The Physical Activity Guidelines for Children and Adolescents

The Role of Schools in Promoting Youth Physical Activity

Your Name
Organization or Group
Date of Presentation
Presentation Objectives

• Identify the benefits of regular physical activity among youth
• Describe the key physical activity guidelines for children and adolescents
• Describe the role of schools, in partnership with families and communities, in promoting physical activity among children and adolescents
A Day in the Life of Colin: A 7-Year-Old Child

- Walks to and from school
- Jumps rope and does gymnastics in physical education class
- Plays on the playground during recess
- Does homework
- Watches television
- Plays soccer with family
- Plays video games
What Are the Benefits of Physical Activity?

• Promotes health and fitness
• Builds healthy bones and muscles
• Reduces the risk of developing obesity and risk factors for diseases such as type 2 diabetes and heart disease
• Reduces the symptoms of anxiety and depression
• Can positively affect concentration, memory, and classroom behavior

1. HHS. Physical Activity Guidelines Advisory Committee Report; 2008
How Much Physical Activity Do Youth Need?

• **Children and adolescents should do 60 minutes (1 hour) or more of physical activity daily.**
  - **Aerobic Activities:** Most of the 60 or more minutes per day should be either moderate- or vigorous-intensity aerobic physical activity. Include vigorous-intensity physical activity at least 3 days per week.
  - **Muscle-strengthening Activities:** Include muscle-strengthening physical activity on at least 3 days of the week, as part of the 60 or more minutes.
  - **Bone-strengthening Activities:** Include bone-strengthening physical activity on at least 3 days of the week, as part of the 60 or more minutes.

• Activities should be age-appropriate, enjoyable, and offer variety.
What Does This Really Mean?

• At least 60 minutes every day
• Mostly aerobic activities
• Add variety and fun
What are Aerobic Activities?

- Activities that keep your body moving enough to increase your heart rate and make you breathe harder
- There are two intensities of aerobic activity:
  - Moderate-intensity
  - Vigorous-intensity
Judging the Intensity of Aerobic Activities

• **Moderate-intensity Activity**
  - Heart will beat faster than normal and breathing will be harder than normal
  - On a scale of 0 to 10, moderate-intensity activity is a 5 or 6

• **Vigorous-intensity Activity**
  - Heart will beat much faster than normal and breathing will be much harder than normal
  - On a scale of 0 to 10, a vigorous-intensity activity is 7 or 8
# Types of Moderate- and Vigorous-Intensity Aerobic Activities

<table>
<thead>
<tr>
<th>Type of Physical Activity</th>
<th>Age Group</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td><strong>Children</strong></td>
</tr>
<tr>
<td><strong>Moderate-intensity aerobic</strong></td>
<td>- Active recreation, such as hiking, skating, rollerblading&lt;br&gt;- Bicycle riding&lt;br&gt;- Brisk walking</td>
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<tr>
<td></td>
<td><strong>Adolescents</strong></td>
</tr>
<tr>
<td></td>
<td>- Active recreation, such as canoeing, hiking, skating, rollerblading&lt;br&gt;- Brisk walking&lt;br&gt;- Bicycle riding (stationary or road bike)&lt;br&gt;- Housework and yard work, such as sweeping or pushing a lawn mower&lt;br&gt;- Games that require catching and throwing, such as baseball and softball</td>
</tr>
<tr>
<td><strong>Vigorous-intensity aerobic</strong></td>
<td>- Active games involving running and chasing, such as tag&lt;br&gt;- Bicycle riding&lt;br&gt;- Jumping rope&lt;br&gt;- Martial arts, such as karate&lt;br&gt;- Running&lt;br&gt;- Sports such as soccer, ice or field hockey, basketball, swimming, tennis&lt;br&gt;- Cross-country skiing</td>
</tr>
<tr>
<td></td>
<td><strong>Adolescents</strong></td>
</tr>
<tr>
<td></td>
<td>- Active games involving running and chasing, such as flag football&lt;br&gt;- Bicycle riding&lt;br&gt;- Jumping rope&lt;br&gt;- Martial arts, such as karate&lt;br&gt;- Running&lt;br&gt;- Sports such as soccer, ice or field hockey, basketball, swimming, tennis&lt;br&gt;- Vigorous dancing, cross-country skiing</td>
</tr>
</tbody>
</table>
What are Muscle-Strengthening Activities?

