

Act 256 Report:

Health-Related Physical Fitness Assessments in Schools

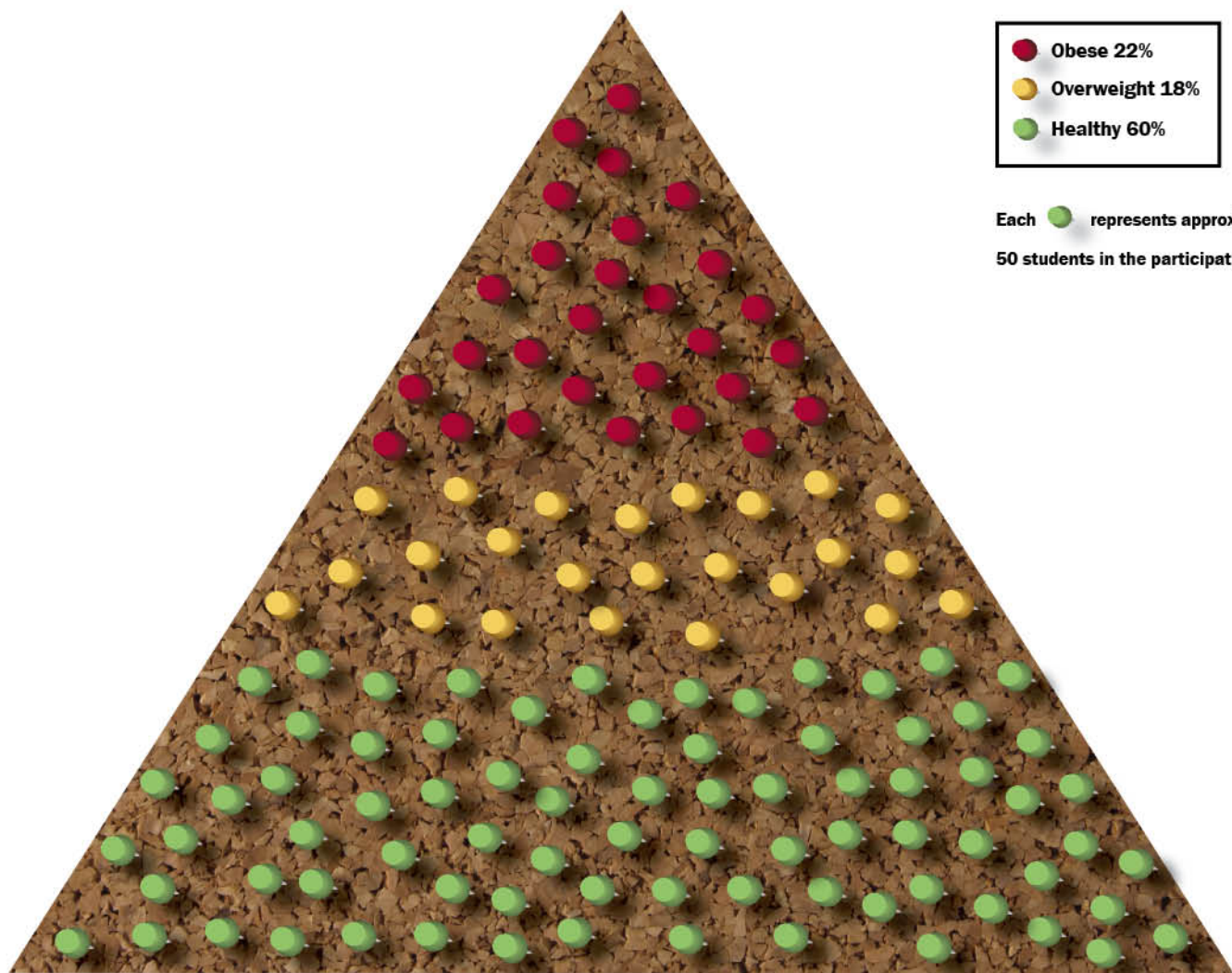


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Acknowledgements

The collaborative efforts of the Cecil J. Picard Center for Child Development and Lifelong Learning at the University of Louisiana at Lafayette, the Department of Education, the Department of Health and Hospitals, the Governor's Council on Physical Fitness and Sports and the Louisiana Council on Obesity Prevention and Management resulted in the preparation and dissemination of this report regarding 2008-09 academic year results of physical fitness testing using the Fitnessgram and plans for expansion of physical fitness test administration and other activities related to Act 256 of the 2009 regular legislative session. The collaborators wish to acknowledge the following efforts.

Ms. Donna Nola-Ganey, Assistant Superintendent for the Office of School and Community Support, has worked for more than five years on implementing Coordinated School Health in Louisiana's public schools. During the 2008-09 school year, the **Louisiana Department of Education** hired *Ms. Tavia Crumpler* as a section leader for Safe and Healthy Schools and *Mr. Michael Comeaux* as a Physical Education Consultant. Additionally, the Louisiana Department of Education, under the direction of *Mr. Michael Coburn* Division Director of Student Learning and Support has reviewed and revised the Physical Education Grade Level Expectations. Their input into the development of this report was substantial.

Ms. Pamela Romero has coordinated the **Louisiana Council on Obesity Prevention and Management** through her work at the **Louisiana Department of Health and Hospitals** in the Office of Public Health. This organization, which was legislatively created in 1999, is currently chaired by *Stewart Gordon, MD*. The Louisiana Obesity Council continues implementation of its Strategic Plan for 2007-10. Representatives from the Louisiana Department of Health and Hospitals and the Louisiana Obesity Council were instrumental in the development of this report.

Under the leadership of *Dr. Billy Stokes* as Executive Director and *Dr. Susan Aysenne* as Coordinated School Health Principal Investigator, the **Cecil J. Picard Center for Child Development and Lifelong Learning** has been working on improving the health and well-being of Louisiana's children. The Picard Center has worked with seven school districts in the last two years to implement the Fitnessgram at one or more schools in each district. The work has been overseen by *Dr. Holly Howat* of the Picard Center and *Dr. Praphul Joshi* of the **University of Louisiana at Lafayette's Kinesiology Department**. *Mr. John LaCour*, Director for Health Sciences, has been instrumental in bringing the aforementioned collaborators together for this report.

I. Introduction

Childhood obesity is both a national and a local concern. Nationally, alarming numbers of school-age children are overweight or obese. The Center for Disease Control and Prevention (CDC) reports an estimated 17 percent of children aged 6-19 are obese (Ogden, Carroll & Flegal 2008) and another study asserts that in Louisiana, 35.9% of children aged 10-17 are either overweight or obese in Louisiana (Trust for America's Health, 2009). Finally, adult obesity rates have also skyrocketed in recent years. In Louisiana, 28.9% of adults are now categorized as obese, and this rate is the eighth highest in the nation (Trust for America's Health, 2009).

