

## Memorandum

TO: Kent City Schools Physical Education Staff  
FROM: R. Scott Olds, Steve Mitchell, Natalie Cain-Bish, Angela DeJulius  
RE: Healthy Kent Kids Project (Body Mass Index)  
DATE: 11/12/2004

Attached is a report that outlines the findings from the data collected during spring, 2004 regarding body mass percentiles for students in grades three through seven in the Kent City Schools. The purpose of the report is to share the findings that can help all involved determine what could be done to promote the health of children in Kent City Schools relative to physical activity and nutrition. Our hope is that the report will serve as an important benchmark for our future collaborative work.

## **Introduction**

The need to gather data from children regarding their risk for overweight is an important public health objective. Such data allow communities to identify where subgroups of children with elevated risk are located and to develop public health programming to address it. Further, these data provide important evaluation benchmarks to note progress over time of the interventions developed on reducing this risk for these students.

The purpose of this report is to highlight the findings from data collected in the spring, 2004 in the Kent City Schools. A collaborative team including faculty members in physical education from the Kent City Schools and in physical education, nutrition and health education from Kent State University, a family physician and the director of Child Health Services of Portage County have teamed up to address childhood obesity. These findings are preliminary as the meaning of the data are still subject to interpretation by all team members since Drs. Olds, Mitchell and Cain-Bish have done the original analysis. We strongly believe in a participatory approach and want very much to be sure all voices are heard prior to the beginning of any intervention.

## **Objective**

- Gather data on students' height and weight
  - These data can be used to calculate body mass index (BMI) and BMI percentiles
  - Better prevention programming can be developed, implemented and evaluated with these data
  - Better student health and education outcomes can be the result

## **Methods**

Kent City Schools invited the parents of children in grades three thru seven to participate in voluntary data collection of students' height and weight. Students whose parents elected not to have their children participate with excluded from the project without penalty. Additional data points collected included age, grade and sex. No personal identifiers were collected that could match individual students with their height and weight data. Steps were taken to protect the confidentiality of student data while being collected to as to minimize if not eliminate any undue embarrassment that might come from the procedures.

All students were weighed and height measured with their shoes off. Standard scales and height charts were used to collect the data. Data were collected by project staff and Kent State University students in nutrition and recorded on a paper data collection form and then transferred to SPSS. Data were cleaned and checked for accuracy prior to all analyses.

Because body mass index percentiles are age and sex specific for children unlike for adults, it was necessary to account for these characteristics. To accomplish this, the Centers for Disease Control and Prevention (CDC) provides statistical software programs in SAS that allow researchers and practitioners to apply these programs to their data sets in order to calculate the BMI percentiles. Our data were transferred from SPSS to SAS and the CDC programs were then applied to generate this desired outcome. The results of these analyses follow.

### **Findings and Conclusions**

The sample included 928 students in grades three thru seven with 46.4% girls and 54.6% boys. The findings are presented in both the table and figure attached to this report. The overall findings indicate that 37% of students in this sample are at risk for overweight ( $\geq 85^{\text{th}}$  percentile). Of this group, nearly 19% were at the  $95^{\text{th}}$  percentile or higher which classifies these students as obese. The national rates report that 16% of children ages 6-19 years are obese indicating that the Kent sample is higher than the national rate! In the Kent sample, the boys (39.3%) are slightly higher than the girls (34.4%) for being at risk for overweight ( $\geq 85^{\text{th}}$  percentile).

The data from this sample represents a significant public health concern for the Kent community. The data indicate a very strong need to develop, implement and evaluate pilot public health interventions that would address a comprehensive approach to reducing childhood obesity and overweight risk including school physical education, school nutrition, family physical activity, community recreation opportunities, and school and community policies regarding physical activity and nutrition. This strategy will increase the likelihood that a variety of approaches will have the greatest chance of accomplishing our goal of increasing the health of the children and Kent community.

### **Recommendations**

In light of the data presented, the following recommendations seem appropriate:

- i) Develop an extra-curricular “Healthy Kent Kids” project as a collaborative project between Kent City Schools, Kent State University and Kent Parks and Recreation. This program will be aimed at addressing the needs of those children most at risk (>85<sup>th</sup> percentile) of being overweight;
- ii) Undertake a review of the Kent City Schools Physical Education curriculum to ensure that students receive appropriate quantity of instructional physical activity during the school week;
- iii) Continue to implement and modify as needed a Physical Education program that emphasizes regular, health enhancing moderate-vigorous physical activity, and hold all personnel accountable for its implementation and evaluation;
- iv) Evaluate the nutritional content of food and beverages provided in Kent City Schools to determine the extent to which nutritional needs of young and adolescent children are met;
- v) Review all relevant district and community policies that could reduce the prevalence of at-risk body mass index percentiles; and
- vi) Engage parents/guardians as important levers of influence on the eating and physical activity patterns of children.

Table 1. Percent Body Mass Index Percentile by Grade and Sex  
 Kent City Schools  
 October 7, 2004

	Less than 85 percentile ( <i>Not at risk</i> )		Greater than 85 <sup>th</sup> percentile ( <i>At risk for overweight</i> )		85-89.9 <sup>th</sup> percentile ( <i>At Risk for overweight</i> )		90-94.9 <sup>th</sup> percentile ( <i>Overweight</i> )		Greater than 95 <sup>th</sup> percentile ( <i>Obese</i> )	
	%	(n)*	%	(n)*	%	(n)*	%	(n)*	%	(n)*
Grade 3										
Girls	72.5	(66)	27.5	(25)	4.4	(4)	12.1	(11)	11.0	(10)
Boys	68.6	(70)	31.4	(32)	9.8	(10)	6.9	(7)	14.7	(15)
Grade 4										
Girls	63.3	(88)	36.7	(51)	7.9	(11)	11.5	(16)	17.3	(24)
Boys	55.6	(90)	44.4	(72)	9.9	(16)	11.1	(18)	23.4	(38)
Grade 5										
Girls	65.6	(61)	35.4	(32)	6.4	(6)	9.7	(9)	18.3	(17)
Boys	58.3	(63)	41.7	(45)	9.3	(10)	14.8	(16)	17.6	(19)
Grade 6										
Girls	63.6	(42)	36.4	(24)	3.0	(2)	9.1	(6)	24.2	(16)
Boys	68.0	(53)	32.0	(25)	5.1	(4)	5.1	(4)	21.8	(17)
Grade 7										
Girls	61.9	(26)	38.1	(16)	11.9	(5)	11.9	(5)	14.3	(6)
Boys	55.3	(26)	44.7	(21)	4.3	(2)	14.9	(7)	25.5	(12)
Total										
Girls	65.6	(283)	34.4	(148)	6.5	(28)	10.9	(47)	16.9	(73)
Boys	60.7	(302)	39.3	(195)	8.4	(42)	10.5	(52)	20.3	(101)
Overall Total	63.0	(585)	37.0	(343)	7.5	(70)	10.7	(99)	18.7	(174)

\*n = number of students in that category

# Prevalence of Body Mass Index Percentile by Grade and Sex 2004 Kent City Schools

