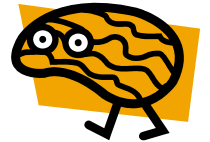


Learning is a Moving Experience



Paul Zientarski
Naperville, Illinois
pzientarski@naperville203.org

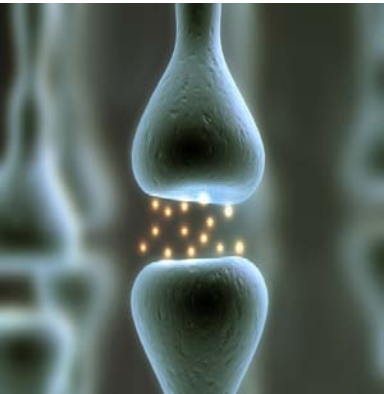


Figure 1 2004 CST in English-language arts by the number of fitness standards achieved

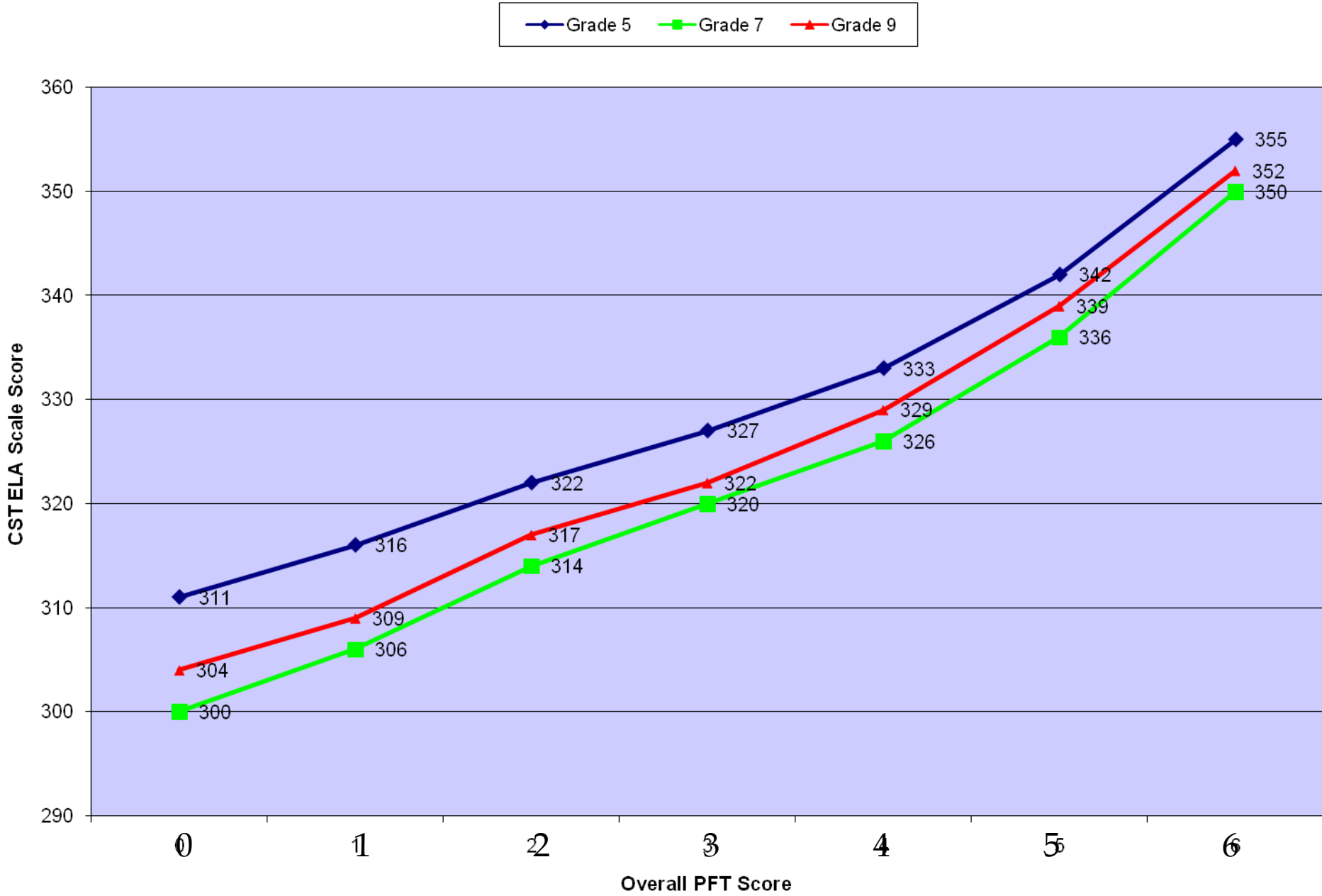
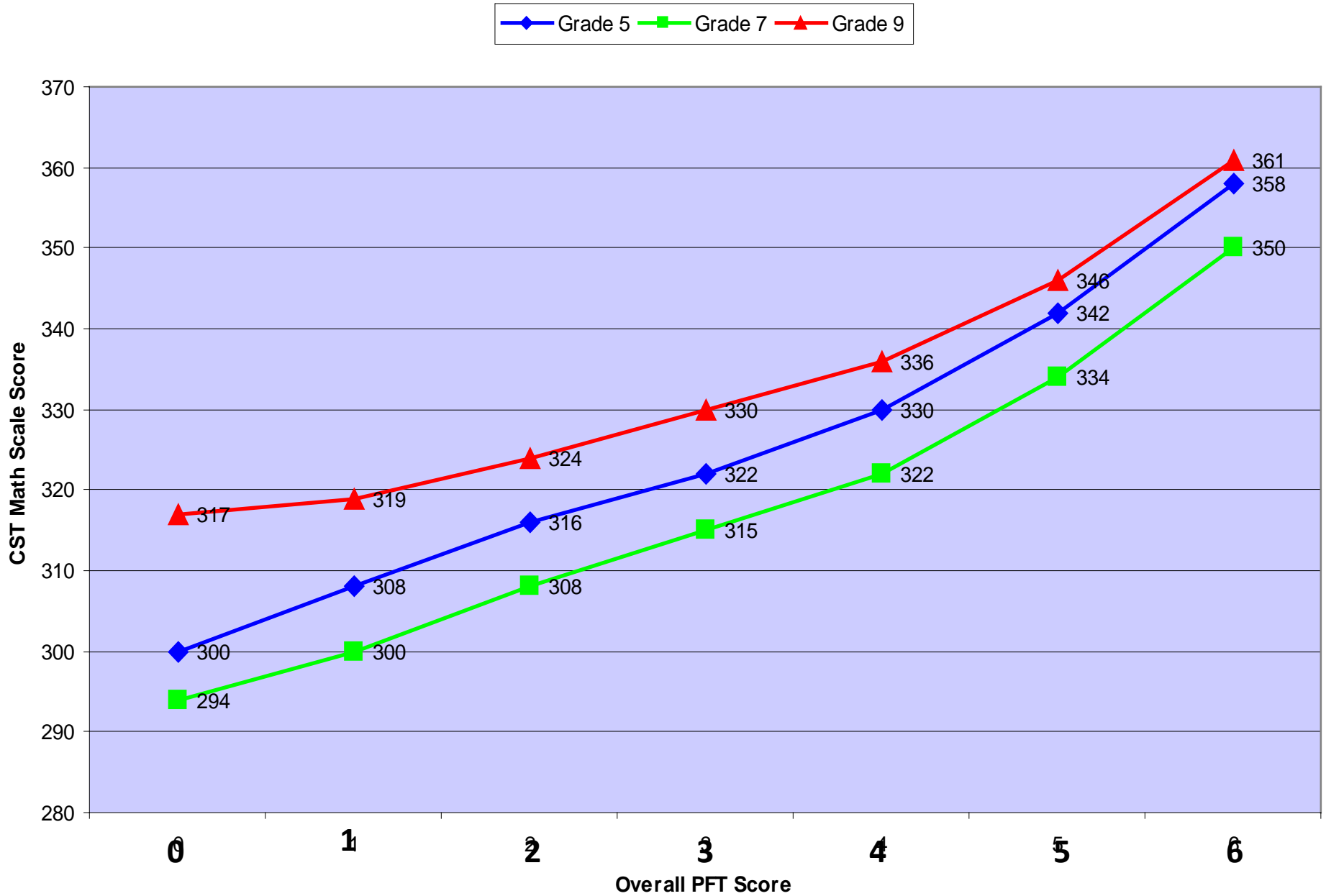
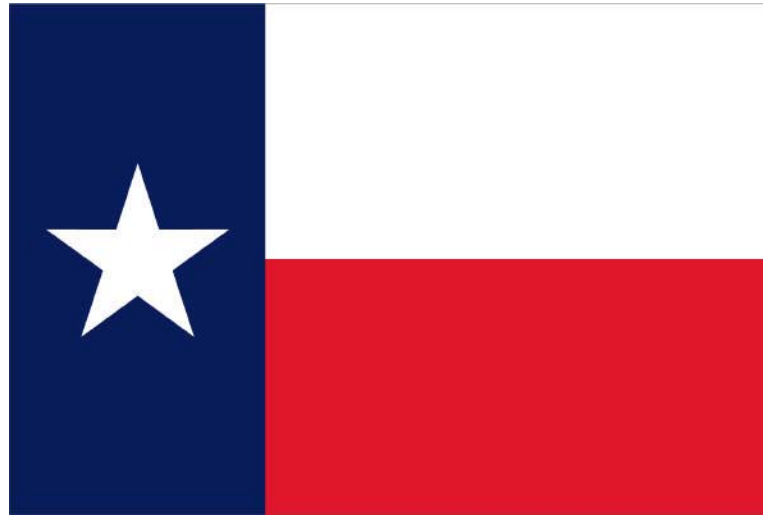


