

Mouse brain rewires its neural circuits to recuperate from damaged neural function after stroke

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Japanese research group led by Professor Junichi Nabekura in National Institute for Physiological Sciences, NIPS, Japan, found that, after cerebral stroke in one side of the mouse brain, another side of the brain rewires its neural circuits to recuperate from damaged neural function. The Japan Science and Technology Agency (JST) supported this study.

They report their finding in [Journal of Neuroscience](#), on August 12, 2009.

The research group investigated how neural circuits rearrange themselves after cerebral strokes by using two-photon laser microscopy in vivo. In a specific period after strokes in the right side of the mouse [brain](#), namely one to two weeks after strokes, the left side of the brain rearranged its neural circuits actively.

After three to four weeks, the left side of the brain became to receive sensory information from the left leg that is usually received by the right side of the brain. In conclusion, the [stroke](#) in the right side of the brain activated the rearrangement of the neural circuits in the left side of the brain, and then these rearrangements helped to recuperate from stroke-induced damaged neural function.

"We found that the active rearrangement of the neural circuits in the opposite side of the brain happens only in the specific period after

strokes. Our findings can be applied to rehabilitative programs for stroke survivors", said Professor Nabekura.

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