

## **Artificial kidney technology continuing to see major developmental progress**

Currently, there are over 100,000 patients on the kidney transplant waiting list, while only around 17,000 patients receive a transplant every year. A device is in development by a team of scientists at Vanderbilt University in Nashville to try and eliminate this organ shortage. They are developing an implantable artificial kidney that uses microchip filters and live kidney cells to clean the blood.

The microchips are made out of the same silicon elements that are used in computers. Each microchip filter contains pores that hold living kidney cells that mimics the kidney's function of cleaning waste and fluids from the blood. The device would be powered by the patient's heart and designed to avoid rejection from the body's immune system. Scientists are using computer imaging and 3-D printing to build and test prototypes. The research for this project began over a decade ago, and was granted fast-track approval by the FDA in 2012. Although further research is needed, the team aims to conduct pilot testing of this device by the end of 2017.

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