Figure 2 shows these same results using 2004 CST in mathematics scale scores



What were the findings in the State of Texas?



**2.4 Million
Students
tested**



Most telling tests for
Academic Success

**Cardiovascular
Fitness**

Body Composition

Researchers at West Virginia University evaluated the fitness levels and standardized academic test scores of **725**

Grade 5 students in Wood County, West Virginia, and re-examined the results two years later when the children were in **Grade 7**.

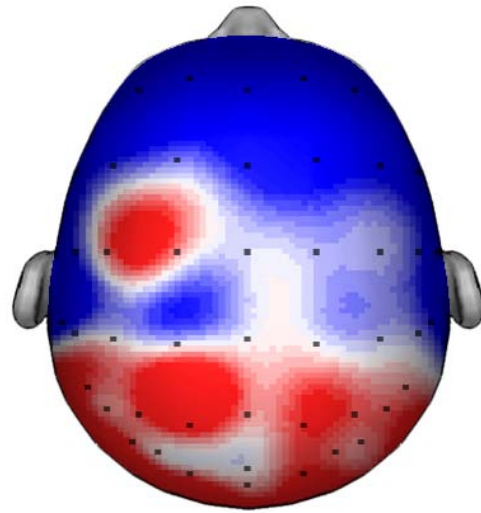
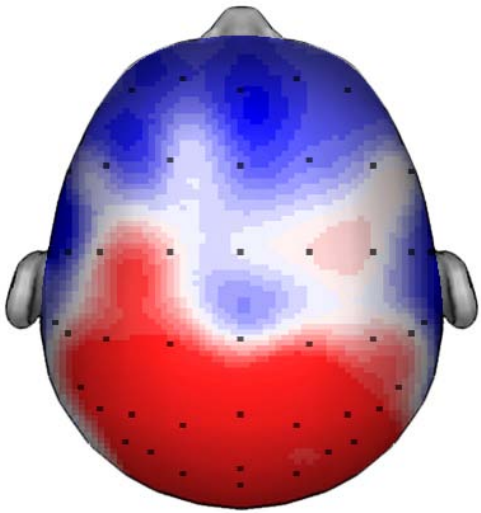
The study found that **performance dipped** when the students' **fitness declined** and **increased** when **fitness improved**. Children with the **highest average standardized test scores**, which included reading, math, science and social studies, were the ones who were **deemed fit at the start and end of the study.**

