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Indo-Swiss collaboration results in novel sweat-based diagnostic technology

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A study carried out by a team of researchers led by an alumnus of the Indian Institute of Technology (IIT) Hyderabad, Dr Brince Paul, has resulted in the development of a new device that can generate sweat at resting and detect markers and transmit through a mobile phone. This sweat based non-invasive point of health diagnosis technology would be an alternative to blood based invasive diagnosis.

As a postdoctoral researcher, Dr Paul conducted this study in the Écolepoly technique fédérale de Lausanne (EPFL), Switzerland.

Making such a non-invasive tool available could accelerate medical research to progress in this field. For example the direct chloride level in sweat is useful for screening cystic fibrosis.

Similarly, potassium level correlated with plasma for ambulatory monitoring and sweat quality control, pH as an indicator of metabolic alkalosis, glucose for screening pre-diabetic conditions or monitoring tool for diabetes, and lactate for assessing metabolic efficiency etc., are some of them.

Researchers are presently in the process of accommodating more markers from the sweat and other fluids (surface needle based) to make it useful for real time daily usage purposes including exercise condition (which includes ions, metabolites such as glucose and lactate, and different proteins).

“The actual clinical device innovation can be realised when we collaborate effectively with engineers, clinicians, product designers, and along with an industry partner towards a common solution by allowing them to stand their own experts platform”, said Dr Paul.