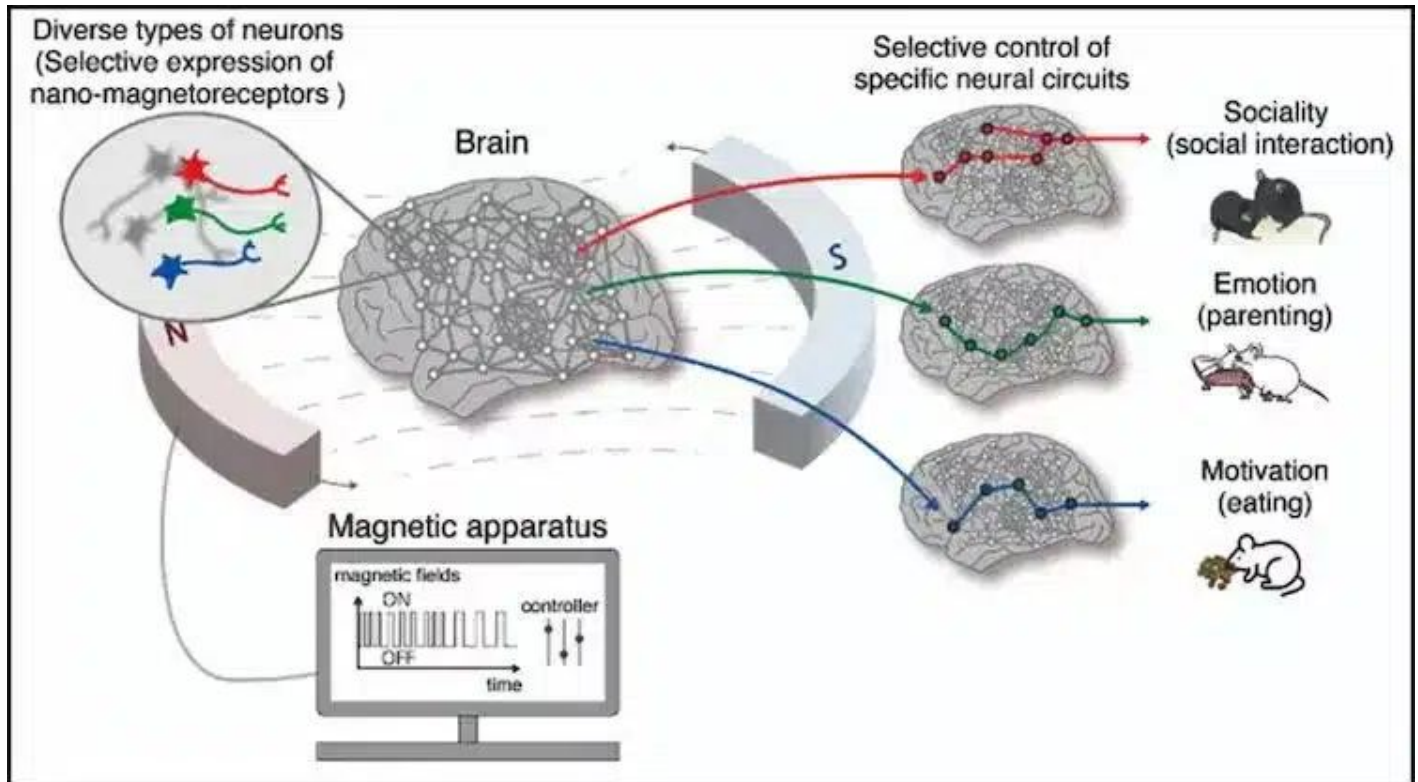


## What is Nano-MIND Technology?

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### About Nano-MIND Technology:

- Nano-MIND (**Magnetogenetic Interface for NeuroDynamics**) technology, opens up new possibilities for understanding and manipulating complex brain functions such as cognition, emotion, and motivation.
- It allows **for wireless, remote, and precise modulation** of specific deep brain neural circuits using magnetism.
- This innovative approach leverages **magnetic fields and magnetized nanoparticles** to selectively activate targeted brain circuits, offering a significant advancement over existing methods of brain manipulation.
- **Highlights of the research**
  - The research team demonstrated the technology's capabilities by activating specific neurons in different brain regions of mice.
  - One notable achievement was the activation of **inhibitory GABA receptors** in the medial preoptic area (MPOA), which is responsible for maternal behaviours.
  - When these neurons were stimulated in non-maternal female mice, the animals exhibited significantly increased nurturing behaviours, mimicking those of maternal mice.

- The researchers also successfully regulated feeding behaviours by targeting motivation circuits in the lateral hypothalamus.
  - Activation of inhibitory neurons in this area resulted in a remarkable 100% increase in appetite and feeding behaviours in mice. Conversely, when excitatory neurons were activated, the mice showed a more than 50% reduction in appetite and feeding behaviours.
  - **Significance:** It represents a significant step forward in neuroscience research and could have far-reaching implications for the **development of brain-computer interfaces** (BCIs) and the treatment of neurological disorders.
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## Q1: What are Neurons?

These are nerve cells that send messages all over your body to allow you to do everything from breathing to talking, eating, walking, and thinking.

**Source:** [Scientists use magnetism to mind-control mice in world's first experiment](#)

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Source: <https://vajiramandravi.com/current-affairs/nano-mind-technology/>

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