COGNITIVE REMEDIATION for PSYCHIATRIC DISORDERS

What Is Cognitive Remediation?
Cognitive remediation (CR), also called cognitive enhancement, cognitive rehabilitation, or cognitive training, is a behavioral intervention targeting problems with cognition (the mental ability to process and understand information and ideas) through the application of learning principles, with the ultimate goal of improving day-to-day community functioning.

Who Might It Help?
CR is for people who have cognitive difficulties that contribute to problems in functioning, such as social relationships, work, school, or self-care and independent living. Currently, CR has shown cognitive benefits for people with schizophrenia. It is also being explored for those with bipolar disorder, major depression, anxiety disorders, attention deficits, and autism.

What Does Cognitive Remediation Involve?
CR programs vary in the methods they use to improve cognitive functioning. Almost all CR programs include restorative task practice of cognitive exercises. Many programs are facilitated by a trained clinician who provides strategy coaching. In some programs, trained clinicians may also teach compensatory skills and prompt participants to describe their thinking process in approaching these exercises, also called meta-cognitive training. These methods are described below.

• **Restorative task practice:** this involves doing mental exercises that target different areas of cognition, including attention, learning and memory, planning, problem solving, and the speed with which we work through complex thoughts. Restorative task practice is usually done with commercially available software. There are many commercially available cognitive software packages; Cogpack, PSS CogRehab, and PositScience currently show the greatest success among participants.

• **Strategy coaching:** this involves teaching participants strategies to help improve their cognitive performance on the cognitive practice exercises. Examples of strategies taught include reading information aloud or creating a story containing the information to help participants learn new material better.

• **Compensatory skills training:** this training is aimed at helping people work around their cognitive limitations toward performing important tasks and optimizing community functioning. For example, the clinician may teach the individual how to keep appointments by maintaining a daily schedule, remember verbal information by immediately repeating the information back for verification, or improve attention by removing distractors.

• **Metacognitive training:** this training is focused on increasing awareness of and the ability to monitor one’s own thoughts toward enhancing cognitive performance in daily activities. Metacognitive skills can be strengthened by asking the participant to pay attention to how and when they improved their performance.
on a particular cognitive task or by noting what things led them to become
distracted.

CR programs for psychiatric disorders vary in the use of strategy coaching
and the teaching of compensatory strategies. These teaching approaches re-
quire a trained clinician who provides such instruction during the course of
cognitive exercise practice. Some CR programs focus only on restorative task
practice and do not use a clinician to facilitate the practice (e.g.,
PositScience). Other CR programs use a trained clinician who provides a
combination of strategy coaching, teaching compensatory skills, and
metacognitive training. In programs in which CR is combined with another
type of psychiatric rehabilitation (e.g., vocational rehabilitation, social skills
training), the clinician plays a key role in integrating the cognitive and reha-
bilitative work. Programs that combine cognitive exercise practice and psy-
chosocial rehabilitation and have been shown to improve cognition and
community functioning include the Thinking Skills for Work program (im-
proves cognition and work) and Cognitive Enhancement Therapy (improves
cognition and social cognition).

How Long Are Cognitive Remediation Programs
and When Can I Expect Changes?

CR programs vary in the length and frequency of sessions, and therefore in
duration of the program. On average, CR programs provide approximately 24
hours of treatment programming over 3 to 6 months. The cognitive benefits
of CR accrue gradually over the course of practice, with some benefits be-
coming apparent during the program and most readily apparent by its end.
Cognitive effects of CR are assessed using standardized, neuropsychological
tests that are different from the exercises used in the CR practice. These tests
are given before the CR starts, and are re-administered when CR is com-
pleted. Benefits of CR are determined by comparing pre- and posttest per-
formance.

Is Cognitive Remediation Effective?

CR is effective at improving cognitive functioning in persons with schizo-
phrenia and other serious mental illnesses, and, in some studies is associ-
ated with modest reductions in clinical symptoms, such as psychosis and lack
of motivation. Some programs have also improved psychosocial functioning
in areas such as work or social relationships. Specifically, programs that com-
bine CR with a psychiatric/psychosocial rehabilitation intervention that tar-
gets a specific area of functioning, such as supported employment to improve
work functioning or social skills and social cognition training to improve so-
cial functioning, have improved psychosocial function compared to psychi-
atric rehabilitation alone. Thus, improvements in cognitive functioning
demonstrated in programs that provide CR alone, without other program-
ing focused on psychosocial functioning, do not transfer to other areas of
community functioning. CR appears to help people learn new skills, thereby
increasing their ability to learn and benefit from rehabilitation and psy-
chotherapeutic interventions.

CR is important for persons with serious mental illness for two primary
reasons. First, impaired cognitive functioning in this population is strongly
associated with poor psychosocial functioning in areas such as work, school, social relationships, and self-care and independent living. Second, people with more impaired cognitive functioning benefit less from established psychiatric rehabilitation or psychosocial treatment programs, presumably because they have a lower capacity to learn new skills.

**Finding the Right Cognitive Remediation Program**

Some CR programs are combined with other rehabilitation programs, whereas others are not. If a “stand alone” CR program is all that is available, people are encouraged to find an additional rehabilitation program focused on the area of functioning they most want to change. Finding a CR program in the community can be difficult, as there are few people trained to provide these programs. Fortunately, the field is rapidly growing. It is possible to order commercially available CR software programs for home use, but the effectiveness of home practice without the guidance of a trained professional is unknown at this time. Local mental health centers or your doctor may have information about accessing a CR program.