

A Contraceptive Implant with Remote Control

A startup has developed a contraceptive chip that could be deactivated and reactivated using a wireless remote.

by **Gwen Kinkead**

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The hunt for a perfect contraceptive has gone on for millennia. A new candidate is now on the horizon: a wireless implant that can be turned on and off with a remote control and that is designed to last up to 16 years. If it passes safety and efficacy tests, the device would be more convenient for many women because, unlike existing contraceptive implants, it can be deactivated without a trip to the clinic and an outpatient procedure, and it would last nearly half their reproductive life.

Developed by MicroCHIPS of Lexington, Massachusetts, the device will begin pre-clinical testing next year in the U.S. The goal is to have it on the market by 2018.

The device measures 20 x 20 x 7 millimeters, and it is designed to be implanted under the skin of the buttocks, upper arm, or abdomen. It dispenses 30 micrograms a day of levonorgestrel, a hormone already used in several kinds of contraceptives. Sixteen years' worth of the hormone fits in tiny reservoirs on a microchip 1.5 centimeters wide inside the device. MicroCHIPS invented a hermetic titanium and platinum seal on the reservoirs containing the levonorgestrel. Passing an electric current through the seal from an internal battery melts it temporarily, allowing a small dose of the hormone to diffuse out each day.

“The idea of using a thin membrane like an electric fuse was the most challenging and the most creative problem we had to solve,” MicroCHIPS president Robert Farra says.

To conceive, women turn off the implant with a remote control; another click of the remote restarts it. After 16 years, it could be removed. Doctors could also adjust dosages remotely.

Currently, no hormonal birth control lasts over five years.



controlled release microchip technology he invented with colleagues Michael Cima and John Santini in the 1990s and licensed to MicroCHIPS might offer a solution.

Few private companies step up to the challenge of creating new contraceptives. MicroCHIPS' timing could be good. An international coalition of governments, companies, philanthropies, and nonprofits recently committed to providing family planning to 120 million more women in the world by 2020.

More work remains before MicroCHIPS files an application with the Food and Drug Administration.

For example, it will be necessary to encrypt the chips to keep their wireless data flow private and secure. **T**

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