



Improving Academic Achievement Through Physical Activity

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Steven Gaskill, Lisa Beczkiewicz, and Mary McCourt

The Univ. of Montana, HHP Dept. and Missoula City-County Health Dept.

Physical Activity to promote learning is recommended by the CDC

National Center For Chronic Disease and Health Promotion

Division of Population Health



THE BRAIN BENEFITS OF EXERCISE



INCREASES PRODUCTION OF
NEUROCHEMICALS THAT
PROMOTE BRAIN CELL REPAIR



IMPROVES
MEMORY



LENGTHENS
ATTENTION SPAN



BOOSTS DECISION-
MAKING SKILLS



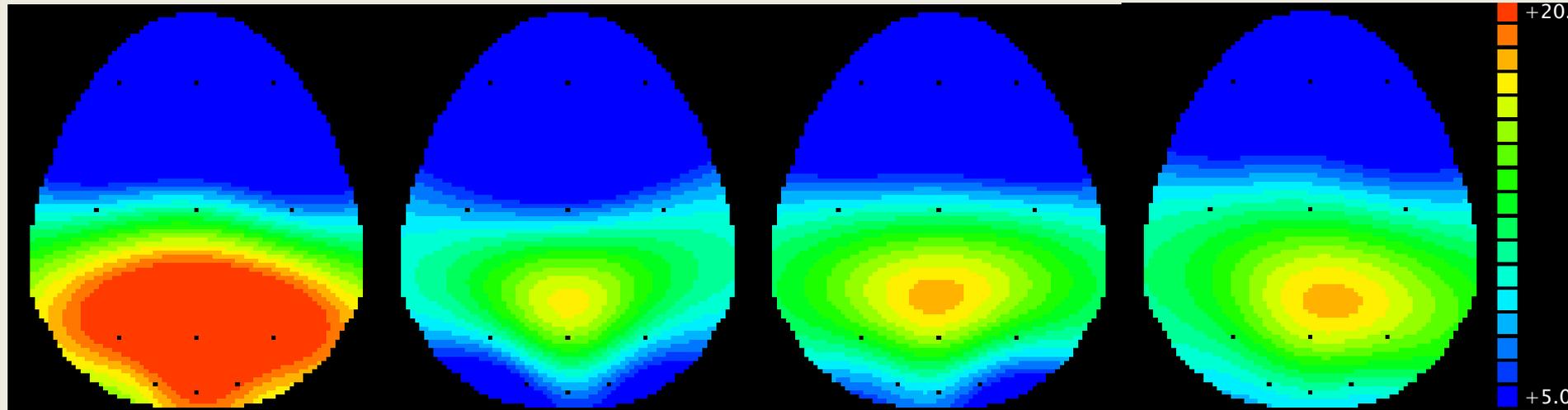
PROMPTS GROWTH OF
NEW NERVE CELLS AND
BLOOD VESSELS



