This issue of NeuroRehabilitation illustrates the variety of techniques and applications that are generally referred to as Cognitive Rehabilitation Therapy (CRT). The topics in this issue span a wide range of CRT research and therapy. As such, the articles provide answers to several questions that are often posed by brain injury survivors, family members, and other professionals to those therapists who provide this type of treatment.

What is Cognitive Rehabilitation Therapy? The variety of articles in this issue illustrate the art and science of restoring mental functioning in those who have suffered a debilitating injury or who may otherwise have problems with attention, comprehension, learning, remembering, problem solving, reasoning, and processing (Parente & Herrmann, 2010). According to the American Congress of Rehabilitation Medicine (Cognitive Rehabilitation Manual: Translating Evidence-Based Recommendations into Practice), “The primary goal of cognitive rehabilitation is to ameliorate injury-related deficits in order to maximize safety, daily functioning, independence, and quality of life. Progress is achieved in a stepwise manner, with an emphasis on following long term goals that include problem orientation, awareness and goal setting... compensation... internalization... and generalization.” (page 3). The purpose of this issue of NeuroRehabilitation is to provide a sampling of recent techniques and applications in this ever-evolving field.

Over the last four decades, there has been a virtual explosion of interest in CRT techniques. However, the history of CRT dates back to World War I and the development of therapy for wounded soldiers. The Second World War renewed interest in CRT as a response to this same need. The latter part of the 20th century witnessed a number of influential articles and books on CRT as well as the development of model systems. This same need continues today with the influx of soldiers with brain injuries who are returning from the Middle East and Afghanistan.

Parente & Herrmann (2010) describe a variety of different types of CRT. For example, stimulation therapy involves mental exercises that stimulate the process of neuroplasticity. Currently available computer training (e.g., lumosity.com) provide this type of therapy. Process training involves targeted treatment for specific disorders such as visual scanning and visual neglect. Attention/concentration training is perhaps the best-developed CRT technique. It involves treatments to improve a person’s ability to focus, to maintain vigilance and mental control. Strategy training involves teaching specific techniques for remembering (e.g., mnemonics), social strategies, or problem solving techniques. Nutrient and drug treatment involves the use of over-the-counter or prescription substances that either correct a dietary deficiency or improve attention and memory. Prosthetic devices obviate a memory or cognitive problem. For example, using a digital recorder can dramatically reduce a person’s problems with memory. Environmental manipulation organizes the personal living space to facilitate daily functioning and independent living. Although each of these methods has been used...
with some success, perhaps the best approach to CRT involves using all of these techniques together to coordinate the survivor’s nutrition, lifestyle habits, and therapy efforts. Several of the articles in this issue illustrate the integration of these techniques.

**Does CRT work?** Although there is no shortage of the published literature on CRT that derives from experimentation and report of data collected in acute care centers and therapy facilities around the world, there is little published literature that documents specific and reproducible treatments with proven efficacy. However, several recent meta-analytic studies and systematic reviews have documented various categories of the CRT treatment which have been shown to improve function in a number of areas, e.g., language-based treatments, attention training process, and memory training (Cicerone, et al., 2000, 2005; Rohling, et al., 2009; Elliott & Parente, 2013). All of the articles in this issue provide suggestions for therapeutic intervention that, in the author’s experience, prove effective.

**What is Cognitive Rehabilitation Therapy?** There is a conspicuous lack of published research that describes specific, standardized, or easily replicable CRT techniques. Aside from some commercially available software packages (e.g., www.cogmed.com/progra; lumosity.com, Attention Process Training program) there are no other standardized treatment packages that are in general use. Therefore, the goal of this issue is to showcase the efforts of therapists around the world who actually provide treatment. The articles in this issue by Kit Malia, Elsa van Schouwen-van Kranen, Davide Pierini and Doreen Hoerold, and Jan Nordvik and colleagues illustrate the application of CRT theory and the practice of CRT in the UK, the EU, and Canada. The article by Jessica Kegel and her colleagues illustrates CRT therapy with veteran stroke patients in the US. The contribution of Bryan Devan and Paul Piottell at the National Institute on Aging demonstrate the potential of pharmaceutical treatment for improving memory. Research from international organizations and private companies, such as the Practical Memory Institute, iLearn systems (Kayla Long, Bob Rager, and Greg Adams) and collaborative research between psychiatric centers and universities (Julie Bird and Rick Parente) highlight the importance of awareness of deficits and emotional perception as determiners of progress in CRT. Other articles deal with generally unexplored areas of CRT such as techniques for training expressive writing skill after brain injury (Lisa Wheeler, Sherry Nickerson, and Kayla Long) or the application of CRT in the elementary school system (Dorothy Shaw).

**Who could benefit from CRT Therapy?** Literally, anyone who has sustained a brain injury or stroke may benefit from CRT. This need is growing due to the huge influx of soldiers from warzones with brain injuries who will need extensive CRT. There is also a growing population with age-related cognitive decline who will likely require CRT. Athletes with sports related head injuries would also benefit. These numbers do not include the myriad of undiagnosed brain injuries that go largely unreported. In addition, CRT techniques may also be helpful to those who are learning disabled or otherwise intellectually limited. Many CRT techniques are also useful to unimpaired people. For example, students who wish to improve their retention of lecture materials and readings. The ubiquity of these procedures illustrates that most anyone may benefit from the systematic application of these targeted treatments that we call cognitive rehabilitation. The author’s goal for this issue of NeuroRehabilitation was to demonstrate the ubiquity of CRT procedures and to provide practical therapy suggestions for CRT professionals, ABI survivors, the elderly, and anyone else who may experience some form of cognitive limitation.

**References**


