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Novel research aims to identify new medications for the treatment of opioid use disorder

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Opioid use disorder and overdose deaths are a major public health crisis in the United States. While medication-assisted treatments for opioid use disorder exist, these treatments remain inadequate for many patients, resulting in a high rate of relapse following detoxification.

A new study from the University of Pennsylvania School of Nursing (Penn Nursing) shows the first evidence supporting a role for glucagon-like peptide-1 (GLP-1) receptor agonists in opioid reinforcement and analgesic responses. Using recently established models of opioid-taking and -seeking behaviors in rats, researchers have shown that systemic administration of the GLP-1 receptor agonist exendin-4 reduced oxycodone self-administration and the reinstatement of oxycodone-seeking behavior, an animal model of relapse.

"Collectively, these findings highlight a novel role for GLP-1 receptors in opioid mediated behaviors and suggest that central GLP-1 receptors could serve as targets for novel medications aimed at treating opioid use disorder without affecting opioid-induced analgesic responses," said Yafang Zhang, a post-doctoral fellow at Penn Nursing and lead investigator of the study.

The study, "Activation of GLP-1 Receptors Attenuates Oxycodone Taking and Seeking Without Compromising the Antinociceptive Effects of Oxycodone in Rats" has been published in the journal

Neuropsychopharmacology.

Co-authors of the article include Michelle W. Kahng, Jaclynn A. Elkind and Vanessa R. Weir, all of Penn Nursing; and Nicole S. Hernandez and Lauren M. Stein, both of the University of Pennsylvania Perelman School of Medicine. Senior author Heath D. Schmidt, Ph.D., is an Associate Professor of Nursing in Penn Nursing's Department of Biobehavioral Health and an Associate Professor of Psychiatry in Penn's Perelman School of Medicine.

More information: Yafang Zhang et al. Activation of GLP-1 receptors attenuates oxycodone taking and seeking without compromising the antinociceptive effects of oxycodone in rats, *Neuropsychopharmacology* (2019). DOI: 10.1038/s41386-019-0531-4

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