The harm from obesity is also growing rapidly. It can adversely impact a variety of health conditions, such as hypertension, asthma, diabetes, sleep apnea, bone disorders and gall bladder diseases (Trasande, Liu, Fryer & Weitzman, 2008). The national cost to Medicaid of obesity-related hospitalizations more than doubled from 2001 to 2005, from \$53.6 million to \$118 million (Trasande, et.al., 2008). Further, hospitalizations of children aged 2 to 19 where obesity was listed as a diagnosis rose from 21,743 in 2001 to 42,429 in 2005.

In an initiative led by Pennington Biomedical Research Center, the 2008 Louisiana's Report Card on Physical Activity & Health for Children and Youth assigned Louisiana an overall grade of D, a clear signal that our young people face health hazards. This first comprehensive examination of the issue was an important benchmark, and the report made recommendations both to improve the overall grade of D and to track our progress into the future. One of the recommendations was: "Improve population assessment of physical activity and health in Louisiana."

Act No. 256 of the 2009 Louisiana legislative session put this recommendation into effect by calling for health-related physical fitness assessments of students in schools. This act includes the review and expansion of a current health-related physical fitness assessment program associated with 12 school districts in Louisiana that are piloting partners in the Coordinated School Health (CSH) initiative, through the Cecil J. Picard Center for Child Development and Lifelong Learning at University of Louisiana at Lafayette (Picard Center). This initiative uses the Fitnessgram as its physical fitness assessment. The Fitnessgram will establish a statewide standard with easily comparable baselines and subsequent measurements. The implementation of the physical assessment will thus enable evaluation of the effectiveness of interventions and promote fitness for health, rather than just for performance.

The Fitnessgram is a criterion-referenced physical fitness assessment that is gaining a positive reputation among educators and researchers. Based on physical activity research, it was created more than 20 years ago by the Cooper Institute in Dallas, Texas. The Fitnessgram is the only physical fitness measurement tool to use criterion-referenced standards, Healthy Fitness Zones (HFZ), by age and gender.

The assessment originally arose to assist physical education teachers with understanding the physical fitness of their students and to communicate that information clearly to students, parents and other educators. However, it is can also track a student's physical fitness over time,

and it is hence a very useful longitudinal tool. Additionally, many schools and districts use the Fitnessgram as a pre-test in the fall and a post-test in the spring. Educators can thereby gauge the effectiveness of physical education curriculum over a school year and match physical fitness up against other factors.

The Fitnessgram measures three components of health-related physical fitness that have been identified as important to overall health and function:

- aerobic capacity;
- body composition; and
- muscular strength, endurance and flexibility.

These three components are measured by six subtests: Progressive Aerobic Cardiovascular Endurance Run or PACER (aerobic capacity), curl-ups, trunk lift, push-up and shoulder stretches (strength, endurance and flexibility), and Body Mass Index or BMI (body composition). The BMI is a measurement that calculates a person's body mass based upon height, weight, age and gender factors. The results of these subtests place each student either within or outside the Healthy Fitness Zone (HFZ). Fitnessgrams also provide personalized feedback and positive reinforcement, which are vital to changing behavior, and serves as a link between teachers, parents and students. In summary, the Fitnessgram provides objective, easy-to-understand results that track physical fitness over time and assess the effectiveness of physical education curricula.

The collaborators – the Picard Center, Department of Education (DOE), Department of Health and Hospitals (DHH), Governor's Council on Physical Fitness and Sports, and Louisiana Council on Obesity Prevention and Management (Louisiana Obesity Council) – will provide annual reports to the Legislature regarding the analysis and assessment of the current pilot program, as well as the plan to expand the health-related physical fitness assessments to all schools in Louisiana and to identify best practices for the implementation of effective interventions.

II. Implementation Results of Fitnessgram Assessment for 2008-09

In Louisiana, the Picard Center has collaborated with DOE and DHH for several years to implement a CSH initiative. This initiative seeks to improve the health and well-being of Louisiana's students and thereby maximize their academic abilities. Components of the Coordinated School Health initiative include physical education, health education, nutrition services, mental health and counseling services, health services and family and community involvement.

During that time, these partners have worked on a CSH pilot site program funded through DOE's Project SERV from the fall of 2006 to the spring of 2008. This pilot program had 10 participating pilot school districts, each with one participating school. Several of those pilot sites completed an initial Fitnessgram at the pilot school site. The districts participating in the Fitnessgram were Caddo, DeSoto, Sabine, Jackson, Lafayette and Natchitoches.

During the 2007 regular legislative session, \$1 million was appropriated to the Picard Center for continued implementation and expansion of the CSH Initiative over a four-year period. During the 2008-09 academic year, a majority of the Picard Center's work focused on developing three- to five-year plans for CSH in 12 school districts (see table 1 on page 12 for a list). Eleven of the CSH districts have plans that include the implementation of the Fitnessgram within their district. (Due to a grant award, Morehouse Parish School District uses the Well Pro physical fitness assessment).

In addition, the Picard Center and UL Lafayette's Kinesiology department collaborated on completing Fitnessgram assessments in six participating CSH districts during 2008-09. Those districts were: Caddo, DeSoto, Lincoln, Natchitoches, Sabine and West Feliciana. In all, more than 6,500 students from these parishes participated in the Fitnessgram testing. Overall results for the participating school districts are discussed below inclusive of Body Mass Index (BMI) and criterion-referenced scores for Fitnessgram subtests. Results by school district appear in Appendix A.

The BMI gives an overview of physical health, and the Fitnessgram subtests fill in key details regarding physical fitness. A BMI is a practical measure used to determine weight status (underweight, healthy, overweight or obese) by measuring weight in relation to height. While BMI is an accepted screening tool for the initial assessment of body fat in children and adolescents, it is not a diagnostic measure because BMI is not a direct measure of body fat. Fitnessgram Healthy Fitness Zones (HFZ) are research-based standards for aerobic capacity; body composition; and muscular strength, endurance, and flexibility (Appendix B). These standards indicate levels of fitness necessary for good health and act as a complement to the BMI.

Overall results indicated that 60% of participating K-12 students had a healthy level BMI, and the remaining 40% were either overweight or obese (see chart 1 below). The distribution of BMI categories by age is illustrated in Chart 2. For ages 5 through 12, about 55% of the students had BMI in a normal range, about 20% were overweight and 25% were classified as obese. Fitness assessments were conducted during normal physical education classes by the teachers. Participation in PE classes decreases significantly from middle school to high school – and this accounted for lower sample sizes in high schools. The percentage of students having normal BMI increased significantly in high schools (13+ years). This can be attributed to a majority of the participants being athletes or those who were highly physically active. Hence the results of BMI categories by age – particularly 13 years and older should not be generalized to the whole population.

In the Lafayette Parish School System, while Fitnessgram data was not submitted to the Picard Center for 2008-09, preschoolers participating in the LA 4 program underwent a BMI analysis (see Appendix A). Results indicated that 60.9% of these students had a healthy BMI. Of the remaining students, 14.4% were overweight, 13.6% were obese and 11.1% were underweight. Similar results were found when the data was analyzed according to gender and race/ethnicity.

