

Happy and sad memories are genetically controlled

A new study from MIT finds that [positive and negative emotions] are controlled by two populations of neurons that are genetically programmed to encode memories of either fearful or pleasurable events.

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“The positive memory cells identified by the genetic markers, which counter negative memory cells, promise an opportunity to identify effective molecular targets for treatment of emotional disorders such as depression and PTSD,” says Susumu Tonegawa, the Picower Professor of Biology and Neuroscience....

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Tonegawa’s lab set out to identify genetic differences that could be used to distinguish the fear-responsive and reward-responsive populations. After analyzing all of the genes turned on in BLA cells, they came up with one gene that is found in BLA cells that encode positive memories but not in cells that encode negative memories. They also found another that exclusively marks the negative population.

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The researchers also discovered that each population of neurons can inhibit the other: When they stimulated activity in the reward neurons, activity in the fear neurons was suppressed, and vice versa. This suggests that the brain constantly balances activity between these two populations of neurons.

The GLP aggregated and excerpted this blog/article to reflect the diversity of news, opinion, and analysis. Read full, original post: [A delicate balance between positive and negative emotion](#)