

The Memory Practice Newsletter

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In this issue
Dr. Michelon
tells you about
Brain Plasticity.

Visit our website

www.thememorypractice.com

And learn about
how to:

- Exercise your brain at home
- Organize a brain support group for your residents

Brain Plasticity

As you know the brain is not made of plastic! Neuroplasticity or brain plasticity refers to the brain's ability to change throughout life. The brain has the amazing ability to reorganize itself by forming new connections between brain cells (neurons).

Neuroplasticity occurs in the brain:

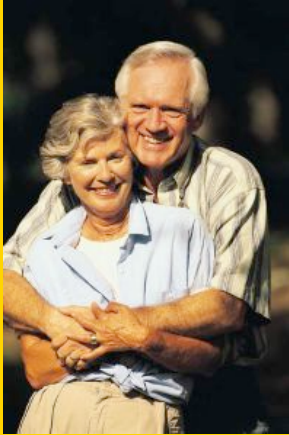
- 1- At the beginning of life: when the immature brain organizes itself.
- 2- Through adulthood: whenever something new is learned and memorized.
- 3- In case of brain injury: to compensate for lost functions or maximize remaining functions.

In addition to genetic factors, the environment in which a person lives as well as the actions of that person, play a role in plasticity.

Plasticity and Brain Injury

A surprising consequence of neuroplasticity is that the brain activity associated with a given function can move to a different location as a consequence of normal experience, brain damage or recovery.

In his book "The Brain that changes itself", Norman Doidge describes numerous examples of functional shifts. In one of them, a surgeon in his 50s suffers a stroke. His left arm is paralyzed. During his rehabilitation, his good arm and hand are immobilized, and he is set to cleaning tables. The task is at first impossible. Then slowly the bad arm remembers how to move. He learns to write again, to play tennis again: the functions of the brain areas killed in the stroke have transferred themselves to healthy regions!



At The Memory Practice we develop brain exercises to help adults boost their memory and keep their brain fit.

Our exercises target all brain functions including memory. They are stimulating and fun.

With our Home Program **brain exercises are sent directly to your home.**

Contact us to set up a **FREE assessment** for your client, your loved one or for yourself!

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The brain compensates for damage by reorganizing and forming new connections between intact neurons. In order to reconnect, the neurons need to be stimulated through activity.

Plasticity, Learning, and Memory

For a long time, it was believed that as we aged, the connections in the brain became fixed. Research has shown that in fact the brain never stops changing through learning. Plasticity IS the capacity of the brain to change with learning.

Changes associated with learning occur mostly at the level of the connections between neurons. New connections can form and the internal structure of the existing synapses can change.

Plasticity and Brain Exercises

You know that exercising or stimulating your brain is highly recommended as part of a brain-healthy lifestyle.

Brain exercises have an impact on brain health thanks to the brain's plasticity. When you exercise or stimulate your brain through new or merely unfamiliar activities, you can trigger changes in the brain, such as an increase of connections between neurons.

These changes contribute to an increase in what is called your brain reserve. Research suggests that the more brain reserve, the more resistant the brain is to age-related or disease-related damages.

References

Doidge, N. (2007). *The Brain that changes itself: Stories of personal triumph from the frontiers of brain science*. Viking Adult.

Stern, Y. (2002). What is cognitive reserve? Theory and research application of the reserve concept. *Journal of Int. Neuropsych. Soc.*, 8, 448-460.