These results are comparable to the BMI distribution of K-12 students in the participating school districts in that roughly 60% of the students had a healthy BMI. The most noteworthy difference is the higher percentage of preschoolers having a BMI classified as underweight than in the K-12 students, which was less than 1%. This potential disparity between preschool students' lower BMI obesity levels compared to school-age student BMI levels, as well as the difference in the percentage of underweight BMI levels (higher in preschool students and lower in school age students) deserves further research during the 2009-10 academic year. Increased sample size will determine the long-term validity of this trend.

Chart 1

2008-09: Overall BMI Status for K-12 Students in Participating Parishes

(N = 6,625)

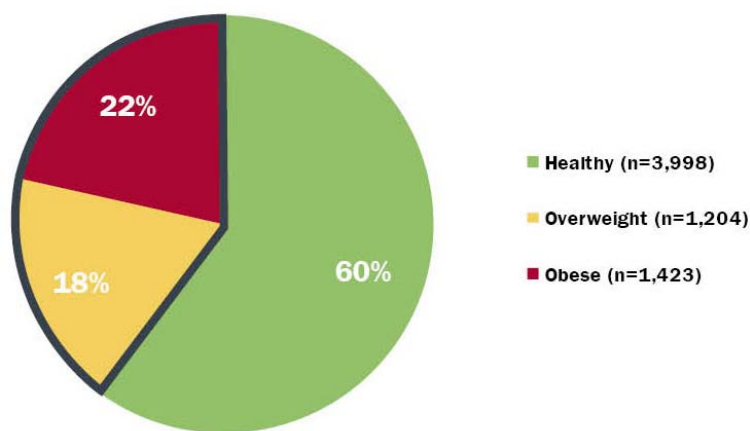
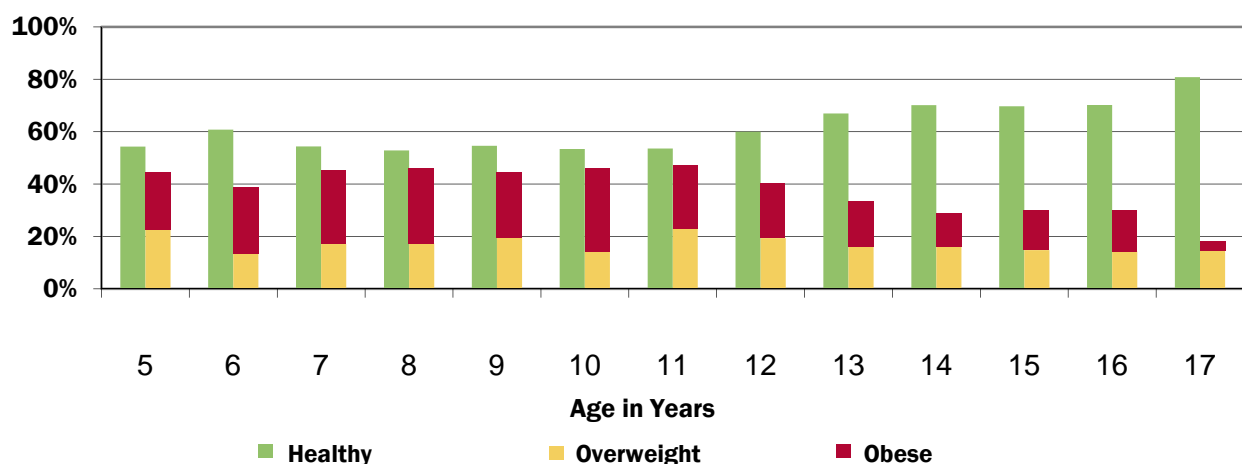


Chart 2:

2008-09: Overall BMI Status by Age for K-12 Students in Participating Parishes

(N = 6,507)



K – 12 student population BMI results were also disaggregated by gender and race/ethnicity. Of students whose race/ethnicity was reported, white students had a higher percentage of healthy BMI than African-American students (61% to 53%). Conversely, African-American students were more likely to be overweight or obese than white students (e.g., 28% to 24% at the obesity level) (see chart 3 below). Additionally, when looking at BMI status by gender, little differences are noted with the exception of overweight females. Only 17% of females were considered overweight, compared to 20% of males (see chart 4 below).

Chart 3

2008-09 BMI Status by Race/Ethnicity for K-12 Students in Participating Parishes

(N = 2,702)

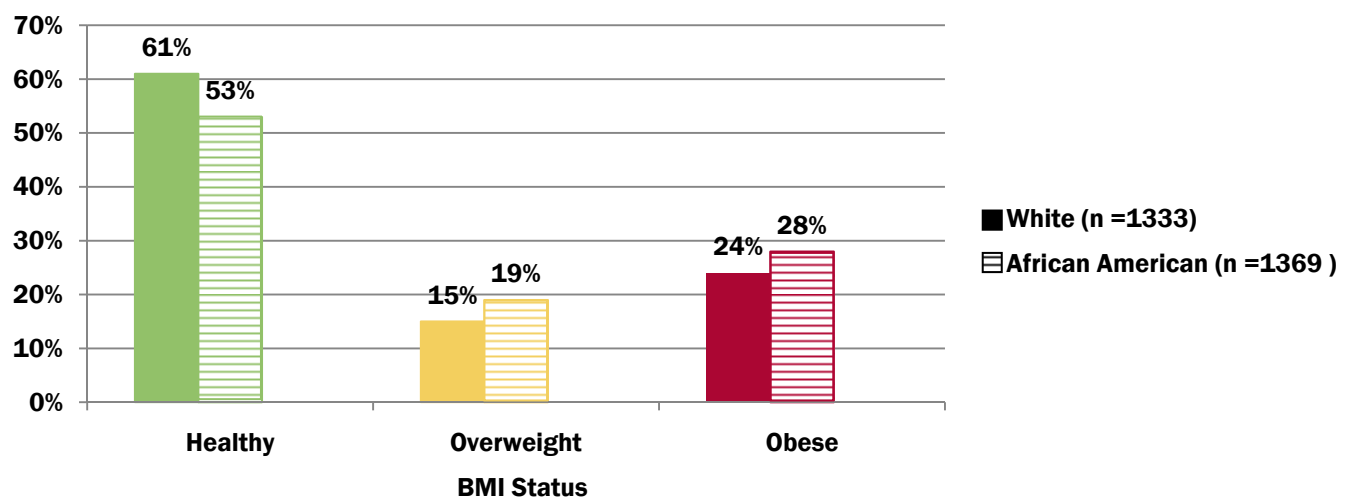
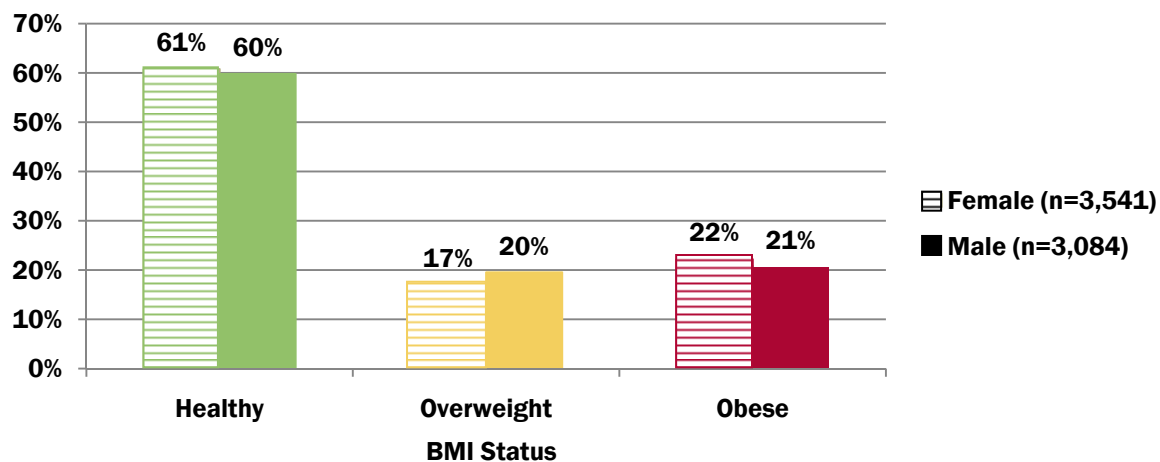


