

Microscopic brain imaging method developed

Stanford University scientists have demonstrated a minimally invasive optical technique to capture micron-scale images from the brains of live subjects.

The method, called two-photon microendoscopy, combines two powerful optical and mechanical techniques into one device that's small enough to fit in the palm of a hand.

The researchers said the device is needed to allow imaging of individual cells inside living subjects. The images would give insight into how cellular behavior gives rise to the properties of organisms as a whole.

Imaging living cells below the surface has been difficult to accomplish using conventional techniques. Yet researchers want to know more about certain deep-tissue areas of the brain that are critical to understanding Alzheimer's and Parkinson's diseases, for example.

Lead researcher Mark Schnitzer said, "This is a portable handheld device with the power of two-photon imaging -- the full functionality of a microscope that fits in the palm of your hand."

The technique is detailed in the Sept. 1 issue of *Optics Letters*, a journal published by the Optical Society of America.

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