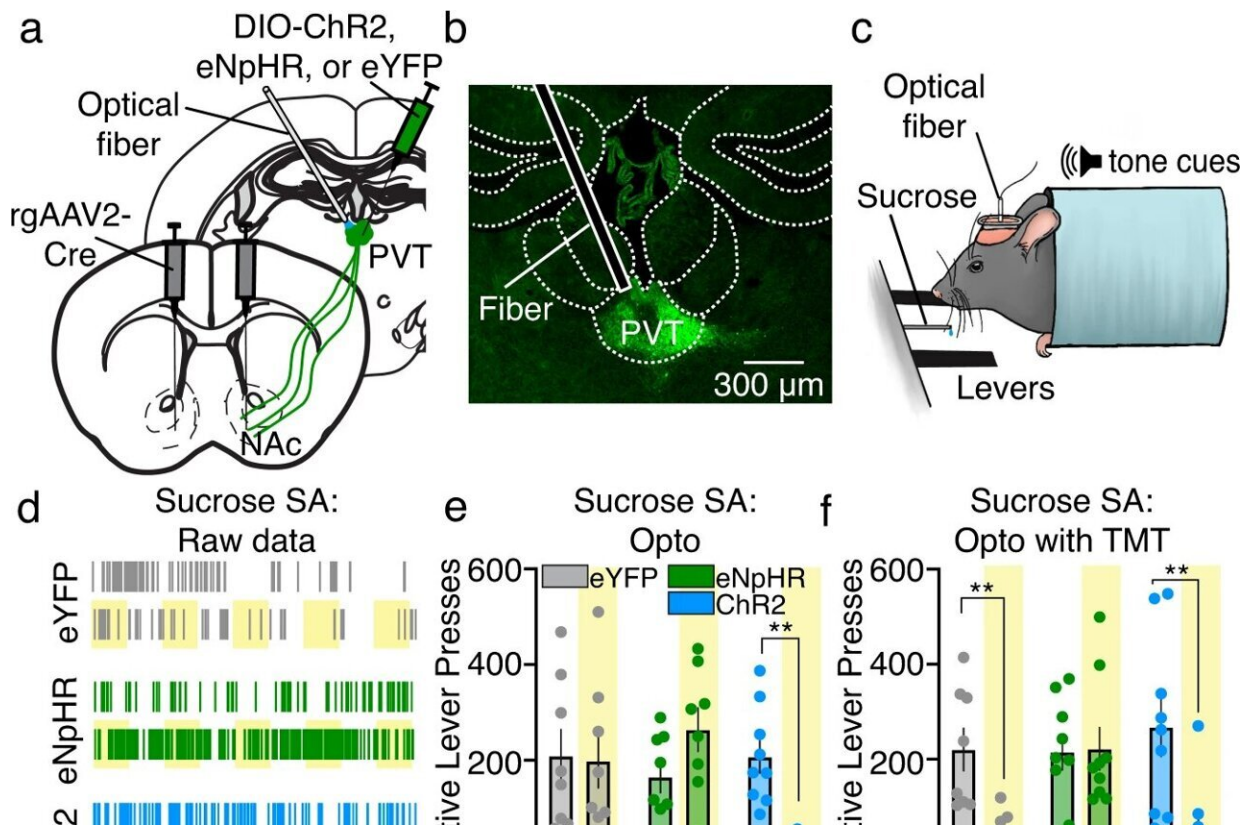


Newly-discovered brain circuit could put the brakes on risky behaviors

February 9 2023, by Josef Blaszkievicz



PVT→NAc activity dynamics are necessary and sufficient for the expression and suppression of sucrose self-administration and seeking. **a–c** Surgical strategy (**a**) for optogenetic manipulation of PVT→NAc neurons (**b**) during sucrose self-administration (**c**; image modified from Vollmer et al.). **d** Raster plot showing example active lever pressing rates in each group during sucrose self-administration (examples from 5 mice/group; yellow bar = light on). **e** Group data showing that optogenetic stimulation of PVT→NAc neurons suppressed active lever pressing ($n = 8$ eYFP, 8 eNpHR, 9 ChR2 mice; repeated-measures

two-way ANOVA, day \times group interaction: $F_{2,22} = 7.09$, $P = 0.004$; Sidak's post-hoc: $P = 0.006$). **f–h** TMT (**f**), yohimbine (**g**), and extinction (**h**) suppressed active lever pressing, whereas inhibition of PVT \rightarrow NAc neurons in eNpHR mice rescued active lever pressing (TMT: $n = 8$ eYFP, 9 eNpHR, 9 ChR2 mice; repeated-measures two-way ANOVA, day \times group interaction: $F_{2,23} = 5.36$, $P = 0.01$; Sidak's post-hoc: eYFP $P = 0.009$, ChR2 $P = 0.001$; yohimbine: $n = 8$ eYFP, 9 eNpHR, 8 ChR2 mice; repeated-measures two-way ANOVA, day effect: $F_{1,22} = 20.46$, $P = 0.002$; Sidak's post-hoc: eYFP $P = 0.002$, ChR2 $P = 0.04$; extinction: $n = 8$ eYFP, 9 eNpHR, 9 ChR2 mice; repeated-measures two-way ANOVA, day \times group interaction: $F_{2,23} = 19.55$, P

Citation: Newly-discovered brain circuit could put the brakes on risky behaviors (2023, February 9) retrieved 25 April 2024 from <https://medicalxpress.com/news/2023-02-newly-discovered-brain-circuit-risky-behaviors.html>

This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.