Chart 4

2008-09 BMI Status by Gender for K-12 Students in Participating Parishes

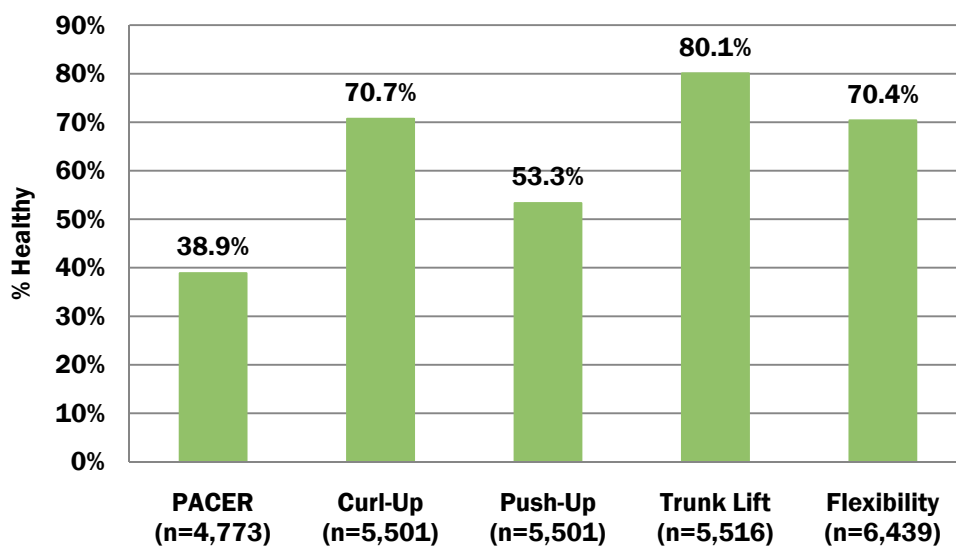
(N = 6,625)



Fitnessgram results were also analyzed according to assessment sub-tests (see chart 5). Participating K-12 students did best on the trunk lift (80.1%), which measures core strength. The participating K-12 students scored lowest on the PACER (38.9%), which measures aerobic capacity. Hence, while most students could complete certain core strength activities, far fewer were successful in tests that emphasize cardiovascular endurance.

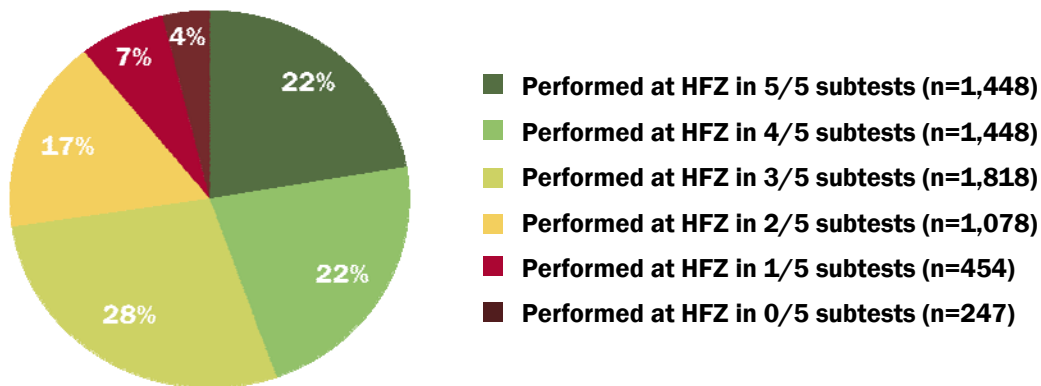
Chart 5

2008-09 Fitnessgram Healthy Fitness Zone Rates by Sub-test for K-12 Students in Participating Parishes



When looking at the Fitnessgram as a whole, few students were unfit on every subtest. Twenty-two percent (22%) of participating students scored within the HFZ in all five sub-tests, while 4% scored outside the HFZ on all subtests and 7% scored outside the HFZ on four sub-tests (see chart 6). Forty-four percent (44%) of students scored within the HFZ on four or more subtests, which indicates a normal level of general physical fitness.

Chart 6
2008-09 K-12 Students' Performance at Healthy Fitness Zone (HFZ) on
Overall Fitnessgram for Participating Parishes
 (N = 6,493)

