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CENTER for HEALTH & COMMUNITY IMPACT
WAYNE STATE UNIVERSITY

Using Healthy School Initiatives to Impact the Health of Children

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Building Healthy Communities

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All about you?

- What is your profession? (What do you do?)
- What are you hoping that you will get out of this session?

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A Little Bit About Me…

- Taught for 5 years in the public school setting
  - Elementary and High School
  - Physical education and health
- Undergrad and Masters from University of Illinois
  - Kinesiology
- Ph.D from University of Texas at Austin
  - Curriculum and Instruction
- Currently an Assistant Professor at Wayne State University
  - Kinesiology, Health and Sport Studies, College of Education
  - Researcher in the Center for Health and Community Impact
  - Focus on increasing physical activity and healthy eating and the impact on childhood obesity and academic achievement of children

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Overview

- Understand schools' role in about the overall health of children
- Overview of the Building Healthy Communities program
- Ways to collaborate with schools to provide healthy opportunities for children

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Survey Says…

One in every five children in American are overweight or obese

On average, children spend 28 hours in front of the TV each week

1 in 3 children will become diabetic

The average 15 year old accumulates 1 hour of TV a day

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Michigan School Health Profiles

Physical Inactivity (2012)

- **15.2%** did not participate in at least 60 minutes of physical activity on at least 1 day
- **50%** not active for 60 minutes at least 5 days a week
- **74%** not meeting the national recommendation of 60min/day
- **65%** did not attend physical education classes on 1 or more days in an average week when they were in school
- **27%** watched television 3 or more hours per day on an average school day
- **34%** used computers 3 or more hours per day on an average school day

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Which is more Appealing?

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Benefits of Healthy Eating & Physical Activity

Physical

- Reduced chance of obesity
- Reduced risk for chronic diseases

Emotional

- Reduced feelings of depression & anxiety
- Promotes psychological well-being

Cognitive

- Improved attention & concentration
- Memory
- Verbal ability
- Academic Achievement

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Eating Healthy & Eating Breakfast

- Improved attendance
- Fewer sick days
- Reduced tardiness
- Cognitive functioning
- Academic achievement
- Children who participate in school breakfast programs show decreased anxiety, depression, and hyperactivity

(Rampersaud et al., 2005; Taras, 2005; Sigfusdottir et al., 2007

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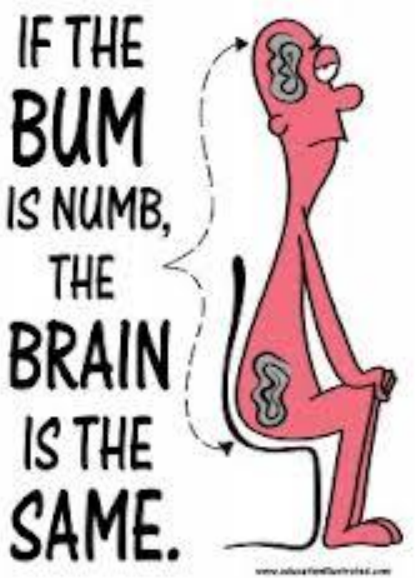
Physical Activity

- Physical activity and fitness has been linked to:
  - Improved time on task (Greico, 2011)
  - Fewer discipline issues (Mahar, 2008, Dwyer et al 1979)
  - Less unexcused absences (Cance, Centeio, Castelli, in press)
  - Improved academic performance
    - Reading and Math achievement (Castelli et al. 2007)
    - Grades and standardized test scores (Kolbe et al. 1996)
    - Higher ROI & Improved learning in Math and Reading – Building Healthy Communities program (Centeio, et al. 2016)



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Brain Booster

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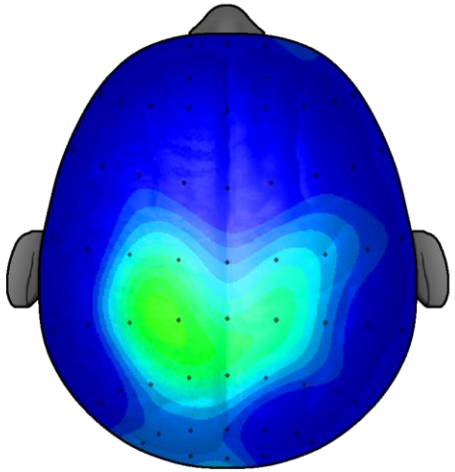
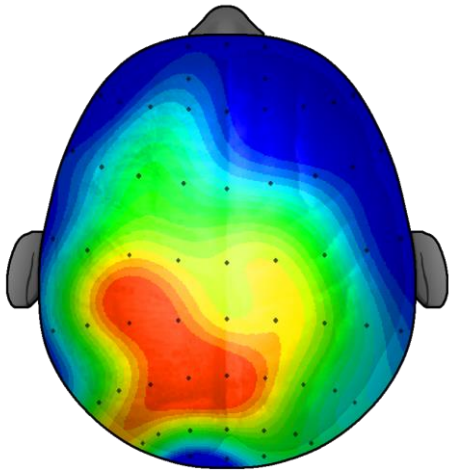
Healthy Body, Healthy Mind

- Physical activity has been shown to have a positive association with cognitive functioning in children (Sibley & Etnier, 2003)
- Acute bout of physical activity (Hillman et al., 2009)



After 20 minutes sitting quietly



After 20 minutes of walking

Hillman, C.H., Pontifex, M.B., Raine, L., Castelli, D.M., Hall, E.E., & Kramer, A.F. (2009). The effect of acute treadmill walking on cognitive control and academic achievement in preadolescent children. Neuroscience, 159(3), 1044-1054. PMID: 19356688

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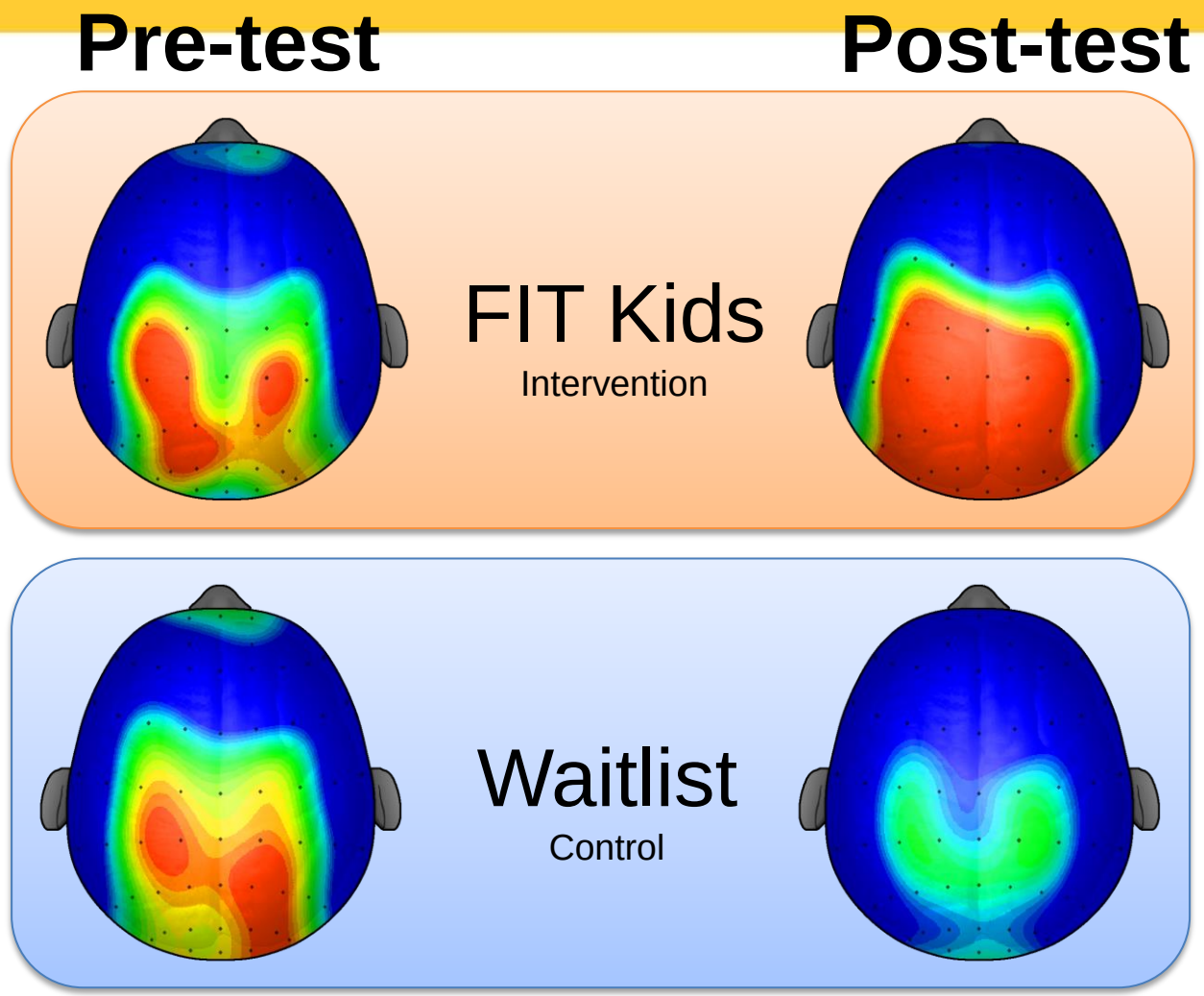
Healthy Body, Healthy Mind

