



MILKEN INSTITUTE
CENTER FOR STRATEGIC PHILANTHROPY

A Giving Smarter Guide To Accelerating Research Progress

GIVE SMARTER



An Executive Summary

EPILEPSY

1 in 26

more than 50 million people worldwide live with epilepsy

30-40%

of people living with epilepsy do not achieve effective seizure control

↓10x

less funding than other common neurological disorders

One in twenty-six Americans has epilepsy, a condition characterized by unprovoked and recurrent seizures. At least 50 million people live with this disorder worldwide according to the World Health Organization.

The manifestation of epilepsy, in terms of seizure type, severity and age of onset has been shown to vary widely among patients. Just like there are many different cancer subtypes and severities which require tailored individualized treatment, epilepsy is starting to be viewed as having many subtypes. Unfortunately, the biological and clinical profiles of all epilepsy subtypes is not well known. While these profiles are difficult to elucidate, a focused effort to comprehensively identify and characterize epilepsy subtypes using precision medicine would greatly improve clinicians' ability to diagnose and treat patients based on the epilepsy type they have.

“Epilepsy affects more people than multiple sclerosis, cerebral palsy, muscular dystrophy and Parkinson’s combined – *yet receives fewer federal dollars per patient* than each of these.”

Thirty to forty percent of epilepsy patients

do not achieve effective seizure control with currently available therapies. Of those who do achieve seizure control, they are often left to contend with often severe adverse side effects from epilepsy therapies, comorbid conditions such as depression and anxiety, sleep disorders, learning and memory problems, increased suicide risk and public misunderstanding and discrimination. All of which can negatively impact quality of life even if seizures are controlled. If seizures remain uncontrolled, lifelong disability is often present. Supporting the expansion or development of accredited epilepsy centers for coordinated medical care teams would substantially improve comprehensive holistic care.

There are no disease modifying therapies for epilepsy.

Current epilepsy medications do not treat the underlying cause of epilepsy, but instead only treat seizures, which is a symptom of epilepsy. Knowledge gaps in understanding biological underpinnings of epilepsy are currently precluding the field from developing treatments

that can correct the abnormal biology driving the disease. These fundamental knowledge gaps, along with the high cost of clinical trials and competing priorities, has weakened the value proposition for the pharmaceutical industry to invest in the development of new epilepsy therapies that can treat the disease and not only the symptoms. Strategic philanthropic support for basic and translational research to close the aforementioned knowledge gaps could incentivize the industry to pursue novel therapeutic targets.

Epilepsy is underfunded.

Compared to other neurological diseases, government funding and nonprofit support has lagged behind. For example, epilepsy is six times more prevalent than Parkinson’s Disease, but receives *10 times less funding* from nonprofit and government funding sources combined. Additional funding and providing opportunities to attract young investigators and encourage collaboration between the different research communities would ensure a sustainable and thriving workforce.

For more information visit philanthropy.milkeninstitute.org