IMPROVES
MULTI-TASKING
AND PLANNING



Neural Activation

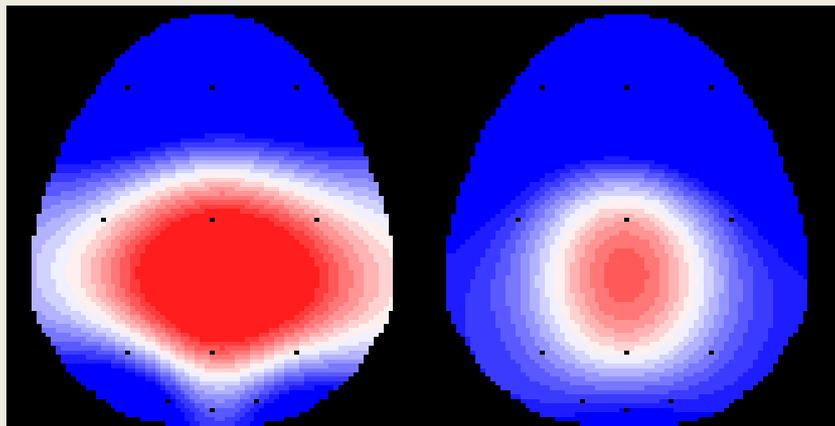


Fit
Children

Sedentary
Children

Fit
Adults

Sedentary
Adults



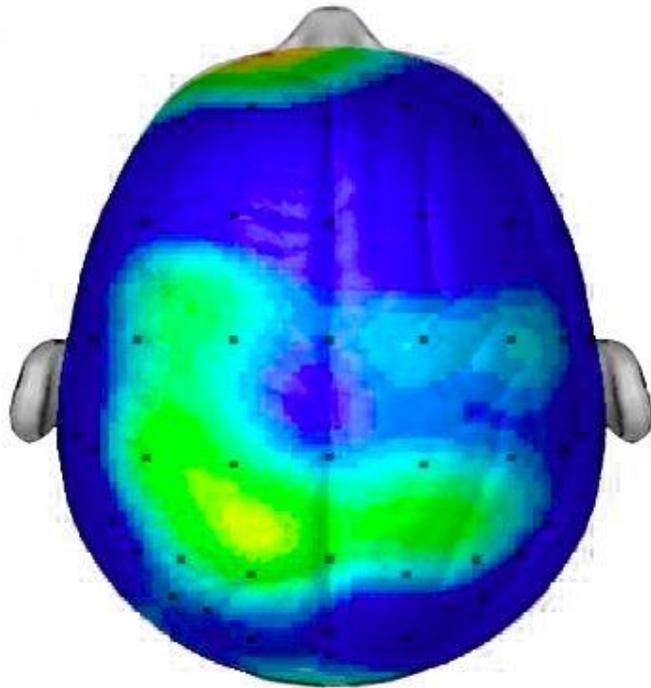
Higher Fit Children

Lower Fit Children

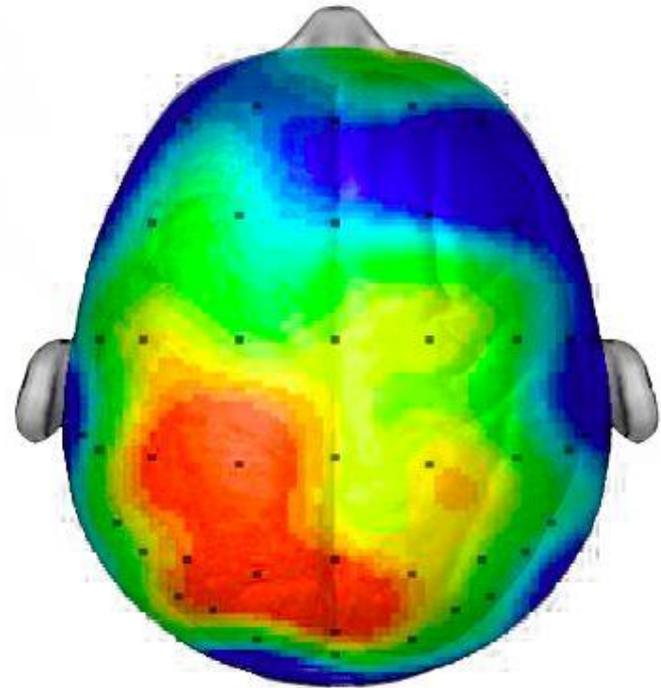
Hillman, Castelli & Buck, 2005

