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## Exercise 'silver bullet' for student success

Wendy Elliott, Published on January 9, 2012



### Dr. John Ratey

Exercise can boost the brains of young learners, according to Harvard medical professor John Ratey. He shared research he has compiled at Landmark East School in Wolfville last week.

By Wendy Elliott

Landmark East School in Wolfville could become part of a pilot program in Nova Scotia to boost academic scores with increased exercise.

[Dr. John Ratey](#), an associate clinical professor of psychiatry at Harvard Medical School, gave a one-day seminar for teachers, academics and administrators Jan. 6.

"There's been evidence accumulating like crazy that shows how physical activity, exercise, play, improves the ability to learn and to perform on tests," Ratey said. Research also makes a fundamental link between emotional health and exercise.

Paul Iannaccone, development officer with the Landmark East Foundation, said the school is excited by Ratey's research, which indicates, "exercise is the single most powerful tool that we have to optimize the function of our brains."

Students with learning difficulties, Iannaccone said, could particularly benefit from exercise in several targeted learning situations. However he Ratey's ideas offer significant possibilities for all students in Nova Scotia.

Saskatoon's City Park Collegiate in Saskatoon was one compelling example, but Ratey offered others in Illinois, Finland and Sweden.

Exercise, Ratey said, makes the brain very plastic and aids growth in brain cells. Physical activity before classes start prepares learners to learn. Even three or four minute "brain breaks" make a difference, he added.

The Harvard professor also said rough and tumble play has real value. Screen time added to a ready diet of television mean children today are glued to the couch rather than actively playing.

"It is so essential today to teach kids how to play," Ratey said. "Play will make them smarter and more adaptable."

"The biggest problem with kids today is toys," he said. "Screens. They don't sleep and they go to school when they haven't slept. Sleep is a big part of ADD..

He conducts research all over the world and pointed out countries like Japan, China and Taiwan now see that reducing physical activity has cut their competitiveness.

He shared several studies about a brain protein that promotes learning: brain-derived neurotrophic factor or BDNF. BDNF improves the ability of brain cells to grow. In his book, *Spark: The Revolutionary Science of Exercise and The Brain*, Ratey called BDNF "Miracle-Grow" for the brain. BDNF is increased through exercise.

Ratey also cited studies showing exercise, particularly focused on balance, promotes the growth of new cells in the hippocampus, an area in the brain associated with memory and learning.

"Exercise promotes more than anything else we know the growth of new brain cells," Ratey said.

Ratey has focused on a high school in Naperville, Illinois, where students participate in a physical exercise program before classes. Exercise equipment is located in the back of some classrooms. Students who participated had improved test scores that keep the high school in the top of state ratings, he said.

In fact, Grade 8 students in Naperville scored first in the world in science and sixth in math on the Trends in International Mathematics and Science Study, a test that most American students lag in compared to those in Asian countries.

Another example, he mentioned, was a Saskatoon teacher who found students who ran with the cross-country team before school became calmer and more focused in class.

Ratey said he hope to come back to Landmark East and also connect with a public school in the Wolfville area for a demonstration project.

"Exercise is the magic bullet if there ever was one for physical and mental issues," he said. "We have to reassess the paradigms we're living under."

### **Activity part of alternative school**

**Since 1979, Wolfville's [Landmark East School](#)** has offered a compulsory daily athletic program to compliment its academic program. By being involved in a variety of sports and activities, students with learning difficulties hone their abilities to move toward independence and self-control.

The athletic program involves both individual and team sports. It ranges from dance, curling, and skiing to swimming and weight training.

Every year since 1991, Landmark East has received the Canadian Association for Health, Physical Education, Recreation and Dance Award, which is the highest school award given in Canada for excellence in physical education.



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