

Discovery by FSU team advances epilepsy research



Photo: From left, former doctoral student Thomas Sullenberger, Professor Sanjay Kumar and researcher Stephen Beesley. (Florida State University) (FSU)

By [Logan Allen](#)

Published: Jul. 19, 2022 at 11:16 AM EDT | Updated: 21 hours ago



TALLAHASSEE, Fla. (WCTV) - Florida State University researchers have found a link between a protein in the brain and a heightened chance for neurodegeneration in people with temporal lobe epilepsy (TLE), according to a release by the FSU College of Medicine.

Professor of Biomedical Studies Sanjay Kumar led the team, using an innovative technique known as area-specific tissue analysis (ASTA) that allowed them to study small amounts of tissues from hard-to-reach areas in the brain.

The release says the Kumar Lab focuses on the basic workings of TLE and “identifying and isolating vulnerable cells and circuits within the hippocampal region to” help create better treatments. TLE is the most common form of epilepsy in adults and is often unaffected by medications currently available.

“Kumar, FSU researcher Stephen Beesley and former doctoral student Thomas Sullenberger focused on a chemical messenger called glutamate and one of its receptors, N-methyl-D-aspartate (NMDA),” according to the release.

Glutamate helps with learning and memory and must be in the right concentration at the right time for proper brain function. The release also notes that it is an amino acid, which helps build proteins.

The team saw that while GluN1 and GluN2, two proteins associated with NMDA, “were evenly distributed in a critical hippocampal region of the brain, a third one — GluN3 — was distributed on a gradient.” Consistent neuron loss in the hippocampal and parahippocampal regions is a key feature of TLE.

Professor Kumar said the relationship between GluN3 and cell loss was not previously known and that “this advance in cellular biology is an important step for developing therapies to help patients.”

The release said this discovery will help researchers tighten their focus and “identify exactly where neurons are dying and in how large an area.”

“This research shows how area-specific tissue analysis can be a useful tool,” Kumar said. “I’m excited to explore what further research with this technique can uncover.”

The work of Kumar’s team is partially supported by the National Institute of Neurological Disorders and Stroke, a division of the National Institutes of Health.

Video shows Sesame Place character appearing to avoid Black girls, prompting theme park apology

Cell phone video showing a character at Sesame Place ignoring two small Black girls is making the rounds on social media.

WCTV

Florida State said person who fell from third floor had "no FSU affiliation"

The Florida State University Police Department is investigating after a person fell from the third floor of the College of Law's Research Center on Tuesday.

WCTV

FSU, UF weigh in on Potbelly’s court case

Florida State University and the University of Florida plan to file arguments at the state Supreme Court in support of a woman who suffered catastrophic injuries when she was hit by a pickup truck in an incident th...

WCTV

Most Read

🔍 [Child found dead inside a vehicle in Tallahassee](#)



[Mega Millions jackpot tops half a billion dollars](#)



[Leon County deputies net drug arrest](#)



[Man disguised as grandma robs bank in Georgia, police say](#)



▶ [FHP joins Operation Southern Slow Down to promote safe driving](#)

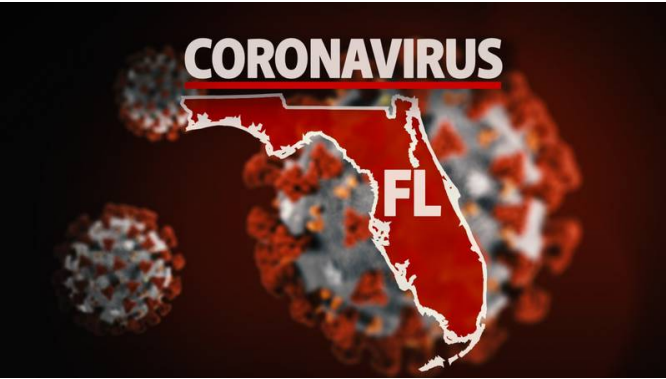


Latest News

[TMH holds luminary ceremony to honor lives lost to COVID](#)



[Continuing Coverage: COVID-19 in South Georgia](#)



[Continuing Coverage: COVID-19 in the Big Bend](#)

[Florida Department of Health warns of possible bacterial contamination in the Withlacoochee River](#)

[Home](#)
[Sports](#)
[Submit Photos and Videos](#)

[News](#)
[Contact Us](#)

[Weather](#)
[WCTV Jobs](#)

WCTV
1801 Halstead Blvd.
Tallahassee, FL 32309
(850) 893-6666

[Terms of Use](#)[Privacy Policy](#)[FCC Applications](#)[Advertising](#)[Public Inspection File](#)[EEO Statement](#)[FCC Applications](#)

[publicfile@wctv.tv - \(850\) 893-6666](#)[Closed Captioning/Audio Description](#)

A Gray Media Group, Inc. Station - © 2002-2022 Gray Television, Inc.