

The Link Between Movement and Learning

... movement is crucial to every other brain function, including memory, emotion, language, and learning. Our “higher” brain functions have evolved from movement and still depend on it.” —John J. Ratey, MD Harvard Medical School from User’s Guide to the Brain

How effective is integrative movement as a means to promote brain wellness?

Consider this: Elderly people who dance regularly have a 76% decreased risk of dementia or Alzheimer’s disease. This statistic comes from a study reported in the New England Journal of Medicine in 2003.

Movement is likely the most effective means we have of directly improving our brain functioning. This is because the nervous system learns by doing, as the following examples show.

PET Scans show link between movement and increased neural connections. Using PET scans, Rockefeller University neuroscientist Hiroshi Asanuma, measured increases of 25% in the number of neural connections between the sensory and motor cortex following the use of specific exercises. The motor cortex has key links to thinking and formal reasoning areas in the prefrontal lobes.

Learning disabilities do not have to remain static or fixed. Dr. Michael Merzenich, a University of California neuroscientist says, “When someone can’t read or do math, people tend to think it is caused by a defect in the brain. It’s not a brain defect or limitation at all. These kinds of problems really represent a different learning pathway that the brain has taken.” Merzenich states that because the brain reorganizes itself during new learning, *the brain has the capacity to rewire itself to improve learning.*

An underlying key to successful learning is movement that promotes neurological brain/body development.

In a study of more than 500 Canadian children, students who spent an extra hour each day in physical activity performed notably better in reading and exams than less active children. In a study reported by H.L. Mosse in *A Complete Handbook of Children’s Reading Disorders*, specific movement and balance activities greatly improved reading ability in elementary school students.

A double-blind study with 538 sixth grade students in Cheshire Texas Public School System demonstrated

that experimental students who performed a half-hour of daily movement activities exhibited a much higher level of academic success with less test anxiety and less myopia than the control students.

Dr. R. Kohen-Raz, in *Learning Disabilities and Postural Control*, points to research in Great Britain demonstrating that first graders who engaged in movement activities involving brain integration and balance, sharply reduced their rates of academic failure and improved their ease of learning to read.

Author and neurophysiologist, Dr. Carla Hannaford, Ph.D. conducted a study with 5th grade special education students doing daily Brain Gym® activities. During the year, 95% of the students gained two or one and a half years in reading ability. In contrast, a longitudinal study of special education students with reading disabilities being taught with traditional teaching methods revealed that 74% had insignificant gains over a six-year period.

In a research study done by Dorothy Carroll, Ed.D., first grade students dramatically improved their auditory discrimination ability, alphabet recognition ability, and the elimination of letter and word reversals after using Brain Gym activities for a ten-week period.

In fact, over eighty research studies have documented the link between movement and improved learning. Despite early deficits in neural development, children can make significant gains in establishing whole brain/body integration. Overall, scientific research has consistently demonstrated that neural plasticity is an intrinsic characteristic of the nervous system. **Neurological reorganization can take place easily in response to activity, enabling one to reestablish the use of lost functions and to awaken deeper gifts.**

Adapted from an article by Jon Bredal with the same title.
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