



## **EXERCISE: GOOD FOR THE BRAIN, AS WELL AS THE BODY!**

Most people approach the new year with one or more well-intended resolutions for improvement: "I'll be more organized!" "This year I'll start that new diet!" "I promise to work out more!" The list goes on and on, with many people making solemn vows to improve aspects of their lives in the months ahead. Make this year the year to do something good for your body – and mind – by building regular exercise into your routine.

Regular exercise does more than combat the extra pounds gained during holiday festivities. Exercise increases your heartbeat, which pumps your blood faster and carries glucose and oxygen to your brain. Activities like walking, running or jump roping benefit your body, your heart, and your brain. According to Franklin Institute Resources for Science Learning, exercise like walking "is especially good for your brain... As you walk, you effectively oxygenate your brain. Maybe this is why walking can 'clear your head' and help you to think better... Movement and exercise increase breathing and heart rate so that more blood flows to the brain, enhancing energy production and waste removal. Studies show that in response to exercise, cerebral blood vessels can grow, even in the middle-aged."

The American Heart Association boasts the brain benefits to students participating in its "Jump Rope for Heart Program: "Jumping rope is an excellent exercise for cardiovascular fitness, muscular endurance and coordination. Now researchers are learning that physical activity like jumping rope also prepares the brain for optimal learning. Current brain research supports the need for movement in the learning process."

According to reports as recent as December 18<sup>th</sup>, 2008, exercising in natural environments is even better for your brain. A new study in **Psychological Science**, a journal of the Association for Psychological Science, reveals that spending time in nature may be more beneficial for mental processes than being in urban environments. Psychologists Marc G. Berman, John Jonides, and Stephen Kaplan from the University of Michigan designed two experiments testing interactions with nature and urban environments, and the effect on memory and attention. The results indicated that walking in a park improved performance of memory and attention when compared with those walking downtown. Urban environments may provide a relatively complex and often confusing pattern of stimulation, requiring great effort to sort out and interpret. Authors suggest that natural environments offer a more coherent, aesthetic pattern of stimulations that, in contrast to requiring effort, provide a restorative effect on our mental abilities.

So whichever mode you choose – walking, running, or jumping rope – exercise your way to a healthier mind, as well as body, in 2009!

FOR MORE INFORMATION: The Franklin Institute, [www.fi.edu/learn/brain/exercise.html](http://www.fi.edu/learn/brain/exercise.html)

The American Heart Association, [www.americanheart.org](http://www.americanheart.org)

Association for Psychological Science, [www.psychologicalscience.org/media/releases/2008/berman.cfm](http://www.psychologicalscience.org/media/releases/2008/berman.cfm)

## VIDEO GAMES – BENEFICIAL FOR SENIORS??

Kids may need to keep a closer eye on those new video games just received over the holidays! If early research on the brain benefits of gaming is correct, adults may consider battling the grandkids for those video game controllers!!

A December 2008 article found in **Psychology and Aging** details a study of 40 adults in their 60s and 70s. Researchers found that those who learned to play a strategy-heavy video game improved their scores on a number of tests of cognitive function. Men and women who trained in the game for about a month showed gains in tests of memory, reasoning and the ability to “multi-task.” The findings suggest that video games that keep players “on their toes” might help older adults keep their brains sharp, researchers report.

“This is the first published study to suggest as much, so it’s important not to overstate the findings,” said senior researcher Dr. Arthur F. Kramer, a professor of psychology at the University of Illinois at Urbana-Champaign. Still, he told Reuters Health, the results are “very promising,” as they suggest that strategy-based video games can enhance reasoning, memory and other cognitive abilities that often decline with age.

The study included 40 older adults who were randomly assigned to either the video-game group or a comparison group that received no training in the game. Over 1 month, the gamer group spent about 23 hours training in “Rise of Nations,” an off-the-shelf video game where players seek world domination.

“More research is needed to confirm and extend the findings,” says Kramer. “It’s not clear,” he notes, “if other strategic games would have the same benefits, or if the effects seen in this study persist over time. Still, the findings are in line with research suggesting that older adults can improve their cognitive health by staying both physically active and mentally active through activities such as reading, writing or other hobbies.”

*Psychology and Aging* publishes original articles on adult development and aging. Such original articles include reports of research that may be applied, biobehavioral, clinical, educational, experimental (laboratory, field, or naturalistic studies), methodological, or psychosocial. For More Information on Psychology and Aging: [www.apa.org/journals/pag/](http://www.apa.org/journals/pag/)

## BRAIN BYTE



### DID YOU KNOW?

**YOUR BRAIN CELLS NEED TWO TIMES MORE ENERGY THAN THE OTHER CELLS IN YOUR BODY.**

Neurons, the cells that communicate with each other, have a high demand for energy because they are always in a state of metabolic activity. Even while you are sleeping! Most demanding of all are the bioelectric signals responsible for communication throughout the nervous system, consuming one-half of all the brain’s energy (and nearly 10% of the entire body’s energy). Your brain is dependent upon a steady diet of complex carbohydrates. Complex carbohydrates are the time-release capsules of glucose, the only fuel normally used by brain cells. Because neurons cannot store glucose, they depend on the bloodstream to deliver a constant supply of this precious fuel.

