The State of Physical Activity in America

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Questions

1. What percentage of U.S. youth and adults meet aerobic and muscle strengthening guidelines?

2. What population groups are most at risk to not meet aerobic and muscle strengthening guidelines?

3. Is the percentage of those meeting aerobic and muscle strengthening guidelines changing over time?
NOT Going to Present

• Data from:
  ◦ Device-based assessments
  ◦ Sedentary behaviors
  ◦ Community supports
  ◦ Policies
Ongoing systematic collection, analysis, and interpretation of outcome-specific data for use in the planning, implementation, and evaluation of public health practice.

Youth Physical Activity Guidelines

3 days / week:

✓ Vigorous-intensity
✓ Bone strengthening
✓ Muscle strengthening
✓ Variety
✓ Fun!
High School Students, 2013

• About 1 out of 4 high school students meet the aerobic guideline
### Percentage of U.S. High School Students Who Met the Aerobic Physical Activity Guideline, Youth Risk Behavior Surveillance System 2013

<table>
<thead>
<tr>
<th>Category</th>
<th>Male</th>
<th>Female</th>
<th>9th</th>
<th>10th</th>
<th>11th</th>
<th>12th</th>
<th>NH/White</th>
<th>NH/Black</th>
<th>Asian</th>
<th>AI/AN</th>
<th>NH/PI</th>
<th>Hispanic</th>
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</thead>
<tbody>
<tr>
<td>Sex</td>
<td>37</td>
<td>18</td>
<td>30</td>
<td>28</td>
<td>26</td>
<td>24</td>
<td>28</td>
<td>26</td>
<td>21</td>
<td>24</td>
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<td>26</td>
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<td>Grade</td>
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<tr>
<td>Race/Ethnicity</td>
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</tbody>
</table>

Youth Physical Activity


- Did not participate in 60+ mins, 1+ d/wk
- 60+ mins, 5+ d/wk
- 60+ mins, 7 d/wk
- Muscle strengthening, 3+ d/wk
Prevalence of High-School Youth Meeting Healthy People 2020 Physical Activity Objectives, Youth Risk Behavior Surveillance System, 2013

- Aerobic: 27.1%
- Muscle-strengthening: 51.7%
- Both: 21.6%

www.healthypeople.gov/2020
## Top 10 Physical Activities of U.S. High School Students
### Overall and by Sex,
#### National Youth Physical Activity and Nutrition Survey, 2010

<table>
<thead>
<tr>
<th>Ranking</th>
<th>Activity</th>
<th>%</th>
<th>Activity</th>
<th>%</th>
<th>Activity</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Walking</td>
<td>82.3</td>
<td>Walking</td>
<td>85.6</td>
<td>Walking</td>
<td>79.0</td>
</tr>
<tr>
<td>2</td>
<td>Running/Jogging</td>
<td>71.8</td>
<td>Running/Jogging</td>
<td>69.9</td>
<td>Running/Jogging</td>
<td>73.7</td>
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<tr>
<td>3</td>
<td>Weight lifting</td>
<td>45.2</td>
<td>Dance</td>
<td>52.1</td>
<td>Weight lifting</td>
<td>62.4</td>
</tr>
<tr>
<td>4</td>
<td>Basketball</td>
<td>44.6</td>
<td>Active video games</td>
<td>40.4</td>
<td>Basketball</td>
<td>57.9</td>
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<tr>
<td>5</td>
<td>Active video games</td>
<td>40.8</td>
<td>Basketball</td>
<td>31.0</td>
<td>Active video games</td>
<td>41.2</td>
</tr>
<tr>
<td>6</td>
<td>Dance</td>
<td>33.7</td>
<td>Aerobics</td>
<td>30.6</td>
<td>Football</td>
<td>40.4</td>
</tr>
<tr>
<td>7</td>
<td>Bike riding</td>
<td>29.5</td>
<td>Weight lifting</td>
<td>27.5</td>
<td>Baseball</td>
<td>26.7</td>
</tr>
<tr>
<td>8</td>
<td>Football</td>
<td>26.4</td>
<td>Bike riding</td>
<td>25.3</td>
<td>Soccer</td>
<td>21.9</td>
</tr>
<tr>
<td>9</td>
<td>Aerobics</td>
<td>25.8</td>
<td>Swimming</td>
<td>24.1</td>
<td>Aerobics</td>
<td>21.2</td>
</tr>
<tr>
<td>10</td>
<td>Swimming</td>
<td>22.3</td>
<td>Volleyball</td>
<td>21.8</td>
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</tr>
</tbody>
</table>

Challenges – Youth Physical Activity

- Limited information for youth less than high school age
- Measurement challenges
  - May require alternative method for ≤ elementary age
- Difficult to measure totality of guidelines (bone strengthening)
- Limited trend data
2008 Physical Activity Guidelines for Americans
Adult Aerobic Guidelines

• Avoid inactivity

• For substantial health benefits
  ◦ ≥ 150 minutes of moderate-intensity equivalent aerobic activity per week; or

• For more extensive health benefits
  ◦ > 300 minutes of moderate-intensity equivalent aerobic activity per week; or

