

Why You Should Walk and Roll: The Link between Exercise and Brain Function

By: Chelsea Biklen

Many of us are aware that exercise (e.g. walking or riding a bicycle) will have a positive effect on our health, but are we aware of the positive effects on our brains? This correlation does exist! Spurts of exercise throughout the day are shown to improve long-term memory, reasoning, attention, problem-solving and fluid intelligence levels, especially in adolescents.

These conclusions were confirmed by a Danish project called ‘The Mass Experiment 2012’ which looked at the links between concentration, diet, and exercise in kids ages 5 – 19. As part of this project, Aarhus University researcher Niels Egelund surveyed 20,000 Danish schoolchildren about their exercise habits and had each student perform a simple concentration test. Results of the study, published in 2013, indicated that children transported to school by car, train, or bus scored lower on the test than those who somehow made the journey to school themselves, and furthermore the engagement in pre-class exercise affected concentration abilities for about four hours into the school day (Egelund). The study additionally found that exercise had an even greater positive effect on a child’s concentration level than diet (i.e. whether the child ate breakfast or lunch) and that as a result of walking or biking daily, children of a 3rd grade level had the same ability to concentrate as those half a year further in their studies!

Developmental molecular biologist and researcher John Medina attributes these kinds of results to an increase of oxygen that feeds into the brain and body when we exercise. Mr. Medina explains in his book, *Brain Rules*, that physical activity increases production of neurotransmitters that support learning readiness; oxygen flow, which facilitates healthy brain functioning, and the brain chemical BDNF. BDNF, sometimes referred to as “miracle-grow” for the brain is active in the hippocampus, cortex, and basal forebrain- areas imperative to learning, memory, and higher thinking. Putting it simply, students are able to pay better attention to their subjects when they’ve been active, so why not activate those adolescent brains before the school day even begins? Let’s boost young learner brainpower by helping them to adopt walking or biking to school as a new habit.

Practical Application: A great time to test this theory is during Walk One Week (WOW)! WOW is an annual, weeklong event led by the Cupertino Teen Commission that encourages Cupertino families to walk, bike, or carpool to school in an effort to increase health and safety and reduce car traffic. **This year, Walk One Week will take place the week of February 29th – March 4th** at CUSD and FUHSD schools across Cupertino! During WOW please:

- Encourage your students to walk or roll to school!
- Walk or Cycle with your student, or a group of students to school!
- Organize a Carpool with your friends or neighbors!

For more information about Walk One Week, please contact Safe Routes to School Community Coordinator, Chelsea Biklen, at chelseab@cupertino.org.

Sources:

- “Brain Rules” by John Medina
- <http://www.citylab.com/commute/2013/02/kids-who-walk-or-bike-school-concentrate-better-study-shows/4585/>
- <http://sciencenordic.com/children-who-walk-school-concentrate-better>