School based body mass index screening: The Arkansas experience

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The Robert Wood Johnson Foundation Center to Prevent Childhood Obesity is a leading voice in the national movement to reverse the epidemic by 2015. Through policy analysis, leadership development, and communications with a broad network of advocates, the center is working to enable children of all races, ethnicities and geographic locations to eat healthy, be physically active and avoid obesity.

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Technical Assistance

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National Plan 2009
## Building Communities: RWJF Childhood Obesity Programs

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Obesity Trends* Among U.S. Adults
(*BMI ≥30, or about 30 lbs. overweight for 5’4” person)

1990

1998

2007

No Data <10% 10%–14% 15%–19% 20%–24% 25%–29% ≥30%

Source: CDC Behavioral Risk Factor Surveillance System.
Age-adjusted Percentage of U.S. Adults Who Were Obese or Who Had Diagnosed Diabetes

1994

Obesity (BMI ≥ 30)

Diabetes

Age-adjusted Percentage of U.S. Adults Who Were Obese or Who Had Diagnosed Diabetes

1995

Obesity (BMI≥30)

Age-adjusted Percentage of U.S. Adults Who Were Obese or Who Had Diagnosed Diabetes

1996

Obesity (BMI $\geq 30$)

- Missing Data
- $14.0 - 17.9\%$
- $22.0 - 25.9\%$
- $18.0 - 21.9\%$
- $\geq 26.0\%$

Diabetes

- Missing data
- $4.5 - 5.9\%$
- $6.0 - 7.4\%$
- $7.5 - 8.9\%$
- $\geq 9.0\%$

Age-adjusted Percentage of U.S. Adults Who Were Obese or Who Had Diagnosed Diabetes

1997

Obesity (BMI ≥30)

Diabetes

Age-adjusted Percentage of U.S. Adults Who Were Obese or Who Had Diagnosed Diabetes

1998

Obesity (BMI≥30)

Diabetes

Age-adjusted Percentage of U.S. Adults Who Were Obese or Who Had Diagnosed Diabetes

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Obesity (BMI ≥ 30)

- Missing Data
- 14.0 - 17.9%
- 18.0 - 21.9%
- 22.0 - 25.9%
- ≥ 26.0%

Diabetes

- Missing data
- 4.5 - 5.9%
- 6.0 - 7.4%
- 7.5 - 8.9%
- ≥ 9.0%

Age-adjusted Percentage of U.S. Adults Who Were Obese or Who Had Diagnosed Diabetes

**2000**

**Obesity (BMI≥30)**
- <14.0%
- 14.0 - 17.9%
- 18.0 - 21.9%
- 22.0 - 25.9%
- ≥26.0%

**Diabetes**
- <4.5%
- 4.5 - 5.9%
- 6.0 - 7.4%
- 7.5 - 8.9%
- ≥9.0%

Age-adjusted Percentage of U.S. Adults Who Were Obese or Who Had Diagnosed Diabetes

2001

Obesity (BMI≥30)

Diabetes

Age-adjusted Percentage of U.S. Adults Who Were Obese or Who Had Diagnosed Diabetes

2002

Obesity (BMI ≥ 30)

- Missing Data
- 14.0 - 17.9%
- 18.0 - 21.9%
- 22.0 - 25.9%
- ≥ 26.0%

Diabetes

- Missing data
- 4.5 - 5.9%
- 6.0 - 7.4%
- 7.5 - 8.9%
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Age-adjusted Percentage of U.S. Adults Who Were Obese or Who Had Diagnosed Diabetes

2003

Obesity (BMI ≥ 30)

Diabetes

Age-adjusted Percentage of U.S. Adults Who Were Obese or Who Had Diagnosed Diabetes

2004

Obesity (BMI ≥30)

- <14.0%
- 14.0 - 17.9%
- 18.0 - 21.9%
- 22.0 - 25.9%
- ≥26.0%

Diabetes

- <4.5%
- 4.5 - 5.9%
- 6.0 - 7.4%
- 7.5 - 8.9%
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Age-adjusted Percentage of U.S. Adults Who Were Obese or Who Had Diagnosed Diabetes

2005

Obesity (BMI ≥ 30)

Diabetes

Age-adjusted Percentage of U.S. Adults Who Were Obese or Who Had Diagnosed Diabetes

2006

Obesity (BMI≥30)

Diabetes

National Childhood Obesity Trends

Percentage of Children who are Obese Aged 10–17 Years by State (2003)

Data for these maps were retrieved from the Child and Adolescent Health Measurement Initiative, 2003 National Surveys of Children's Health, Data Resource Center for Child and Adolescent Health website (accessed 10/03/08, www.nschdata.org).
Percentage of Children who are Obese Aged 10–17 Years by State (2007)

Act 1220: Arkansas Child and Adolescent Obesity Initiative
84th General Assembly Act 1220 of 2003

An act to create a Child Health Advisory Committee; to coordinate statewide efforts to combat childhood obesity and related illnesses; to improve the health of the next generation of Arkansans; and for other purposes.

