

## Your mind: use it or lose it

One of the greatest discoveries relating to the human brain in our generation—indeed in the last century—is that of neuroplasticity (the ability of the brain to “repair” itself). In 1998 a landmark study found that human brain is capable of developing new brain cells (neurogenesis)<sup>1</sup> or of making new synaptic connections<sup>2</sup>—thus, debunking the prevailing theory that the brain was a rigid system, and that we are daily losing brain cells which do not regenerate).

Neuroplasticity refers to changes in the brain structure and function brought about by training and experience. The brain is an organ that is able to change in response to experience. Neuroscience and psychological research over the past two decades on this topic—thanks to their close connection with Buddhism, especially meditation—has burgeoned and is leading to new insights about the many ways in which the brain and behaviour change in response to experience.<sup>3</sup>

Neuroplasticity is being studied at many different levels, in different species, and on different time scales. Yet all of the work invariably lead to the conclusion that the brain is not static but rather is dynamically changing and undergoes such changes throughout one’s entire life. Research on brain plasticity reveals how the composition of the adult mammalian brain is constantly changing and show the factors that influence these changes.<sup>4</sup>

A healthy brain is like a jungle, full of trees; it has numerous synaptic connections. This is called synaptic density and is a direct measure of our brain reserve. A brain should not look like an island with one palm tree. This is because Alzheimer’s disease and other types of dementia will invade the brain and cut down the neurons and synaptic connections, like a lawn-mower cutting down grass. A brain that is a jungle of synaptic links effectively slows down the onset of Alzheimer’s and other brain diseases. However, in a brain that is an island with only one palm tree, symptoms of Alzheimer’s will quickly arise because there is no brain reserve to fight it off.

An article in the *Annals of Internal Medicine* highlights the results of a large study that “suggests that regular exercise [15 minutes a day, at least 3 times a week] is associated with a delay in onset of dementia and Alzheimer’s disease.” Results showed that such exercises decreased the onset of dementia by 32%.<sup>5</sup> This study joins a growing body of research that points to a connection between physical exercise and brain health.

On a positive note, I might add that meditation (breath or lovingkindness, or better both) of 15 minutes a day, at least 3 times a week, would further reduce our chance of getting dementia. Better still, the meditation should be done on a daily basis of even just 10 minutes a session. It is also vital to learn how to deal with or reduce stress, and meditation is a good way to do this.

---

<sup>1</sup> <http://en.wikipedia.org/wiki/Neurogenesis>.

<sup>2</sup> <http://en.wikipedia.org/wiki/Neuroplasticity>.

<sup>3</sup> See **Meditation & Consciousness** = SD 17.8c: <http://dharmafarer.net/wp-content/uploads/2009/12/17.8c-Meditation-consciousness.-piya.pdf>.

<sup>4</sup> <http://www.jneurosci.org/cgi/content/full/25/45/10366>; also <http://www.hhmi.org/janelia/conf-042.html>.

<sup>5</sup> Vol 144 no 2, 17 Jan 2006: 73-81, <http://www.annals.org/content/144/2/73.full>.

Medical advice in preventing dementia are: avoid strong drinks (or at least reduce it), keep blood pressure normal, engage in some physical activity, and cultivate interests or hobbies: keep the mind active. And, of course, meditate.

There is such a thing as “young onset Alzheimer’s disease” which strikes those below 60.<sup>6</sup> The best defence here is learning and doing effective meditation. Keep the mind active, and it will stay healthy.

My point is that to be a Buddhist is to know your mind, train your mind, and free your mind. This means you need to keep your brain healthy, too. Your mind: use it or lose it.

Piya Tan ©2010 rev  
Revisioning Buddhism 11

---

<sup>6</sup> [http://www.afateens.org/learn\\_dementia.html](http://www.afateens.org/learn_dementia.html); <http://www.medicalnewstoday.com/articles/103648.php>.