

# Researchers examine how opioids affect proteins in the brain other than opioid receptors

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In a new study, researchers have characterized the effects of a series of opioids on proteins in the brain other than opioid receptors. In the *British Journal of Pharmacology* study, several synthetic opioids inhibited serotonin and norepinephrine transporters, which may contribute to their analgesic properties but may also increase the risk of serotonin toxicity, a group of symptoms that can include high body temperature, agitation, increased reflexes, tremor, sweating, dilated pupils, and diarrhoea.

The investigators note that serotonin syndrome may result from serotonin transporter inhibition by tramadol, tapentadol, methadone, dextromethorphan, and pethidine, especially when combined with other serotonergic medications.

"Physicians need to be aware of the risk of serotonin toxicity when using certain opioids," said senior author Prof. Matthias Liechti, of the University Hospital Basel, in Switzerland.

**More information:** *British Journal of Pharmacology* (2017). [DOI: 10.1111/bph.14105](https://doi.org/10.1111/bph.14105)

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