Hanover Wellness Education News
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"Be always ashamed to catch thyself idle." Ben Franklin

MOVING TO LEARN and LEARNING TO MOVE

Physical activity is strongly correlated with improvement of concentration, memory, academic performance (this includes grade point average, scores on standardized tests, and grades in specific courses) and classroom behavior (Strong et al, 2005). Yet, the average American 13-19-year-old spends 9.5 hours each day sitting (Harris, 2003). And, 20% of U.S. elementary schools do not allow their students to have recess (Tyre, 2004) and only 28% of high school students in Massachusetts attended daily Physical Education class in 2003 (MASCD, 2005).

Movement cannot be separated from the brain. A lot of brain function is, essentially, movement (Ratey, 2003, Hannaford, 1999). Movement is essential to every brain function, including memory, emotion, language, and learning. So called higher brain functions have evolved from movement and still depend on it. For example, the cerebellum, which coordinates physical activity, also coordinates the movement of thoughts. It orders the movements of the hands and arms in order to catch a ball in much the same way as it sequences the thoughts necessary to make a decision form a coherent argument or create a poem.

MOVEMENT IS A MAJOR PLAYER IN LEARNING.

Harvard Medical School professor Dr. John Ratey (2003) states that our physical movements can directly influence our ability to learn think and remember. It has been shown that certain physical activities that have a strong mental component, such as dance or tennis, enhance social, behavioral and academic abilities. Each person's capacity to master new and remember old information is improved by biological changes in the brain brought on by physical activity.

Exercise can produce chemical alterations that give us stronger, healthier, and happier brains. A better brain is sufficiently equipped to think, remember and learn. While dancing, for example, one must sequence, master and coordinate many movements. These types of physical activities increase academic ability, memory retrieval and cognitive abilities. During these physical activities, we not only exercise our muscles, but we also exercise our brains, particularly our ability to sequence motor actions and information as well as access memory.

Exercises that involve complex movements can affect our brain in other ways. Practicing and performing physical activities that require many coordinated movements such as striking a ball with a bat, dance and gymnastics causes more connections to grow between neurons. When we combine movement with any new learning experience we get extra benefits because new connections form in the brain as a result of learning a new task. As new routines and dance steps are introduced, the brain produces a greater number of connections between neurons, which creates a brain that is better able to process more information.

Exercise that forces us to improve balance and coordination also strengthens neural networks in the cerebellum, which is the area responsible not only for balance and physical coordination but also for coordinating our social interactions. New research is demonstrating that these types of physical activities affect the basal ganglia and corpus callosum, improving memory and increasing the ability to master new information. Conversely, physical inactivity can hasten the decline in how quickly we learn and recall information.

MOVING IS GOOD FOR YOUR BODY AND GOOD FOR YOUR BRAIN.

Finally, motor development has been found to be crucial in the development of learning readiness. It greatly impacts reading and writing skills. Often children don't get the motor stimulation they need because of increased time spent in front of the television.

The positive relationship between a learner's level of physical activity and academic achievement is clear.

MOVEMENT IS A MAJOR PLAYER IN LEARNING AND STANDARDIZED TEST SCORES.

- Academic achievement increases when Physical Education time increases (Shepherd et al 1984; NASPE, 2001).
- Students who are physically fit scored higher on standardized tests than their peers of lesser fitness levels (CDE, 2004)
- Vigorous physical activity has positive effects on academic achievement including: increased concentration; improved mathematics, reading, and writing scores and reduced disruptive behavior (Symons et al, 1997)
- Physical activity has a positive influence on concentration, memory, academic performance (including grade point average, scores on standardized tests, and grades in specific courses) and classroom behavior (Strong et al, 2005)

- Successful participation in physical activity brings increases in academic ability, memory retrieval and
  cognitive abilities (Ratey, 2002)
- When we learn a new physical activity the brain produces a greater number of connections between neurons, which creates a brain that is better able to process more information (Ratey, 2002)
- As we age physical inactivity can hasten the decline in how quickly we learn and recall information (Ratey, 2002)

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