9 and 10 year olds students

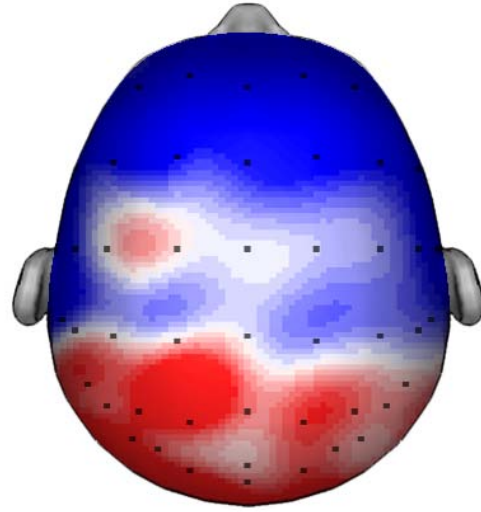
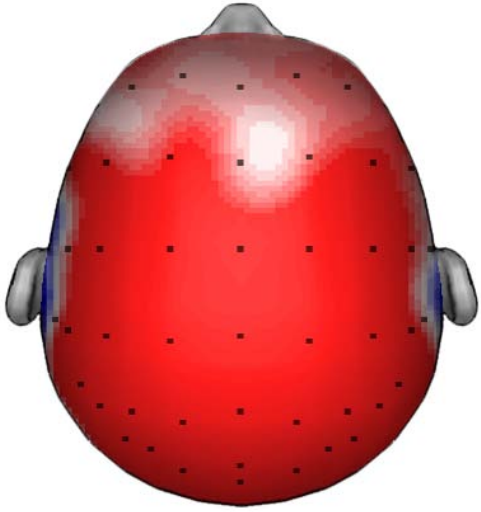
Higher Fit

Lower Fit

Easy Condition



Hard Condition



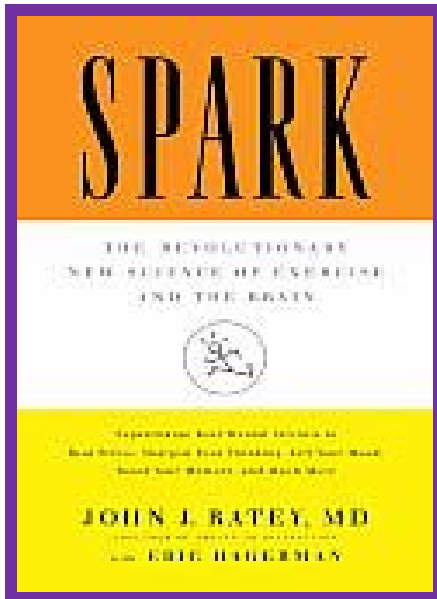


Enhanced Academic Performance

“Consistent exercise, and certain types of specific exercises, can both temporarily and permanently affect the way your brain is able to focus, its ability to deal with stress and anxiety, and its ability to learn ...

“Exercise is like fertilizer for the brain ... it’s so good, it’s like Miracle Gro”.

