

# Microswimmers'' make a big splash for improved drug delivery

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They may never pose a challenge to Olympic superstar Michael Phelps, but the "microswimmers" developed by researchers in Spain and the United Kingdom could break a long-standing barrier to improving delivery of medications for cancer and other diseases. They describe the development of tiny, magnetically controlled particles, called "microswimmers," that doctors could use to precisely deliver medicine to diseased tissue. Their report appears in the December 25, 2008 issue of *The Journal of Physical Chemistry B*.

In the new study, Pietro Tierno and colleagues note that scientists tried for years to develop tiny engines that can move micro and nanomachines through tight spaces, such as blood vessels and lab-on-a chip devices. But existing engines are slow, difficult to maneuver, and must undergo alterations in their shape, chemistry or temperature in order to work. The design of simple, more practical engines to power these tiny, robotic machines remains a major challenge, the researchers say.

The scientists describe a solution — tiny beads, about 1/25,000 of an inch in diameter, made of plastic and magnetic materials. When exposed to a magnetic field, the particles spun like a gyroscope and could be easily directed to move through narrow channels of liquids inside a glass plate, the researchers say. The scientists could control the speed of the "microswimmers" by varying the strength of the magnetic field.

Article: "Magnetically Actuated Colloidal Microswimmers",  
[pubs.acs.org/stoken/presspac/p...ll/10.1021/jp808354n](http://pubs.acs.org/stoken/presspac/p...ll/10.1021/jp808354n)

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