

Journal of Emerging Investigators

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FOR IMMEDIATE RELEASE

Long Island high school student publishes article in scientific journal on temporal lobe epilepsy's effect on the heart

Justin Choi, a student at Jericho High School in Jericho, New York, recently published a scientific manuscript titled, "The Role of Temporal Lobe Epilepsy in Cardiac Structure and Function" in the *Journal of Emerging Investigators*.

Choi's article, published on August 15, 2018, explores how the heart is affected by temporal lobe epilepsy. Epilepsy is a brain disorder that is characterized by recurrent and unpredictable seizures. Temporal Lobe Epilepsy (TLE) is the most common form of Epilepsy in adults, and consists of seizures that initiate in the temporal lobe and affect autonomic nervous system function. For example, heart rate is known to greatly increase during a seizure which puts patients at risk for sudden unexpected death.

Choi's investigation centered on how the number of seizures in one's lifetime correlates to thickness of the left ventricle wall, ejection fraction and left ventricle mass. Using transthoracic echocardiogram, Choi was able to measure septal wall thickness, posterior wall thickness, and ejection fraction in the heart. The results showed a strong correlation between number of lifetime seizures (up to 100) and adverse changes in septal wall thickness, posterior wall thickness and ejection fraction. Choi attributes this to the heart chambers becoming enlarged to pump greater volumes of blood in a short amount of time. Decreased wall thickness indicates risk for ventricular fibrillation, a potentially lethal heart rhythm.

The *Journal of Emerging Investigators (JEI)* is a non-profit scientific journal operated by graduate students at Harvard University. JEI is dedicated to mentoring young scientists in middle and high school and publishing their research through the online journal. Articles submitted to JEI pass through a rigorous editorial and scientific review process by several PhD-level scientists before they are accepted and published.

Link to Choi's article: <https://emerginginvestigators.org/articles/the-role-of-temporal-lobe-epilepsy-in-cardiac-structure-and-function>

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