- Dr. John Ratey, Harvard Brain Researcher



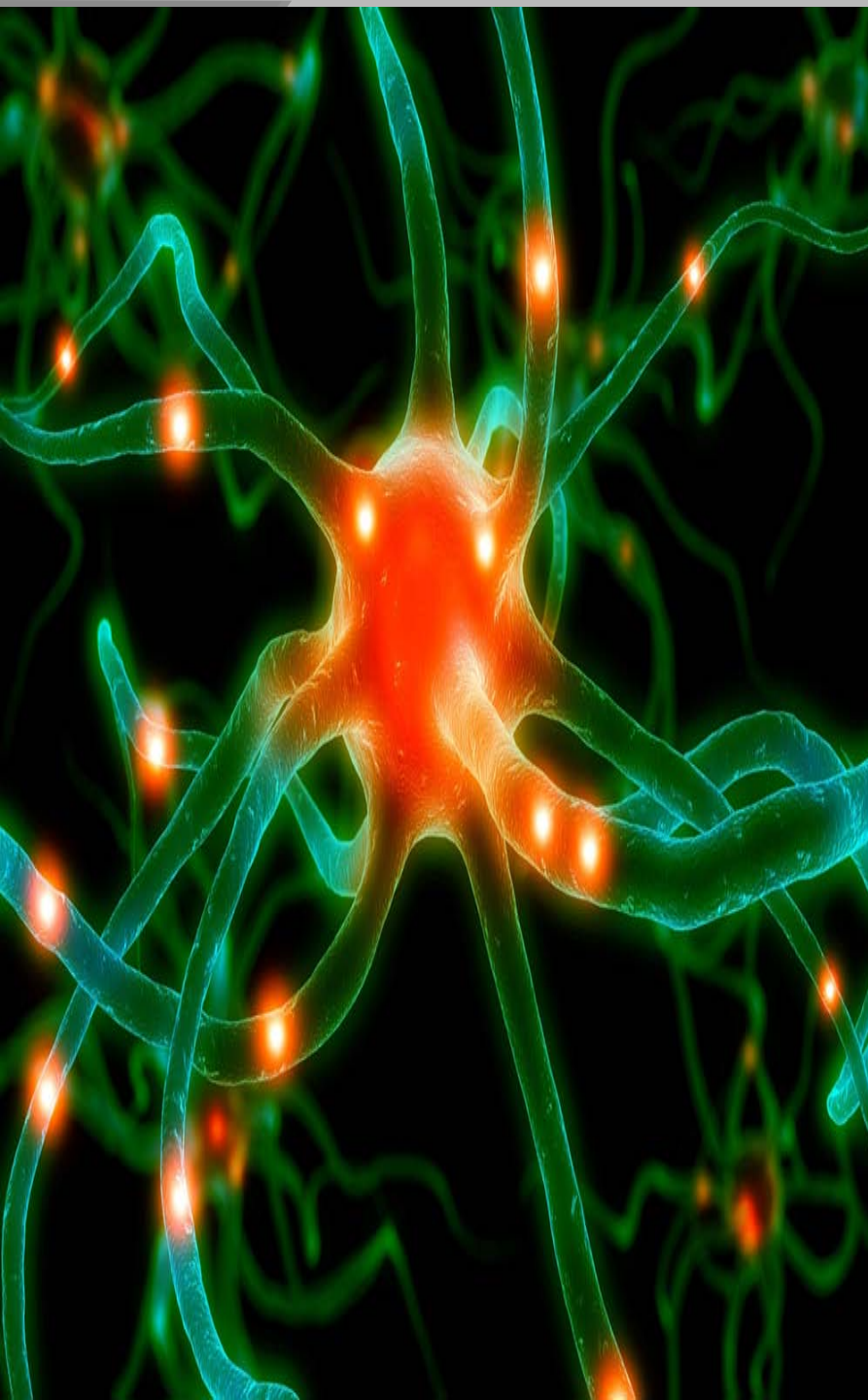
BDNF



Brain Derived Neurotrophic Factor

BDNF is a neurotrophin whose status as a regulator of the survival, growth & differentiation of neurons during development has matured to include the adult nervous system.

BDNF functions to translate activity into synaptic & cognitive plasticity in the adult animal.

