DST), have been published in journal Scientific Reports," said Dr Joshi.

The idea of developing a biosensor was initiated two years back when Ph D scholar Rashmi Chaudhari came up with this topic for research.

For a kidney function test, doctors need an estimate of pH and urea as most kidney disorders result in reduced pH and higher concentration of urea. The available methods are accurate but the patients have to undergo two tests. In addition, there is problem of contaminating components in urine such as calcium, chloride, ascorbic acid, sodium, and potassium which may cause hindrance in diagnosis, said the researching trio.

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> **Dr Abhijeet Joshi** | IIT Faculty.

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