

HYPOTHALAMIC NEWSLETTER

The header features the text 'HYPOTHALAMIC NEWSLETTER' in a white, sans-serif font. The word 'HYPOTHALAMIC' is on the top line and 'NEWSLETTER' is on the bottom line. The text is centered and surrounded by various icons: a brain, a neuron, and a stylized asterisk-like symbol. The background is a light yellow color with white corner brackets.

Welcome to this edition's Hypothalamic Newsletter! We will be discussing research on treating chronic pain, the method of Loci, and Irene Tracy!

Research on Treating Chronic Pain

Even though this breaking research is a long way from being used to treat people with chronic pain related to conditions such as Multiple sclerosis and nerve damage. This research has more positive repression than current treatments and is a huge step in combatting chronic pain which is exciting! When you touch something sharp or cold it's painful. This pain is triggered when neurons are triggered which send signals to the brain through an ion channel that allows certain ions that send a current in the nerves located in the spinal cord. But with chronic pain these pathways become hyperactive. The reason why this new research is so striking is that it doesn't have off-target effects like the Na17 research. CRISPR exactly targets the mutation safely.

How does this work?

This "adeno-associated" virus 'in the drug specifically attacks the repressor protein that essentially stops the creation of Na17. To test this drug mice were injected with inflammatory agents. None had any negative side effects and most lost sensitivity to pain for almost 44 weeks!



April 1st, 2021

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The slowest speed information passes around your brain is approximately 260 MPH.

Method of Loci

A new study shows that a memory enhancement strategy called the "method of loci," which employs visualizations of familiar spatial environments improves information recall on a structural level. A group of participants completed a method of loci training over six weeks and was compared to a group that underwent working memory training and a group that had no intervention. Brain function was assessed before and after training through an MRI scan. Researchers suggest using mnemonic devices like the "method of loci" could improve long-term memory in many individuals. To test whether the method of loci training affected memory performance over a longer-term, participants of the training group also completed a behavioral retest after four months. The results were significant; after training, memory athletes and non-athletes alike experienced increased connectivity in the hippocampus, which is in charge of the consolidation of memories. The MRI brain scans that were performed on study participants also demonstrated a decrease in the activation of the lateral prefrontal, parahippocampal, and retrosplenial cortices over the course of the training; these activate in response to certain tasks. This decrease was associated with better test results after four months. These findings show how mnemonic training improves long-term memory formation by reducing task-based activation and then increasing memory consolidation.

Phone numbers in the US are 7 digits (not including the telephone prefix) because our short-term form of memory can hold a maximum of 7 digits on average.



Irene Tracey

Irene Tracey, head of the Nuffield Department of Clinical Neurosciences at the University of Oxford has made significant contributions in neuroscience. Her research entails how 'brain imaging is opening our eyes to the richness and complexity of the pain experience, giving us extraordinary insight into the neurochemistry, network activity, wiring, and structures relevant to producing and modulating painful experiences in all their various guises'- dana foundation Her work is vital in discovering more on the puzzling feeling on pain and how it's reciprocated in everyone around us. For further research, we would recommend listening to the 'Irene Tracey on pain in the brain' podcast on BBC.