• Muscle-strengthening activities 2+ days/week

http://www.health.gov/paguidelines
<table>
<thead>
<tr>
<th>Health Survey</th>
<th>Collection Method</th>
<th>Physical Activity Domains</th>
<th>Survey Years</th>
<th>Measure</th>
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</thead>
<tbody>
<tr>
<td>Behavioral Risk Factor Surveillance System (BRFSS)</td>
<td>Survey Questions</td>
<td>Non-occupational</td>
<td>2011-2015</td>
<td>Minutes of top two physical activities in past week or past month</td>
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<tr>
<td></td>
<td>(In-person)</td>
<td>Active Transportation</td>
<td>2007-2015</td>
<td>Minutes of walking and bicycling for transportation in typical week</td>
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<tr>
<td></td>
<td></td>
<td>Work (paid/unpaid)</td>
<td>2007-2015</td>
<td>Minutes of vigorous- and moderate-intensity work activity in typical week</td>
</tr>
<tr>
<td>National Health Interview Survey (NHIS): Cancer Supplement</td>
<td>Survey Questions</td>
<td>Active Transportation</td>
<td>2005, 2010, 2015</td>
<td>Minutes of transportation walking in past 7 days</td>
</tr>
</tbody>
</table>
High School Students, 2013

• About 1 out of 4 high school students meet the aerobic guideline

Adults, 2014

• 5 out of 10 adults meet the aerobic guideline
• 3 out of 10 are inactive
**Percentage of U.S. Adults Who Were Inactive During Their Leisure Time NHIS, 2013**

Prevalence of Leisure-time Physical Inactivity

Note: In 2011, BRFSS changed survey methodology. In 2007, NHANES changed physical activity questions.
Percentage of U.S. Adults Who Met the Aerobic Physical Activity Guideline, NHIS 2013

Prevalence of Aerobic Physical Activity in Four Levels, NHIS 2014

Highly active (>300 min/wk moderate-intensity activity, >150 min/wk vigorous-intensity activity, or equivalent combination), sufficiently active (150-300 min/wk moderate-intensity activity, 75-150 min/wk vigorous-intensity activity, or equivalent combination), insufficiently active (some activity but not enough to meet active definition), and inactive (no activity of at least 10 min/time).
Prevalence of Meeting Aerobic Guideline

Note: In 2011, BRFSS changed survey methodology. In 2007, NHANES changed physical activity questions.
Note: In 2011, BRFSS changed survey methodology. In 2007, NHANES changed physical activity questions.
Adults Performing Muscle-Strengthening Activities
2+ Days/week, NHIS 2008 – 2014

- 2008: 21.9%
- 2009: 22.6%
- 2010: 24.2%
- 2011: 24.2%
- 2012: 23.9%
- 2013: 24.1%
- 2014: 24.4%
Percentage of Adults Who Met Muscle-Strengthening and Aerobic Guidelines, NHIS 2014

Active

- Met aerobic and muscle-strengthening guideline: 21.3%
- Met aerobic guideline only: 28.5%
- Met muscle-strengthening guideline only: 3.2%
- Met neither: 47.0%
Percentage of Adults Who Met Guidelines for Aerobic and Muscle-Strengthening Activity* by Sex, NHIS 2014

*Based on self-reports of frequency and duration of light-moderate and vigorous leisure-time aerobic physical activity and frequency of leisure-time strengthening activity at levels consistent with federal physical activity guidelines for adults.


Proportion of U.S. adults meeting both aerobic and muscle-strengthening physical activity guidelines,* by state
Behavioral Risk Factor Surveillance System, 2011

Nationwide, 20% meet aerobic and muscle-strengthening guidelines

* To meet both the aerobic and muscle-strengthening guidelines, respondents had to report ≥150 mins/week of moderate-intensity aerobic physical activity or 75 minutes of vigorous-intensity aerobic activity/week, or an equivalent combination of moderate- and vigorous-intensity activity and participating in muscle-strengthening physical activity at least 2 times per week.

MMWR. May 3, 2013 / 62(17);326-330.
Adult Physical Activity

Participation in Types of Activities By Sex, Behavioral Risk Factor Surveillance System, 2011

% Participation

- Walk
- Run/Jog
- Lawn & garden
- Sports
- Conditioning
- Bike
- Dance/aerobics

Men
Women

*p < 0.001
Challenges – Adult Physical Activity

- Measurement
  - Psychometric properties
- Differences across systems
- Essential measures
- Response rates
- State and local levels
- Long-term trends
- Alternative methods

Summary

• **Youth**
  ◦ About 25% meet aerobic guideline
  ◦ About 20% meet aerobic and muscle strengthening guidelines
  ◦ No change from 2011 to 2015

• **Adults**
  ◦ Half meet aerobic guideline; ~20% meet aerobic and muscle strengthening
  ◦ Small improvements in leisure time; No change in muscle strengthening
  ◦ Walking popular activity for youth and adults

• **Disparities**
  ◦ Disparities persist by age, sex, race/ethnicity, and education
Thank you!

Questions?