

# New device enables 3D tissue engineering with multicellular building blocks

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In creating engineered tissues intended to repair or regenerate damaged or diseased human tissues, the goal is to build three-dimensional tissue constructs densely packed with living cells. The Bio-P3, an innovative instrument able to pick up, transport, and assemble multi-cellular microtissues to form larger tissue constructs is described in an article in *Tissue Engineering, Part C: Methods*, a peer-reviewed journal from Mary Ann Liebert, Inc., publishers. The article is available free on the *Tissue Engineering* website until March 20th, 2015.

Andrew Blakely, MD, Kali Manning, Anubhav Tripathi, PhD, and Jeffrey Morgan, PhD, Rhode Island Hospital and Brown University, Providence, RI, developed the manual Bio-P3 [device](#), and in the article "Bio-Pick, Place, and Perfuse: A New Instrument for 3D Tissue Engineering," they explain how the device is able to grip, transport, and release multi-cellular microtissues grown in the laboratory, with minimal effects on the viability of the cells or the structure of the microtissue construct. The authors describe the design of the device's gripper and build heads and the peristaltic pump-driven fluid dynamics used to create and maintain contact between the device heads and the microtissues. They discuss applications of the device, the potential for automation, challenges, and future directions.

"This device can be the long-expected breakthrough in the field of regenerative medicine and hopefully allow the fabrication of large 3D organs and tissues," says John A. Jansen, DDS, PhD, Co-Editor-in-Chief *Tissue Engineering, Part C: Methods* and Professor and Head of

Dentistry, Radboud University Medical Center, The Netherlands.

**More information:** "Bio-Pick, Place, and Perfuse: A New Instrument for 3D Tissue Engineering." *Tissue Engineering Part C: Methods*. [DOI: 10.1089/ten.tec.2014.0439](https://doi.org/10.1089/ten.tec.2014.0439).

Provided by Mary Ann Liebert, Inc

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