Hillman, Buck, Themanson,
Pontifex, & Castelli, 2009

Composite of 20 student brains taking the same test



After sitting quietly

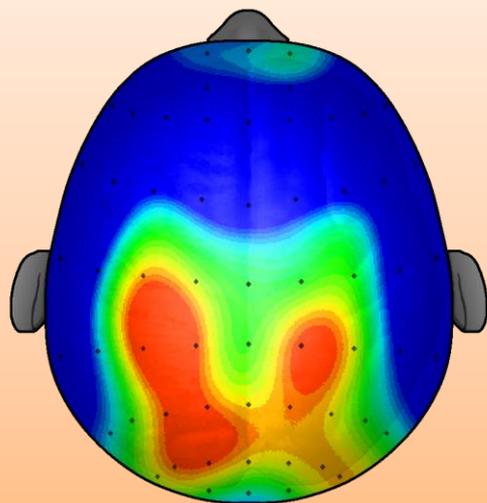


18% Higher Score

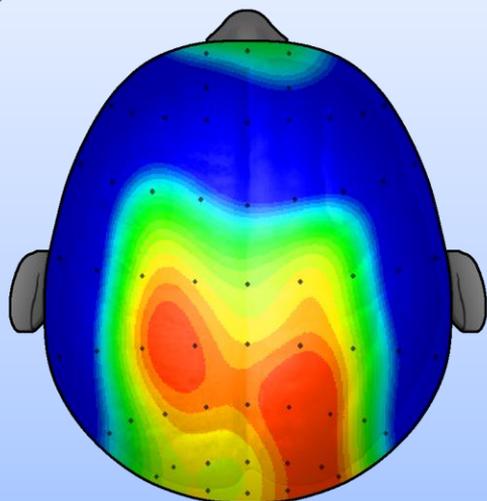
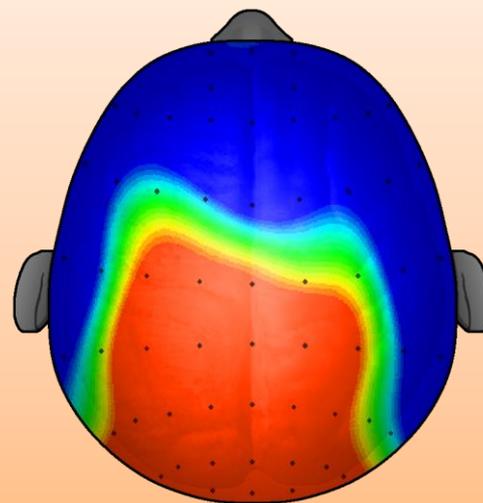
After 20 minute walk

