

## 'Body on a chip' could revolutionize drug research, replace animal testing

Bringing a new drug to market [takes roughly a decade](#) and requires expensive and arduous testing on humans and animals. But a new technology developed at the Massachusetts Institute of Technology aims to cut that time by half and perhaps replace animal testing entirely. The device, roughly the size of a paperback, is nicknamed “the body on a chip” and is designed to show scientists how a drug affects individual organs and the body as whole. The device’s surface contains shallow receptacles in which scientists deposit pregrown, 3-D tissue structures from up to 12 human organs. With prior help from microscopic scaffoldings, the cells have arranged themselves into something resembling their natural structure.

A series of pumps pushes fluid through the system, simulating some features of blood flow. Adding drugs allows scientists to understand their effects.

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Of course, the human body is far too complex to be represented entirely on a device the size of a novel, and [Linda] Griffith’s chip is missing systems that could reveal vital information about how humans and animals react to drugs. Because organs on a chip lack a full immune system, cell cultures are frequently dosed with antibiotics to keep them alive. Griffith’s blue-sky goal? A chip with an immune system of its own.

*Editor’s note: Full text behind paywall*

**Read full, original post:** [Chipping Away at Disease—and Drug Testing](#)