

Cheap, rapid check for HIV developed

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Scientists from two New York universities say they've developed an inexpensive, hand-held sensor that can check a HIV patient's immune system in seconds.

Prices of antiretroviral therapy for HIV have dropped in poorer nations, but a lack of cheap, simple diagnostics to enable doctors to use those treatments remains a stumbling block.

The sensor measures the quantity of key immune cells called CD4+ cells in the blood. Physicians rely on CD4+ measurements to decide when to start drug treatments and to gauge how a patient is responding to treatment.

To make the device, researchers from Cornell University in Ithaca and the University at Albany coated electrodes with antibodies specific to CD4+ cells. When a small sample of blood is placed on a chip bearing those electrodes, the antibodies grab hold of the CD4+ cells. The captured cells then impede the flow of current across the electrodes, allowing the density of CD4+ cells to be calculated.

The study appears in the journal *Biosensors & Bioelectronics*.

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