## **READING RECOMMENDATION**

### **PROUST AND THE SQUID: THE STORY AND SCIENCE OF THE READING BRAIN**

**BY: MARYANNE WOLF**

Maryanne Wolf's **Proust and the Squid** follows the development of the brain and mankind as reading and writing have developed over the ages. Reading is not something that is automatic, and possibly is mankind's greatest invention. As the author points out, "It took our species roughly 2,000 years to make the cognitive breakthroughs necessary to learn to read with an alphabet, today our children have to reach those same insights about print in roughly 2,000 days." The book addresses early forms of reading and writing and delves into some of the biological aspects of reading such as different areas of the brain being needed to read certain writing systems, such as Japanese. The work also covers the brain's continual development to handle our ever-changing literacy needs (internet, etc.) and what happens when the brain can't read, including the science, challenges, and gifts of Dyslexia.

Maryanne Wolf is a professor in the Eliot-Pearson Department of Child Development at Tufts University, where she holds the John DiBiaggio Chair of Citizenship and Public Service, and is the director of the Center for Reading and Language Research. A former Fulbright Fellow, she has received numerous awards for her distinguished teaching and research, including from the American Psychological Association, International Dyslexia Association, and the National Institute for Child Health and Human Development.

## **STUDY FINDS ADHD AFFECTS MOTOR SKILLS OF BOYS MORE THAN GIRLS**

New research published in the November 4, 2008 issue of **Neurology**, the medical journal of the American Academy of Neurology, found that ADHD affects the motor skills of boys more than girls. By examining age-related improvement of motor skills in children with and without ADHD, researchers from the Kennedy Krieger Institute (KKI) in Baltimore, MD found that girls with ADHS and their typically developing peers were more likely to be able to control their movements compared to boys with ADHD. The findings are consistent with multiple MRI studies that have shown boys with ADHD have decreased activity in regions of the brain important for planning and executing movement.

This study found that the motor skills of typically developing children steadily improved with age, but boys with ADHD continued to show motor skills deficits through adolescence. The motor skills of girls with ADHD, on the other hand, improved at a rate more similar to their typically developing peers.

"These findings suggest that sex-related differences in children with ADHD extend beyond symptom presentation to development of motor control," said E. Mark Mahone, Ph.D., ABPP, lead study author and research scientist at KKI. "By elementary school, girls with ADHD may be relatively free from motor skills deficits because the female brain matures earlier than the male brain."

"Studying motor function is critical to understanding the causes and effects of developmental disorders such as ADHD," said Dr. Mahone. "Assessment of motor skills gives researchers a window into brain development, and allows us to more precisely understand the nature of cognitive difficulties in developmental disorders such as ADHD."

**Reprint from November 3, 2008 press release, Kennedy Krieger Institute.**

To learn more about the Kennedy Krieger Institute, visit their website: [www.kennedykrieger.org](http://www.kennedykrieger.org)

## UPCOMING EVENTS

### **SPECIAL EDUCATION TEACHERS: WHY NOT THE BEST?**

**Wed, January 14<sup>th</sup> @ 6:30pm**

**Columbia Center, 6740 Alexander Bell Dr, Columbia**

**Sponsored by The Johns Hopkins University School of Education**

**Moderator: Michael S. Rosenberg, Professor, Dept. of Special Education, JHU School of Education**

Today, schools across the country face a critical shortage of qualified educators to teach students with special needs. Additionally, new research and technology has led to advances in how these students learn. Discuss the challenges of finding and preparing the next generation of special education teachers, with an emphasis on critical-needs areas such as early childhood and autism, the characteristics of the "highly qualified" special educator, implications for school systems, and the importance of parental involvement. A reception will follow.

**For more information: 410.516.4028**

### **UNDERSTANDING LEARNING DISABILITIES**

**Wednesday, January 21<sup>st</sup> 6 – 8 pm**

**Partners for Success Resource Center (the annex bldg), 253 Paradise Rd, Aberdeen**

**Presented by Sharon Huffman, MS, LCPC, [Abilities Network] Project ACT Clinical Supervisor**

Participants will gain knowledge of different types of learning disabilities and will learn possible accommodations to meet the needs of children with a learning disability. Participants will explore the challenges of having a learning disability and how frustrating it can be for a child. The presentation will also highlight some red flags in young children that might lead to a later diagnosis of a learning disability.

**For more information, or to RSVP by January 16<sup>th</sup>: 410.273.5579**

### **CHADD - ADULTS WITH ADHD SUPPORT GROUP**

**Wednesday, January 21<sup>st</sup>, 7 pm** (third Wednesday of each month)

**St. Christopher's Episcopal Church, 116 Marydel Rd, Linthicum Hts**

**For more information, contact Kerch McConlogue: 410.233.3274**

### **ASPERGER SUPPORT GROUP**

**Wednesday, January 28<sup>th</sup>, 7 – 8:30pm** (last Wednesday of each month)

**Churchville Presbyterian, 2844 Churchville Rd, Churchville**

**For more information, contact: 410.273.5579 or email [cindy.cochran@comcast.net](mailto:cindy.cochran@comcast.net)**

## INSPIRATION CORNER

“A goal without a plan is just a wish.”

ANTOINE DE SAINT-EXUPERY