- Activities that make muscles do more work than usual activities of daily life
- Activities that can be part of unstructured play
  - Climbing trees
  - Playing tug-of-war
- Activities that can be structured
  - Push-ups, pull-ups
  - Working with resistance bands
  - Lifting weights
## Types of Muscle-Strengthening Activities

<table>
<thead>
<tr>
<th>Type of Physical Activity</th>
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</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Children</td>
</tr>
<tr>
<td><strong>Muscle-strengthening</strong></td>
<td>• Games such as tug-of-war</td>
</tr>
<tr>
<td></td>
<td>• Modified push-ups (with</td>
</tr>
<tr>
<td></td>
<td>knees on the floor)</td>
</tr>
<tr>
<td></td>
<td>• Resistance exercises</td>
</tr>
<tr>
<td></td>
<td>using body weight or</td>
</tr>
<tr>
<td></td>
<td>resistance bands</td>
</tr>
<tr>
<td></td>
<td>• Rope or tree climbing</td>
</tr>
<tr>
<td></td>
<td>• Sit-ups (curl-ups or</td>
</tr>
<tr>
<td></td>
<td>crunches)</td>
</tr>
</tbody>
</table>
What Are Bone-Strengthening Activities?

• Activities that produce a force on the bones that promotes bone growth and strength, such as jumping

• Activities that are especially important for young people because the greatest gain in bone mass occur during the years just before and during puberty
### Types of Bone-strengthening Activities

<table>
<thead>
<tr>
<th>Type of Physical Activity</th>
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</tr>
</thead>
<tbody>
<tr>
<td></td>
<td><strong>Children</strong></td>
</tr>
<tr>
<td>Bone-strengthening</td>
<td>• Games such as hopscotch&lt;br&gt;• Hopping, skipping, jumping&lt;br&gt;• Jumping rope&lt;br&gt;• Running&lt;br&gt;• Sports such as gymnastics, basketball, volleyball, tennis</td>
</tr>
</tbody>
</table>
How Are the Guidelines for Youth Different from the Guidelines for Adults?

• Take into consideration natural activity patterns of children
  ▪ All episodes of moderate- or vigorous-intensity activities count toward daily requirement
  ▪ Unstructured active play can provide all three types of physical activity

• Daily physical activity required

• Specify need for bone-strengthening activities and vigorous-intensity activities each week
Meeting the Guidelines

Getting and Staying Active
How Physically Active Are High School Students?

* Were physically active doing any kind of physical activity that increased their heart rate and made them breathe hard some of the time for a total of at least 60 minutes/day during the 7 days before the survey.

How Much Do 9- to 13- Year-Olds Participate in Physical Activity?

<table>
<thead>
<tr>
<th>Race/Ethnicity</th>
<th>Organized Activity</th>
<th>Free-Time Activity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Black, non-Hispanic</td>
<td>24%</td>
<td>75%</td>
</tr>
<tr>
<td>Hispanic</td>
<td>26%</td>
<td>75%</td>
</tr>
<tr>
<td>White, non-Hispanic</td>
<td>47%</td>
<td>79%</td>
</tr>
<tr>
<td>Total</td>
<td>39%</td>
<td>77%</td>
</tr>
</tbody>
</table>

Meeting the Guidelines

- **Youth Who Don’t Meet the Guidelines**
  - Slowly increase activity in small steps
  - Participate in enjoyable activities

- **Youth Who Meet the Guidelines**
  - Continue being active on a daily basis
  - Work toward becoming more active

- **Youth Who Exceed the Guidelines**
  - Maintain activity level
  - Vary the kinds of activities to reduce the risk of injury
A Day in the Life of Colin

- Walks to and from school (20 minutes)
- Jumps rope and does gymnastics in physical education class (10 minutes each).
- Plays on the playground during recess (10 minutes)
- Does homework (20 minutes)
- Watches television (30 minutes)
- Plays soccer with family (20 minutes)
- Plays video games (30 minutes)

**Total physical activity time = 60 minutes**
- Vigorous-intensity aerobic activity: jumping rope
- Bone-strengthening activities: jumping rope, gymnastics
- Muscle-strengthening activities: gymnastics
# Colin’s Weekly Physical Activities

