Getting Kids Active with Classroom-based Brain Boosters

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Discussion Outline

- The Case for School-Based Physical Activity
  - Oregon data
  - Classroom-based PA and Physical Education
  - Moving and learning (~5 minutes)
- What is BEPA 2.0
- Evaluating BEPA 2.0
- Disseminating BEPA 2.0
Comprehensive School Physical Activity Programs (CSPAP)

- **Optimized Physical Education**
  - Strong evidence of effectiveness
  - Characteristics of optimized PE?

- **Classroom-Based Physical Activity Breaks**

- **Altering Recess or Recess Environments**

- **Before and After School Programming**
Classroom-Based Physical Activity

- Brief activity breaks (5-15 minutes)
  - Classroom-based physical activity breaks (CBPAs)
  - Leave or stay within the classroom
  - Data support effectiveness under certain conditions
    - Implementation (teacher training, personal value, self-efficacy, school support?)

Physical Activity and Cognition

• What is the relationship between physical activity and cognition?
  • Acute bouts of MVPA

Strong evidence demonstrates that acute bouts of moderate-to-vigorous physical activity have a transient benefit for cognition, including attention, memory, crystallized intelligence, processing speed, and executive control during the post-recovery period following a bout of exercise. The findings indicate that the effects are larger in preadolescent children and older adults relative to other periods of the lifespan. **PAGAC Grade: Strong.**
MVPA and CBPA: Achieving the “Sweet Spot”

- **Sweet Spot =**
  - *100-120 SPM* for adults
  - *120-140 SPM* for youth

~100-120 SPM
What Do You Think??

How much MODERATE intensity physical activity do you think children get at school over a 6.5 – 7-hour school day??
Oregon Children’s PA at School
Measured over a 6.5 Hour School Day, Fall 2013 (N=1482)

Total Activity = All measurable movement at school; MVPA = all PA of at least moderate intensity.

Obesity Prevalence Among Oregon Students

Rural Elementary Students (N=2006); Spring 2013

Grades 2 through 6 had higher obesity prevalence vs grade K; P<0.05
Physical activity levels and obesity status of Oregon Rural Elementary School children

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“More MVPA was associated with lower BMI (p<0.001), independent of sex, device wear time or grade.”

Results: Overweight (BMI ≥ 85th percentile for age and sex) and obesity (BMI ≥ 95th percentile) prevalence was similar for boys (n = 782) and girls (n = 700). More MVPA was associated with lower BMI (P < 0.001), independent of sex, wear time or grade. Mean MVPA was 18.9 ± 8 min/d, versus 15.2 ± 6.7 min/d for healthy-weight and obese children, respectively.

Conclusions: Children are not meeting minimum MVPA recommendations (60 min/d) during school hours. Efforts to promote PA for obesity prevention in rural elementary schools should focus on increasing opportunities for MVPA.

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Physical Education in Oregon

**Oregon House Bill 3141**
- Promoting PE Best Practice
  - Minute-per-week minimums (150; 225)
  - Minimum % time in MVPA (50%)
  - Promoting PE Inclusion

**Oregon Senate Bill 4**
- Prorates minutes under specific conditions
- Allows teachers to provide PE under specific conditions

HB 3141 Passed in July 2007
SB 4 Passed in July 2017

Mean Weekly Minutes of School-Based PE in Oregon Schools

Middle School Mandate

Elementary School Mandate

Graph showing mean weekly minutes of PE offered by school grade level from 2010-2011 to 2015-2016.
The Perfect Storm –
A Call to Action

- High obesity
- Low PA
- Short bouts confer benefits
- New PE Legislation
  - HB 3141 (2007)
- Insufficient funding
- Senate Bill 4
WHAT is BEPA 2.0?

✓ A Standard-Aligned CBPA Curriculum
  • Aligned to National HE and PE Standards (K-5)

✓ A Tool to Provide PA to Students
  • Classroom, recess, or other break-time physical activity

✓ A Strategy to Meet Oregon’s New PE Requirements!
Classroom-Based BEPA 2.0 in Oregon

- The BEPA-Toolkit was developed to enhance PA programming in the school setting.
  - Adapted to help schools to provide additional PE time
  - Includes active games for the classroom, gym and outdoor school spaces.
• An implementation manual and 58 unique activity cards (standard-aligned),
  • Includes active games for the classroom, gym and outdoor school spaces.
• Supporting videos (2-5 minutes in length), with more in development,
• Reporting & PA policy templates
• Implementation Training
What Makes BEPA 2.0 Unique?

• Updated activities integrated into elementary curricula

• **ALL activities** are aligned to grade-level PE and Health Education Standards.
  • Includes 17 nutrition-themed activities

• Reviewed by PE pedagogy specialists, SNAP-Ed nutrition specialists, and Oregon Department of Education PE and HE experts.
Let’s Talk Standards

• PE Standards on Page 7 and HE Standards on Page 8
  • Curriculum aligns to NATIONAL PE and HE Anchor Standards
HE icons appear when an activity addresses grade level HE concepts.