Pre-test

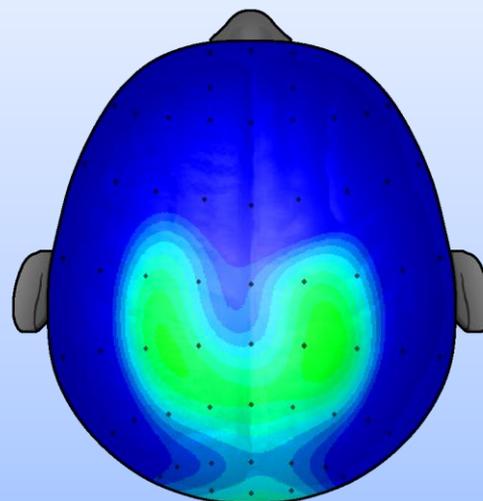
9 Months Later



FITKids
Intervention



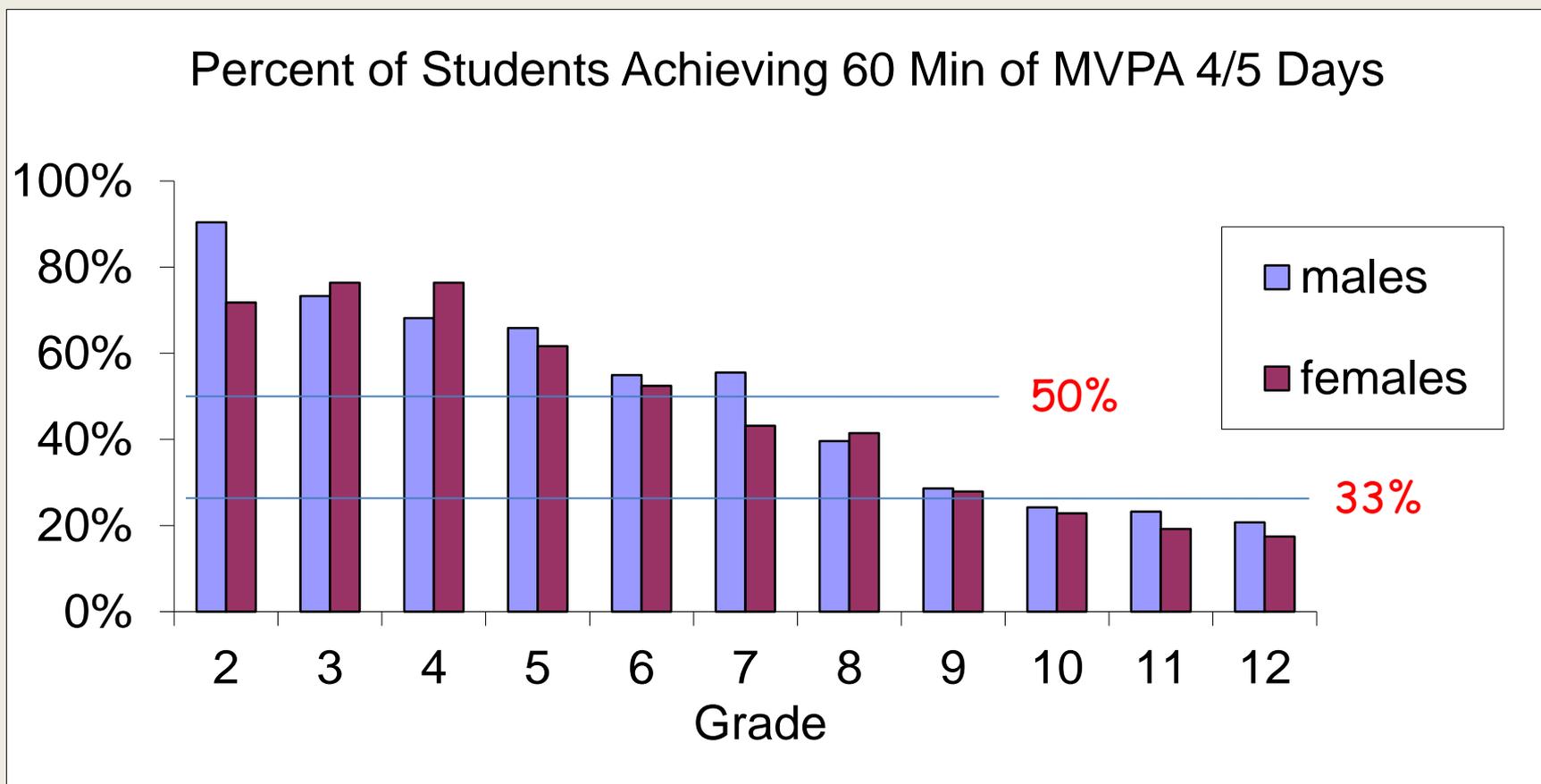
Waitlist
Control