<table>
<thead>
<tr>
<th>Day</th>
<th>Activity</th>
<th>Duration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Monday</td>
<td>Walks to and from school</td>
<td>20 minutes</td>
</tr>
<tr>
<td></td>
<td>Plays on playground</td>
<td>10 minutes</td>
</tr>
<tr>
<td></td>
<td>Jumps rope</td>
<td>10 minutes</td>
</tr>
<tr>
<td></td>
<td>Does gymnastics</td>
<td>10 minutes</td>
</tr>
<tr>
<td></td>
<td>Plays soccer with family</td>
<td>20 minutes</td>
</tr>
<tr>
<td>Tuesday</td>
<td>Walks to and from school</td>
<td>20 minutes</td>
</tr>
<tr>
<td></td>
<td>Plays on playground</td>
<td>25 minutes</td>
</tr>
<tr>
<td></td>
<td>Climbs on playground equipment</td>
<td>15 minutes</td>
</tr>
<tr>
<td>Wednesday</td>
<td>Walks to and from school</td>
<td>20 minutes</td>
</tr>
<tr>
<td></td>
<td>Plays actively with friends</td>
<td>25 minutes</td>
</tr>
<tr>
<td></td>
<td>Jumps rope</td>
<td>10 minutes</td>
</tr>
<tr>
<td></td>
<td>Runs</td>
<td>5 minutes</td>
</tr>
<tr>
<td></td>
<td>Does sit ups</td>
<td>2 minutes</td>
</tr>
<tr>
<td>Day</td>
<td>Activity</td>
<td>Duration</td>
</tr>
<tr>
<td>-----------</td>
<td>----------------------------------------------</td>
<td>-----------</td>
</tr>
<tr>
<td>Thursday</td>
<td>Plays actively with family</td>
<td>30 minutes</td>
</tr>
<tr>
<td></td>
<td>Plays soccer</td>
<td>30 minutes</td>
</tr>
<tr>
<td>Friday</td>
<td>Walks to and from school</td>
<td>20 minutes</td>
</tr>
<tr>
<td></td>
<td>Plays actively with friends</td>
<td>25 minutes</td>
</tr>
<tr>
<td></td>
<td>Bicycles</td>
<td>15 minutes</td>
</tr>
<tr>
<td>Saturday</td>
<td>Plays on playground</td>
<td>30 minutes</td>
</tr>
<tr>
<td></td>
<td>Climbs on playground equipment</td>
<td>15 minutes</td>
</tr>
<tr>
<td></td>
<td>Bicycles</td>
<td>15 minutes</td>
</tr>
<tr>
<td>Sunday</td>
<td>Plays on playground</td>
<td>10 minutes</td>
</tr>
<tr>
<td></td>
<td>Plays soccer</td>
<td>40 minutes</td>
</tr>
<tr>
<td></td>
<td>Plays tag with family</td>
<td>10 minutes</td>
</tr>
</tbody>
</table>
Maria: A 16-Year-Old Adolescent

- Maria participates in many types of physical activities in many places
- She plays tennis and does sit-ups and push-ups during physical education class
- She likes to play basketball at the YMCA, do yoga, and go dancing with her friends
- She likes to walk and hike with her dog
A Day in the Life of Maria

• Walks dog (10 minutes)
• Plays tennis (30 minutes)
• Does sit-ups and push-ups (5 minutes)
• Plays with children at the park while babysitting (15 minutes)
• Total physical activity time = 60 minutes
  ▪ Vigorous-intensity aerobic activity: tennis
  ▪ Bone-strengthening activity: tennis
  ▪ Muscle-strengthening activity: sit-ups and push-ups
Barriers to Meeting the Guidelines

- Personal
  - Attitude
  - Belief in ability to be physically active
- Social
  - Influence of their peers
  - Parental support
- Environmental
  - Safe locations to be active
  - Access to equipment
  - Financial costs of physical activities
  - Time
YOUTH PHYSICAL ACTIVITY
Youth Physical Activity

The Role of Schools
Why is Physical Activity Important For Schools?