Chronic physical activity

- FIT Kids Afterschool program
- 75 minutes of PA



Castelli, D.M., Hillman, C.H., Hirsch, J., Hirsch, A., & Drollette, E. (2011). FIT Kids: Time in target heart zone and cognitive performance. *Preventive Medicine, 52(*1), S55-S59. PMID: 2128167

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Fitness and Obesity

- Aerobically fit children have faster response time, better accuracy, & allocate more working memory toward a given task (Kamijo et al., 2011)

- Adiposity inhibits cognitive performance (Kamijo et al., 2012)

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Misconceptions….

- Just because our students look “physically fit” doesn’t mean that they are
  - Should be measuring some form of fitness within your school
    - Fitnessgram
      - Now affiliated with the Presidential Fitness Challenge
- Provide as many opportunities as possible for children to participate in PA to help them become more “Fit”

FITNESSGRAM®

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What Needs To Happen?

- Change the culture within and around the school
  - Make physical activity a common happenin
- **Principals play a key role** in this culture of change within the school environment!
- BUT communities and the support that a school has in a community is also essential

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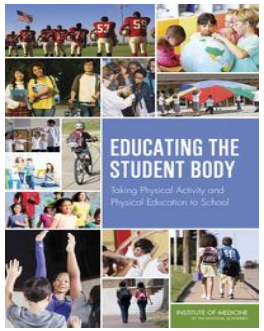
Whole-of-School Approach

- Greater alignment, integration and collaboration between health and school culture

- To improve physical and cognitive health



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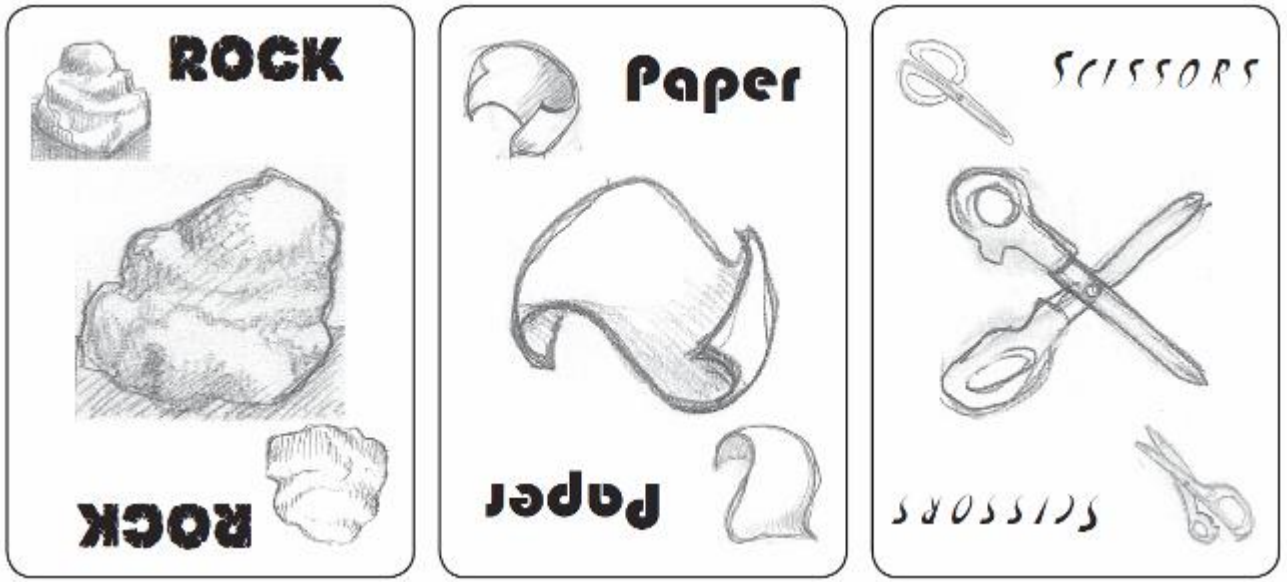
Brain Booster

ACTIVE



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What Happens Currently in your Community?

- Are there any current partnerships with schools?
- Do you know of any initiatives that schools are participating in?
  - Think – Share with neighbor

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Building Healthy Communities: Elementary School Program