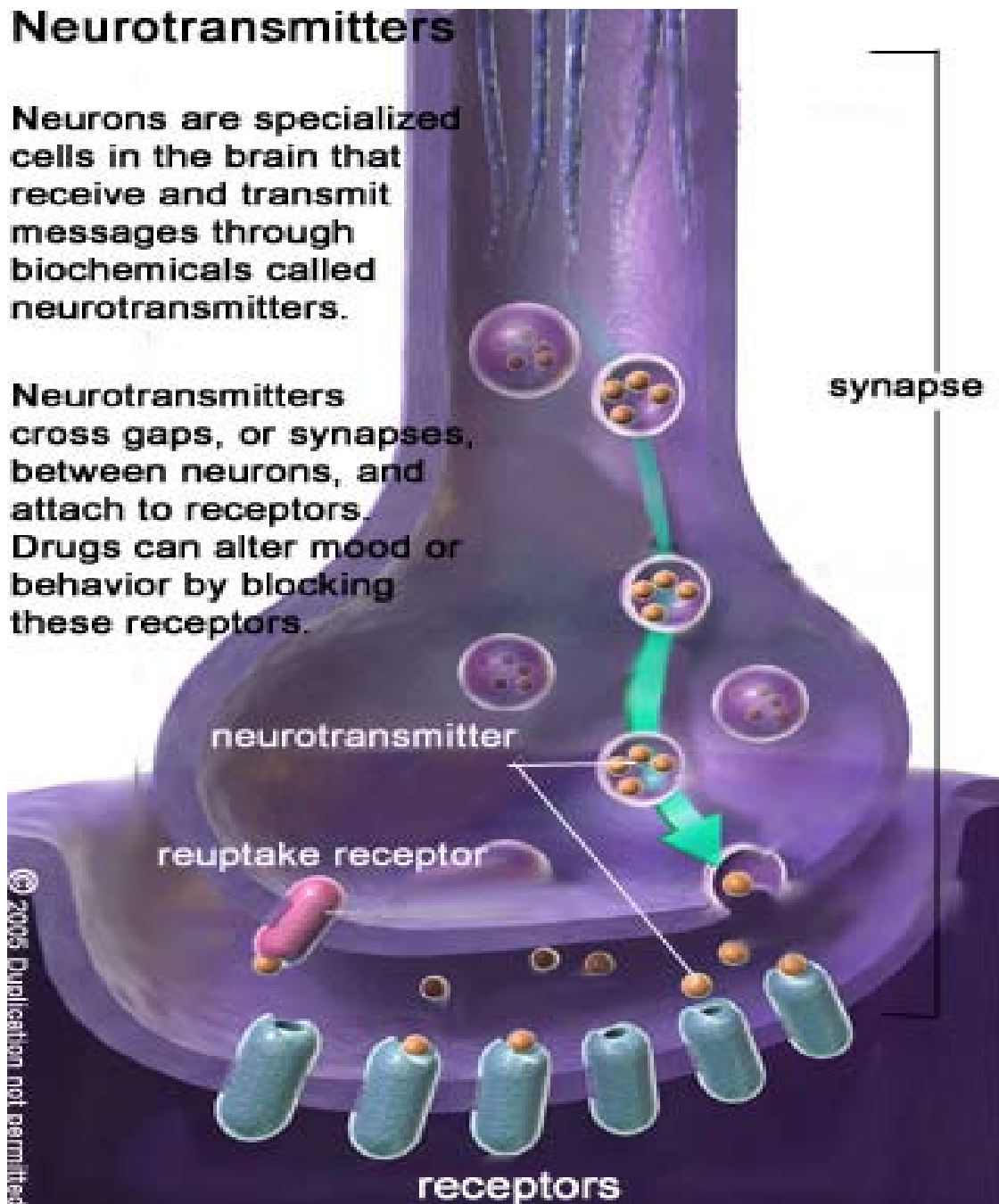


BRAIN CELL CHEMISTRY

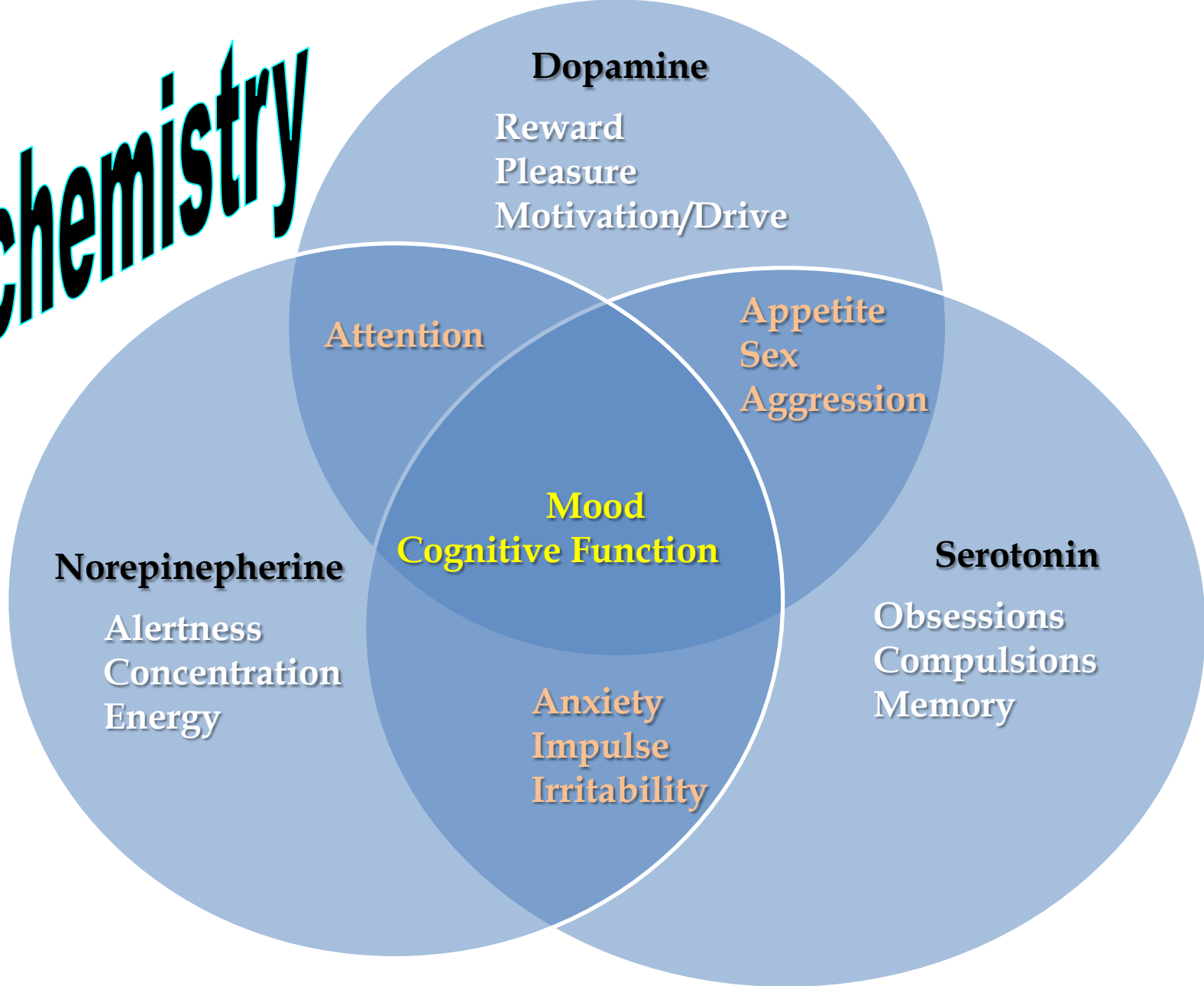
Neurotransmitters

Neurons are specialized cells in the brain that receive and transmit messages through biochemicals called neurotransmitters.

Neurotransmitters cross gaps, or synapses, between neurons, and attach to receptors. Drugs can alter mood or behavior by blocking these receptors.

