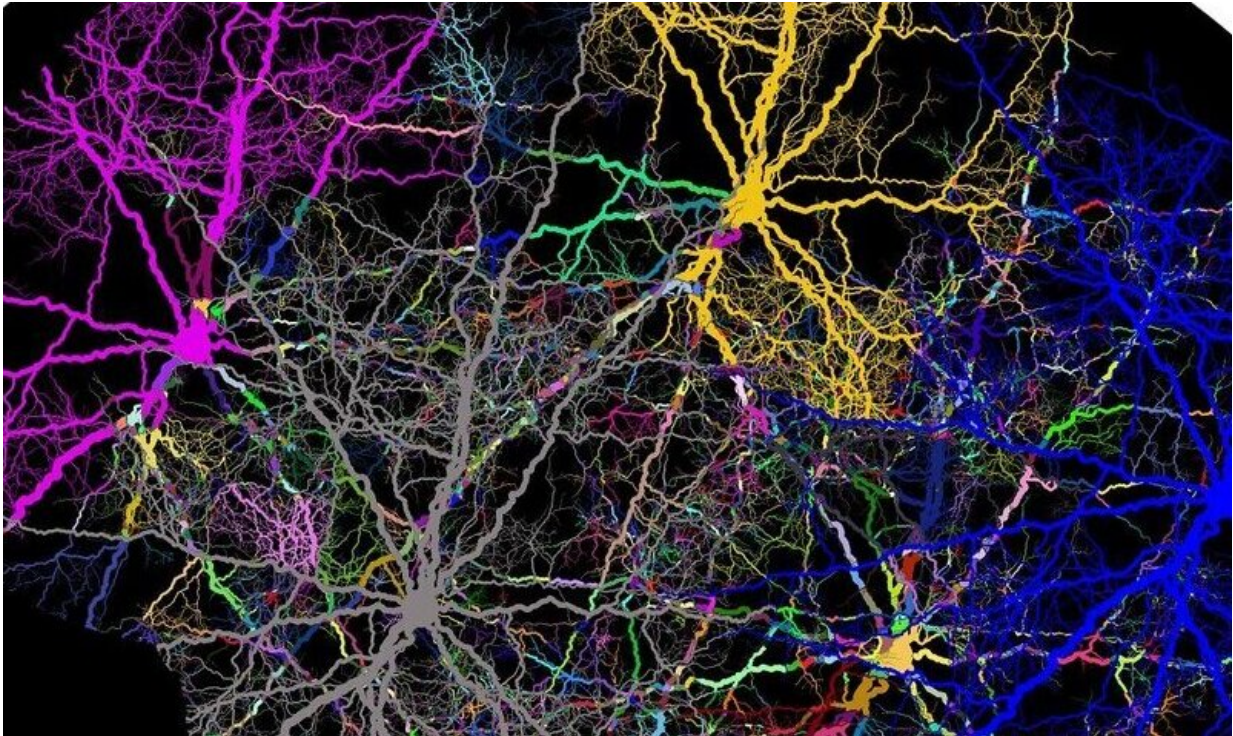


Sudden death from deep in the brain?

August 13 2021, by Paul Govern



Credit: Pixabay/CC0 Public Domain

Risk of sudden unexpected death in epilepsy (SUDEP) is among comorbidities present in Dravet Syndrome (DS), a rare, catastrophic form of epilepsy in which seizures begin in infancy, with most cases due to mutations in a single gene, SCN1A.

Breathing issues have been reported in patients and in mouse models of

DS, and a recent study implicated respiratory decline in SUDEP in DS mice.

In the journal *eNeuro*, William Nobis, MD, Ph.D., Wen Wei Yan, MD, Maya Xia and colleagues report experiments in DS mice showing altered excitability in a complex of neurons deep in the brain, the bed nucleus of the stria terminalis (BNST), and significant under-excitability of neurons projecting from the BNST to the [parabrachial nucleus](#), which is located atop the brainstem and is involved in respiration.

Noting that this circuit might be driving respiratory dysfunction and [sudden death](#) in DS, the authors call for further study of the role of deep brain structures in epilepsy models.

More information: Wen Wei Yan et al, Enhanced Synaptic Transmission in the Extended Amygdala and Altered Excitability in an Extended Amygdala to Brainstem Circuit in a Dravet Syndrome Mouse Model, *eneuro* (2021). [DOI: 10.1523/ENEURO.0306-20.2021](https://doi.org/10.1523/ENEURO.0306-20.2021)

Provided by Vanderbilt University

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