Building Healthy Communities

A partnership between

Blue Cross Blue Shield Blue Care Network of Michigan

MDHHS Michigan Department of Health & Human Services

MICHIGAN FITNESS FOUNDATION

milk Means More United Dairy Industry of Michigan

University of Michigan

Center for Health & Community Impact Wayne State University

Supporters

BCBSM Foundation

GOPHER

FoodCorps Michigan

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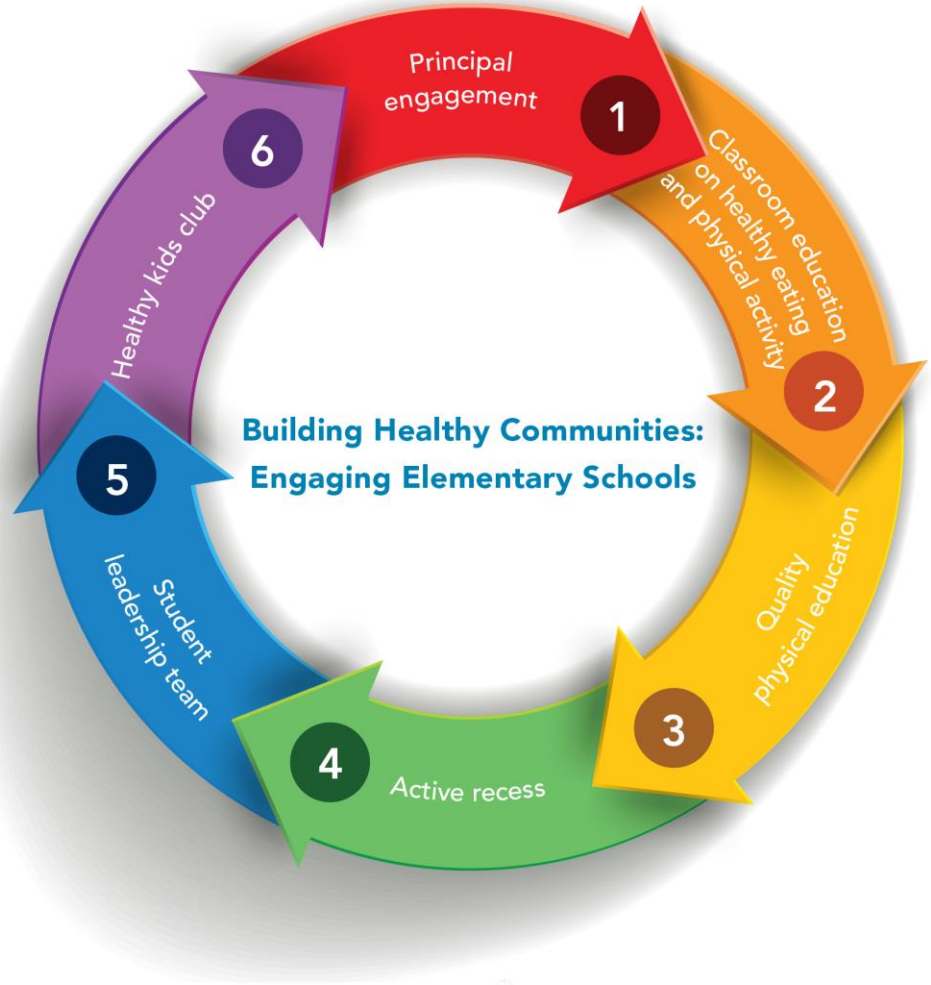
Building Healthy Communities: Elementary School Program

- Building Healthy Communities: Elementary School Program
  - Focused on six key components
    1. Principal engagement
    2. Classroom education
    3. Quality physical education
    4. Active recess
    5. Student leadership
    6. Healthy kids club (Afterschool program)
- Each school has an initial onboarding professional development



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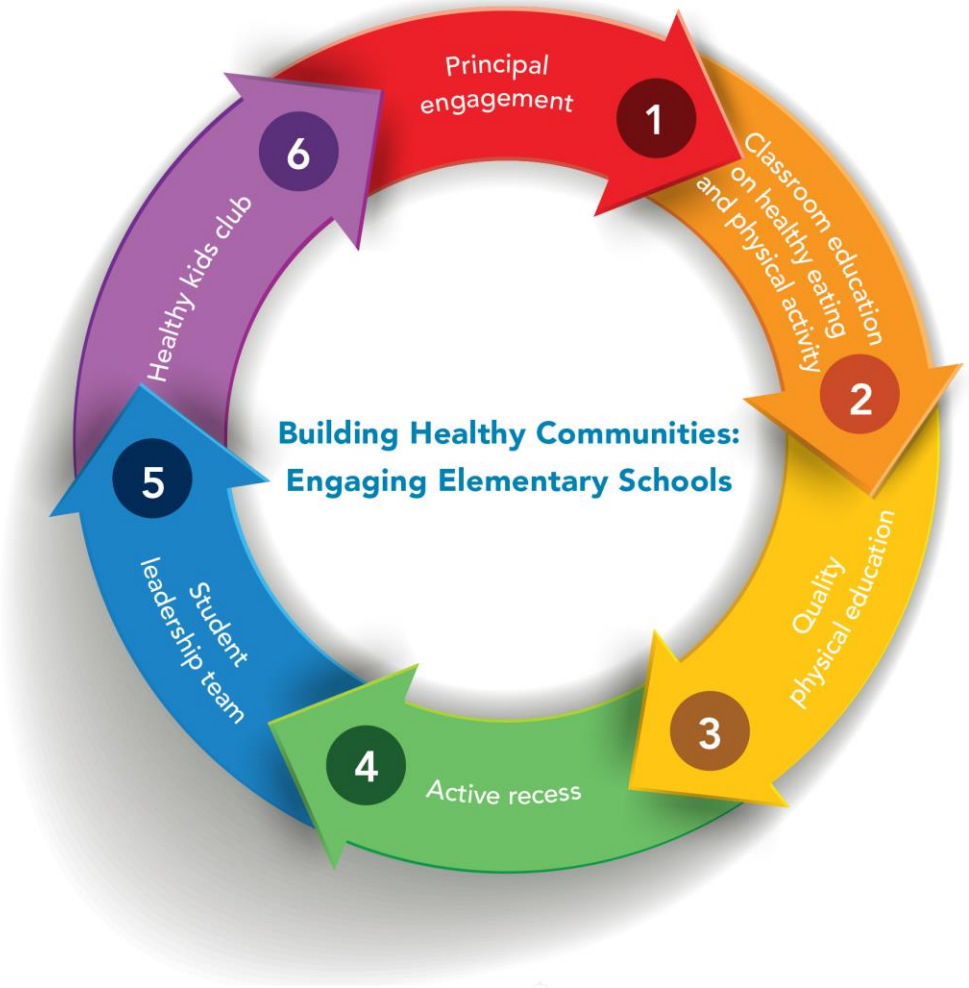
Principal Engagement



- Supports program implementation
- Reads daily morning announcement
- Facilitates newsletter and electronic messaging

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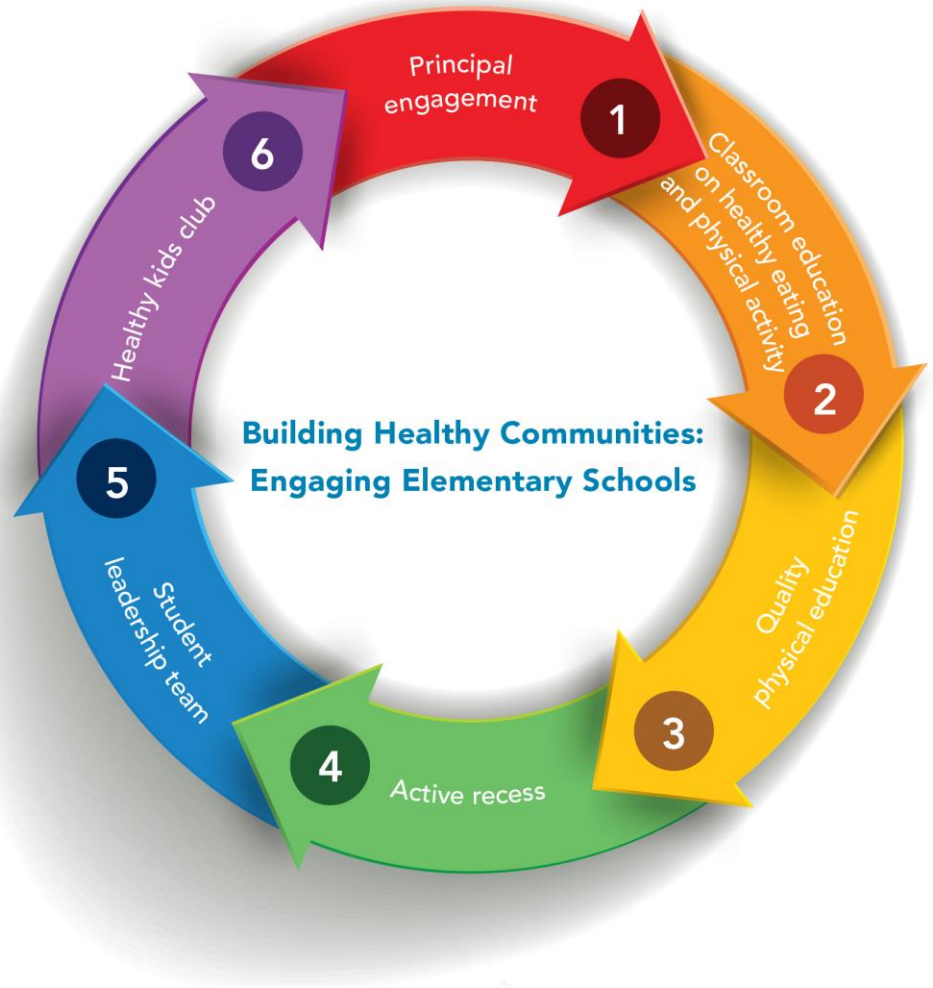
Classroom Education