Goals:

- Change the environment within which children go to school and learn health habits everyday
- Engage the community to support parents and build a system that encourages health
- Enhance awareness of child and adolescent obesity to mobilize resources and establish support structures
Act 1220 Requirements

1. Establishment of an Arkansas Child Health Advisory Committee
2. Vending machine content and access changes
3. Physical activity / education requirements
4. Requirement of professional education for all cafeteria workers
5. Public disclosure of “pouring contracts”
6. Establishment of local parent advisory committees for all schools
7. Confidential child health report delivered annually to parents with body mass index (BMI) assessment
Amending Act 1220 – Acts 201, 719, & 317 of 2007

- Periodicity of BMI assessments change to every even year beginning in K thru 10th grade.
- Parents must provide a written refusal to keep child from participating.
- ADH nurses responsible for quality assurance to follow protocols.
- Adds 5 members to CHAC.
- Broadens CHAC scope to all school health.
- Eliminates physical activity for all but K-5.
Legislation regarding BMI Measurement

• Act 201 of 2007 Changes periodicity of BMI screening to every 2 years starting in K through 10th grade. Parallels other screens – vision, hearing and scoliosis
  – Parents have written opt out capacity
  – Report sent to parents in new Health Screen format
  – Provides for enhances policies and procedures to secure privacy and uniformity in measurement
Legislation Regarding Physical Activity

• Act 317 An act to increase class time by limiting mandated PA activity time in grades K-12. This bill provides for 60 minutes of PE weekly and 90 minutes of PA weekly for K-5 only. No requirements for Physical activity in grades 6-12.
Legislation Regarding the Child Health Advisory committee

• Act 719 of 2007 Calls for CHAC’s expanded role on Coordinated School health and adds new membership
  – CHAC will make recommendations concerning the implementation of the Arkansas Coordinated School Health Program – expansion beyond physical activity and nutritional standards
  – 5 new members added (for a total of 25) – representation from
    • Office of Minority Affairs at DHHS
    • Arkansas School Boards Association
    • Arkansas Association of School Business Officials
    • Arkansas Association for Supervision and Curriculum Deve.
    • A Classroom teacher
AR Responses beyond Act 1220

- CDC School Health Initiative (DOE)
- School, community and faith-based efforts
- Development of first continuing medical education program for clinicians
- Regionalization of specialty care
- Elimination of fiscal barriers to reimbursement (Medicaid / SCHIP)
- Increased awareness of physical activity needs (Mini-marathon)
Arkansas Board of Education actions

- Vending machines restricted until 30 minutes after lunch in all schools
  - 12-ounce maximum beverage size
  - 50% healthy options required
- No competitive foods in cafeterias
- Cafeteria food service education
- Nutrition and health curriculum changes
- 30 minutes per day physical activity (K-12)
  - 2007 change to accept activities (9-12 grades)
AR Health Care Environmental Response

- Local school, community and faith-based initiatives
- Growth in farmers’ markets
- Development of first CME program for clinicians
- Regionalization of secondary and tertiary care (e.g., Fitness Clinic at AR Children’s Hospital)
- Elimination of fiscal barriers to reimbursement (Medicaid / SCHIP)
- Increased awareness of physical activity needs (Mini-marathon)
- Changes to built environment – world’s longest pedestrian bridge
Is your child’s weight a health problem?
Your child was weighed and measured at Bryant Elementary School on November 17, 2003. The child was 60.5 inches tall and weighed 137.4 pounds. Based on her height and weight, has a Body Mass Index (BMI) of 26.4. A BMI of 26.4 for a 10-year-old girl suggests that your child may be OVERWEIGHT (see chart). This may be a major health problem for the child.

What is a BMI?
A BMI tells if a person may be overweight or underweight. It is a screening test. Doctors use screening tests to find problems early. This may help prevent more serious problems from developing later. A healthy BMI number changes as children age and is different between girls and boys. So, it is important to measure BMI each year to see if your child is growing and developing in a healthy way.

What should you do?
•   Offer healthy snacks, like fruits, vegetables, and other foods low in sugar and salt.
•   Drink fewer sodas and drink more water, low-fat milk, or low-calorie drinks.
•   Limit television, video games, and computer time to no more than 2 hours a day.
•   Take family walks, bicycle, run, or exercise with your child.

Healthy habits start early. Please be aware that diet, physical activity, and other health habits will affect your child’s health and life. Thank you.

On behalf of your child’s school

Joseph W. Thompson, MD, MPH
Director, Arkansas Center for Health Improvement
A generous gift from the American Diabetes Association made distribution of this letter possible.


Por qué se midió el IMC en la escuela?
Las leyes del estado de Arkansas requieren que la escuela de su niña mida el IMC cada año y que se le envíe a usted un reporte sobre los resultados. En las escuelas de Arkansas también se practican pruebas iniciales para buscar problemas con la vista y la audición de los niños. Medir el IMC de su niña es otra manera de ayudarle a cuidar su salud. Acciones que se tomen ahora pueden ayudar a disminuir el riesgo de desarrollar enfermedades serias cuando crezca su niña. Así que, es importante medir el IMC cada año para ver si su niña está creciendo y desarrollando de una manera saludable.