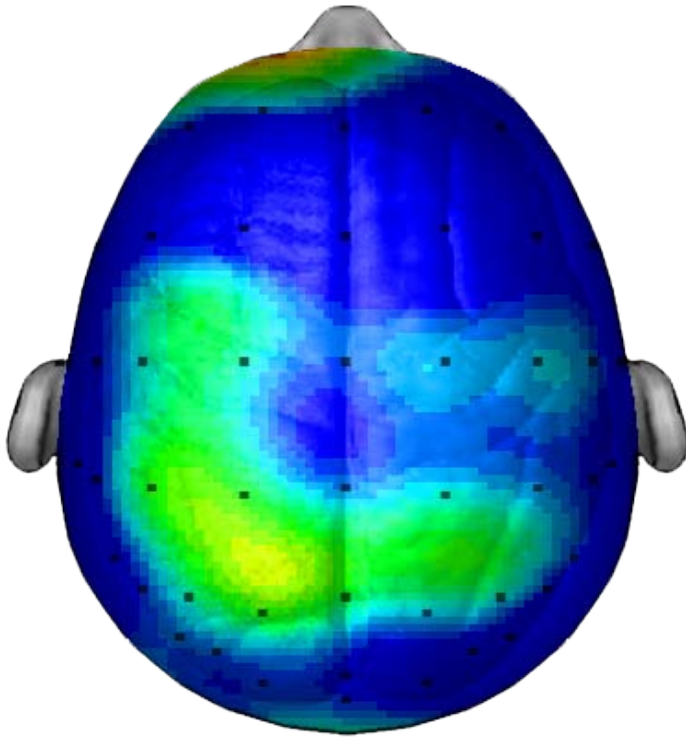


Neurochemistry

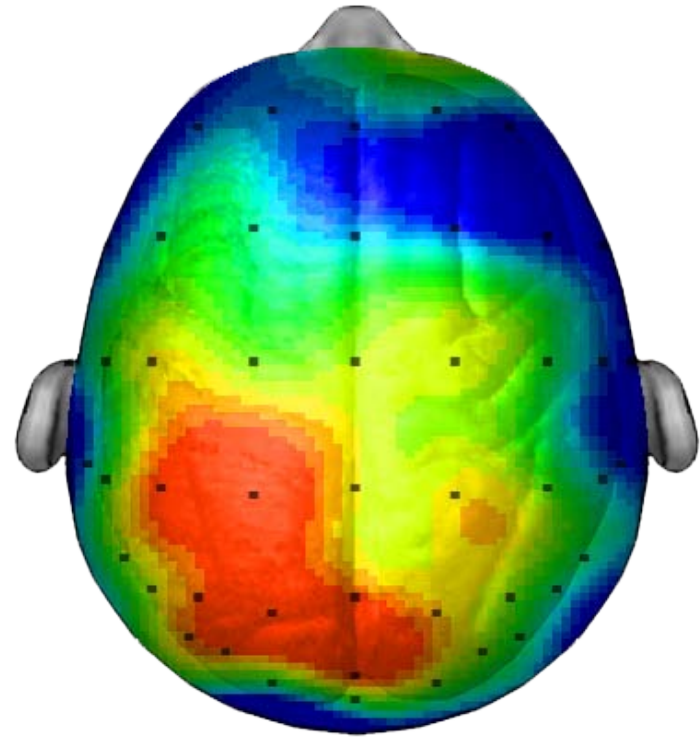


Average composite of 20 student brains taking the same test

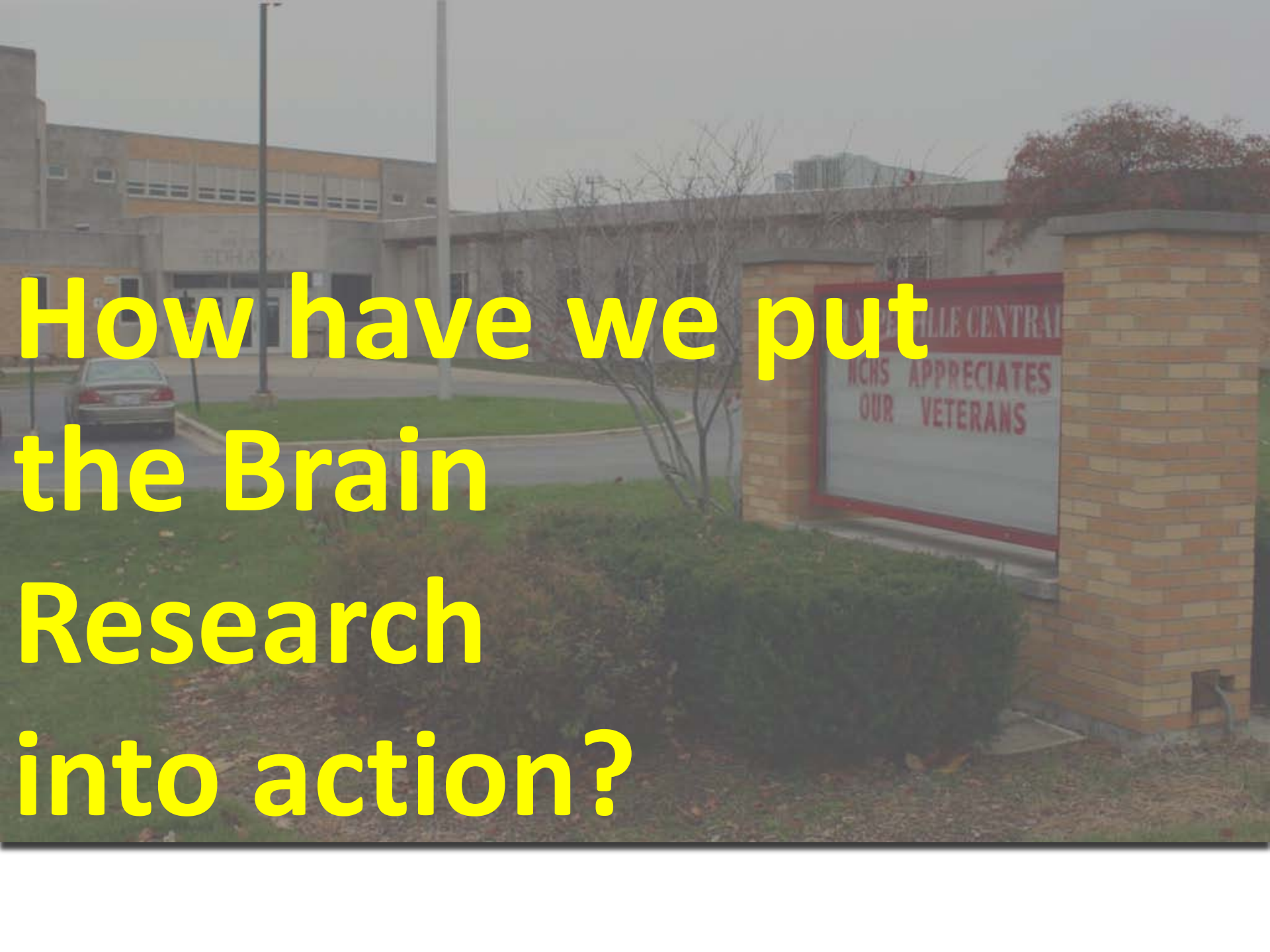
Brains after sitting quietly



Brains after 20 minute walk