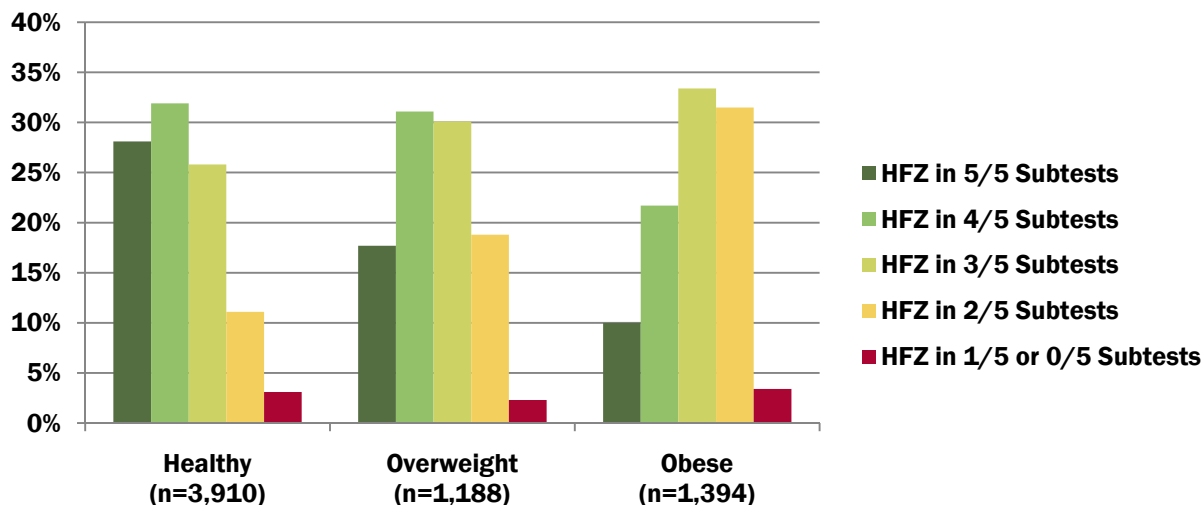


Based on the overall performance in Fitnessgram sub-tests, students were analyzed by how many subtests they scored within the HFZ (Chart 6). Students performing within the HFZ on four or five of the Fitnessgram subtests were considered to be generally physically fit. Students scoring within the HFZ on three or fewer subtests were considered to be less healthy. Chart 7 illustrates the correlation of BMI categories with overall performance in Fitnessgram sub-tests. Participating students with a normal level BMI were more likely to perform within the HFZ on four or five subtests (60% of normal BMI students). Students with an overweight level BMI were most likely to perform within the HFZ on three or four subtests (61.2% of overweight BMI students), while students with an obese level BMI were most likely to perform within the HFZ on only two or three subtests (64.9% of obese BMI students). The differences between obese and normal weight categories with regard to performing at HFZ in Fitnessgram sub-tests were statistically significant ($p < 0.05$). In other words, the healthier a student's BMI, the more Fitnessgram subtests they were likely to perform at healthy levels.

Chart 7

2008-09 K-12 Students Fitnessgram Subtest Performance at Healthy Fitness Zone (HFZ) by BMI status for Participating Parishes

(N = 6,492)



The Picard Center and UL Lafayette's Kinesiology Department further analyzed the 2008-09 data by correlating the BMI with the other Fitnessgram subtests (Appendix C). In all the subtests, students having normal BMI had the highest percentage in obtaining healthy fitness zones, followed by overweight and obese categories. In other words, students who were classified as obese had the lowest rates to achieve healthy fitness zones in all the Fitnessgram sub-tests. It should be noted that the differences in performance for normal weight and obese students with regard to all sub-tests were statistically significant ($p < 0.05$). These results suggest that as a student's BMI becomes healthier, he or she may also be significantly increasing their fitness levels.

Louisiana's data looks similar to other states in the southern region of the country. In Arkansas, BMI data is collected annually on all public school students in grades K-12. The latest report from the Arkansas Center for Health Improvement (2007) indicates that in Arkansas, 60.4% of students have a healthy BMI, while 17.2% have a BMI that is considered overweight and 20.6% have a BMI that is considered in the obese range. The state of Texas conducted Fitnessgram assessments on all public school students in grades 3-12. BMI results indicated that approximately 70% of these students had a healthy BMI, while 30% of these students were either overweight or obese (The Cooper Institute, 2009).

III. Plan Development for 2009-10

As stated previously, DOE, DHH and the Picard Center have long collaborated in the area of children's health and well-being. With guidance from the Louisiana Obesity Council, these partners are developing a plan for Fitnessgram assessment with three goals:

1. To establish baseline and annual measurements to monitor children's physical fitness and childhood obesity rates;

2. To identify best practice universal interventions, targeted interventions and intensive, individual interventions and evaluate their effectiveness; and
3. To relate health outcomes to academic and behavioral outcomes (e.g., LEAP scores and suspension rates).

In short, these collaborators are focused on implementing a physical fitness assessment like the Fitnessgram in as many Louisiana schools as possible, determining effective interventions, and deriving a better understanding of the consequences of childhood obesity.

Department of Education

The DOE will begin the 2009-10 academic year by surveying physical education supervisors from all school districts on their use of physical fitness assessment tools through an online survey (see Appendix D). Its goal is to help direct the strategic expansion of the Fitnessgram assessment. With the assistance of the Picard Center, this survey will be completed in September and results will be available later this fall.

The DOE has also developed grade-level expectations for physical education (these may be found at www.louisianaschools.net). The grade-level expectations are derived from standards developed by the National Association for Sport and Physical Education, and they will guide the development of curriculum, instruction and assessment in physical education. Grade-level expectations do not represent the entire curriculum, but rather, they represent the core content that should be mastered by all students in grades K-12 at the end of a given year.

More specifically, the DOE has created the grade-level expectations to assist students in developing a physically active lifestyle and achieving a health-enhancing level of physical fitness. To help attain these expectations, the DOE is providing technical assistance and professional development opportunities for physical education teachers that will guide curriculum development. Health-related fitness assessment data will also shape curriculum and instruction so that it will assist students in achieving and maintaining active lifestyles and physical fitness.

Annually, the DOE measures compliance with physical education requirements in local schools and will develop an assessment tool to gauge student performance relative to the physical education grade-level expectations. In collaboration with the Picard Center, the DOE intends to utilize compliance data and Fitnessgram data to investigate the correlation between student health and academic performance.

The Picard Center

The Picard Center is continuing with its implementation of a CSH initiative through the continuation of funding from the Louisiana Legislature. Additionally, the Special Children's Foundation has donated funds for the expansion of the Fitnessgram administration in light of the passage of Act 256. In 2009-10, eleven of the original CSH districts will complete pre-test Fitnessgrams in the fall and post-test Fitnessgrams in the spring. Further, the Picard Center will expand the number of participating Coordinated School Health districts by at least 12, and all of

these districts will complete the Fitnessgram in one or more high school attendance zones at least annually. Table 1 indicates the existing parishes and the targeted expansion parishes, which are denoted with an asterisk. Long-term plans for Coordinated School Health and Fitnessgram administration include adding at least 10 school districts annually until all school districts are participating in Fitnessgram administration and/or the CSH initiative.

Act 256 stipulates the inclusion of parishes with high poverty levels. The U.S. Census Bureau has identified the 15 parishes designated with the highest poverty levels (*The State of Poverty in Louisiana, 2008*) (Appendix E). Of those, four have already been trained in the use of the Fitnessgram or other physical fitness assessment, and four more have been identified to be trained in the school year 2009-10. These are highlighted in bold in Table 1 below.

Table 1

List of Current and Targeted Coordinated School Health Districts for Fitnessgram Completion

*indicates targeted expansion districts

- | | |
|--|---------------------------------------|
| 1. Caddo | 16. Recovery School District- Orleans |
| 2. DeSoto | 17. Red River* |
| 3. East Carroll* | 18. Sabine |
| 4. Evangeline* | 19. St. Landry* |
| 5. Iberia* | 20. St. Martin |
| 6. Iberville* | 21. St. Mary |
| 7. Jefferson* | 22. Vermilion* |
| 8. Lafayette | 23. Washington* |
| 9. Lincoln | 24. Webster* |
| 10. Monroe City | 25. West Baton Rouge* |
| 11. Morehouse | 26. West Carroll* |
| 12. Natchitoches | 27. West Feliciana |
| 13. Ouachita | |
| 14. Pointe Coupee* | |
| 15. Recovery School District- Algiers* | |

University Partnerships with The Picard Center

Recognizing the need for regional partnerships in training and technical assistance, the Picard Center is in the process of contracting with several universities around the state. UL Lafayette's Kinesiology Department is taking the lead in this endeavor. Potential university partners include: Northwestern State University, Louisiana State University - Shreveport, Louisiana Technical University, Southeastern Louisiana University and Louisiana State University. These partners will provide invaluable assistance with the expansion of the districts implementing the coordinated school health initiative, as well as those districts that may choose to complete Fitnessgrams. Further, these university partners will select best-practice interventions and assist school districts with the implementation of one or more of them.

