Developing an Evidence-Based Childhood Obesity Strategy for Louisiana

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Age-Adjusted Prevalence of Obesity, LA, 2007

< 26.2
26.3 – 27.7
27.8 – 29.1
29.2 – 30.8
≥ 30.9

www.cdc.gov/diabetes/statistics/index/htm
Prevalence of Childhood Obesity
United States, 1971-2008

Children 6-11 y, Adolescents 12-19 y

Data from NHANES.
The Pediatric Obesity Epidemic Continues Unabated in Bogalusa, Louisiana

Stephanie Broyles, Peter T. Katzmarzyk, Sathanur R. Srinivasan, Wei Chen, Claude Bouchard, David S. Freedman, and Gerald S. Berenson

“Community efforts to combat obesity vary in scope and scale; overall, however, they remain fragmented, and little is known about their effectiveness. At the local level, communities are struggling to determine which obesity prevention programs to initiate and how to evaluate their impact.”
“Community efforts to combat obesity vary in scope and scale; overall, however, they remain fragmented, and little is known about their effectiveness. At the local level, communities are struggling to determine which obesity prevention programs to initiate and how to evaluate their impact.”
• Each location has unique characteristics that must be understood before programs or policies are developed.
  
  • Obesity prevention fits within a broader context.

  • Sustainability must be built into community-based obesity prevention efforts.

  • Obesity prevention is a long-term goal.
Given that obesity is a serious health risk, preventive actions should be taken even if there is as-yet-incomplete scientific evidence on the interventions to address specific causes and correlates of obesity. However, there is an obligation to accumulate appropriate evidence not only to justify a course of action but to assess whether it has made a difference. As childhood obesity is a serious public health problem calling for immediate reductions in obesity prevalence and in its health and social consequences, the committee strongly believes that actions should be based on the best available evidence—as opposed to waiting for the best possible evidence.
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“Evidence-based”

versus

“Intuition”
Evidence-Based Practice

• Origins in medicine
• Publication of Cochrane’s “Effectiveness and Efficiency” (1972)
• Cochrane Collaboration founded in 1993

The Cochrane Collaboration
Working together to provide the best evidence for health care
Continuum of Effectiveness

- Intuition
- Promising Practices
- Best Practices
- Evidence-informed
- Evidence-based

- Theory-based
Continuum of Effectiveness

- Intuition
- Promising Practices
- Best Practices
- Theory-based
- Evidence-informed
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Continuum of Effectiveness

- Intuition
- Promising Practices
- Best Practices
- Evidence-informed
- Evidence-based
FIGURE 1—Relationship of systematic reviews to guideline development and the advancement of science—a model.
Where Does “Evidence” Come From?

- Observational Studies (Cross-sectional or Cohort)
- Non-Randomized Trials
- Randomized Trials
- Systematic Reviews
- Meta-Analyses
Physical activity interventions in the prevention and treatment of paediatric obesity: systematic review and critical appraisal

John J. Reilly* and Zoe C. McDowell
University of Glasgow Department of Human Nutrition, Royal Hospital for Sick Children, Yorkhill, Glasgow G3 8SJ, UK

Table 1. Criteria for evaluation of randomised controlled trials*
(adapted from Scottish Intercollegiate Guidelines Network, 2002)

| Does the study address a clear question or aim? |
| Were subjects allocated randomly to treatment groups? |
| Was allocation concealed? |
| Were subjects and/or investigators kept 'blind' to treatment allocation? |
| Were treatment and control groups similar at the start of the trial? |
| Apart from the treatment being investigated, were groups treated equally? |
| Were relevant outcomes measured in valid and reliable ways? |
| How high was dropout rate? |
| Were subjects analysed in the groups to which they were randomly allocated? |
| Was a power calculation carried out? |
| Was sample size adequate? |
| What is the likely direction of study bias? |

Studies rated as 1— meet few or any of these criteria adequately.

