Obesity and Physical Inactivity in Rural America

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Director
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South Carolina Rural Health Research Center
At the Heart of Public Health Policy
Obesity

- How “big” is the problem
  - Among adults
  - Among kids
- What are some fixable barriers?
What is “obese,” anyway?

- **Obese**: BMI of 30 or more
  - For a 5’10” person: 210 pounds
- **Overweight**: BMI of 25 or more
  - For a 5’10” person: 175 pounds
- **Associated health problems**:
  - Hypertension
  - Diabetes
  - High cholesterol
Rural adults: heavier

- Weight status among adults, by residence, 2008 BRFSS

![Bar chart showing weight status among adults in urban and rural areas in 2008 BRFSS](chart.png)

**Urban**
- Obese: 26
- Overweight: 37
- Normal: 37

**Rural**
- Obese: 31
- Overweight: 36
- Normal: 33
Minority populations are at risk

- Adults who are obese, by race & residence, 2008

<table>
<thead>
<tr>
<th>Ethnicity</th>
<th>Urban</th>
<th>Rural</th>
</tr>
</thead>
<tbody>
<tr>
<td>Whites †</td>
<td>27.0</td>
<td>34.1</td>
</tr>
<tr>
<td>Blacks †</td>
<td>34.3</td>
<td>41.6</td>
</tr>
<tr>
<td>Hispanics †</td>
<td>35.4</td>
<td>40.5</td>
</tr>
<tr>
<td>Others</td>
<td>21.5</td>
<td>38.9</td>
</tr>
</tbody>
</table>
Rural adults: less active

- Adults reporting no physical activity outside work, by race & residence, 2008
What is “obese” in children?

- **At risk for obesity**: At or above the 95 percentile for BMI for age and sex
- **At risk for overweight**: At or above the 85 percentile for BMI for age and sex

- What used to be unusual (top percentiles) is becoming more common
Rural kids are heavier, too

Proportion of children aged 10 – 17 who are overweight or obese, by race/ethnicity and residence, 2003 NSCH

<table>
<thead>
<tr>
<th>Race/Ethnicity</th>
<th>Rural</th>
<th>Urban</th>
</tr>
</thead>
<tbody>
<tr>
<td>White</td>
<td>29</td>
<td>26</td>
</tr>
<tr>
<td>Black</td>
<td>44</td>
<td>41</td>
</tr>
<tr>
<td>Hispanic</td>
<td>40</td>
<td>38</td>
</tr>
<tr>
<td>Other</td>
<td>37</td>
<td>30</td>
</tr>
</tbody>
</table>

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Obese adolescents, by state, 2003

Proportion of children age 10 – 17 with a BMI at or above the 95th percentile for reference population. Data from 2003 National Survey of Children’s Health.
Rural kids likely to be less sedentary

Proportion of children who do not participate in moderate to vigorous activity for at least 20 minutes, 3 days per week, by race/ethnicity and residence, 2003 NSCH

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Inactive adolescents, by state, 2003

Proportion of children age 10 – 17 who fail to get 20 minutes of vigorous exercise or more at least three times per week. Data from 2003 National Survey of Children’s Health.
Paradox

- Rural children less likely to be physically inactive
- Rural children more likely to be overweight, obese

New study: measured height and weight
Measured: rural kids still heavier

Percent of children who are overweight, by residence and age, 1999-2006 NHANES

Data Source: 1999-2006 NHANES

Age (in years)

†P-value<0.05

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When we looked at kids

- Among children ages 2 – 11:
  - Rural children were consistently more likely to be obese
  - Energy intake (calories) also affected weight

- Among adolescents (12 – 18):
  - Rural residence wasn’t a risk factor after you controlled for behaviors that lead to obesity:
    - Screen time
    - Diet
Physical activity barriers

Percent of children living in neighborhoods that lack specific amenities, by residence, NSCH 2007

- No sidewalks: Urban 23, Large rural 42, Small rural 54
- No rec center: Urban 32, Large rural 40, Small rural 55
- No park: Urban 17, Large rural 30, Small rural 30
Diet barriers

- Fewer stores, higher prices
- Longer commuting times
- Among kids:
  - Quality of school foods
  - Soft drinks and revenue
Points of change

- Improving energy balance among both children and adults
  - More activity
  - Better nutrition
Policy and Programs

- Policy
  - Reduce barriers
- Interventions
  - Focused
  - Rural
  - All solutions are local
One policy change

- “Buzzing” not previously illegal
- 2008 SC law requires
  - “safe operating distance”
- Motorist may not:
  - “harass, taunt, or maliciously throw an object”

Safer Cycling
South Carolina Passes New Bicycle Safety Law for Cyclists

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# One small program: rural SC

<table>
<thead>
<tr>
<th>Community</th>
<th>Project</th>
<th>Award</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wedgefield</td>
<td>Walking track &amp; fence repairs</td>
<td>$13,500</td>
</tr>
<tr>
<td>Rembert-Rafting Creek</td>
<td>Walking track, softball field &amp; amenities</td>
<td>$16,805</td>
</tr>
<tr>
<td>V.I.M. Park</td>
<td>Walking track &amp; park revitalization</td>
<td>$16,805</td>
</tr>
<tr>
<td>Willow Drive- YMCA area</td>
<td>Soccer field, basketball court, landscaping</td>
<td>$12,054</td>
</tr>
<tr>
<td>Cherryvale</td>
<td>Walking track &amp; amenities</td>
<td>$3,200</td>
</tr>
<tr>
<td>Salterstown</td>
<td>Walking track, half basketball court &amp; amenities</td>
<td>$15,000</td>
</tr>
<tr>
<td>Dalzell</td>
<td>Walking track &amp; amenities</td>
<td>$15,000</td>
</tr>
</tbody>
</table>

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We can fix this

- Slowly
- One solution at a time
- One rural community at a time
Research Colleagues:

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Questions / Comments