

## The 4 Pillars of Brain Maintenance

Neuroplasticity is the lifelong capacity of the brain to change and rewire itself in response to the stimulation of [learning](#) and experience. The latest scientific research shows that specific lifestyles and actions can, no matter our age, improve the health and level of functioning of our brains.

What factors seem to have the most influence? As described in the second chapter of the Guide, a brain-friendly lifestyle should include at least:

- **Balanced nutrition:** As a general guideline, what is good for the body and heart is also good for the brain. Gingko Biloba and other supplements do not seem to bring the benefits people expect.
- **Stress management:** Chronic stress reduces and can even inhibit neurogenesis (the creation of new neurons) and affects memory and other brain functions. It is then very important to learn how to manage stress.
- **Physical exercise: Physical exercise improves cognitive functioning through increased blood supply and growth hormone levels in the brain. Of all the types of physical exercise, cardiovascular exercise that get the heart beating has been shown to have the greatest effect.**
- **Brain exercise: Brain exercise strengthens the synapses or connections between neurons, thus improving neuron survival and cognitive functioning. Cumulated mental stimulation throughout our lives (via education, our jobs, leisure activities) can help build a neuroprotective Cognitive Reserve.**

## Mental Exercise vs. Mental Activity

The third chapter of the Guide shows why mental exercise goes beyond mental activity. We define Mental Exercise (or “Brain training”) as the structured use of cognitive exercises or techniques aimed at improving specific brain functions.

Brain training can be delivered in a number of ways:

- **Cognitive therapy (CT):** the way we perceive our experiences influences our behaviors, and one can learn cognitive skills to modify his or her thinking and resulting actions. CT has been around for decades, but there is more recent research showing the specific brain benefits from the technique.
- **Meditation:** has been shown to improve specific cognitive functions such as attention and emotional self-regulation.
- **Biofeedback:** these devices can measure and graphically display various physiological variables such as heart rate variability, so that users can learn to self-adjust and identify and manage emotions better.
- **Brain Fitness Software:** these are fully automated applications designed to assess and enhance specific cognitive abilities. This is the area that has exploded since 2007 – and where we observe the most confusion.