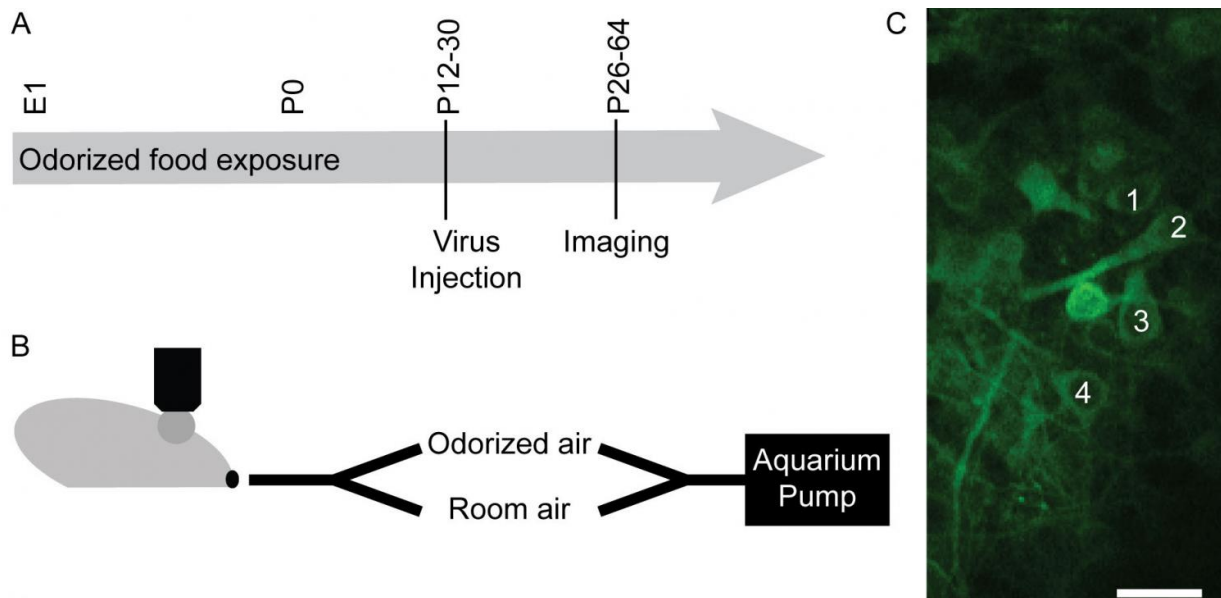


Early odor exposure enhances response of smell cells

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Odorized food exposure lasted through the entirety of gestation and the postnatal period until imaging. B. The dorsal olfactory bulb was imaged during stimulus presentation using a custom-built 2-channel olfactometer with airflow provided by an aquarium pump. C. Image of the mitral cell layer with four cells labeled. Credit: Liu & Urban, *eNeuro*

Mice exposed to scents of mint or fresh cut grass before and shortly after birth show increased responses in a specific population of odor-processing neurons to a variety of odors, according to new research published in *eNeuro*. The study demonstrates how early experience shapes the brain's processing of the sense of smell.

Annie Liu and Nathaniel Urban fed breeding pairs of [mice](#) food infused with two odorants that have distinct smells that activate different but overlapping areas of the [olfactory bulb](#): [methyl salicylate](#), which smells like wintergreen, or hexanal, which smells like cut grass. The litters were then weaned onto the same diet as their parents.

During exposure to varying concentrations of eight different odors, mice exposed to one of the scented diets during gestation and early life had stronger responses of a greater number of mitral cells—which receive inputs from scent receptors and transmit that information to other parts of the brain—than mice exposed to the unscented control diet during the same period.

This effect did not depend on the particular odor to which mice were exposed; mice exposed to either one of the scented diets displayed heightened mitral cell responses to all presented odors.

More information: Prenatal and early postnatal odorant exposure heightens odor-evoked mitral cell responses in the mouse olfactory bulb, *eNeuro*, [DOI: 10.1523/ENEURO.0129-17.2017](#)

Provided by Society for Neuroscience

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