

### FROM THE DIRECTOR

Patients regularly report that one of the most challenging consequences of living with epilepsy is the effect it can have on memory and cognition. By collaborating with other healthcare professionals, physicians can assist their patients in the diagnosis of specific areas of dysfunction and in locating appropriate treatment. This will contribute to improved medication compliance and thereby greater seizure control, which, in turn, may return personal autonomy. Dr. Lebeau describes below the many probable reasons for cognitive impairment as it relates to epilepsy and seizures, how it can be diagnosed and what treatment modalities are currently available. We hope you find this article helpful.

**Marcelo Lancman, M.D.**  
Medical Director

### MEMORY DISTURBANCE IN EPILEPSY

By Karen Isaacs Lebeau, Ph.D.

Memory difficulty is the most frequently reported cognitive complaint among patients with epilepsy. Memory dysfunction can be defined as an inability to recall or retrieve information. It can have a significant impact on patients' abilities to function on a daily basis and often contributes to a diminished quality of life.

The etiology of memory problems in patients with epilepsy is complex and it is widely believed that several factors, in combination, are likely the cause. Psychologists Bruce Hermann and Douglas Whitman developed a model that hypothesizes there are three means by which epilepsy contributes to memory disturbance in patients with the disorder. The first is neurobiological in nature and refers to the direct effect of seizures on the brain. In other words, seizures often originate from the areas of the brain that are directly involved in memory processing (e.g., the temporal lobes). A number of seizure variables have been demonstrated to be related to cognitive functioning, such as laterality of the seizure focus. That is, there is considerable evidence that left temporal seizure foci are associated with verbal memory deficits while right temporal seizure disorders more often produce nonverbal memory deficits. The second way in which epilepsy may contribute to memory dysfunction is as a result of the treatment itself. Some anticonvulsant medications negatively affect cognition and behavior and are known to cause memory problems. The third influence pertains to the effect of psychosocial factors, especially mood, on memory functions.

Memory disturbance can often be traced to a problem in some other area of cognitive function. Persons may report a failure in their memory but in actuality, the information was never encoded in the first place due to problems with attention or information processing speed. It is important to recognize that problems with attention often result in a failure to absorb information and one cannot be expected to recall something that was never learned.

For patients with epilepsy, however, even if they do successfully encode information, they may still have difficulty remembering it later on due to difficulties with storage and retrieval. As discussed above, the retrieval problems that patients with epilepsy experience are not surprising as epilepsy frequently has a direct effect on brain structures that are involved in memory processing.

Patients with epilepsy who suspect that they have a problem with their memory or other cognitive functions should discuss these concerns with their physician. The physician will then be able to consider the relative effects of neurobiological factors specific to the patient's particular type of epilepsy as well the potential of any treatment effects that may be contributing to the patient's symptoms. A referral to a neuropsychologist for evaluation of memory and other cognitive functions is often useful in assessing the degree and nature of the disturbance. The evaluation involves administration of standardized measures that provide objective results regarding the patient's memory performance in comparison to other individuals of the same age (and sometimes educational background). The neuropsychologist then evaluates the results from the entire battery to determine the nature and extent of the memory or cognitive disturbance. The cause of the memory disturbance may be suggested and treatment recommendations are also provided.

There are two major classes of treatment for memory disturbance. The first involves medication management. To date, there are no established guidelines for pharmacological treatment of memory in epilepsy, but some epilepsy centers are beginning to prescribe medications used in the treatment of early Alzheimer's disease in the hopes that patients with epilepsy might benefit from them. The second approach is more akin to behavioral management. That is, utilizing behavior modification strategies to enhance memory by improving organization and structure in one's daily life. For example, using a seven day pill box organizer to manage medications or making sure to always leave one's keys on the same hook by the door so they do not get misplaced. Another example of this is to use "prosthetic" devices such as notepads, alarms, calendars, and electronic organization devices (i.e., PDAs). These simple solutions may seem obvious but their results can be quite significant. Cognitive rehabilitation may also be used to help patients to develop methods for encoding and retrieving information.

## 2008 CALENDAR OF EVENTS

### SUPPORT GROUPS FOR ADULT PATIENTS WITH EPILEPSY & THEIR CARETAKERS

**The 2<sup>nd</sup> Wednesday of every month - 6:30 PM** • Walkill Medical Arts Building, 390 Crystal Run Road, Suite 101, Middletown, NY 10941

**The 1<sup>st</sup> Thursday of every month - 6:30 PM** • White Plains Hospital Center Medical Library, Davis Avenue at East Post Road, White Plains, NY 10601

**The 2<sup>nd</sup> Thursday of every month - 6:30 PM** • Overlook Hospital, The Atlantic Neuroscience Institute Conference Room, 99 Beauvoir Ave., Summit, NJ 07902

**The 2<sup>nd</sup> Wednesday of every month - 3:00 – 4:00 PM** • Medical Pavilion, 4256-1 Bronx Boulevard, Bronx, NY 10466

**The 4<sup>th</sup> Monday of every month - 10:30 – 11:30 AM** • Richmond University Medical Center Conference Room, 355 Bard Avenue, Staten Island, NY 10310

**TBA** • 20 Prospect Avenue, Suite 800, Hackensack, NJ 07601

### TEEN SUPPORT GROUP

**The 4<sup>th</sup> Tuesday of every month - 7:00 PM – 8:00 PM** • Walkill Medical Arts Building, 390 Crystal Run Rd., Suite 101, Middletown, NY 10941

### PARENT GROUP

**The 4<sup>th</sup> Tuesday of every month - 7:00 PM – 8:00 PM** • Walkill Medical Arts Building, 390 Crystal Run Road, Suite 101, Middletown, NY 10941

**The 1<sup>st</sup> Tuesday of every month - 6:30 PM – 8:00 PM** • 21 Old Main Street, Suite 101, Fishkill, NY 12524

Call Ann Marie at 845-695-6885 for more information or to register.

**PLEASE CHECK OUR WEBSITE FOR UPCOMING EDUCATIONAL EVENTS.**

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