• Associated with lower levels of stress and anxiety\(^1\)
• Can positively affect concentration, memory, and classroom behavior among adolescents\(^2\)
• Can improve standardized test scores\(^3\)

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Physical Education and Academic Achievement

- **Nationally representative sample:** 5,316 students starting kindergarten in 1998–1999, followed through 5th grade

- **Physical education (PE) measure:**
  Low (0–35 mins/week), Medium (36–69), High (70–300)

- **Academic achievement measure:**
  Mathematics and reading tests designed by experts

- **Results:** A small but significant benefit on both math and reading tests were observed for girls in the high PE category compared with those in the low PE category; findings not seen in boys

Comprehensive School-Based Physical Activity Program

Components include:
- Quality physical education
- Daily recess period
- Activity breaks throughout the day
- Intramural sports
- Interscholastic sports
- Walk- and bike-to-school programs
- Staff wellness and involvement
- Family and community participation

Physical Activity vs. Physical Education

- Physical activity = behavior
- Physical education = curricular area that teaches about physical activity
  - Provides students with the skills needed to participate in a lifetime of physical activity

What is Quality Physical Education?

• **Opportunity to learn**
  - Adequate time, equipment, and facilities
  - Highly qualified, certified, or licensed teachers

• **Meaningful content**
  - Written standards-based curriculum
  - Sequential, developmentally appropriate learning activities for grades K–12

• **Appropriate instruction**
  - Full inclusion of all students
  - Well-designed lessons that facilitate learning
  - Sufficient practice opportunities for class activities
  - Student assessment
Other Characteristics of Quality Physical Education Programs

• Enjoyable experience for all students
• Meet the needs and interests of all students
• Keep students active for most of class time
  - More than 50% of class time spent in moderate- to vigorous-intensity activity

Policy Recommendation: Schools should require daily PE for students in kindergarten through grade 12

• Elementary school = 150 minutes per week
• Secondary school = 225 minutes per week

Recess

- Opportunity to participate in free-time physical activity and practice skills learned in physical education classes
- Enhances cooperation and negotiation skills
- Improves attentiveness, concentration, and time-on-task in the classroom

**Policy Recommendation:** Schools should provide at least 20 minutes of recess per day, in addition to physical education classes

1. National Association for Sport and Physical Education. Recess in Elementary Schools; 2006.
Physical Activity Breaks

- Independent of physical education and recess
- Can enhance positive classroom behavior of students
- Incorporates activity in the classroom as part of planned lessons

**Physical Activity Break Ideas:** Ask students to identify and act out action words from a story through physical activity or take a walk outside as part of a science class
Intramural Sports

- Can be offered before, during, and after school
- Provide students with a choice in activities
- Offer every student an equal opportunity to participate regardless of ability level
- Incorporate lifetime physical activities such as walking, running, hiking, swimming, tennis, dancing, and bicycling
Interscholastic Sports

- Help establish cooperative and competitive skills\(^1\)
- Help students learn sport-specific and performance-based skills
- May be related to higher levels of overall physical activity\(^2\)
- Associated with improved mental health and reduction in some risky health behaviors\(^3–4\)

Benefits of Active Commuting to School

- Increases physical activity levels\(^1\)–\(^3\)
- Reduces the number of cars and decreases traffic near schools
- Promotes partnerships among students, parents and community organizations and members

Prevalence of Active Commuting to or from School

Activity Recommendation: Schools should participate in *International Walk to School Week* and support ongoing walk and bike to school programs

- Resources:
  - *Safe Routes to Schools*
  - *Walking School Bus*
  - *KidsWalk Guide*
Working Together:
Joint Use Agreements

• Share resources: athletic fields, playgrounds and fitness facilities with other community members and organizations.

• Open school facilities to provide physical activity programs to students, families, school staff, and community members.

• Seek funding from local businesses, community groups and health organizations for physical activity programs and events.
Working Together: Community Involvement In School-Based Physical Activity

• Support school-based physical activity
  ▪ Join the school health advisory council
  ▪ Donate equipment, money or encourage staff to volunteer time
  ▪ Support Safe Routes to School programs
  ▪ Offer after-school physical activity programs
YOUTH PHYSICAL ACTIVITY
Thank you!
Questions?

*Be Active and Play, 60 minutes, every day!*

Information in this presentation is provided by
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National Center for Chronic Disease Prevention and Health Promotion
Division of Adolescent and School Health
www.cdc.gov/HealthyYouth