% Missoula Students meeting 60 min/day Mod. and/or Vig. Physical Activity

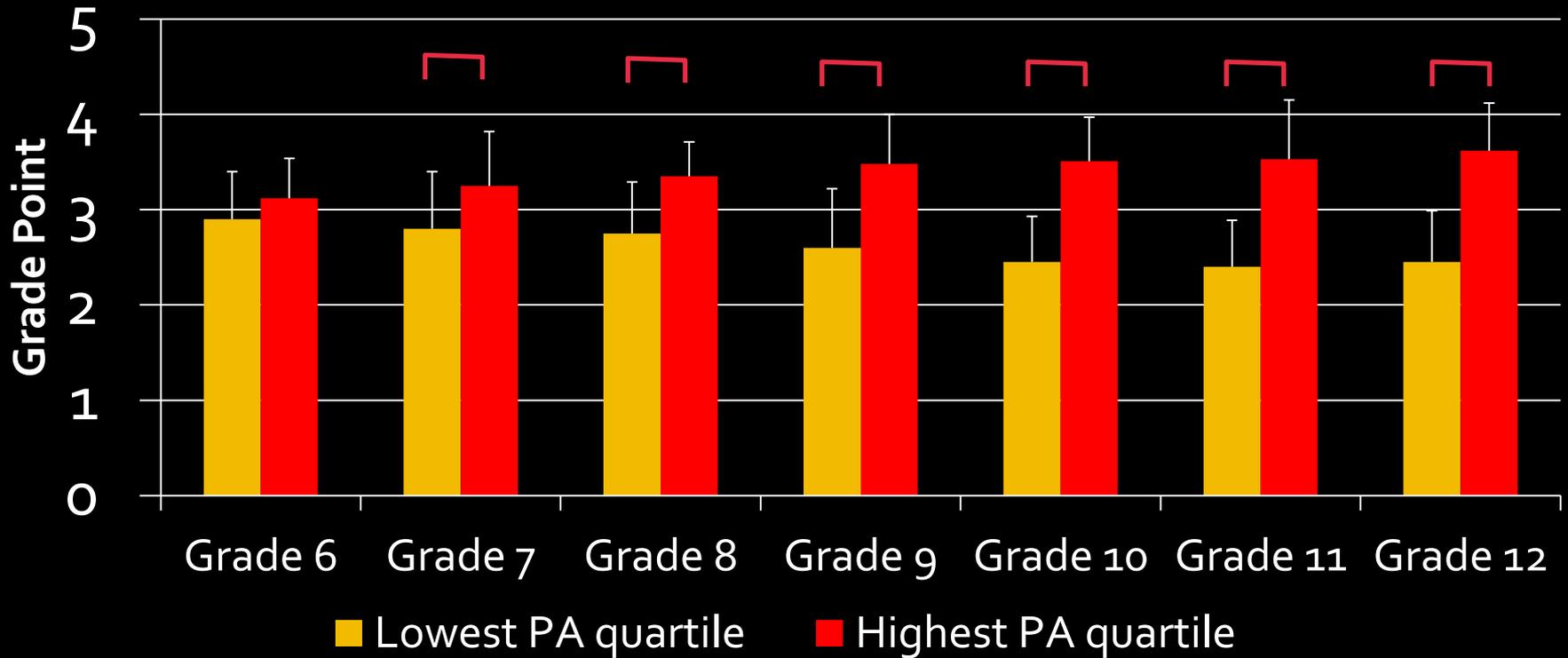
I.E. Achieving - CDC Guidelines

2006-2008 n=1214



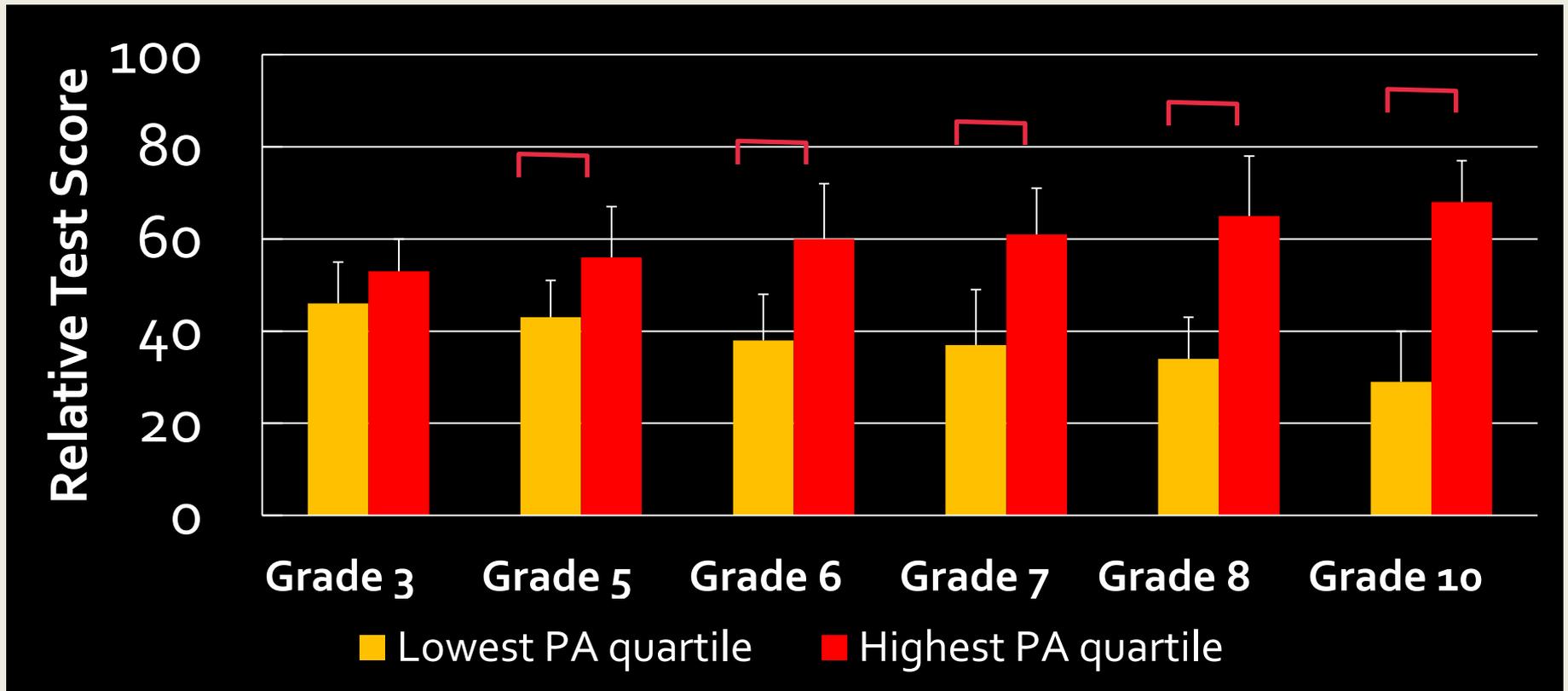
Missoula Grade Point Data

2006-2008 n=712



Missoula Standardized Test Scores

2006-2008 n=640



MontCAS Phase II (Criterion-Referenced Test: CRT).



Prescription:

“Complex Movement” requiring coordination is best

--Before school

Any Physical Activity is good

--Regular throughout the day

5 min every half hour

--Never withhold PA or use as a punishment

--Move at Recess

--Require activity before counseling

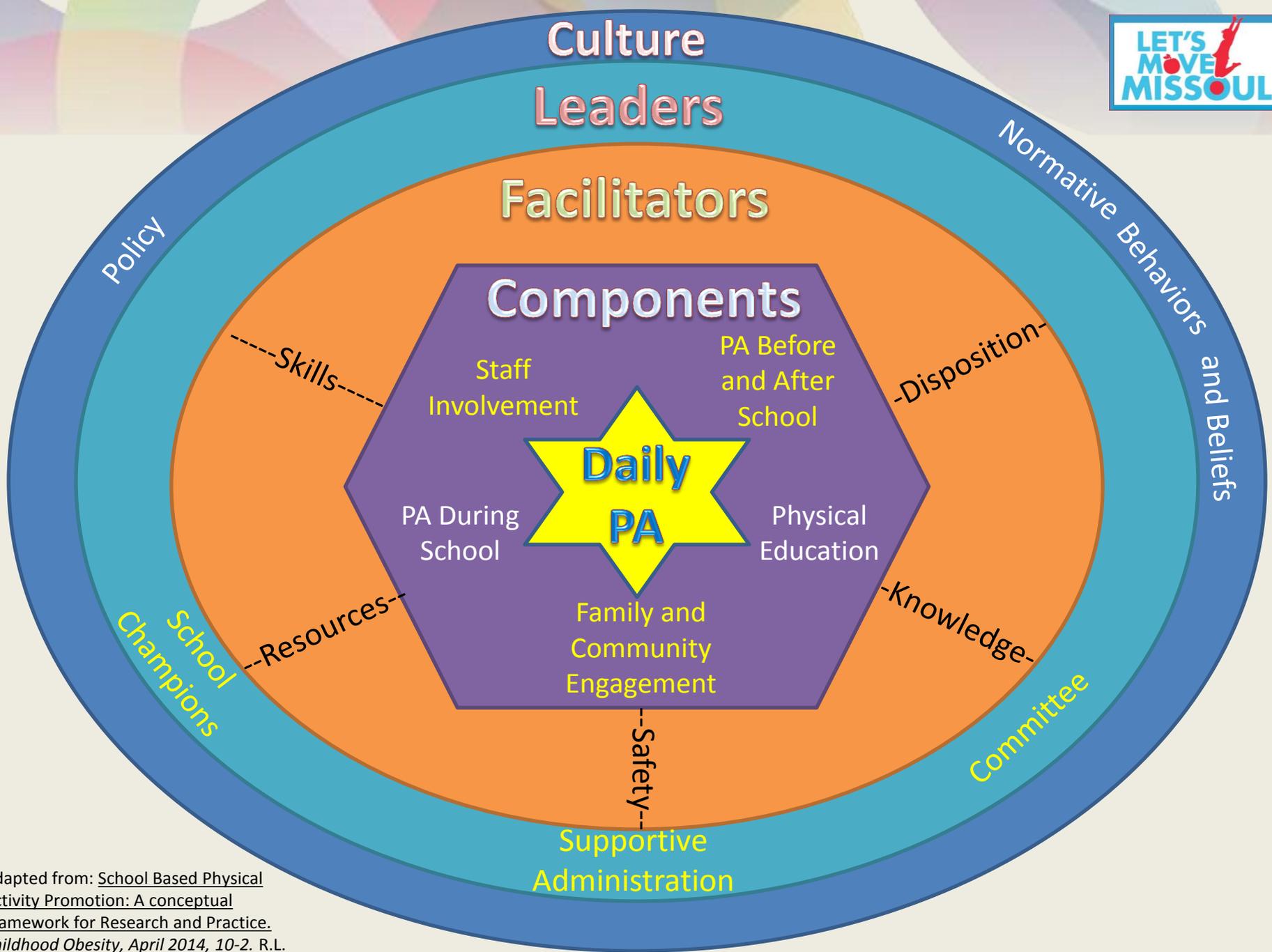
--Start class with physical activities

Your Thoughts.....



ADHD, Depression, Anxiety and Oppositional Defiant Diagnosis
are ALL Improved by Regular Physical Activity







Missoula Resources

- Lisa Beczkiewicz -- lbeczkiewicz@co.missoula.mt.us – Missoula City-County Health Dept.
406.258.3895
- Mary McCourt -- mmccourt@co.missoula.mt.us –Missoula City-County Health Dept.
406-258-3889
- Steven Gaskill -- steven.gaskill@umontana.edu - University of Montana – HHP Dept.
406.243.4268
- Tucker Miller -- arthur.miller@umontana.edu - University of Montana – HHP Dept.
406.243.5238

Contact for handouts and training on Brain Breaks and Energizers, Take-10 and other ways to incorporate physical activity into your school and your classroom.



THANK YOU!