- Teaching classroom healthy eating lessons
  - Taught by coordinator, co-taught, and then teacher led
- Physical activity break resources
- Classroom newsletter messaging
- Parent handouts
- Recommendations for healthy classroom transformation
  - Policy changes surrounding food and not using PA as punishment

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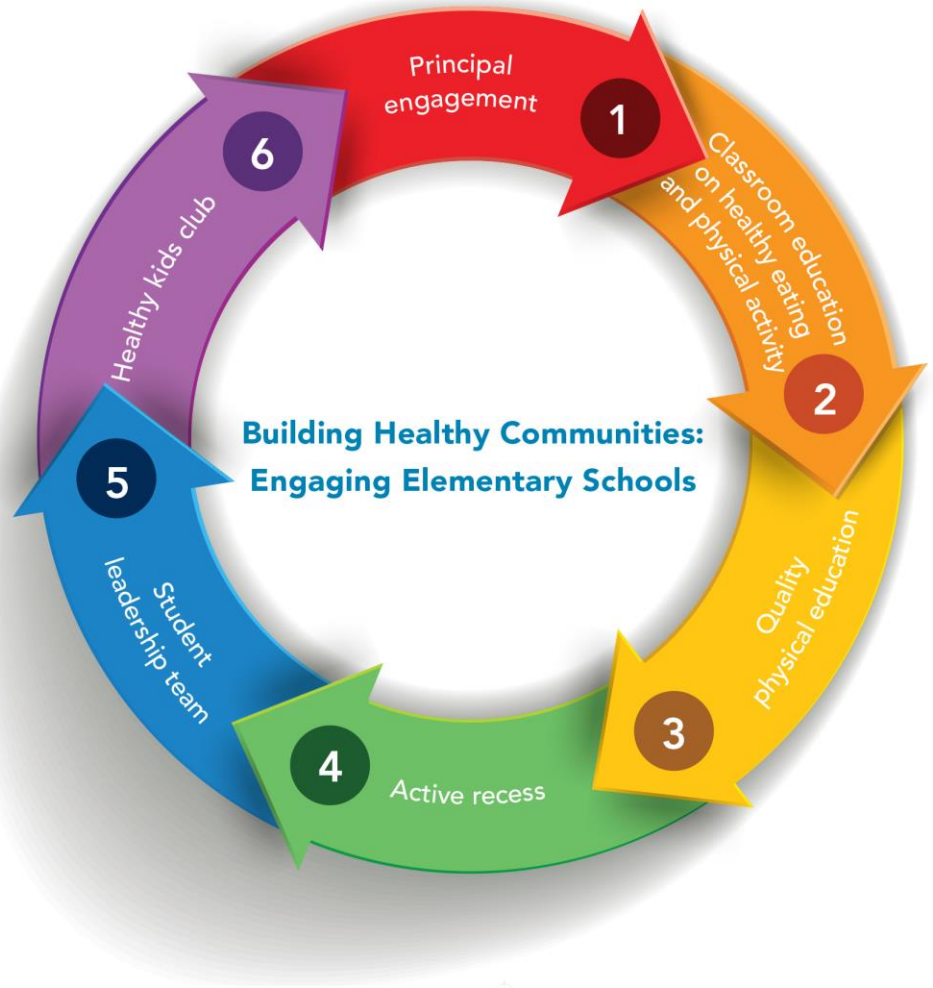
Quality Physical Education



- EPEC curriculum
  - The Exemplary Physical Education Curriculum™ for K–5
- PE equipment to support the curriculum
- EPEC professional development and training
  - Includes introduction to the boxed curriculum and PE best practices
- On-going support for PE teachers

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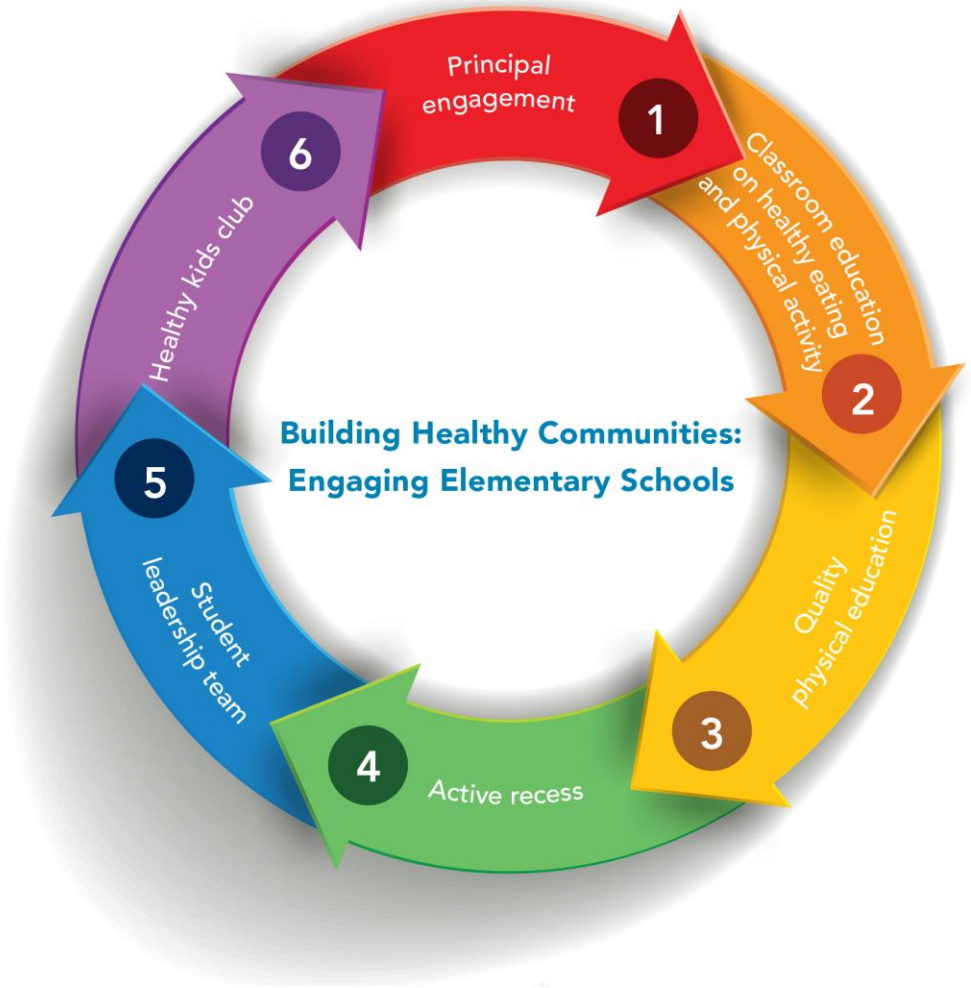
Active Recess



- PA equipment for recess along with a recess cart
- Training for recess monitors and classroom teachers
- Indoor recess training

