

Brain Gym and Cognitive Reserve

by ©Claire Hocking, Brain Gym Instructor 2020

Some of you may know that I am also a University of the Third Age tutor and write a regular column on Brain Health for their newsletter.

I have been doing Brain Gym with seniors for many years now and often explain the benefits of Brain Gym by relating to the concept of cognitive reserve.

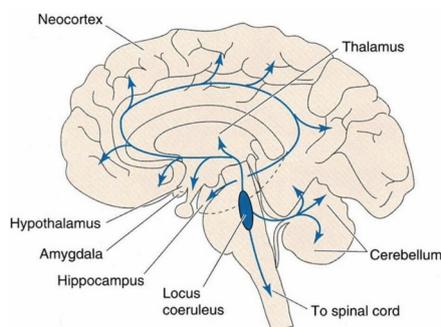
When it comes to brain function and memory, you “use it or lose it”. Brain wiring plays an important role in determining how efficiently the brain/mind functions. Brain research has discovered factors that are crucial to help save our brain/mind and body as we age. Your brain is the most plastic and adaptable of all our organs. In response to healthy behaviours, your brain can react like an exercised muscle, growing bigger and stronger, reclaiming your natural brain power and age -proofing your brain. This is called neuroplasticity.

Your brain retains its plasticity, the ability to rewire itself for better function, throughout life, at any age. When you use your brain, especially doing something differently, it forms new neural connections, promoting greater cognitive reserve.

Surprising brain research has revealed that people can have the same amount of Alzheimer’s disease/pathology in their brain, but some will show dementia symptoms while alive while the others didn’t. Studies are showing up to 30% of the people who are cognitively normal before they die, have full blown Alzheimer’s pathology, the typical plaques and tangles, just like people with Alzheimer’s, yet display no symptoms when they are alive. Researchers now believe this difference is due to the amount of cognitive reserve in their brains.

Cognitive reserve is based on the fact that our brains carry redundant neural connections that can act as a back-up in times of need. With the stress of ageing or when the brain is damaged, e.g. by a stroke or through the gradual development of Alzheimer’s disease, this cognitive reserve comes into play to replace or cover the damaged cells. The greater your cognitive reserve supply, the more resilient your brain is.

People with greater cognitive reserve have more neurons and neural connections, specifically in the Locus coeruleus, which is involved in stress and panic responses (Moro and Fear Paralysis reflexes). Alzheimer’s patients eventually lose up to 70% of neurons in that part of the brain.



There is mounting evidence that giving your brain a workout, whether it be doing U3A courses, Brain Gym, jigsaws or Sudoku, learning to play an instrument or a language, even socialising with friends, boosts your cognitive reserve, and lowering your chances of showing symptoms of dementia.

Having integrated primitive reflexes promotes cognitive reserve. The one thing that has been apparent to me when working in high care dementia units, is the residents have very obvious immature primitive reflexes activity.

In fact, research now shows that early life experiences effects how your brain deals with the ageing process, it is always building cognitive reserve. Apart from the immediate benefits of doing Brain Gym during schooling years, Brain Gym may contribute towards enhancing brain functioning in their later years. We are really helping society, both now and in the future, by doing Brain Gym in schools.

Dementia is one of the most costly diseases in the world. The number of people with dementia in Australia has soared to more than 413,106 – with an estimated cost to the community of more than \$14 billion this year alone. If nothing is done to reduce the incidence of dementia, the cost will blow out to more than \$18 billion by 2025, and more than double to \$36 billion in less than 40 years, in today's dollars. The number of people with dementia is expected to reach more than 1.1 million people by 2056.

Is there a better reason to do Brain Gym, especially in the senior years? I have personally seen remarkable improvements in people in aged care settings that regularly do Brain Gym. If interested, I have a remarkable aged care case study on my website, www.wholebrain.com.au relating to a elderly lady who had dementia and how she benefited from her daily Brain Gym.

I always explain to people when I am teaching Brain Gym, that if they do Brain Gym with others, not only are they being good role models, they are building their own cognitive reserve, thus reducing their chances of getting dementia in their later years. A win-win for everyone!

An excellent reference on cognitive reserve is

<https://blogs.adelaide.edu.au/robinson-institute/2017/06/23/the-conversation-what-is-cognitive-reserve-how-can-we-protect-our-brains-from-memory-loss-and-dementia/>