

Investigating the Association between Early-Life Seizures and Chronic Communication Abnormalities in Ultrasonic Vocalizations in Rats.

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Many individuals who experience an early life seizure are later diagnosed with socialization deficits (i.e. autism). We speculate alterations in auditory communication may be responsible for the aforementioned social abnormalities. Determining the impact of ELS on long term communicative abilities in an animal model is a first step towards clarifying the nature of this relationship. We have classified ultrasonic vocalizations (USVs) of adult rats that had induced early life seizures and compared them with USVs from placebo control rats to determine if our hypothesis that early life seizures cause long term communication differences can be supported. Communication data between two rats is recorded by a microphone that can pick up ultrasonic frequencies and processed by a software to translate into a spectrogram. The spectrogram is read and categorized by an analyst who records duration, frequency, and call-type. After all rat recordings are analyzed and recorded, the analyst is unblinded and able to compare call types and communications of early life seizure rats vs control rats.

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