For 2009-10, the Picard Center will be responsible for Fitnessgram completion in participating districts. It will provide or assure the provision of training and technical assistance in regards to Fitnessgram administration. The Picard Center will also either provide or assist in obtaining the

necessary Fitnessgram kits for participating districts. Upon a district's completion of the Fitnessgram at one or more schools, data will be sent to the Picard Center for analysis.

This information will advance understanding of the relationship between a student's health and other factors such as academic performance and behavioral outcomes. The Picard Center, along with UL Lafayette's Kinesiology Department, will collect, analyze and summarize the data. As part of the process, they will conduct sub-group analyses by age, grade level, gender and socioeconomic status (as measured by free/reduced lunch status). The Picard Center will return this information to the schools and districts within 60 days. It will provide results to districts, schools, students and families on an individual student level, as well as aggregated by grade, school and district level. The community at large will receive only the aggregated information. Further, the Picard Center will correlate this data to other academic and behavioral data elements. These include, but are not limited to, high stakes test scores, suspension and expulsion data and student attendance. Finally, the Picard Center has developed a longitudinal database to track student progress over time, as well as analyze long-term trends related to physical fitness and childhood obesity.

IV. Summation

Childhood obesity is a problem that affects Louisiana's health care system, educational agencies, communities and families. This issue needs to be addressed at the family, community, state, regional and national levels in order to be resolved. To that end, a brief summation of findings is given below. Following the findings, next steps for collaborative partners and recommendations for essential actions are discussed.

Findings

Through a cooperative endeavor with Department of Education and UL Lafayette's Picard Center, the Fitnessgram has been completed on a small scale for two years. The findings below are from the 2008-09 Fitnessgram administration in Louisiana.

- Of the $\geq 6,500$ Louisiana students who completed the Fitnessgram, 40% of them were either overweight (22%) or obese (18%).
- When BMI is separated by age (in years), approximately 55% of the students ages 5 to 12 years had BMI in normal range, about 20% were overweight and 25% classified as obese.
- African-American students tended to have a lower percentage of students in the healthy BMI level (53%) and a higher percentage of students in the overweight (19%) and obese (28%) BMI levels.
- Little differences in BMI status were observed among gender. 61% of females had a healthy weight level BMI, and 60% of males had a healthy weight level BMI.
- Analysis of the Fitnessgram subtest revealed that most students achieved a healthy fitness zone level on the trunk lift subtest (80.1%), while the least amount of students achieved a healthy fitness zone on the PACER (38.9%).

- Twenty-two percent (22%) of students achieved a healthy fitness zone on all five subtests, while 4% did not meet healthy fitness zone levels on any subtest.
- Participating students with a normal level BMI were more likely to perform within the HFZ on four or five subtests (60% of normal BMI students) than obese students which were most likely to perform within the HFZ on only three or two subtests (64.9% of obese BMI students). The differences between obese and normal weight categories with regard performing at HFZ in Fitnessgram sub-tests were statistically significant ($p < 0.05$).
- In a statistical analysis correlating BMI to the individual Fitnessgram subtests, students having normal BMI had the highest percentage in performing within healthy fitness zones, followed by overweight and obese categories. This was also statistically significant ($p < 0.05$)

Next Steps

The Picard Center will expand the number of participating Coordinated School Health districts by at least 12 for the 2009-10 academic year. Further, the Picard Center will continue to add 10 or more parishes each year until all parishes are completing physical fitness assessments on students.

Data analysis will continue to include sub-group analyses by age, grade level, gender and socioeconomic status as measured by free/reduced lunch status. This data will also be used in developing a longitudinal analysis to determine trends in physical fitness of students. For example, an analysis of variances in healthy BMI levels among students as they age will be conducted.

Correlation analysis will be completed by the Picard Center to relate health outcomes (BMI and physical fitness assessment results) to academic and behavioral data elements. These will include high stakes test scores, suspension and expulsion data and student attendance.

DOE will continue to provide technical assistance and professional development opportunities for physical education teachers that will guide curriculum development as it relates to physical education grade level expectations.

Recommendations

Continue collaboration between state agencies regarding children's health. Our current work regarding Act 256 will create a joint plan that addresses the availability of physical fitness assessments to provide a better understanding of the obesity problem in Louisiana and to identify solutions through effective interventions.

Increase involvement of local offices of state agencies (e.g., Regional Office of Public Health and Education Regional Service Centers) and community non-profits organizations (e.g., local United Way chapters) in health-related endeavors. For example, the Louisiana Rural Ambulance Alliance has partnered with the Picard Center in applying for grant money to fund local emergency medical staff (EMS) in the administration of the Fitnessgram in rural parishes.

Align Louisiana's efforts to fight childhood obesity with other similar regional partners, such as the Arkansas Center for Health Improvement and Texas Department of Education, to better address obesity problems at the state level and determine best practices for intervention.

Consult with nationally recognized experts on addressing childhood obesity interventions. To begin with, build on current collaborative work with the Pennington Biomedical Research Center in Baton Rouge. Further efforts would include continued interaction with the Center for Disease Control, as well as fostering a long-term relationship with The Cooper Institute in Dallas, Texas.

Policy Implications

Act 256 solidified the collaboration on improving physical health between Louisiana's Department of Education, Department of Health and Hospitals, and universities including the Picard Center at UL Lafayette. As the physical fitness assessment initiative progresses and additional data is harvested related to the health and physical fitness of Louisiana's youth, the Picard Center, Louisiana Department of Education, Louisiana Department of Health and Hospitals and Louisiana Obesity Council, working in tandem, will be better situated to make informed policy recommendations impacting the most cost-effective strategies for changing the trajectory of children's health and physical fitness.

