

BOOST YOUR BRAIN

A single thought can change your brain for the better. Here's how.

BY DR HELENA POPOVIC

The rapidly expanding field of neuroplasticity has shown that the brain can change its own structure and function. Your brain can grow new cells, new circuits and new connections in response to what you do, what you think and how you behave. This is great news because it means we are more than passive victims of our genes; we play an active role in how our brains develop throughout our lives and we can significantly reduce our risk of developing dementia, including Alzheimer's disease.

There are three key ways to boost our brains and halve our risk of dementia: lifelong mental stimulation, social connection and regular physical exercise.

Stay positive

What exactly do these three things entail? In a walnut shell (since walnuts are a good source of omega-3 fatty acids, which are essential for optimal brain function)

having a positive attitude to ageing and living in a way that brings us meaning, purpose and connection with our fellow humans is the best way to stay physically and mentally healthy till our very last days.

In a 2002 research paper, Becca Levy, an expert in the psychology of ageing from the Yale School of Public Health, recorded that people with more positive perceptions of ageing lived an average of seven-and-a-half years longer than people who felt negatively about ageing. The effect of a positive attitude on survival and cognition was greater than the effect of a healthy lifestyle. Having low blood pressure, normal cholesterol levels and never having smoked each added around four extra years to life. That's only half of what a life-affirming optimistic outlook gives.

Specifically in relation to cognition, when older people were exposed to positive and constructive messages about ageing immediately

before a series of memory tests, they performed better than individuals told or shown something negative in relation to ageing.

So the most important thing to keep our brains at their best is continuing to set goals that inspire and excite us. What are you passionate about? What brings you joy and fulfillment? What makes you feel more connected to the people you love? Seek it out and do it. There isn't one specific set of activities that boosts brain power; it's whatever engages and challenges *you*.

Never stop dreaming

How do these attitudinal factors affect the brain? Excitement and passion change our brain chemistry through the production of neurotransmitters to spark creativity, strengthen focus and energise every aspect of thinking. These neurotransmitters keep our brains healthy as we age.



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Studies have also demonstrated that aspirations turn on our brain cells much more powerfully than needs. When people are attached to a brain scanner and asked to think of things they aspire to do, more of their brain cells start firing than when they think of things they need to do. We have a use-it-or-lose-it brain and the more brain cells we activate on a regular basis, the more we preserve them and keep them at optimal functioning. What are places you've wanted to visit? Things you've wanted to do? Skills you've wanted to learn? Write a list and start planning how you'll make it happen. Even if you don't reach your final destination, simply setting a goal and striving to attain it benefits cognitive functioning. If something doesn't challenge you, it won't change you. There is nothing more exhilarating than embarking on a project you aren't quite sure you're able to accomplish.

Learning a second (or third) language, or practising a musical instrument, art, craft, painting, drawing or carpentry all boost our brains. As do dancing, juggling, joining a book club, reading poetry, creative writing, starting a new hobby or enrolling in a formal course. The key is that you find it mentally challenging and enjoyable. Crossword puzzles and sudoku are beneficial as long as you aren't good at them. As soon as you master something, take on something new. Get comfortable with being uncomfortable. The brain needs ongoing stimulation through new experiences. Boredom and monotony are poison to the brain.

Another powerful activity to boost brain function is volunteer work. A study of older African-American women with risk factors for both heart disease and dementia showed positive changes in frontal »

lobe blood flow when they started volunteering at a local primary school. This correlates with worldwide studies showing that meaningful social relationships and a rich social life halve the risk of developing dementia.

Keep moving

The third key factor in halving dementia risk is physical exercise. We have long known that exercise is good for the heart but it wasn't until the 1990s that scientists at the Salk Institute for Biological Studies in California discovered that exercise not only builds muscle it builds brain matter.

Exercise stimulates the production of a protein called brain-derived neurotrophic factor (BDNF), which acts like a fertiliser for neurons. BDNF promotes the formation of new brain cells and new connections between existing brain cells. BDNF is particularly active in areas of the brain linked to learning, memory and complex thinking. The more you exercise, the more BDNF you produce and the better your cognition and memory. A study published in 2006 reported that those over the age of 60 who engaged in brisk walking for three hours a week over a six-month period increased both grey matter and white matter and enlarged their overall brain volume.

The brain operates at its best in the first hour after we engage in any form of physical activity. Just 20 minutes on a treadmill improves language learning, creative thinking and problem solving. If you are stuck on a problem, get moving for 20 minutes and you are more likely to come up with the solution. Before you arrive at your origami lesson, take a brisk walk and you'll learn more easily. Exercise also stimulates the release of



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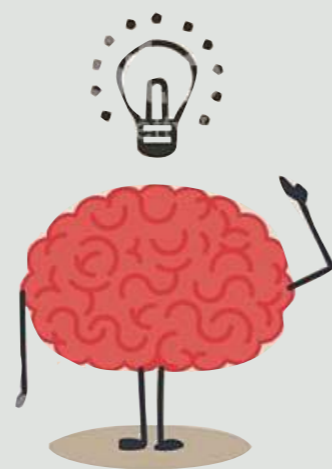
feel-good chemicals: endorphins, serotonin, dopamine, oxytocin and noradrenalin. These neurotransmitters improve mood and positivity. In fact, one hour of exercise a day has an anti-depressant effect equivalent to that of some medications.

Physical exercise refers to endurance training (aerobic activities such as walking, running, cycling, swimming, dancing and vigorous housework) and strength training (lifting weights or carrying heavy shopping bags up a hill). Both types of exercise improve cognition and affect the brain in complementary ways so ideally we need to engage in both. But the best exercise is ultimately whatever you enjoy doing and will continue to do on a regular basis.

It's the little things

Small things can make a big difference because they add up over time and increase our confidence to continue stretching ourselves. Start on one new activity or learn one new thing today – whatever inspires or interests you. The person who moves mountains begins by carrying small stones. Dementia is a mountain but we all have the capacity to carry small stones. ••

Dr Helena Popovic visits Probus clubs around Australia to talk about brain health. Would you like her to visit your club? Visit www.drhelenapopovic.com



ABOUT THE AUTHOR

Dr Helena Popovic is a medical doctor, leading authority on how to improve brain function, international speaker and best-selling author. She cares for her father who has had dementia for over 10 years. Everything she speaks and writes about, she practises with her father and he accompanies her to all her Probus talks. She has written two books on dementia: *In Search of My Father: Dementia is No Match for a Daughter's Determination* and *NeuroSlimming*.