

# Memory



Memory is one of the most important functions of our brain. People with epilepsy are at a higher risk of developing memory problems, which can be frustrating and affect their life. There are potentially several reasons for memory problems in people with epilepsy, including abnormalities in the frontal lobes of the brain.

There are two types of memories that we make – short-term memories and long-term memories.

Our short-term memory is used to process information which needs to be remembered for just a short time. For example, when reading a sentence, our short-term memory allows us to remember what we read at the start of the sentence and when we reach the end of the sentence. We need to use our short-term memory to complete particular tasks (e.g. calculating how many hours until we need to prepare dinner or playing a game), and when this information is no longer needed it is discarded by our brain.

Long-term memory is different in that it is information that is stored for a long period of time. This information may include things like where our childhood home was, what we did last year or even what we did a few hours ago. It can be very distressing for people when they cannot remember their past. This can be a frequent problem for people living with epilepsy, and can be even more relevant and distressing for people in their later years who are also living with epilepsy.

There are three stages to the memory process.

**The first relates to learning.** To be able to remember something new, we must first pay attention in order to learn the new information. Having epilepsy can impact a person's ability to pay attention to something over a period of time and may slow the speed of information processing. Important facts may be missed and memory is affected because the information is not being properly received.

**The second phase is storage of information in the brain.** Some people with epilepsy may have difficulty consolidating new information. Epilepsy can cause structural problems in parts



**0800 37 45 37**



**[national@epilepsy.org.nz](mailto:national@epilepsy.org.nz)**



**[www.epilepsy.org.nz](http://www.epilepsy.org.nz)**

of the brain responsible for memory and the storage of these memories.

**Retrieval or recall is the third phase of the memory process.** This is the brain's way of finding and using the information that has been learnt. There are a number of factors which can make it difficult to recall information such as time pressure, being put on the spot, or being asked to recall information out of context. For example, if someone at the dinner table asks you to quickly tell them what happened during your morning at work. Often later in the day when the pressure is off the information may be remembered more easily. It is difficult to remember information in isolation, but when given further information the memory may be more easily recalled.

There are a number of reasons why people with epilepsy could develop memory problems. These include:

**Seizures** – Seizures are believed to affect the storage of memory in people with epilepsy. Having seizures over a long period of time can negatively affect memory functions.

**Anti-seizure medication** – Anti-epileptic drugs (ASMs) have a number of side effects, and one of them can be a negative impact on the person's cognitive functioning. The impact of ASMs on attention and memory is common, although some people on lower doses of ASMs find that medication helps with their memory.

**Surgery** – Some people experience increased memory difficulties after epilepsy surgery. It has been found that the risk of this can, in most cases, be identified by a specialist before the surgery.

**Anxiety and depression** – Our mood can impact on our ability to attend to information, learn and recall. When we feel anxious or depressed, it is harder to focus on information which, in turn, makes it harder to remember information.

**Stress and fatigue** – When we feel stressed or tired we place more demands on our minds which can affect our ability to retain and recall information. Keeping a healthy sleep and exercise routine is important for people with epilepsy to help manage stress and fatigue levels.



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