PE icons appear when an activity addresses grade level PE concepts.
### Physical and Health Education Standards met by BEPA 2.0 Toolkit Activities

<table>
<thead>
<tr>
<th>Grade Level</th>
<th>Activity</th>
<th>Skills</th>
<th>Movement Concepts</th>
<th>Physical Education Standards</th>
<th>Health Education Standards</th>
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<tbody>
<tr>
<td>1st</td>
<td>Bean Bag Balance</td>
<td>Touch Toes, Arm Circles, Squat, Vertical Jump, One-Foot Balance</td>
<td>Levels, Space, Speed, Body Shapes</td>
<td>1.1.1, 1.1.3, 1.1.5, 2.1.2, 2.1.4, 3.1.1, 3.1.4, 4.1.1, 4.1.2, 4.1.3, 4.1.5, 4.1.6, 5.1.1, 5.1.2</td>
<td>1.1.2, 6.1.1, 6.1.2, 7.1.1</td>
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<tr>
<td>2nd</td>
<td>Bean Bag Balance</td>
<td>Touch Toes, Arm Circles, Squat, Vertical Jump, One-Foot Balance</td>
<td>Levels, Space, Speed, Body Shapes</td>
<td>1.2.5, 1.2.7, 2.2.2, 2.2.2, 3.2.3, 4.2.1, 4.2.2, 4.2.3, 4.2.5, 4.2.6, 5.2.1, 5.2.2</td>
<td>1.2.2, 6.2.1, 6.2.2, 7.2.1</td>
</tr>
<tr>
<td>3rd</td>
<td>Bean Bag Balance</td>
<td>Touch Toes, Arm Circles, Squat, Vertical Jump, One-Foot Balance</td>
<td>Levels, Space, Speed, Body Shapes</td>
<td>1.3.4, 1.3.7, 1.3.8, 1.3.10, 1.3.11, 2.3.1, 2.3.2, 2.3.3, 3.3.2, 3.3.3, 3.3.4, 4.3.1, 4.3.2, 4.3.3, 4.3.4, 4.3.5, 5.3.1, 5.3.2</td>
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</tr>
<tr>
<td>4th</td>
<td>Bean Bag Balance</td>
<td>Touch Toes, Arm Circles, Squat, Vertical Jump, One-Foot Balance</td>
<td>Levels, Space, Speed, Body Shapes</td>
<td>1.4.1, 1.4.4, 1.4.9, 1.4.21, 2.4.4, 3.4.1, 3.4.3, 3.4.4, 4.4.1, 4.4.2, 4.4.3, 4.4.4, 4.4.5, 5.4.1</td>
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<tr>
<td>5th</td>
<td>Bean Bag Balance</td>
<td>Touch Toes, Arm Circles, Squat, Vertical Jump, One-Foot Balance</td>
<td>Levels, Space, Speed, Body Shapes</td>
<td>1.5.1, 1.5.9, 1.5.10, 2.5.2, 2.5.5, 3.5.2, 3.5.4, 4.5.1, 4.5.2, 4.5.3, 4.5.4, 4.5.5, 4.5.6, 4.5.7, 5.5.1, 5.5.2</td>
<td>1.5.1, 1.5.4, 5.5.3, 6.5.1, 6.5.2, 7.5.1, 7.5.2</td>
</tr>
</tbody>
</table>

### Get Ready:
- Provide one bean bag to each student.

### Directions:
- In this activity you will practice balance by completing a series of movements that require you to balance your body.

### Tips:
- Ensure students try balancing while jumping up and down, touching their toes, spinning in circles, standing on one foot, squatting down and up, doing arm circles.
- Have students try balancing the bean bag on another part of their body (e.g., heads, shoulders, top of foot, etc.)

### Standard Connections

#### Did You Know?
- Today we practiced balancing. Balance is an important part of all physical activity and practicing balance can help prevent falls!

#### Show and Tell!
- **Grades K-5:** Show me which movement was the hardest for you to balance today.
- **Tell me why you think it was hard.

#### Try This at Home:
- Practice the hardest balancing exercise you tried today with a soft object at home. Challenge a family member to see who can walk the farthest with an object on their head.
- Find an activity to do at home that requires a lot of balance. For example—riding a bike, skateboarding, surfing, walking across rocks, and yoga!
Play the Game

- "Get Ready" lets you know what you need to do before starting
- "Directions" provides details about how to play
- "Tips" provides strategies to adapt or innovate

Implement Standard Component

- Reinforce the concepts using Did You Know?
- Assess the concepts using Show and Tell.
- Extend the concepts by encouraging them to share with family and friends using Try This at Home.

Addresses all 5 PE standards

Addresses 5 of 8 HE standards
“How do I know if we are doing health promoting Physical Activity? Check out our intensity practice activity on page 5 of the BEPA 2.0 Activity Book!”

