

(Image source: [Alzheimer's Association](#))

BY STEVEN SPARKMAN

You're watching multisource science news analysis from Newsy

A new drug delivery technique is showing promise for getting drugs directly into the brain. It's possible this technique could solve one of the longstanding problems in treating brain diseases like Parkinson's or Alzheimer's. [An Oxford University press release explains.](#)

"The team has successfully switched off a gene implicated in Alzheimer's disease in the brains of mice by exploiting exosomes -- tiny particles naturally released by cells. The exosomes, injected into the blood, are able to ferry a drug across the normally impermeable blood-brain barrier to the brain where it is needed."

The blood-brain barrier protects the brain from bacteria or harmful molecules circulating in the blood, but it also blocks most drugs. [As Health Canal explains,](#) getting past the barrier is a huge challenge.

"Novel drugs based on antibodies, peptides or more recently RNA molecules have been developed on many occasions... While these have shown good results in the lab, too often it has proved difficult to get the drugs to the right part of the body to see any effect in humans. Currently, delivering any such type of therapy to the brain would have to involve neurosurgery."

The new technique effectively disguises the drug to slip it past the barrier.

The researchers harvested exosomes from the mouse, then attached a special targeting protein: the same protein the rabies virus uses to find nerve cells. Then they loaded the exosomes with the drug and injected them back into the mouse. (Image source: [Nature Biotechnology](#))

They found that the drug, designed to inhibit a gene responsible for plaque in the brains of Alzheimer's patients, managed to decrease that gene's activity by 60 percent. And while it's exciting to finally treat the brain, [one researcher told the BBC](#) the technique could target anything.

"The research group believes that the method could [be] modified to treat other conditions and other parts of the body. Dr Wood said: 'We are working on sending exosomes to muscle, but you can envisage targeting any tissue. It can also be made specific by changing the drug used.'"

The technique might also lead to safer delivery of drugs overall. The researchers found the cloaked drugs were invisible to the liver and kidneys. That means they could target the brain while leaving other organs alone.

Follow [@Newsy_Videos](#) on Twitter

Get more multisource video news analysis from Newsy
Transcript by Newsy