

MID ATLANTIC BRAIN & NEUROLOGICAL REHABILITATION

FUNCTIONAL NEUROLOGY & CLINICAL NEUROSCIENCE (CNS)

FUNCTIONAL NEUROLOGY has developed from basic neuroscience principles and an understanding of how the most recent scientific research can be applied to patient care.

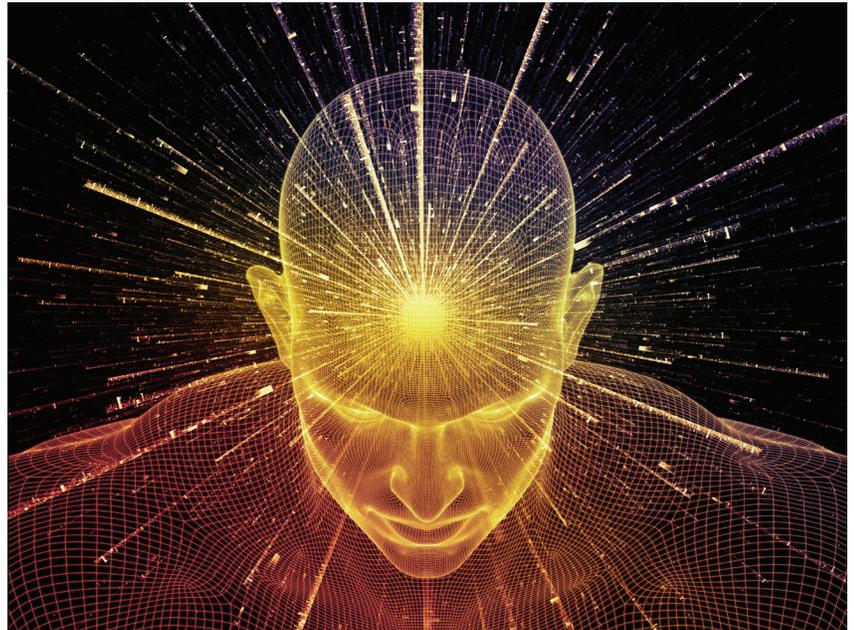
Through careful assessment, a Functional Neurologist can not only determine which areas of a person's nervous system are compromised, but also devise an appropriate treatment to improve the quality of how their nervous system functions. The man often credited with the origin of this premise is Dr. Ted Carrick, who has been researching and teaching this model since the mid-1970s.

NEUROPLASTICITY CONCEPT

A key concept in understanding this approach is "neuroplasticity". Nerve connections in the brain are considered "plastic" because they can be shaped or modified by sensory, motor, cognitive or emotional experiences. Simply put, what you are exposed to can rewire your nervous system. The basic unit of the nervous system is a nerve cell called a "neuron." There exists over 100 billion neurons in the human body, each one having a specific function and connection to other neurons, forming extensive electro-chemical circuits and highways of communication.

While this system was once considered "fixed," we now know that this vast collection of nerve cells is capable of remarkable change.

For example, by repetitively firing a pathway from one neuron to another, we can expect an increase in the number of chemical messengers (neurotransmitters) produced by the "talking" neuron as well as an increase in the number of receptors on the "listening" neuron (synaptic plasticity). Furthermore, a nerve cell can grow connections to new neurons (synaptogenesis) and can even extend to far reaching areas (neuronal migration). This is essentially how we learn a new skill and why "practice makes perfect."



FUNCTIONAL NEUROLOGY & REHABILITATION OF THE NERVOUS SYSTEM

In the developing brain, as well as in the adult, research has confirmed that we have the ability to create new neurons (neurogenesis), a process long considered impossible. It is now also known that if an area of the nervous system is damaged, not only is regeneration achievable, but other nerve cells can take over the function of the lost neurons (functional reorganization). For example, a person who has suffered a stroke of the language centers of the brain may still regain the ability to speak.

It is important to note that neuroplasticity can also develop negative consequences. If an area of the brain is not stimulated or if a neuronal pathway is not fired, neurotransmitters and receptors may diminish, connections between distant neurons may be withdrawn and nerve cells may eventually die. The saying, “use it or lose it”, is indeed, a neurological fact.

A basic premise of Functional Neurology is to support healthy plasticity of the nervous system through proper stimulation and fuel. Treatment is aimed at not only protecting the nervous system, but giving it the activation that it needs to thrive. We now know that even a nervous system that is functioning poorly can be rehabilitated, often with progressive and permanent success.

WHO CAN BENEFIT FROM CLINICAL NEUROSCIENCE (CNS)?

CNS is effective for treating people with functional neurological deficits who have already been treated by traditional care but have not achieved their clinical objective. CNS may also benefit people with anatomical abnormalities who are not candidates for surgery.

CNS has been shown to be particularly effective for:

- Concussion/traumatic brain injury
- Movement disorders
- Neurodegenerative disorders
- Brain optimization
- Patients with significant neurological deficits including:
 - Developmental disorders
 - Neuro-psychological conditions
 - Vestibular/balance disorders
 - Pain syndromes
 - Cognitive challenges

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