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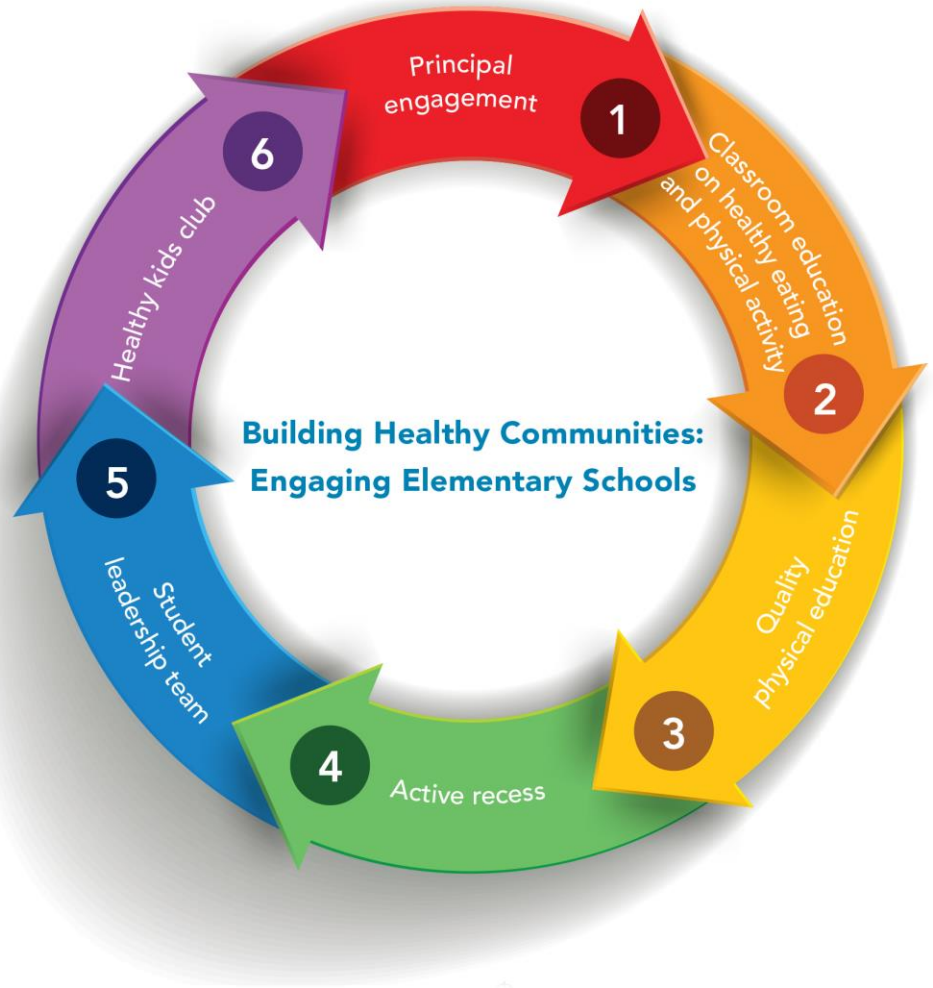
Student Leadership



- Fuel Up to Play 60
  - Partner with UDIM (United Dairy Industry of Michigan)
  - Schools have the opportunity to win an additional $4000 in grant money
  - Encouraged to complete all six steps
  - Required to fulfill two “plays” during the grant period (one PA and one HE)
  - Student leadership team is formed and the BHC coordinator checks in with the Student Leadership team leader

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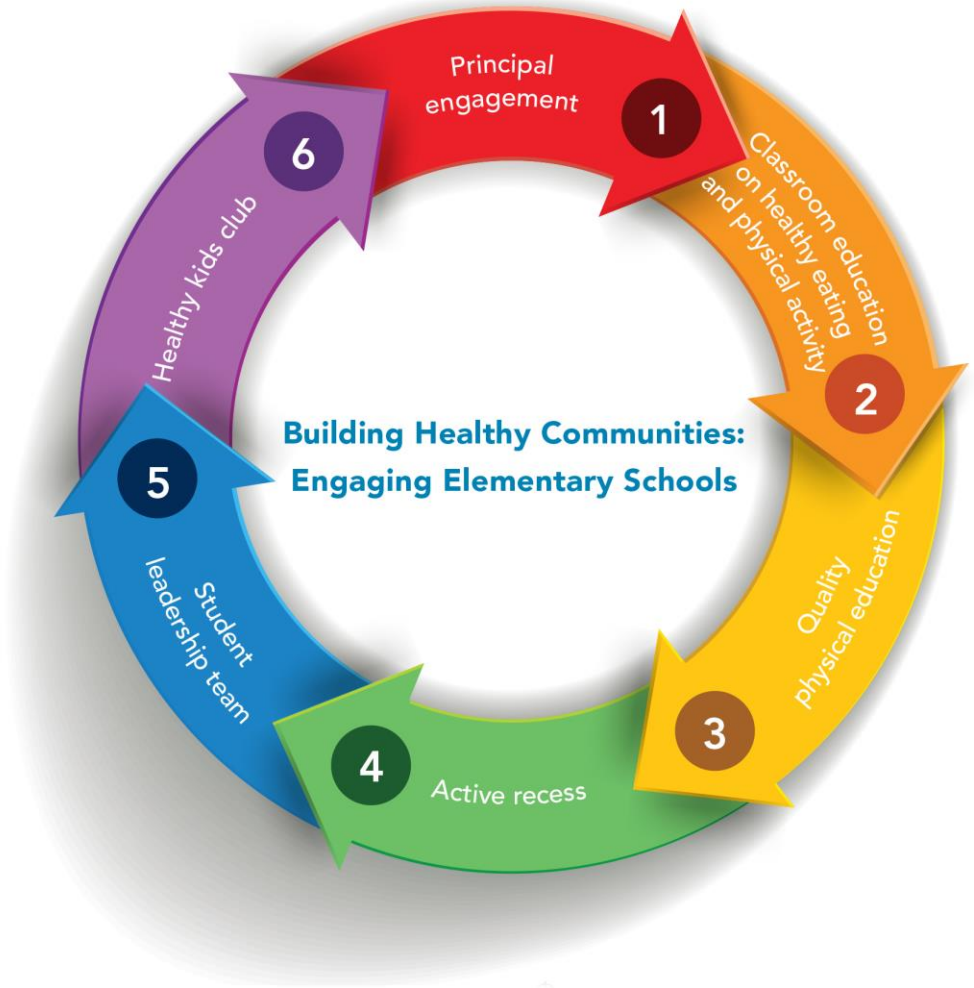
Healthy Kids Club



- After-school Club
  - Designed to be a free opportunity for physical activity
  - Healthy snack is provided
  - Students participant in a walking/running club for 20 minutes
  - 20 minutes of fun, non-sport, games provided by the club leader

