

New human neurons from adult cells right there in the brain

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Researchers have discovered a way to generate new human neurons from another type of adult cell found in our brains. The discovery, reported in the October 5th issue of *Cell Stem Cell*, a Cell Press publication, is one step toward cell-based therapies for the treatment of neurodegenerative diseases, such as Alzheimer's and Parkinson's.

"This work aims at converting cells that are present throughout the brain but themselves are not nerve cells into neurons," said Benedikt Berninger, now at the Johannes Gutenberg University Mainz. "The ultimate goal we have in mind is that this may one day enable us to induce such conversion within the brain itself and thus provide a novel strategy for repairing the injured or diseased brain."

The cells that made the leap from one identity to another are known as pericytes. Those cells, found in close association with the blood vessels, are important for keeping the blood-brain barrier intact and have been shown to participate in [wound healing](#) in other parts of the body.

"Now, we reason, if we could target these cells and entice them to make [nerve cells](#), we could take advantage of this injury response," Berninger says.

Further testing showed that those newly converted neurons could produce [electrical signals](#) and reach out to other neurons, providing evidence that the converted cells could integrate into neural networks.

"While much needs to be learnt about adapting a direct neuronal reprogramming strategy to meaningful repair in vivo, our data provide strong support for the notion that neuronal reprogramming of cells of pericytic origin within the damaged brain may become a viable approach to replace degenerated neurons," the researchers write.

More information: Karow et al.: "Reprogramming of pericyte-derived cells of the adult human brain into induced neuronal cells." [DOI: 10.1016/j.stem.2012.07.007](https://doi.org/10.1016/j.stem.2012.07.007)

Provided by Cell Press

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