Cognitive enhancement therapy (CET), also referred to as “cognitive remediation therapy,” is a program developed by Drs. Gerald E. Hogarty and Samuel Flesher of the University of Pittsburgh Medical Center as a treatment to aid in the psychiatric rehabilitation of people recovering from schizophrenia and related illnesses. The CET model views schizophrenia as a neurodevelopmental disorder and works on improving deficits in cognition.

In 2000, Dr. Flesher was recruited by PLAN (Planned Lifetime Assistance Network) of Northeast Ohio to establish the first CET program outside of academia (CET Cleveland). CET Cleveland began disseminating to other sites in 2004, and in 2006, the Center for Cognition and Recovery (CCR) was established to further promote the use of CET.

Ray Gonzalez, the executive director of CCR, recently shared some of his experiences and information about CET with NAMI. A graduate of the Ohio State University School of Social Work, Gonzalez describes himself as an “optimist” with 36 years of experience as a psychiatric social worker. He is a certified CET coach and has been co-leader of four CET groups. Gonzalez has also been a NAMI member for more than 20 years; he conducted a CET workshop at the 2012 NAMI National Convention in Seattle and will be a speaker at the NAMI National Convention in San Antonio this June.

Many individuals with schizophrenia and related disorders exhibit signs of impaired cognition: they have problems paying attention, remembering, solving problems and making decisions. Brain-imaging studies have revealed that individuals with schizophrenia show reduced activity in the prefrontal cortex, precisely the area of the brain involved in attention, working memory and judgment.

Although there are medications that help with the positive symptoms of schizophrenia (e.g., psychosis, hallucinations, delusions), there are no known medications for improving cognition (a negative symptom). Cognitive impairments interfere with normal functioning, and people with schizophrenia often have difficulty at school, at work and in relationships. In addition, people with schizophrenia have problems with social cognition, or transforming emotions into thoughts and actions. They have difficulty perceiving social cues and engaging in social interactions. These cognitive and social difficulties create a cycle of desocialization, which often leads to isolation.

Many studies have been able to show the neuroplasticity of neurons, which is their ability to form new connections and to change their activity and organization in the brain. It is thought that increased neural activity leads to better connections, which in turn may lead to an increase in the brain’s gray matter. In 2010, a study published in Archives of General Psychiatry by Eack et al., examined the effects of CET on gray matter changes and found that CET led to increases in gray matter. These studies suggest that the brain can be “trained.” Training and changing the brain through exercise is the key to CET.

CET is different from cognitive behavioral therapy (CBT) in that it does not change thoughts or behaviors. Instead, according to Gonzalez, individuals learn how to “become more competent in dealing wisely and effectively with a wide range of possibilities in the ever-changing spontaneous world of social interactions at home, work, school and in the community.”

CET is meant to complement other treatments such as medication,
psychological counseling and intervention. “By using a holistic approach, we are able to improve both overall cognitive functioning and increase [our] understanding of how society and the workplace function—social and vocational cognition,” says Gonzalez. “Having our clients interact with others in a group setting over the 48 weeks [the length of the program] gives them opportunities to be successful again.” While there are Internet resources that provide only the cognitive exercises, he feels that the interaction provided by the program is invaluable.

The program is best suited for people with schizophrenia or related disorders whose psychoses have been stabilized but who still exhibit cognitive impairment. Groups of eight to 12 participants and two CET coaches meet once a week for three-and-a-half hours. A typical session includes an hour of specialized computer exercises done in pairs to improve cognitive skills (attention, memory and problem-solving), group exercises to improve social cognition, individual “coaching” and psychoeducational talks (e.g., the importance of proper nutrition, sleep and exercise). Weekly homework, which complements the group discussions or psychoeducational presentations, is assigned, and participants are expected to report back and share their homework with the class.

Five to 10 percent of graduates return for less-formal post-CET groups, but most continue their improvement by going to school, working or volunteering. In a three-year post-CET study, the positive results of CET were shown to be lasting. Gonzalez says that he has seen the effects last for 10 or even 12 years.

One of the biggest challenges Gonzalez and CET providers face is that everyone wants to do CET in less than the 48-week time span that has been shown to be most effective. “We tell people that our clients did not get ill overnight, and they cannot recover overnight,” he says.

CCR was awarded the 2011 Science and Service Award by the Substance Abuse and Mental Health Services Administration (SAMHSA) for its “exemplary implementation of evidence-based interventions shown to prevent and/or treat mental illnesses and substance abuse.” CCR provides CET training and consultation services to community-based and inpatient health and human service organizations, and it continually updates its approach, bringing in new ideas and concepts based on research and utilizing new software exercises. The two principal researchers conducting current studies around CET are Dr. Shaun Eack of the University of Pittsburgh and Dr. Matcheri Keshavan of Harvard University, who are studying the use of CET on individuals with high-level autism and replicating their studies with persons in recovery.

Currently, there are 32 CET groups running across 21 sites in 10 states. Seven new sites are in development (planned sites in Kansas and Wisconsin are not indicated on the map). In the future, Gonzalez hopes to disseminate CET throughout the U.S. while maintaining the highest level of fidelity-to-model, or the degree to which a scientific model reproduces the state and behavior of the real world.

**The Treatment of Schizophrenia**

While there is still no cure for schizophrenia, treatments have been developed that help reduce many symptoms of the disease. In addition to CET there are a number of different treatments and therapies that can help.

**Medication**

Antipsychotic medications have been used to treat schizophrenia since the 1950s. New antipsychotic medications, called second generation, or “atypical” antipsychotics were created in the 1990s. While medications do work for many there are also possible side effects, including metabolic syndrome, blurred vision, tremors and others.

**Cognitive Therapy**

Like CET, cognitive behavioral therapy (CBT) has been shown to be an effective part of a treatment for some people living with affective disorders. With more serious disorders, including schizophrenia and psychoses, additional cognitive therapy is added to basic CBT and is known as CBTp.

**Psychosocial Rehabilitation**

Psychiatric rehabilitation strategies are designed to enable people to compensate for, or eliminate, the environmental and interpersonal barriers and the functional deficits created by schizophrenia. Assertive community treatment (ACT) is one of the evidence-based services that can help individuals to be more likely to continue taking their medication and less likely to be re-hospitalized in the future because of a relapse.

To learn more about the treatment of schizophrenia, and other aspects related with the illness, visit www.nami.org/schizophrenia.