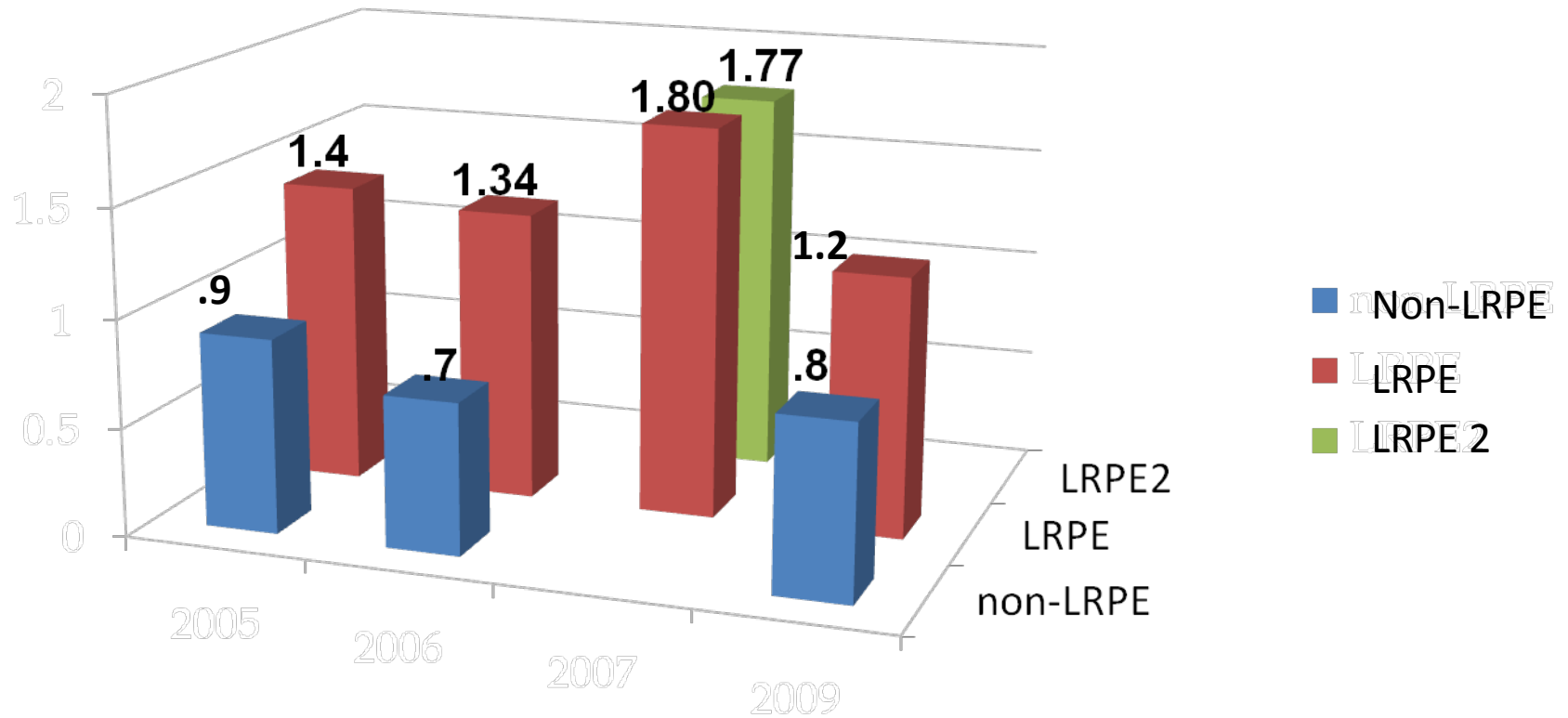


Research/scan compliments of Dr. Chuck Hillman University of Illinois

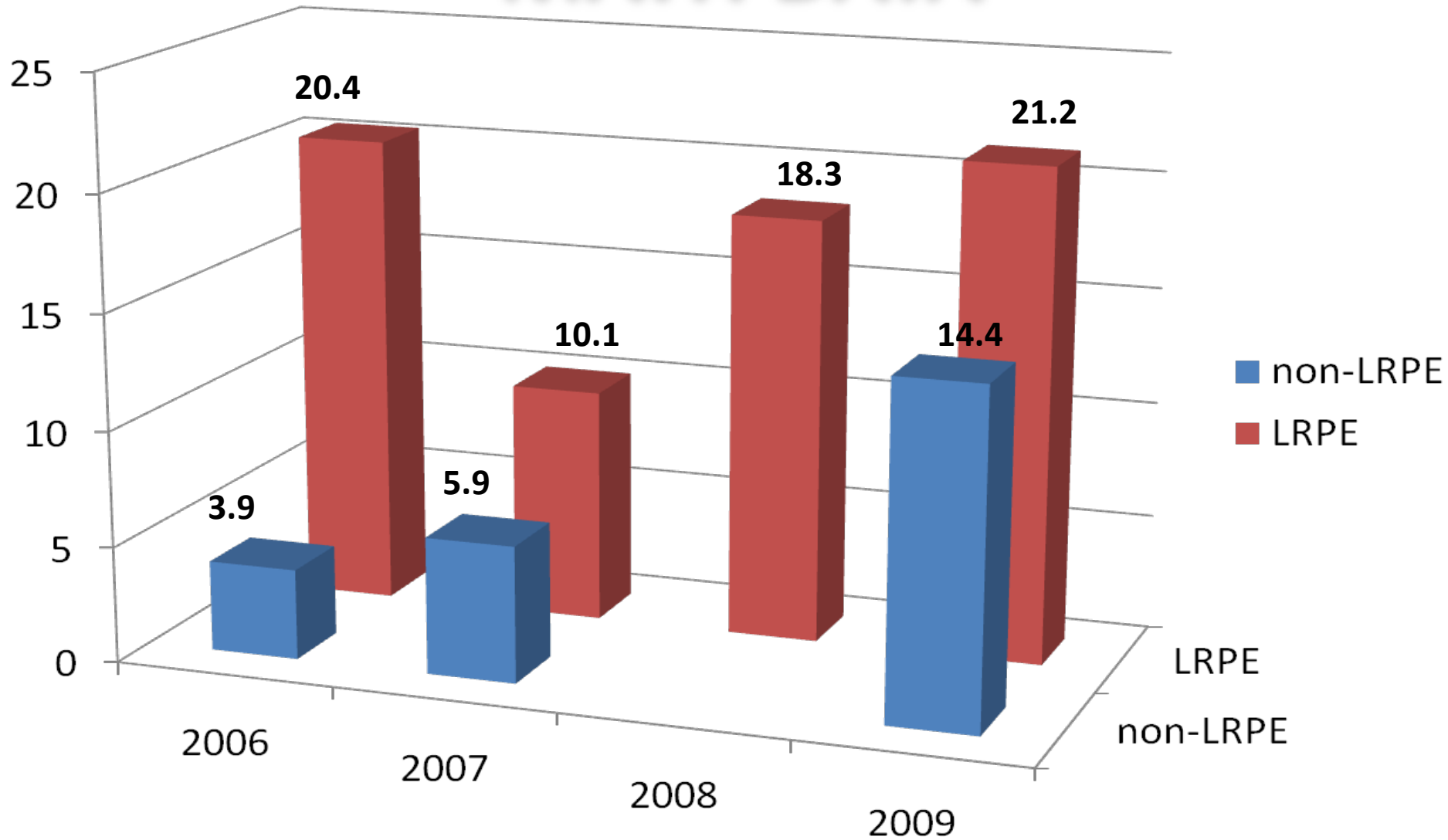


**How have we put
the Brain
Research
into action?**

Literacy/Reading Data



MATH DATA



What does L.R.P.E. Look Like ?

