

Immune system emerges as potential partner in opioid cravings fight

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The same immune system that fights infection and the flu could join the battle against opioid addiction, new research out of the Vanderbilt Center for Addiction Research indicates.

Erin Calipari, assistant professor of pharmacology and corresponding author on a paper in *The Journal of Neuroscience*, says there's promise in specific immune system peptides—amino acid compounds that signal cells how to function.

In this case, they may be affecting brain activity and, by extension, drug cravings.

"We found we could target these immune peptides and change the cravings that male mice and rats had for food and sugar," Calipari said. "Now we're looking at what we need to do before we can take this into human clinical trials. This is exciting because we see how peripheral systems such as the immune system could be influencing cravings."

She's collaborating with Drew Kiraly at the Icahn School of Medicine at Mount Sinai on how these systems work and how to best translate the findings to help human patients.

Calipari warns that there's no single cure for the complicated disease of [addiction](#) which, at its core, is a hijacking of the dopamine system that creates a cycle of substance abuse. However, individual addicts are heavily influenced by genetic or external factors, Calipari said. Her lab is focused on neurological interventions that could help cut cravings while patients work on other contributing factors.

"One example is that we've found women are particularly vulnerable to addiction," she said. "Ultimately, we want to be able to go to various populations and say, 'These things are predictive of your vulnerability to addiction.' Then, we want to target systems that could improve their treatment outcomes.

"We're not going to find one treatment that fixes everything, but we can, eventually, target different aspects of addiction for individual patients."

More information: Munir Gunes Kutlu et al, Granulocyte colony stimulating factor enhances reward learning through potentiation of mesolimbic dopamine system function, *The Journal of Neuroscience* (2018). [DOI: 10.1523/JNEUROSCI.1116-18.2018](https://doi.org/10.1523/JNEUROSCI.1116-18.2018)

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