**BEPA 2.0 Guidance**

**Activity Intensity Practice: K-5**

The goal of BEPA 2.0 is to enable short bouts of moderate intensity physical activity at school. To meet this goal, students must learn the difference between light, moderate, and vigorous intensity activity.

**Teachers, before you introduce BEPA activities to students:**

- **Download** a metronome application that works for your circumstances.
- **Practice** using the metronome. You will need to vary the cadence from 100-140.
- **Explain** the concept of intensity using the metronome as described below:
  - **Move** your body to the cadence of the metronome (march in place or walk)
    - **Sedentary/Inactive**—the metronome is not on, everyone is sitting
    - **Light Activity**—the metronome is set at <100 steps per minute (spm)
    - **Moderate**—the metronome is set between 120 and 130spm
    - **Vigorous**—the metronome is set at ≥ 140 spm

Step rate cut-points are based on the current evidence. Grades 3–5 can take heart rate measurements at each intensity and compare differences between intensity levels.
Implementing BEPA 2.0

• **Classroom teachers implement** BEPA 2.0 to provide classroom-based physical activity breaks.
  • In Oregon, classroom teachers can also use BEPA 2.0 to provide standard-aligned PE minutes in compliance with statewide laws.

• **Extension professionals implement** BEPA 2.0 to enhance physical activity opportunities for elementary-aged students via SNAP-Ed programming.

• **Train-the-Trainer**
  • Train-the-Teacher

• Preliminary data show no difference in teachers self-reported comprehension, confidence and self-efficacy to implement BEPA 2.0 ($p>0.05$).
  • Trained by Master Trainer | $n=54$
  • Trained by Trainers | $n=78$

• Perceived implementation factors include **Time, Disruption, Space, Support**
Evaluating BEPA 2.0

- We evaluated the effectiveness of the BEPA-Toolkit in 6 elementary schools located in under-resourced, rural communities.
- Using objective monitoring of children’s PA at school we found that when teachers use the BEPA-Toolkit, children are more active.
- When children were more active at school, they were less likely to be obese.

- Factors associated with implementation:
  - BEPA training
  - Teacher self-efficacy
  - Support from school/SNAP-Ed management
  - Understanding the benefits of children being active at school
  - Easy access to activities and equipment

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Where in the State is BEPA 2.0?
Disseminating BEPA 2.0

• Grant Support

• For schools writing grants to support additional kits—here are the costs that can be built into the grant.

• We created a grant support document to help school apply for funding to obtain more BEPA 2.0 kits.

• We have a BEPA 2.0-specific email and website!

  • BEPA2.0@oregonstate.edu

General Background Information of Physical Activity in School Settings

Schools can play a critical role in obesity prevention, as more than 55% of U.S. youth ages 5–17 are enrolled in school (health.gov, as of 2020). Nearly every day, over 180 days at school each year, highlighting the importance of a healthy school environment for enrolled students. The physical activity (PA) may be scarce, especially among rural areas. Schools provide a critical venue for obesity prevention and health promotion (DAMBEF 2017). In Oregon, data show that rural children accrue lower PA at school and that the amount of PA rural children attain at school is inversely associated with their body mass index (BMI).

Specific Findings about Providing Classroom Activity Breaks

A recent study in Oregon examined how school physical activity and policy factors were associated with elementary students’ physical activity levels at school. To this end, a PA level of interest to our grant application was that when school policies and practices encourage classroom teachers to include 5- to 10-minute physical activity breaks, this was associated with a 3.06 min/day more total activity and 3.19 min/day more health-promoting minutes in vigorous BEPA among children that when these practices were not implemented. For elementary schools where funding for regular PA programming is limited, classroom teachers may be tasked with providing PA and other physical activity opportunities for children. Thus, the need exists to provide schools resources and training to implement these activities and practices.

Specific Information and Research Findings about BEPA 2.0

BEPA 2.0 includes over 50 unique activity cards aligned to PA and health education (HE) standards, implementation guidance cards, and sets of printable play items such as bean bags, balloons, stickers, chalk, cones, floor tape, and cones. Other resources include access to training, policy and reporting template, and an implementation manual. All educators can implement BEPA 2.0 to provide classroom-based physical activity breaks. In Oregon, STEWEP teachers can use BEPA 2.0 to provide standard-aligned PA minutes in compliance with statewide policies. The effectiveness of the original BEPA Toolkit was evaluated in six elementary schools located in urban and rural communities. Results showed that when teachers used the BEPA Toolkit, children were more active and the more active children were at school, the less likely they are to be obese. Study findings also showed that when teachers are trained, have the support of administrators, and understand the role of physical activity for students, teachers are more likely to implement it. The toolkit is validated in the National Coalition for Childhood Obesity Research (NCCOR) and NHANES Toolkit (2015) for childhood obesity prevention reduction.
Get More Information or Order BEPA 2.0

https://extension.oregonstate.edu/bepa
To-Do List

Check out our website!
https://extension.oregonstate.edu/bepa

Try out some activities!

Contact us via the website!
Questions???

Thank you!!!