How often do epilepsy and cognitive problems co-occur?
Depending on the type of epilepsy, and whether or not seizures are controlled, memory difficulties and other cognitive problems are fairly common in epilepsy. In temporal lobe epilepsy, for example, some studies show the rate of cognitive issues may be as high as 80%. Importantly, cognitive difficulties in epilepsy have a larger effect on quality of life than the seizures themselves. This is also true of depression in people with epilepsy (See Epilepsy and Depression in this issue) and because depression can also cause cognitive problems, it can be difficult to determine whether epilepsy, depression, or both are causing the cognitive problems. It is clear, however, that there can be cognitive problems caused by epilepsy that are more than what is seen in depression alone or in everyone who has both depression and epilepsy.

What types of cognitive problems are common in epilepsy?
The cognitive problems that we see are also dependent on the type of epilepsy a person has. With frontal lobe epilepsy, you are more likely to see executive dysfunction, whereas with temporal lobe epilepsy both short- and long-term memory are likely affected. Some people have difficulties with visual memory or performing mathematical operations. Some people have slowed thinking, others experience difficulties sustaining attention. In general, the cognitive problems are related to the function of the area where seizures originate, reflecting a common pathophysiology. In fact, I do not always like the term comorbidity for cognitive dysfunction because that implies cognitive issues are something extra or in addition to the epilepsy. I see it as a different manifestation of epilepsy that occurs in many, but not all, individuals with epilepsy.

Is epilepsy more common in people with cognitive problems?
The rates of unprovoked seizures and epilepsy are higher in people with cognitive disorders (eg, Alzheimer disease) compared with people the same age who do not have those conditions. Typically, when people with cognitive disorders have seizures or epilepsy, the cognitive disease has a faster progression than is typical. In general, this is a different situation from cognitive symptoms of epilepsy in that cognitive disorders cause structural or microstructural changes in the brain that result in seizures rather than there being a separate cause of epilepsy, which may or may not include cognitive symptoms.

It is important to stress this distinction, especially because patients with epilepsy who have cognitive symptoms are often afraid that they are developing or will develop Alzheimer disease. The cognitive changes of Alzheimer disease are relentlessly progressive, which is generally not the case for cognitive symptoms of epilepsy. If there is concern for Alzheimer disease in a person who has epilepsy, neuropsychologic testing can be used to objectively test for and differentiate cognitive disorders from epilepsy.

What clinical approach do you recommend for cognitive complaints in epilepsy?
For subjective cognitive complaints, among the most important things a clinician can do is take the time to have the conversation about cognition. Listen to the patient’s concerns, acknowledge that cognitive problems are common in epilepsy, and also provide reassurance that this does not mean they are developing dementia. It can be useful to talk about how cognition changes as a part of normal aging as well. Ask if medications, including over-the-counter drugs or supplements, have changed recently to determine if there may be another cause of cognitive problems. Usually there is something real occurring that underlies the patient’s concerns; in other words, just because the report is subjective doesn’t mean the issues are not real, especially for the patient.

I would also recommend clinicians remember that cognitive complaints are more detrimental to quality of life than seizures and refer patients to cognitive rehabilitation and problem-solving training programs.

At the Dartmouth-Hitchcock Medical Center, we developed a program for self-management of cognitive complaints in people with epilepsy called Home Based Self-Management and Cognitive Training Changes Lives (HOBSCOTCH). The HOBSCOTCH program incorporates psychoeducation, self-awareness compensatory strategies, and assistance from a memory coach to learn to apply these
strategies in daily life. Individuals in the program develop their own plans for using the tools they learn to improve their quality of life with coping strategies to work around or improve cognitive problems. The memory coach helps them hold themselves accountable, just as a coach for physical exercise would do.

In a single-site clinical trial my colleagues and I conducted, adult participants received the HOBSCOTCH intervention with or without an additional memory exercise on a gaming device or were in a waitlisted control group. Both groups that received HOBSCOTCH had significant gains in cognitive performance, especially attention, compared with people in the nonintervention waitlisted control group. As importantly, those in the intervention groups had improved quality of life as measured with the Quality of Life in Epilepsy (QOLIE-31) scale compared with participants in the waitlisted group, who had a decline in QOLIE-31 scores. The HOBSCOTCH program is supported by the Managing Epilepsy Well Network and funded by the Centers for Disease Control. A multi-site study is under way to test whether HOBSCOTCH can be reliably administered at other locations with similar effects on quality of life. A fully virtual version is also being tested.

Are some epilepsy treatments better than others when there are cognitive complaints?

The most important treatment goal is unchanged when cognitive complaints are present. Working towards freedom from seizure should still be the goal of all treatment. Epilepsy treatment needs to be highly individualized to the needs of a particular patient whether it is pharmacologic treatment, neurostimulation, or epilepsy surgery. There are some drugs known to have cognitive side effects, for example, but not everyone who takes those drugs will have those side effects. If seizures are reduced or not occurring, cognition will be better.