Exercise helps keeps brain fit, slows Alzheimer's

Seniors benefit in particular from brisk walks that get more blood to the brain

By Katherine Dedyna, Times Colonist January 26, 2009

Exercise helps keep our minds active.

Photograph by: Files, Canwest News Service

Brian Christie is wearing an Old Guys Rule surfing T-shirt, but the University of Victoria neuroscientist knows that one of the best ways to keep his brain young is to exercise.

It has only been a decade since scientists discovered that brain cells could be increased and made more active through exercise, not just lost through disease -- and Christie was part of that
groundbreaking research team at the Salk Institute in California. Granted, the studies were on mice. He's still looking at ways to help regenerate neurons in the adult brain and isn't waiting for the research on humans.

"Exercise creates new cells and changes old cells for the better," says Christie, who bikes or runs two kilometres to and from UVic each day.

"Even if you're diagnosed with Alzheimer's disease, if you exercise, the progression of your disease will slow considerably. As little as 20 minutes of brisk exercise three times a week -- if you just do that, it really produces a lot of benefits."

Backing that up is a 2008 study by Dr. Jeffrey Burns of the University of Kansas medical school that found only one-fourth the brain shrinkage in fit people with Alzheimer's Disease compared to less-fit participants.

Getting blood to the brain is what counts, and a brisk walk rather than a brutal run can do that.

It's especially important because brain volume and the production of new neurons decline with age and even more so with diseases such as Alzheimer's, Christie says.

"If the elderly got out for 20 minutes a day, it would be fantastic."

He's one of a huge team of scientists from Canada, the U.S. and Europe looking at exercise under the microscope rather than in the gym.

In his Salk days, genetically identical mice were divided into two groups -- one with food and water; the other with food, water and a running wheel.

Mice with a wheel ran five kilometres a night. Six weeks later, they found a hidden platform significantly more easily than the inactive mice.

Examination of their brains showed they had grown more cells than sedentary mice from the same litter, and those cells were largely neurons capable of transmitting messages throughout the brain.

Abnormalities in new brain-cell growth and connections are linked to Alzheimer's, major depression and schizophrenia.

And Christie's work on how exercise can affect this might one day result in new ways to enhance human brain cells and their connections as we age, says B.C.'s Michael Smith Foundation for Health Research, named for the Nobel laureate.

To cover your bets, make it physical exercise and mental exercise, Christie advises.

Walk, run or bicycle. Learn to throw a baseball or play piano.
Do a sudoku or crossword puzzle. Try some creative writing, the more elaborate the better.

But beware of hype about exercise. "You're not going to take someone with serious damage to their brain and rebuild the brain with exercise."

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EXERCISE ADVOCATE

University of Victoria neuroscientist Brian Christie will discuss Benefits of exercise for you brain: Hope or Hype at Café Scientifique on Feb. 5 at 6:30 p.m. at Swans Suite Hotel.

Sponsored by the Centre for Biomedical Research, it's aimed at the public, is free and includes refreshments.

For more information, call 250-472-4067, e-mail: cfbr@uvic.ca or visit www.uvic.ca/cbr

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