Based on Fitness
Cardiovascular
Intensity

Cross Lateral
Activities

Core Strength
Team Building

Balance and
Gymnastics

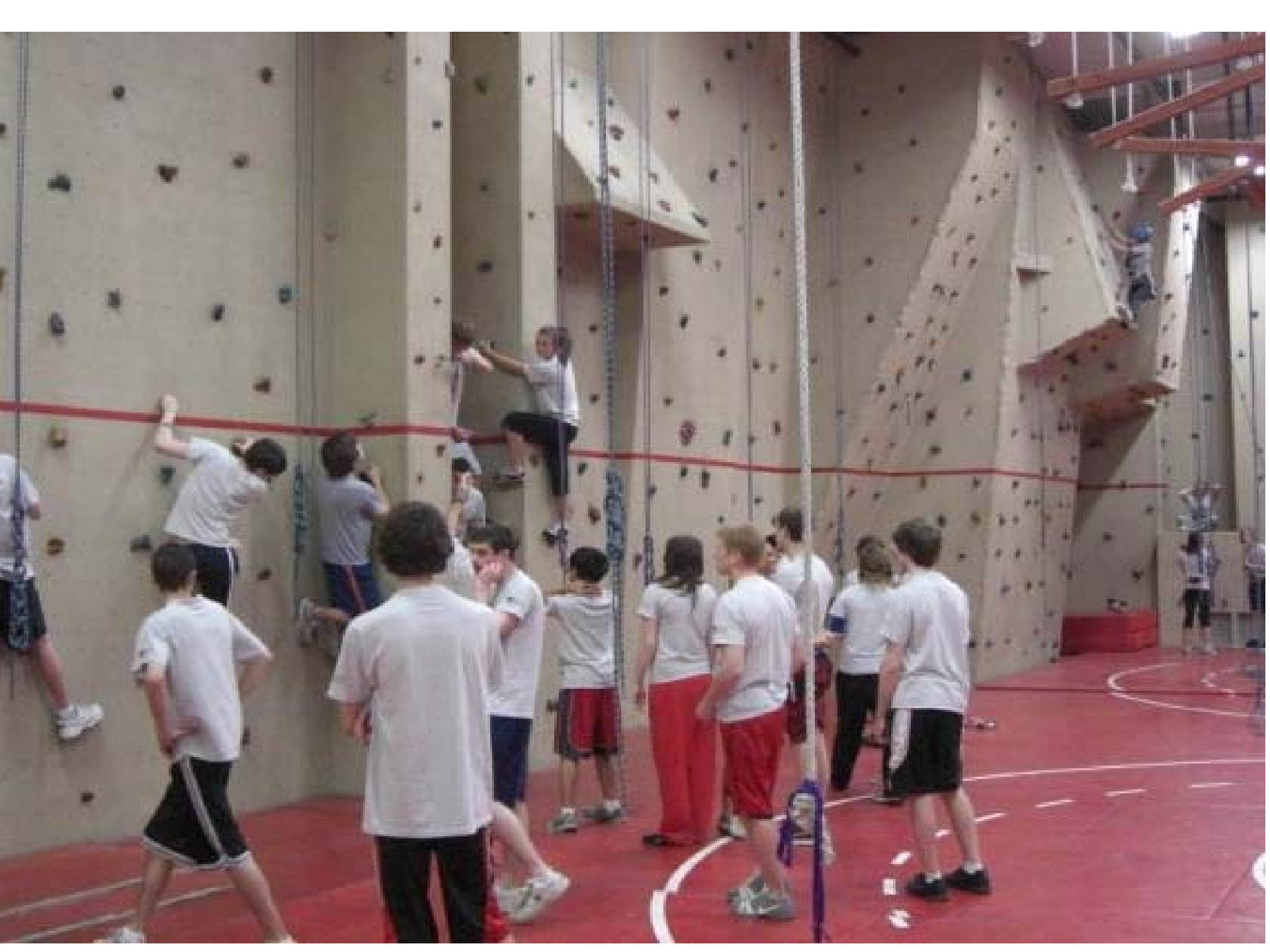
Traditional Team
Sports

















Naperville Central High School's Learning Readiness Physical Education Program,
Naperville IL

Home	Overview	Dr. Ratey	Mathematics
Freshman Literacy	Articles and Videos	Links and PDF's	Contact Us



MOVE and LEARN

Improve Student Engagement
Help Motivate Students
Activate all parts of their brain



Learning Readiness PE
was PBS. Click play to watch.

Questions about LRPE Contact

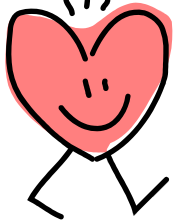
Paul Zientarski

Learning Readiness PE (LRPE) Coordinator Naperville Community School District 203

Phone: 630 - 961 - 0525

Email : pzientarski@naperville203.org Or Click the link [Paul Zientarski](#)

Big Ideas for PCFSN



- Support quality daily PE in all States
- Make PE a “**CORE**” Subject
- Support the continuation of the **PEP Grant**
- Adopt a recognized nation-wide **Fitness Test**
- Encourage a paradigm shift from sports-skills activities to life-long fitness understanding as a standard
- Colleges of education should change the emphasis of physical education teacher preparation.