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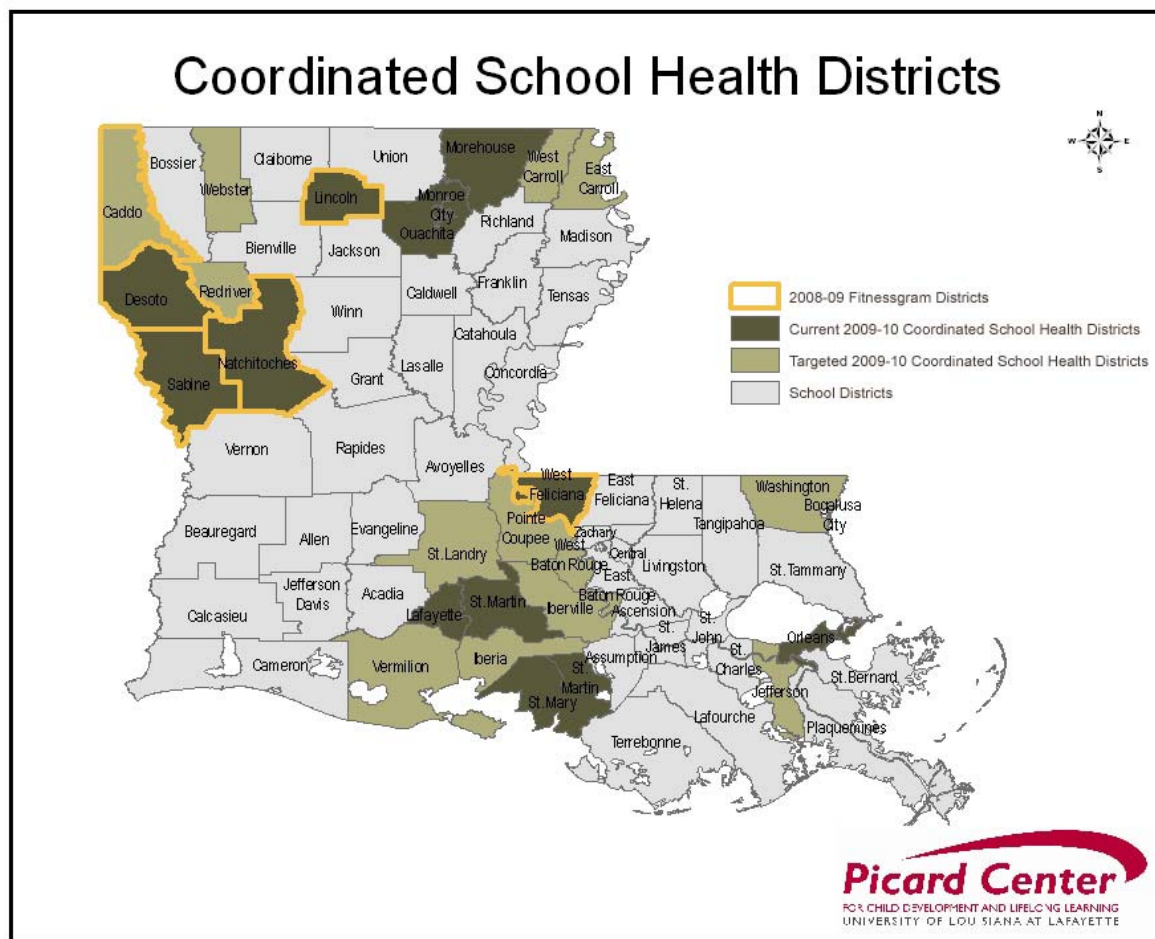
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Appendices

Appendix A: Specific Participating School District Results

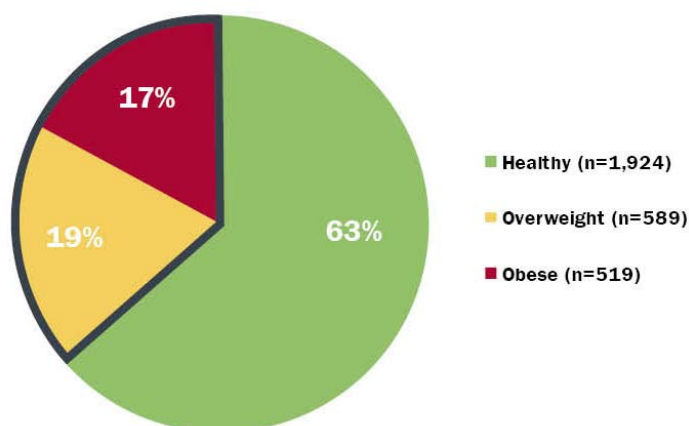
The following information is specific to the six districts that participated in the 2008-09 Fitnessgram completion. Included below are charts that illustrate overall BMI status and Fitnessgram sub-test passage rates for each of the participating parishes, along with the percentages for the number of sub-tests passed.

Louisiana Map Illustrating the Implementation of Coordinated School Health and Fitnessgram Administration

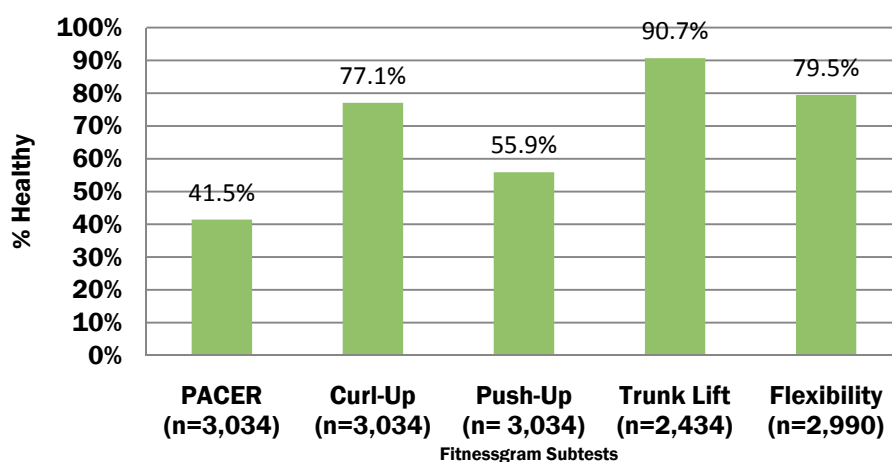


Caddo Parish

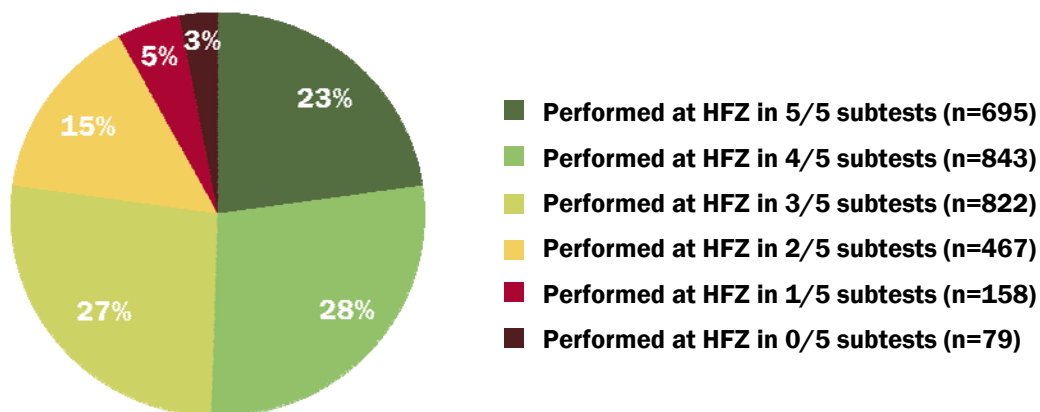
2008-09: Overall BMI Status for K-12 Students in Caddo Parish



2008-09 Fitnessgram Healthy Fitness Zone Rates by Sub-test for K-12 Students in Caddo Parish

