How 3-D bioprinting could address the shortage of organ donations

March 11 2015

Three-dimensional bioprinting has come a long way since its early days when a bioengineer replaced the ink in his desktop printer with living cells. Scientists have since successfully printed small patches of tissue. Could it someday allow us to custom-print human organs for patients in need of transplants? An article in *Chemical & Engineering News* (*C&EN*), the weekly newsmagazine of the American Chemical Society, explores the possibility.

Matt Davenport, an associate editor at C&EN, points out that for every organ donor in 2012, there were more than eight patients on a waiting list. The ability to print functioning organs could completely transform the equation. But this goal is decades away and some scientists are unconvinced that bioprinting will ever replicate human organs.

Researchers still have many obstacles to overcome, such as how to incorporate blood vessels into printed organs. Vessels are critical for transporting nutrients and oxygen to cells, but they're also very complex. But as researchers confront these challenges, some experts predict that the new parts might work even better than the originals.

More information: Print Your Heart Out - cen.acs.org/articles/93/i10/Print-Heart.html

Provided by American Chemical Society

Citation: How 3-D bioprinting could address the shortage of organ donations (2015, March 11) retrieved 23 April 2024 from https://phys.org/news/2015-03-d-bioprinting-shortage-donations.html

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