Systematic Reviews

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Table 2. Summary of obesity prevention trials rated 1+*

<table>
<thead>
<tr>
<th>Trial</th>
<th>Subject characteristics at baseline</th>
<th>Nature of intervention or target</th>
<th>Drop-out rate (%)</th>
<th>Primary outcome(s)</th>
<th>Duration of follow up</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gortmaker et al. (1999)</td>
<td>Age (years) 11-7  n 1295  Location USA</td>
<td>↓ Television viewing ↓ Fat consumption ↑ Fruit and vegetable intake ↑ Physical activity</td>
<td>17</td>
<td>Obesity prevalence and remission</td>
<td>Approximately 17 months</td>
</tr>
<tr>
<td>Luepker et al. (1996)</td>
<td>Age (years) 8-8  n 5106  Location USA</td>
<td>↑ Intensity of physical education ↓ Fat consumption in school ↑ Physical activity</td>
<td>21</td>
<td>Serum cholesterol</td>
<td>Approximately 30 months</td>
</tr>
</tbody>
</table>

↓, Reduce; ↑, increase.

*These studies were rated as 1+ and met all or most of the criteria listed in Table 1 (Scottish Intercollegiate Guidelines Network, 2002).
Figure 2. RR of stroke incidence for highly active individuals vs low-active individuals in 5 epidemiological case-control studies. Error bars represent 95% CIs for each RR (†adjusted for age and some risk factors excluding high blood pressure; ††adjusted for age and major risk factors including high blood pressure). A RR <1.0 indicates that greater physical activity levels may decrease the risk of stroke incidence.

(Stroke. 2003;34:2475-2482.)
Drug Abuse Resistance Education (D.A.R.E.) Program

Since its beginning in 1983, the DARE program has been used in about 80% of all US school districts and more than 56 other countries. The basic DARE program consists of a series of lectures delivered to schoolchildren by police officers over a 17-week period. In the US alone, over 50,000 police officers have been trained to teach the course and over 36,000,000 students have “graduated” from DARE. DARE is very popular with students, school administrators, police, and the general public. DARE leaders defend the program largely on the basis of anecdotal evidence such as “students tell me it works.”

David J. Hanson, Ph.D.

Two meta-analyses on the effectiveness of DARE have been reported in the scientific literature and both show that the program is INEFFECTIVE at changing behavior.

Local Government Actions to Prevent Childhood Obesity

Committee on Childhood Obesity Prevention Actions for Local Governments
Food and Nutrition Board
Board on Children, Youth, and Families
Board on Population Health and Public Health Practice
Transportation Research Board
Lynn Parker, Annmarie Catherine Burns, and Eduardo Sanchez, Editors

INSTITUTE OF MEDICINE AND NATIONAL RESEARCH COUNCIL
OF THE NATIONAL ACADEMIES

SOLVING THE PROBLEM OF CHILDHOOD OBESITY WITHIN A GENERATION

White House Task Force on Childhood Obesity
Report to the President
MAY 2010
SOLVING THE PROBLEM OF CHILDHOOD OBESITY WITHIN A GENERATION

White House Task Force on Childhood Obesity Report to the President

MAY 2010

Bending the Curve: Childhood Obesity, 1972 to 2030

Source: CDC, National Center for Health Statistics, National Health and Nutrition Examination Surveys.
Note: Obesity is defined as BMI ≥ gender- and weight-specific 95th percentile from the 2000 CDC Growth Charts.
Where are we Now?

Danger in the Balance

The danger of following intuition is that millions of dollars will be spent on ineffective interventions.

The danger of doing nothing is that the prevalence of childhood obesity will continue to increase.
1. There is a pressing need for action.

2. There are very few effective childhood obesity strategies.

3. Programs need to be evaluated and effective solutions identified.

4. We cannot become wedded to ineffective programs - we must break the pandemic paradigm paralysis.