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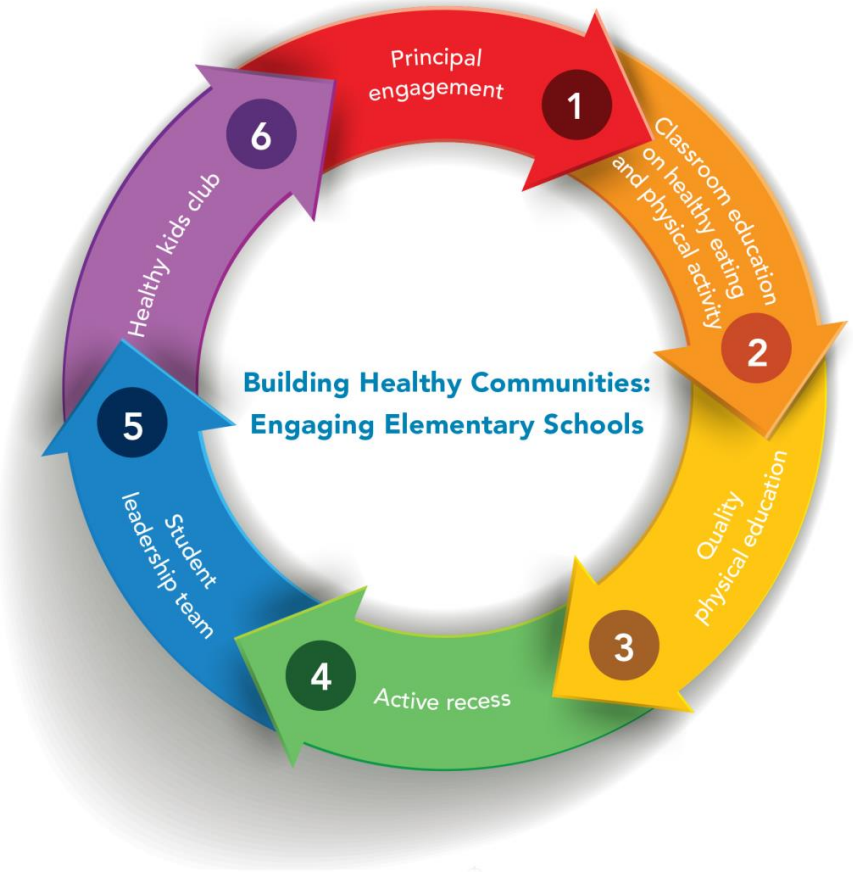
Research Findings From the Building Healthy Communities – Elementary School Program




Increased physical activity


Increased healthy eating behaviors


Increased physical activity levels led to higher math scores


Higher level of implementation led to higher reading scores


Decreased obesity


Support of the school principal matters in overall school change

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Building Healthy Communities: Elementary School Program Research Results

Centeio, E.E., McCaughtry, N., Gutuskey, L., Garn, A., Shen, B., Martin, J., & Kulik, N. (2014). ***Comprehensive School Physical Activity Programs in Urban Elementary Schools.*** Journal of Teaching in Physical Education, 33, 573-591.

- **PURPOSE:** This study explored overall changes in student, educator, and parent physical activity after an 8-month CSPAP-based program.

Participants

- Six urban elementary schools
  - Students: 301 fourth graders (*M_{age}= 9.39; SD = .44; Girls = 57%;* African American (53%), Caucasian (23%), Other (20%), Hispanic (2%), Asian/Pacific Islander (1%), and American Indian (1%)
  - Guardians: 109 completed Pre/Post surveys (Mage = 36.38; SD = 6.04; 91 mothers, 17 fathers, and 1 male guardian; 53% African American, 29% Caucasian, 1% Hispanic, and 17% Other)
  - Educators: 22 4th grade teachers (*M*experience = 10.8 years, *SD* = 8.64) and 12 administrators (*M*experience =1.76 years, *SD* = 2.89)

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Building Healthy Communities: Elementary School Program Research Results

Participants were engaged in the BHC program in their school for 8 months

Measures

- Students
  - Self-reported age, gender, race/ethnicity
  - Physical activity measured in steps by accelerometers (Actigraph GT3X+)
- Adults
  - Self Reported PA data with the short version IPAQ (International Physical Activity Questionnaire)
    - (Craig et al., 2003; Lee, Macfarlane, Lam, & Stewart, 2011)

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Building Healthy Communities: Elementary School Program Research Results

Results

- **Student** In-School MVPA increased by an average of 4.5 minutes per day
  - Pillai's Trace, $F(1,308) = 100.09$, $P < .001$, $\eta 2 = .25$
  - 4.5 minutes a day is equivalent to 22.5 additional minutes of MVPA per week
  - Over one school year this totals 810 minutes of MVPA, 27 separate bouts of 30 minutes of MVPA or an extra 54 PE classes.
- **Parent** physical activity (reported in MET-minutes)
  - Increase in MET-min of PA reported from pre to post
  - Pillai's Trace, $F(1,115) = 13.39$, $P < .001$, $\eta 2 = .10$; *Mpre* = 10,402 MET-min, *Mpost* = 18,181 MET-min
- **Educator** physical activity (reported in MET-minutes)
  - No significant change in physical activity

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Building Healthy Communities: Elementary School Program Research Results

Centeio, E.E., Somers, C., Moore, E.W., Kulik, N., Garn, A., Shen, B., Martin, J., Fahlman, M., & McCaughtry, N. (under review). ***The relationship between academic achievement and healthy school transformations in urban elementary schools***. Research Quarterly for Exercise & Sport

- **PURPOSE:** This study examined the relationships between physical activity, fruit and vegetable consumption, obesity level, and academic rate of improvement in math computation and reading comprehension

Participants

- Four urban schools
- 378 fourth graders (M_{age}= 9.04; *SD* = .74; Girls = 44.6%)
- African American (45.7%), Caucasian (26.1%), Multi-Racial (15.1%), Other (8.2%), Arab American (3.4%), Hispanic (1%), and Asian (.5%)

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Building Healthy Communities: Elementary School Program Research Results

Participants were engaged in the BHC program in their school for 8 months

Measures

- Self-reported age, gender, race/ethnicity
- Weight, height, waist circumference
- Physical activity measured in steps by accelerometers (Actigraph GT3X+)
- Aerobic fitness (PACER)
- Fruit and vegetable intake (SPAN)
- Academic achievement
  - Math – AIMSweb
  - Reading – DIBELS
- Program implementation

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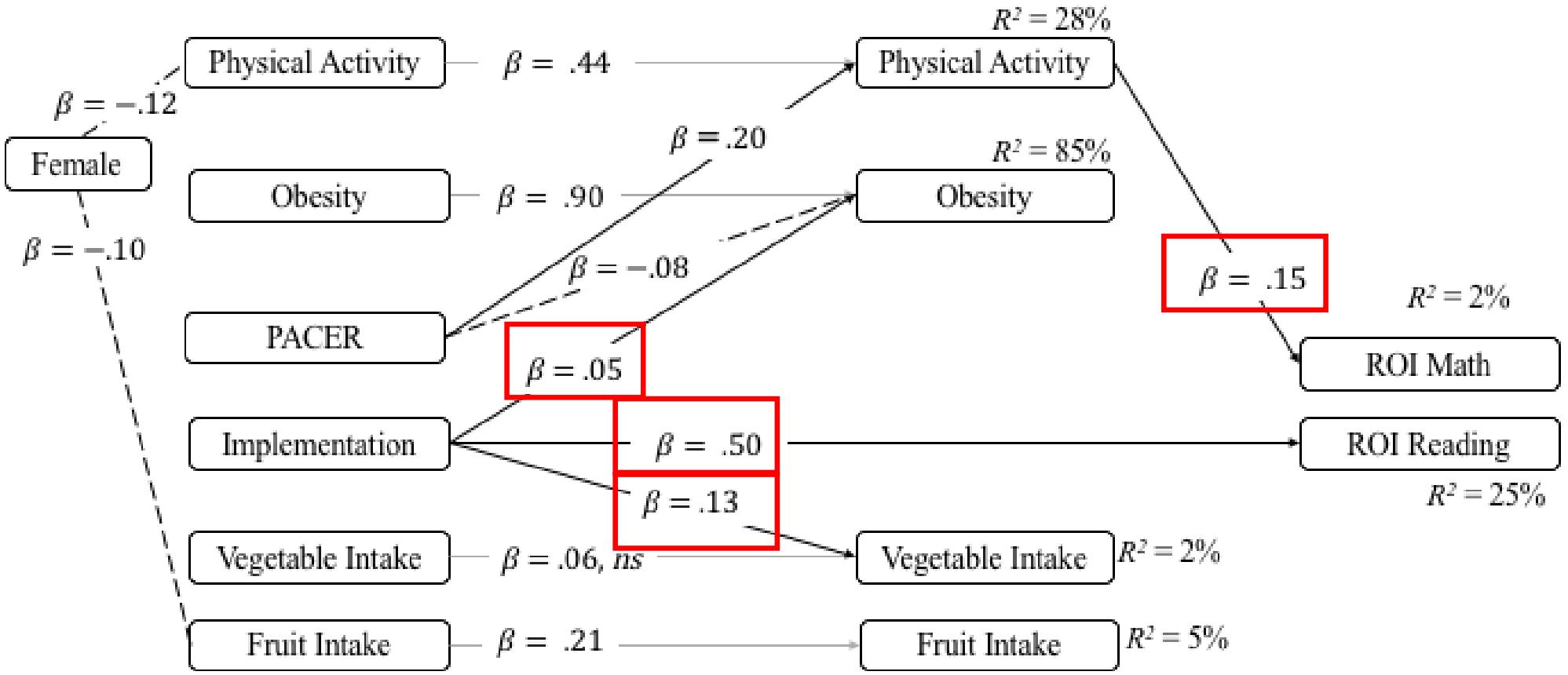
Building Healthy Communities: Elementary School Program Research Results



