

From Labs to Lives

How Research Funding Solves Real-World Problems

NIH-Funded Research to Prevent Epilepsy after Brain Injury

At UC Davis, Dr. Amy Brooks-Kayal leads pioneering research on how brain injuries — like stroke, trauma, prolonged seizures or birth complications — can lead to epilepsy. Her NIH-funded research is identifying how epilepsy develops at the cellular level, with the goal of stopping it before it starts or preventing it from becoming resistant to treatment. Resistance happens to nearly 1/3 of people with epilepsy. Her team was the first to show that the JAK-STAT cell signaling pathway may play a key role in triggering epilepsy after brain injury and its progression — opening the door to new therapies for patients who do not respond to current treatments.

Helping Humanity

One-third of people with epilepsy — more than 20 million worldwide — do not gain seizure control from existing medications. Dr. Brooks-Kayal's work offers hope for those patients and families, and could reduce the \$15 billion annual cost of epilepsy in the U.S. Without continued federally funding, progress toward better treatments and prevention would stall, delaying relief for millions.

// Without federal funding, research to find new treatments for epilepsy simply stops — leaving millions without hope for relief. The human toll is immense, and the economic cost to our nation exceeds \$15 billion each year in care and lost productivity.” — Dr. Amy Brooks-Kayal



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