

## BRAIN HEALTH



*“Our research on the adult human brain has shown that we still retain stem cells throughout life. This was unthinkable in previous decades. We have shown that those cells can multiply to make new replacement brain cells to fight brain diseases. We have also discovered the motorway that these new brain cells travel down to repair the human brain. What is most interesting is that animal studies have shown that exercise and a stimulating environment promotes increased numbers of new brain cells. Therefore this has implications for all of us. The more we stimulate our brains, the more we exercise, the more new brain cells we make and the more it will increase out potential to repair the damaged human brain. In summary, use it or lose it!”*

*- Professor Richard Faull, Neuroscientist\**

Until recently, the scientific community believed that brain development stopped at adulthood. Research now shows otherwise, and there are three key findings that further promote the importance of brain exercise: New pathways of communication among brain cells can form, areas of the brain that are used intensely

can increase slightly in size, and the brain has the ability to make new cells.

Because Parkinson's is caused by the breakdown of dopamine neurons in the brain, these findings are very relevant. In addition there is now scientific evidence to suggest that certain activities – exercise, nutrition, creativity, and relaxation – may not only be therapeutic for Parkinson's symptoms, but may help to improve the brain.

### EXERCISE

It is already well established that exercise can help people with Parkinson's improve and maintain mobility, but now we know it can help the brain. Exercise may help increase the connections between neurons and improve blood flow in the brain. Animal studies show that when mice with Parkinson's symptoms exercise, it helps them to retain and use their dopamine neurons more effectively. Similar research is being done into human responses. Exercise also helps to combat depression by releasing serotonin and other mood-elevating chemicals in the brain.

# PARKINSON'S FACT SHEET

- Set a routine and stick to it. Slowly ease into different difficulty levels and set achievable goals.
- Envision the realistic results you are aiming for while exercising.
- Even a simple walk can release natural antidepressants and help you think freely
- Exercise at the time of day that suits you best e.g. in the mornings to help wake up, or in the evenings to help wind down.
- Take up exercise opportunities: climb a few flights of stairs when you feel you can, park your car a bit further away than usual.
- Investigate exercises that will address different Parkinson's symptoms, this can be both a mentally and physically stimulating task.

## NUTRITION

As a general rule, good nutrition for the body is good nutrition for the brain. However there are some foods that are especially good for brain health, and some that are not.

- Omega Three oils are found in fish, walnut and flaxseed and helps to improve the function of the membranes around brain cells, helping the brain to function better, improve concentration and lessen depression.
- Research suggests antioxidant vitamins E and C help protect cells in the brain.
- Avoid excessive unhealthy foods. Reducing calories can slow age-related brain changes.
- Enjoy caffeine and alcohol in moderation.

## CREATIVITY

Another way you may be able to affect the health of your brain is to challenge and stimulate yourself mentally. Contrary to what you may think, creativity is not restricted to those with artistic genius - it is within reach of all of us. Creativity involves a cognitive brain process which helps develop mental function. It is not limited to the arts - there can be creativity in science, mathematics, any kind of problem solving.

- Try things you don't already know how to do. Study a new language, take up an interest in architecture, sailing or crafts for example. Anything that involves concentration, learning and focus will be good for the brain.

- Memory exercises, such as memorising lists, or playing games like bridge, can be helpful for improving loss of memory and recollection speed.
- Try reading aloud to someone, perhaps a grandchild, regularly as this can help mental development.
- Games like Sudoku, crosswords and chess are all good for challenging yourself and getting creative.

## RELAXATION

There is evidence that long-term stress, depression and anxiety can damage the brain, so learning relaxation techniques can be invaluable in helping to maintain brain health and ability.

- Try meditation. It can lower blood pressure and help with concentration, even when you are not actively meditating.
- Exercise. Channelling internal stress into external action can help. This can also help you sleep better, which is important for relaxation and brain health.
- Take time for yourself and concentrate on things you enjoy, getting creative can help this.
- Actively relax by tensing then releasing individual muscle groups.

*\*Professor Faull is establishing a new Centre for Brain Research at The University of Auckland. This will be a unique partnership between neuroscientists, clinicians and community NGOs, including Parkinson's New Zealand. The Centre will launch in November. See page 10.*

*Sources: PDF - Improving Brain Function, Headlines - The Healthy Brain Program*

