

# Understanding Epilepsy



Epilepsy, one of the most common neurological diseases in the world, is a chronic disorder that is characterized by recurrent seizures.<sup>1</sup> Epilepsy is defined as having two or more unprovoked seizures separated by at least 24 hours or after one seizure with a high risk for more.<sup>2</sup>

## What are Seizures?

A seizure is the result of a sudden surge of electrical activity in the brain caused by complex chemical changes that occur in nerve cells.<sup>3</sup>

Usually, there is a balance of cells that either encourage or stop other brain cells from sending messages. A seizure occurs when there may be too much or too little electrical activity in the brain causing an imbalance.<sup>3</sup>

Seizures are not a disease in themselves. Instead, they are a symptom of many different disorders that can affect the brain.<sup>3</sup>



## Types of Seizures

There are three major groups of seizures:<sup>4</sup>

### PARTIAL-ONSET (focal)

Partial-onset (focal) seizures refer to those that start in an area or network on one side of the brain. They can be localized or spread to larger areas.<sup>4</sup> About 60% of people with epilepsy experience this type of seizure.<sup>5</sup>

### GENERALIZED ONSET (tonic-clonic, absence, or atonic)

Generalized seizures affect both sides of the brain or large networks of cells on both sides from the onset of the event.<sup>4</sup>

### UNKNOWN ONSET

This classification is given if the beginning of the seizure is not known and may be changed to a generalized or partial-onset diagnosis once additional testing is completed.<sup>4</sup>

## Epilepsy by the Numbers



Nearly 65 million people suffer from epilepsy worldwide, including more than 3.4 million people in the U.S.<sup>6</sup>



Epilepsy is the **fourth most common** neurological disorder and affects people of all ages<sup>7</sup>



**1 in 26** people will develop epilepsy or recurring seizures in their lifetime<sup>8,9</sup>

## Disease Burden

The impact of epilepsy is far-reaching and poses a significant burden on many facets of life, for patients and their caregivers:



### PSYCHOLOGICAL

People with epilepsy tend to experience higher rates of psychological conditions, including anxiety and depression.<sup>1</sup>



### SOCIAL

Even today, people living with epilepsy can suffer from stigma and discrimination and experience a negative impact on overall quality of life for themselves and their families.<sup>1</sup> According to a 2019 study fielded by Kantar Health on behalf of SK life science, at least 80% of patients and caregivers feel some form of isolation due to their epilepsy.<sup>12</sup>



### TRANSPORTATION

Driving a car is critical to employment, socialization, and self-esteem and people with epilepsy say that limitations in being able to drive is one of their main concerns.<sup>13</sup>



### EDUCATION

Students with epilepsy are more likely to have difficulties in school, use special education services, and have activity limitations such as less participation in sports or clubs compared with students with other medical conditions.<sup>11</sup>



### SUDDEN UNEXPECTED DEATH IN EPILEPSY (SUDEP)

SUDEP occurs when someone with epilepsy dies unexpectedly when they were previously in good health and there is no other identifiable cause. Every year, more than 1 in 1,000 people with epilepsy die from SUDEP.<sup>14</sup> One of the main risk factors for SUDEP is uncontrolled or frequent seizures.<sup>15</sup>



### ECONOMIC

Epilepsy creates a significant economic burden for the healthcare system, patients and their families in both direct (outpatient visits, hospital stays) and indirect costs (employment, productivity).<sup>10</sup>



### WORKPLACE

58% of caregivers and 47% of patients have had to take time off work in the past year due to epilepsy.<sup>12</sup>

## Current Unmet Need

While important advances have been made over the years, many people continue to face the disruptive challenges of epilepsy, highlighting the need for new, innovative therapies and better disease management.

According to the **Centers for Disease Control and Prevention:**



Despite the approval of **more than a dozen AEDs** over the past two decades, overall treatment outcomes for people with epilepsy have not changed.<sup>16</sup>



of adults with active epilepsy take epilepsy medication, but



continue to have seizures<sup>17</sup>

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<sup>1</sup> World Health Organization. Epilepsy. <https://www.who.int/news-room/fact-sheets/detail/epilepsy>. Accessed September 17, 2019.  
<sup>2</sup> Epilepsy Foundation. About Epilepsy: The Basics. <https://www.epilepsy.com/learn/about-epilepsy-basics>. Accessed November 4, 2019.  
<sup>3</sup> Epilepsy Foundation. What is a Seizure? <https://www.epilepsy.com/learn/about-epilepsy-basics/what-seizure>. Accessed September 17, 2019.  
<sup>4</sup> Epilepsy Foundation. Types of Seizures. <https://www.epilepsy.com/learn/types-seizures>. Accessed September 17, 2019.  
<sup>5</sup> NINDS. The Epilepsies and Seizures: Hope Through Research. <https://www.ninds.nih.gov/disorders/patient-caregiver-education/hope-through-research/epilepsies-and-seizures-hope-through>. Accessed November 4, 2019.  
<sup>6</sup> CURE. What is epilepsy? <https://www.cureepilepsy.org/about-epilepsy/what-is-epilepsy>. Accessed September 17, 2019.  
<sup>7</sup> Epilepsy Foundation. What is Epilepsy? <https://www.epilepsy.com/learn/about-epilepsy-basics/what-epilepsy>. Accessed September 17, 2019.  
<sup>8</sup> CURE. Mission. <https://www.cureepilepsy.org/about-cure/mission/>. Accessed October 22, 2019.  
<sup>9</sup> American Epilepsy Society. Facts and Figures. [https://www.aesnet.org/for\\_patients/facts\\_figures](https://www.aesnet.org/for_patients/facts_figures). Accessed November 4, 2019.  
<sup>10</sup> Allers, K. "The economic impact of epilepsy: a systematic review." BMC Neuro. 2015; 15:245.  
<sup>11</sup> Centers for Disease Control and Prevention. Epilepsy. <https://www.cdc.gov/healthyschools/npa0/epilepsy.htm>. Accessed September 17, 2019.  
<sup>12</sup> SK Life Science, Inc. and Kantar Health. "Seize the Truth about Epilepsy Perceptions (STEP) Survey." February 7, 2019 to March 27, 2019.  
<sup>13</sup> Epilepsy Foundation. Epilepsy and Driving. <https://www.epilepsy.com/learn/early-death-and-sudep/sudep/sudep-faq>. Accessed September 17, 2019.  
<sup>14</sup> Epilepsy Foundation. SUDEP FAQ. <https://www.epilepsy.com/learn/early-death-and-sudep/sudep/sudep-faq>. Accessed October 2, 2019.  
<sup>15</sup> Devinsky O. Sudden unexpected death in epilepsy. New Engl J Med. 2011;365:1801-11.  
<sup>16</sup> Chen Z, Brodie MJ, Liew D, Kwan P. Treatment outcomes in patients with newly diagnosed epilepsy treated with established and new antiepileptic drugs: a 30-year longitudinal cohort study. <https://www.ncbi.nlm.nih.gov/pubmed/29279892>. Published online December 26, 2017.  
<sup>17</sup> Tian N, Boring M, Kobau R, Zack MM, Croft JB. Active Epilepsy and Seizure Control in Adults — United States, 2013 and 2015. MMWR Morb Mortal Wkly Rep 2018; 67:437–442. DOI: <http://dx.doi.org/10.15585/mmwr.mm6715a1>.