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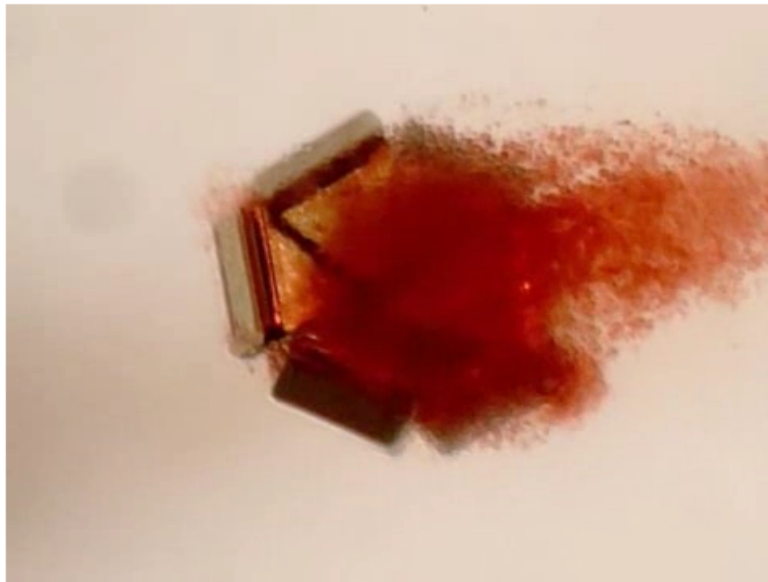
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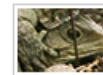
## Dust-Size "Crabs" Grab Living Cells in Lab Video

Christine Dell'Amore  
National Geographic News  
January 26, 2009

New wireless machines the size of dust particles can grab and manipulate tiny objects, a breakthrough that could lead to devices that can perform surgery, a new study says.



Video player controls: Play/Pause, Progress bar (00:30 / 00:31), Volume, and Close buttons.



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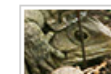


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## Dust-Size "Crabs" Grab Living Cells in Lab Video

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For instance, the highly mobile machines could capture and retrieve objects in hard-to-reach spots, such as inside capillaries.

The miniscule gadgets are also relatively inexpensive and can be mass-produced, added Gracias, whose research appeared earlier this month in the journal *Proceedings of the National Academy of Science*.



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Mauro Ferrari, deputy chairperson of the Department of Biomedical Engineering at the University of Texas Health Science Center in Houston, called the new study a "quantum leap."

"It is a very clever idea. You can find some foundations in the work of many labs over the years," said Ferrari, who was not involved in the research.

**Roadblocks**

However, major obstacles must be scaled before wireless microgrippers hit doctors' offices.

For one, the device can become lost in the body, or lodged in tissue.

That could be remedied if the tool could be made to move on its own, without the aid of a magnet—a major goal of Gracias and his team.

Likewise, in the body the gripper can only grab a target once and cannot be instructed to release tissue and grab another piece. This could get complicated if the device grabs onto the wrong object in a body, said Ferrari of the University of Texas.

The ability to biologically activate small tools is a "wonderful notion," but getting from this point to a clinical application is 10 to 15 years away, Ferrari cautioned.

Using the wireless microgrippers to perform biopsies may be a more practical use may be reaching now inaccessible parts of the brain to close aneurysms, Ferrari added.

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**SOURCES AND RELATED WEB SITES**

- University of Texas: Mauro Ferrari
- Johns Hopkins University: Gracias Laboratory