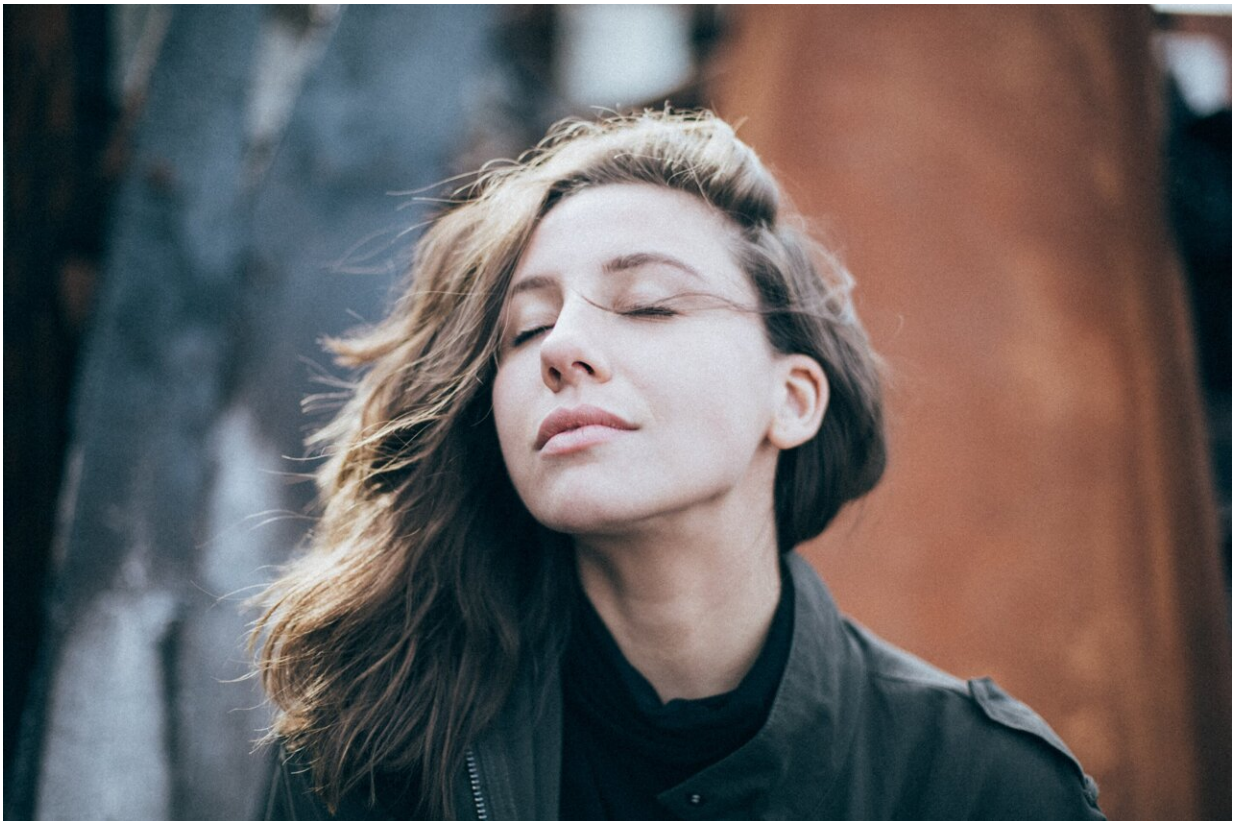


Researchers show that hydrogen sulfide regulates the neural circuit for respiration

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While commonly associated with the unpleasant odor of hot springs, hydrogen sulfide is naturally produced in the body. Despite its toxicity at higher concentrations, the lower concentrations generated internally are

indispensable for life. Researchers from the University of Tsukuba have demonstrated the importance of hydrogen sulfide in the brain for normal respiration although the precise mechanism remained unclear.

The findings are [published](#) in the journal *Scientific Reports*.

The medullary respiratory center, responsible for the rhythm and depth of respiration, comprises various neurons dedicated to inspiration and expiration. In this study, researchers focused on hydrogen sulfide production within the respiratory center.

Results revealed that inhibiting hydrogen sulfide production alters neurotransmissions, leading to disruptions in the rhythm and depth of respiration. Moreover, the study identified variations in this mechanism across distinct regions within the respiratory center. These results imply that hydrogen sulfide, produced in the respiratory center, exerts a modulating influence on [neural circuits](#), contributing to the stability of respiration.

Understanding the role of hydrogen sulfide in respiration offers [valuable insights](#) into disorders characterized by respiratory irregularities and potential avenues for treatment. Furthermore, these findings deepen our understanding of how [hydrogen sulfide](#) sustains life.

More information: Minako Okazaki et al, Hydrogen sulfide production in the medullary respiratory center modulates the neural circuit for respiratory pattern and rhythm generations, *Scientific Reports* (2023). [DOI: 10.1038/s41598-023-47280-9](https://doi.org/10.1038/s41598-023-47280-9)

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