

Brain plasticity: Changes and resets in homeostasis

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In an article published in the June 25th edition of the journal *Neuron*, researchers at the Hotchkiss Brain Institute, University of Calgary, have found that synaptic plasticity, long implicated as a device for 'change' in the brain, may also be essential for stability.

Homeostasis, the body's own mechanism of regulating and maintaining internal balance in the body, is necessary for survival. Precisely how the brain pulls off this tricky balancing act has not been well appreciated.

By examining neural circuits that regulate fluid volume, Jaideep Bains, PhD, and colleagues, Brent Kuzmiski, PhD, and Quentin Pittman, PhD, have demonstrated that multiple forms of synaptic plasticity work to ensure that an effective response to a life-threatening challenge is followed by an immediate recovery of these neural circuits to pre-challenge conditions.

These observations provide the first set of synaptic rules that help us understand how homeostatic setpoints are re-set in vivo. Based on their findings, Bains and colleagues, demonstrate that synaptic plasticity is essential for maintaining stability in a nervous system constantly bombarded by inputs from the outside world.

Source: University of Calgary ([news](#) : [web](#))

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