¿Es el peso de su niña un problema de salud?
El pasado 3/1/05, su niña fue medida y pesada en la escuela. EXAMPLE midió 4 pies con 8 pulgadas y pesó 137.4 libras, lo que le da un IMC que sugiere que ella pueda estar sobrepeso.

El IMC de su Niña

<table>
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<tr>
<th>Bajo de peso</th>
<th>Peso apropiado</th>
<th>En riesgo de estar sobrepeso</th>
<th>Sobrepeso</th>
</tr>
</thead>
</table>

Para mayor información, visite www.achi.net.

Source: Arkansas Center for Health Improvement, Little Rock, AR, 2005.

Percent at risk for overweight or overweight by gender, ethnicity, and grade (’05–’06)

Percentage of students classified as overweight or at risk for overweight by Arkansas public school district (’05–’06)

National and Arkansas Childhood Obesity Trends

• Parents’ awareness of obesity-related health problems increased (1/3 recognized problem > 2/3)

• 95% of parents read some or all of the Child Health Report and 67% found the report helpful

• No feared consequences of BMI measurements

• Students reported purchasing more healthy drinks, such as water and other unsweetened beverages

• Innovations in schools and communities across the state – taste tests in cafeterias, curriculum changes

• Support of continued improvements to nutrition standards in school cafeterias
What is the impact of obesity on children’s healthcare?
Average Annual Total Use by Age Group

Contact days of services for outpatient, inpatient, other place of service, and dental visits. Significant p values for within-group t-test are shown.
Average Annual Total Cost by Age Group

<table>
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<tr>
<th>Age Group</th>
<th>Normal Cost</th>
<th>Overweight Cost</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>All</td>
<td>$1,008</td>
<td>$1,101</td>
<td></td>
</tr>
<tr>
<td>5-9 yr</td>
<td>$945</td>
<td>$934</td>
<td>p=.02</td>
</tr>
<tr>
<td>10-14 yr</td>
<td>$1,080</td>
<td>$1,166</td>
<td>p&lt;.0001</td>
</tr>
<tr>
<td>15-19 yr</td>
<td>$1,016</td>
<td>$1,310</td>
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Total payments for outpatient, inpatient, pharmacy, and dental claims.
Adult Average Annual Total Risk Cost

No Risks $2,382

Obese $3,679

Daily Cigarette Users $3,081

O = Obese
P = Physically Inactive
C = Daily Cigarette Use
Annual Average Total* Costs Linked to Obesity

*Includes medical (inpatient and outpatient) and pharmacy costs for 18-84 year old state employees.
Average Annual Total* Costs Linked to Obesity compared with No Risk by Age Group

<table>
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<th>Age Group</th>
<th>No Risk</th>
<th>Obese</th>
<th>Increase</th>
</tr>
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<tr>
<td>18-24</td>
<td>$1,382</td>
<td>$1,230</td>
<td>$1,991</td>
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<tr>
<td>25-34</td>
<td>$1,857</td>
<td>$2,160</td>
<td>$2,801</td>
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<tr>
<td>35-44</td>
<td>$3,765</td>
<td>$3,266</td>
<td>$5,391</td>
</tr>
<tr>
<td>45-54</td>
<td>$2,409</td>
<td>$3,765</td>
<td>$5,391</td>
</tr>
<tr>
<td>55-64</td>
<td>$4,338</td>
<td>$5,391</td>
<td>$1,053</td>
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<tr>
<td>65-74</td>
<td>$8,860</td>
<td>$4,522</td>
<td>$4,338</td>
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*Includes medical (inpatient and outpatient) and pharmacy costs for state employees.
What Next?
Immediate Opportunities

• Align education, health, and financing options to support parents and communities in making change
  – Update and expand school nutritional guidelines in accordance with IOM recommendations - Child Nutrition Act (Congressional reauthorization 2009)
  – Incorporate financial coverage for childhood obesity - SCHIP (reauthorization 2009)/Medicaid Rules & Regs
  – “No Child Left Behind” K-12 education reauthorization - Consider personal physical performance goals
  – Non-motorized transportation investments – Transportation (SAFETY-LU) reauthorization 2009

• Local and state investments in food access, built environment, and multi-facet strategies for impact

• Consider Medicare’s future financial risk to support current prevention programs
Welcome
Posted on 09 Apr 2009 @ 05:04 pm GMT

Welcome to the Website of the Robert Wood Johnson Foundation Center to Prevent Childhood Obesity. The site will be regularly refreshed with new research reviews, policy updates and analyses, and reports about successful obesity-prevention efforts across the nation. We invite you to sign up to receive updates when new content is posted and to share your stories.

We welcome researchers, policy-makers, advocates, and government, business and community leaders to join the growing movement of people working to reverse the childhood obesity epidemic by changing policies and community environments. We need your knowledge, commitment, and expertise to ensure that all of our nation's children—regardless of race, ethnicity and geographic location—live in communities and attend schools that encourage and support healthy eating and physical activity. We look forward to working with you.
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