A local movement to raise a healthier generation of kids
Get Them Up & Get Them Moving

HOW PHYSICAL ACTIVITY PROMOTES LEARNING & WHAT MISSOULA TEACHERS REPORTED
Review

- 2007 *Physical activity is related to academic performance in 2nd through 12th grade students.*
  Steven Gaskill, Ph.D., UM HHP Department

- 2008 BMI Surveillance Project- MCCHD

- Let’s Move! Missoula

- Childhood Obesity Summit 2012 & 2013 presented the community with a recipe
A realization:
We must focus on lifestyle change, not just “exercise” for the actively inclined. We need increases in routine, daily physical activity for everyone.

Mark Fenton, Ph.D.
Social Ecology Model
Determinants of behavior change

- Individual
- Interpersonal
- Institutional
- Community
- Public Policy

Sallis & Owen, *Physical Activity and Behavioral Medicine*
Socio-ecological Successes

- Tobacco –

- Seat belts, child safety restraints –

- Water & sewer –
Overview

Cognitive and brain health

Moving from known relationships to cause and effect results

If exercise is medicine what is the dose?

Points of intervention and children’s health

Darla Castelli, Ph.D., University of Texas, Austin
Neural Activation

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

Hillman, Castelli & Buck, 2005

Hillman, Buck, Themansion, Pontifex, & Castelli, 2009
Measurement of Executive Control

• **Stimulus-response (i.e., Odd ball paradigm)**
  - Press the button when you see the cat

• **Discrimination tasks (i.e., Flanker’s task)**

• **Congruent/non-congruent (i.e., Stroop, Go/NoGo)**
Cognitive Task Performance

Hillman, Castelli & Buck, 2005
Pre-test  9 Months Later

FITKids Intervention

Waitlist Control

µV

7  10
Goal: Every Student Will have Access to 60 Minutes of Physical Activity a Day

The HOW

Active Transportation: walking or biking to school

Active Before-school Activity: supervised activity on the playground before school

Active Brain Breaks: during instructional time, up and active

Active Recess: supervised activity on the playground with soft equipment

Active After-school activity: all agencies using the schools will begin programs with an activity
Updated and link all Safe Route to School maps on the school district's website.

Zero Hour Active Recess

- Three schools in our poorest neighborhoods
- Funded by Providence St. Patrick Hospital
- Run by Parks & Recreation with volunteers
Improving Academic Achievement Through Physical Activity

Steven Gaskill, The Univ. of Montana HHP Dept.
Lisa Beczkiewicz, and Mary McCourt
Missoula City-County Health Dept.

*Physical Activity to promote learning is recommended by the CDC*
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

Hillman, Castelli & Buck, 2005

Hillman, Buck, Themanson, Pontifex, & Castelli, 2009
Composite of 20 student brains taking the same test

After sitting quietly  After 20 minute walk

18% Higher Score

Research/Scan compliments of Dr. Chuck Hillman University of Illinois
Pre-test          9 Months Later

FITKids          Intervention

Waitlist         Control

7 µV            10
% Missoula Students meeting 60 min/day Mod. and/or Vig. Physical Activity
I.E. Achieving - CDC Guidelines
2006-2008 n=1214

Percent of Students Achieving 60 Min of MVPA 4/5 Days

S.E. Gaskill, 2008
Missoula Grade Point Data
2006-2008 n=712

S.E. Gaskill, 2008
Missoula Standardized Test Scores
2006-2008 n=640

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

S.E. Gaskill, 2008
“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
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
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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.
How Did We Measure Success

- We trained over 500 teachers in Missoula County in this model

- Provided each school with a curriculum of Take 10!
  - http://take10.net/

- Trainings took about 30-45

- Spring 2016 Survey
Survey & Its Results

• Active Brain Breaks: trained staff in 16 of the 17 schools on the fundamental “why” of brain breaks.
• Survey results of 350 teachers:
  • 78% (98%*) reported improved attention during classroom activities.
  • 70% (96%*) reported improved behavior,
  • 64% (97%*) reported improved learning

*teachers who used 4 plus brain breaks during the day
Overall, 83 percent of teachers reported using increased physical activity in the classroom since the incorporation of this program.

90% of Teachers who attended training sessions answered YES

62% of teachers who did not attend training sessions answered YES

87% of Elementary teachers responded YES

75% of Middle School teachers responded YES
Concentrating on the four schools in our poorest neighborhoods:

- All schools have new Safe Route to School maps
- Three of the four schools have Morning Move 2x a week; soon to be 3x
- Two schools have Active Recess 2x/week; soon to be 3x
- All schools in Missoula County are being offered Brain Break refresher
- RWJF grant Invest Health is looking at three of the neighborhoods for improvement
- [http://gis.missoulacounty.us/mcchd/healthmap](http://gis.missoulacounty.us/mcchd/healthmap)
No Need to Reinvent Anything

We are happy to share any of our data and/or tools

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