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Building Healthy Communities: Elementary School Program Research Results

Centeio, E.E., McCaughtry, N., Moore, E.W., Garn, A., Fahlman, M., Martin, J., & Kulik, N. (2017). ***Building Healthy Communities: A Comprehensive School Health Program to Prevent Chronic Disease.*** To be presented at ASCM Annual meeting, Denver, CO.

PURPOSE: This study examined the impact of a school-wide nutrition and PA intervention on 5th graders' central adiposity as a primary predictor of chronic disease.

Participants

- Six Metro Detroit schools (4 treatment and 2 control)
- 628 (377 treatment, 251 control) 5th graders

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Building Healthy Communities: Elementary School Program Research Results

Participants took part in the 6 component BHC program in their school for 8 months while the control schools did not participate in any new PA or nutrition programming

Measures

- Self-reported age, gender, race/ethnicity
- Body Mass Index
- Waist to Height Ratio
  - Better early predictor of central adiposity and chronic disease

Data Analysis

- ANCOVA – to control for T1 differences between treatment and control groups

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Building Healthy Communities: Elementary School Program Research Results

Results

- ANCOVA
  - Controlled for age, gender, and race
  - Significant difference in Waist to Height ratio and among treatment and control groups at time two $F_{MI}(24.61,63.08) = 4.59$, $p < .001$, $R^2_{Treament} = 0.01$
  - Significant difference in BMI among treatment and control groups at time two (M_{diff} = -0.23, 95%CI upper boundary: -0.03)
  - There were no significant differences in T2 WHtR or BMI based on:
    - Age $F_{MI}(0.02,63.08) = 0.44$, $p > .05$
    - Gender $F_{MI}(0.03,63.08) = 0.001$, $p > .05$
    - Race $F_{MI}(0.15,63.08) = 0.02$, $p > .05$
  - A total of 64% of T2 WHtR variance was accounted for by this model

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Building Healthy Communities: Elementary School Program Research Results

Conclusions

- The BHC healthy school intervention led to significant differences in central adiposity and BMI levels among 5th grade students, regardless of age, gender, or race
- This supports the ability of schoolwide programs to significantly and positively impact student health and chronic disease prevention

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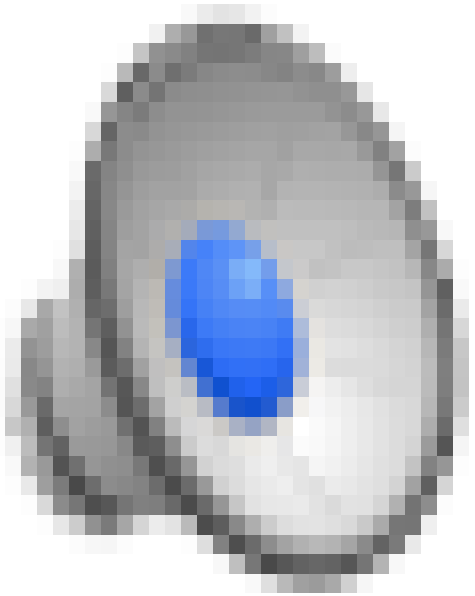

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Rethinking Physical Activity Across the school day

What does it look like and what is your role?

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Quality Physical Education

- Hold Physical Education Teachers accountable
  - 50% of time in PE should be Moderate-Vigorous in Nature
  - National and State Standards should be followed
  - Busy-Happy-Good IS NOT BEST
- Create an environment at the school where PE is valued
  - Have policies that don't allow students to get pulled out
  - Cancel PE as least as possible
  - Try to find as much time as possible for students in PE

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Physical Activity During School

- Brain Boosters
  - GoNoodle
  - Jammin Minutes
  - HopSports
- Active Recess
  - Provide a recess cart
  - Equipment bags
  - Buckets for stations
  - Painted playgrounds
- Drop in PA Opportunities

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Physical Activity During School

- Active learning
  - Needs to be planned by teachers
- Classroom “tools” to encourage movement
  - Standing desks
  - Stability balls
  - PVC Pipe

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Physical Activity Before and After School

- Contribute to total PA
- On school campuses, prior to or after the daily schedule
- Give a variety of activities to participate in & Make sure it is culturally relevant
  - Not just traditional sports
  - Think outside the box (non-competitive)
    - Yoga
    - Zumba
    - Ultimate Frisbee
    - Team Handball

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Physical Activity Before and After School

- Walk & Bike to school
  - Walking school bus
  - School marketing
- Start of the day movement
  - During announcements
  - Assemblies
- Open gym time
- Zero hour PE
- Intramural and PA clubs
- Interscholastic sports

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Family and Community Engagement

- Get students and families active together!
  - Family fitness nights
  - Fun Runs (Color Runs, Turkey Trot, etc)
- Involve the community
  - Local YMCA's and fitness centers
  - Corporate sponsors or joint activities

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Staff Involvement

- Before school PA
- Faculty challenges
- Community events
- Being active with students
- Walking meetings/lunch

