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Research Spotlight

Exercise: Good for the Body, Good for the Brain


By Laurel Tielis, Infoaging Correspondent

Everywhere we turn, we hear information about the benefits of exercise in building stronger bones and muscles and reducing the incidence of illnesses from diabetes to heart disease. A growing body of research however, is demonstrating that exercise is not just good for your body, it's good for your brain.

Physical activity can be beneficial to stroke victims, people suffering from dementia, even those who are the clinically depressed. This was a key finding from a panel of doctors and researchers who spoke recently in New York City at an American Federation for Aging Research seminar entitled "Staying on Top of Your Game."

Exercise and stroke

Exercise can play a transformative role in the way the brain responds to stroke. It can make the difference between being in a wheelchair to navigating with a cane, according to Dr. Andrew Paul Goldberg, head of the Division of Gerontology in the Department of Medicine at the University of Maryland School of Medicine. In working with Richard Macko, MD, Associate Professor of Neurology and Jill Whitall, PhD, PT,


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Professor in the Department of Physical Therapy, Dr. Goldberg says they have found that through repetitive exercise, the healthy part of the brain can be trained to take over the work of the damaged part.

"The interesting thing we find," said Dr. Goldberg at the seminar, "is that someone who has a stroke has damage to one side of the brain; if the stroke is on the left, you lose function on the right." To help the undamaged side of the brain take over some of the functions of the damaged side, patients are given "reciprocal repetitive training." In the past, standard practice had been to take the weakened arm or leg and have it lift weights working against resistance. What Dr. Goldberg and his team have done is have the good side work first and follow it with the bad side in a repetitive rhythm. Think of walking on a treadmill; one leg automatically follows the other.

Results are seen first in the upper body; walking takes longer. But according to Dr. Goldberg, after six weeks of training in the upper body and six months in the lower body, "(Patients) get right into rhythm. It's like poetry in motion; it's amazing."

What's also amazing is that as long as five to seven years after a stroke, patients can improve dramatically. Dr. Goldberg said, "There is the potential to take a very disabled population and get them totally back to normal function. That would allow many to leave nursing homes."

Exercise and dementia

Beyond stroke, exercise can also have positive benefits for people with other so-called "brain diseases." "There is a growing body of literature that indicates physical activity is associated with a decreased incidence of dementia and Alzheimer's disease," according to Dr. William Evans, director of the Nutrition, Metabolism and Exercise Laboratory in the Donald Reynolds Department of Geriatrics at the University of Arkansas.

"We don't hypothesize that exercise will make people less demented," he said, but a current project he is involved with is examining whether people with dementia in nursing homes sleep better and have a better quality of life if they exercise. "They sleep during the day, and because of that, do not sleep well at night," he explains, "basically because there is nothing to occupy their minds. The hypothesis is that making

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them stronger and more active during the day will improve their sleep patterns at night."

Exercise and Depression

Numerous studies looking at the effects of exercise on depression have found that physical activity can increase self-esteem, decrease anxiety and improve mood and sleep patterns.

In a Harvard study, 32 depressed people aged 60 and over were randomly assigned to those who followed resistance training and those in a control group. Those who received the training made noticeable gains in vitality, mood and the ability to function in social settings. Their strength was seen to increase by a significant 33 per cent.

A similar study in Sweden focused on 40 seniors with an average age of 66. At the end of three months of working out three times a week, the exercise group had a significantly better rate of ability to perform complex tasks than the control group.

Dr. Thomas Prohaska, a professor in the department of the Division of Community Health Sciences at the University of Illinois at Chicago School of Public Health and a co-director of the University of Illinois Center for Research on Health and Aging, is finishing a review of the effect of exercise in older adults. Funded by the Centers for Disease Control, Dr. Prohaska said its purpose is to see how physical activity impacts on all aspects of daily life. Six different content areas are being followed: quality of life; depression; self-efficacy; cognitive function; anxiety and mood.

From the studies he's been following he noted, "Aerobics and strength exercise both have some effect on mental health in older adults." He also said, "We don't have a lot of research on anxiety and depression, but looking at the studies we have, more than half were significant and show a need for long-term studies."

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