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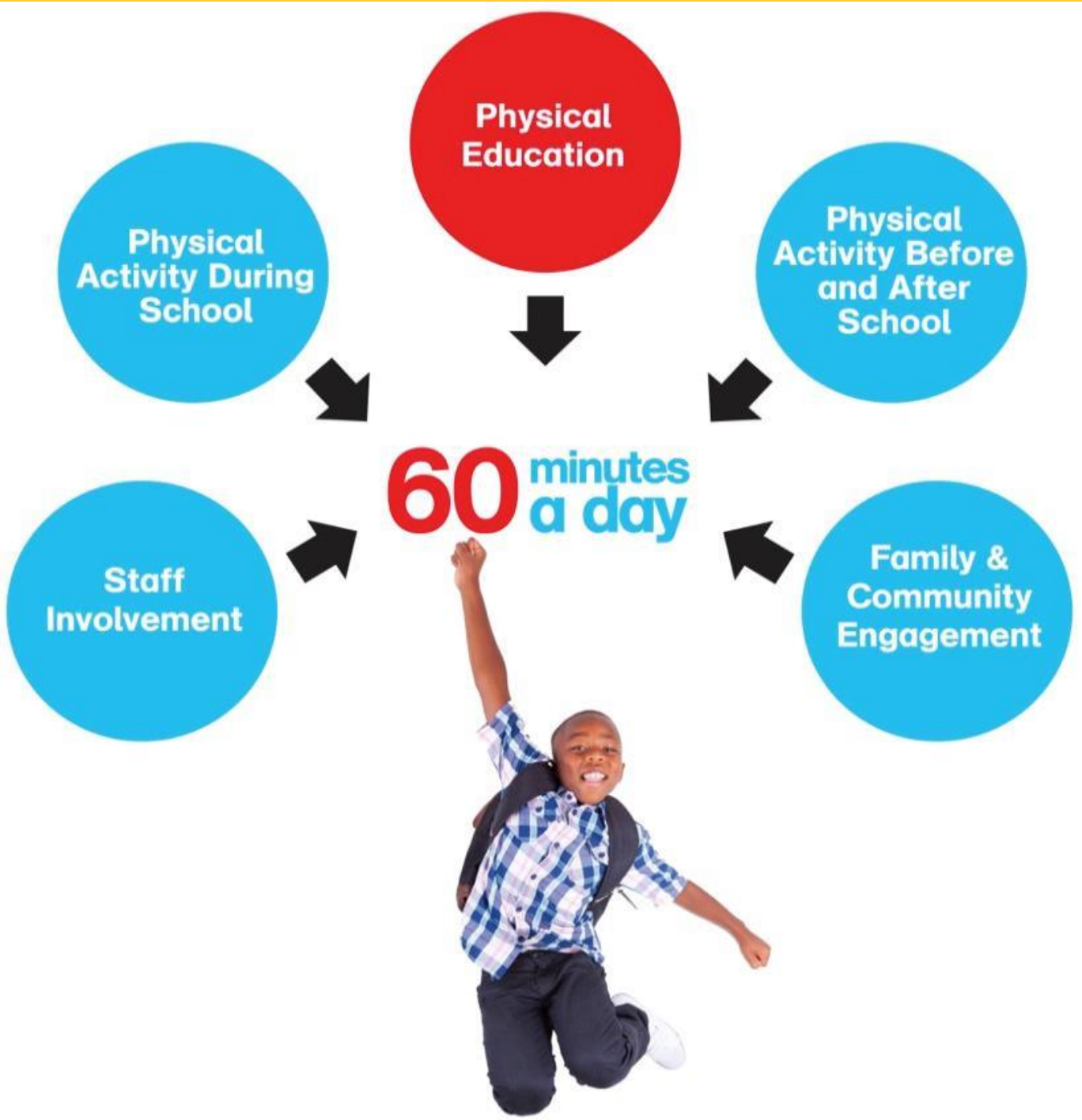
Carousel Activity



Let's Move. Active Schools

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What is recommended from the National Academies?

- Working together as a WHOLE community
  - California Medical Association (CMA) Foundation
    - Physicians for healthy communities initiative (2005)
      - Coordinates HE and PA programs in schools and community organizations
  - California Nutrition Network for Healthy and Active Families
    - Trained 250 physician champions to become educators and advocates in schools and communities
  - Tools have been created to help physicians help with obesity prevention of youth
    - CIGNA, AHIP, BCBS, Kaiser all have their own funding that is dedicated to the prevention of childhood obesity and many of these resources could be used in schools
  - Advocating for BUILT environment
    - Safe access to PA
    - Stigma of schools vs. credentials of medical professionals

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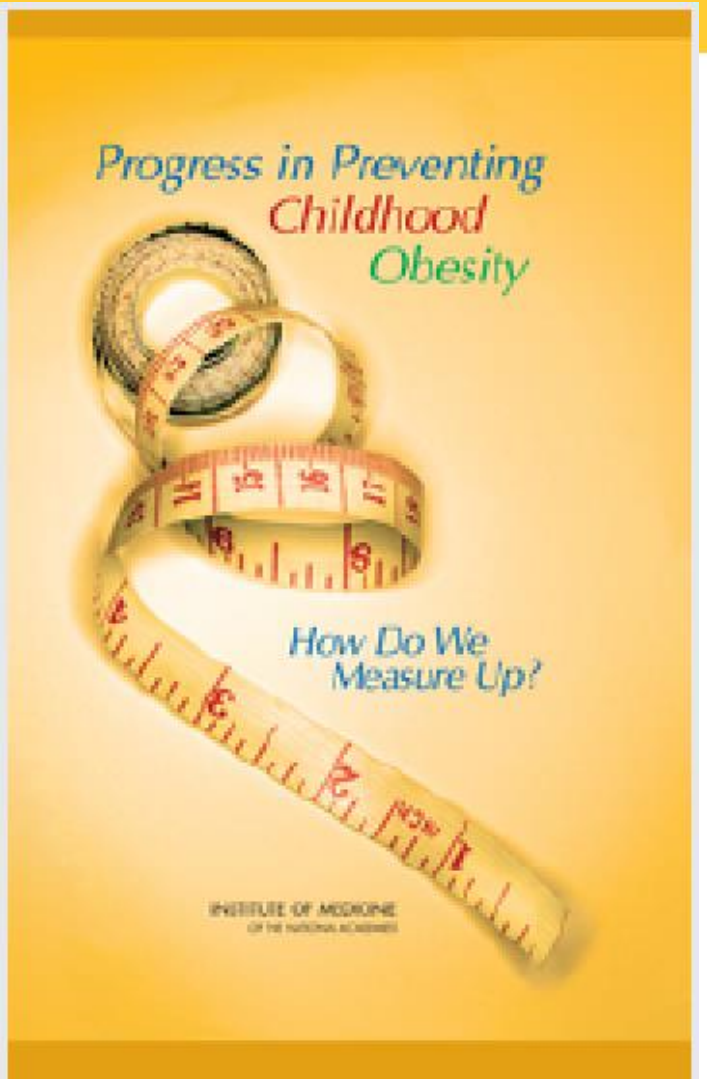
What is recommended from the National Academies?

This Free PDF is available at
http://nap.edu/11722



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How can YOU make an impact in your area?!

- Policy, Policy, Policy
  - Be an advocate
- Know the right language
  - Talk in relation to your stakeholders or target audience
- Volunteer time
- Reach out!
- Local Examples
  - Walk with a Doc http://walkwithadoc.org/
  - Brilliant Detroit partnership
    - Bringing services to the community

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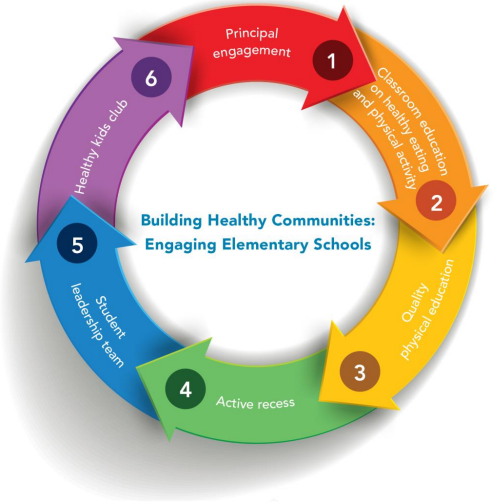
Grants & Funding

- Building Healthy Communities
  - Elementary School Program
    - Valued at $6000
    - Six component model



  - Step Up for School Wellness
    - Each component valued at $1000 per award
    - One or more components

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Grants & Funding

- Project Healthy Schools (Middle School Program)
  - Eat more fruits and vegetables
  - Choose less sugary food and beverages
  - Eat less fast and fatty foods
  - Be active every day
  - Spend less time in front of a screen

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Grants & Funding

- Elementary and Secondary Education Act (ESEA)
  - Newly authorized under Title IV Part A
    - Part 4107 -- Provide all students with access to a well-rounded education (including Health and Physical Education)
    - Part 4108 – Implementing programs that support a healthy, active lifestyle (nutritional and physical education)
  - Schools will be able to apply for funding from the MDE (applications open in January)
    - Comprehensive needs assessment of your school environment – including health and physical activity

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What are you currently doing and what could you see adopting?

Think

Pair

Share

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