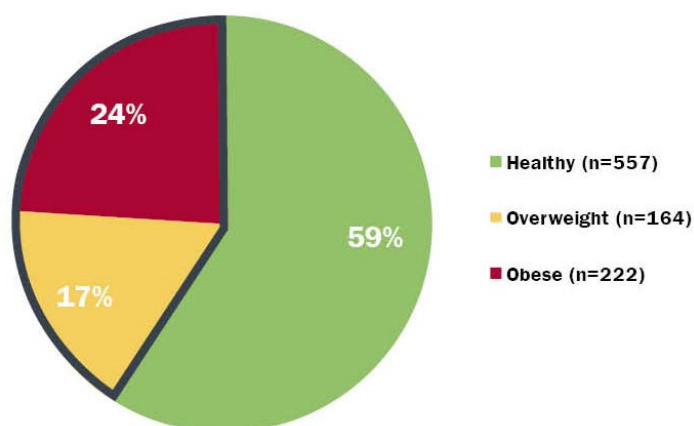


2008-09 K-12 Students' Performance at Healthy Fitness Zone on Overall Fitnessgram for Caddo Parish

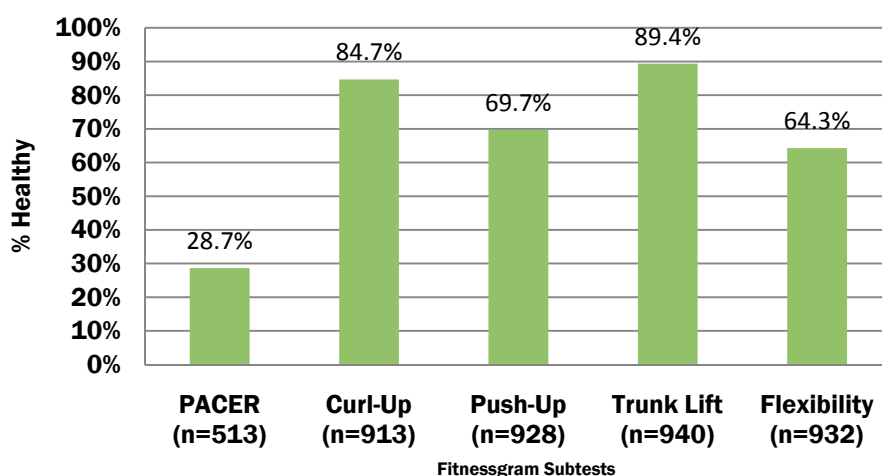


DeSoto Parish

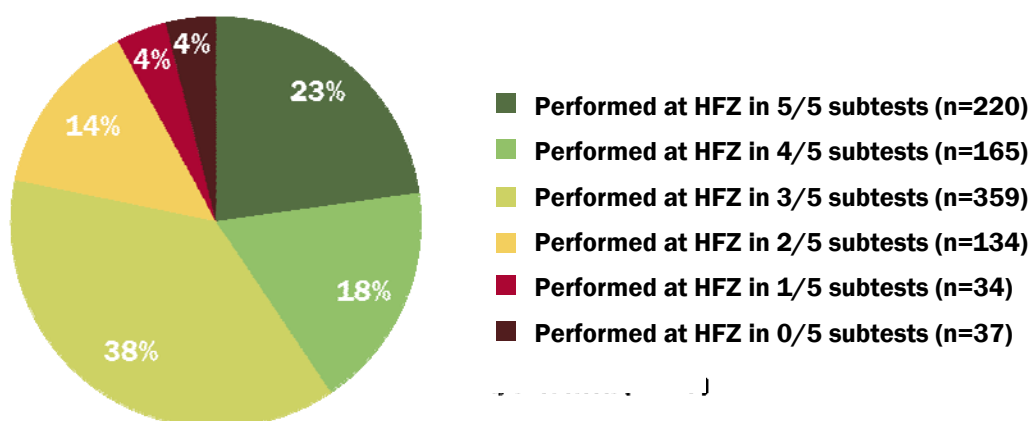
2008-09: Overall BMI Status for K-12 Students in DeSoto Parish



2008-09 Fitnessgram Healthy Fitness Zone Rates by Sub-test for K-12 Students in DeSoto Parish

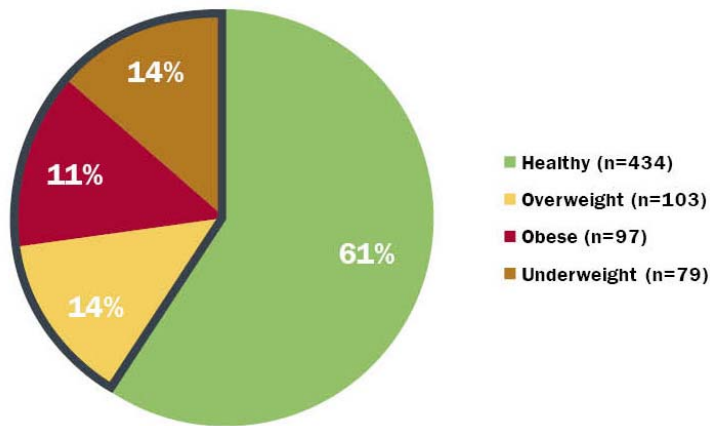


2008-09 K-12 Students' Performance at Healthy Fitness Zone on Overall Fitnessgram for DeSoto Parish

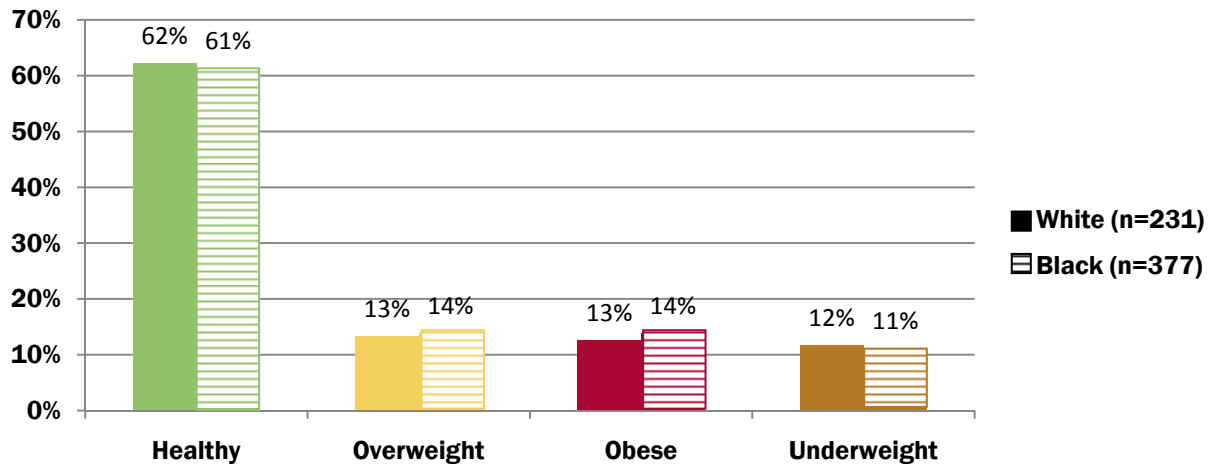


Lafayette Parish

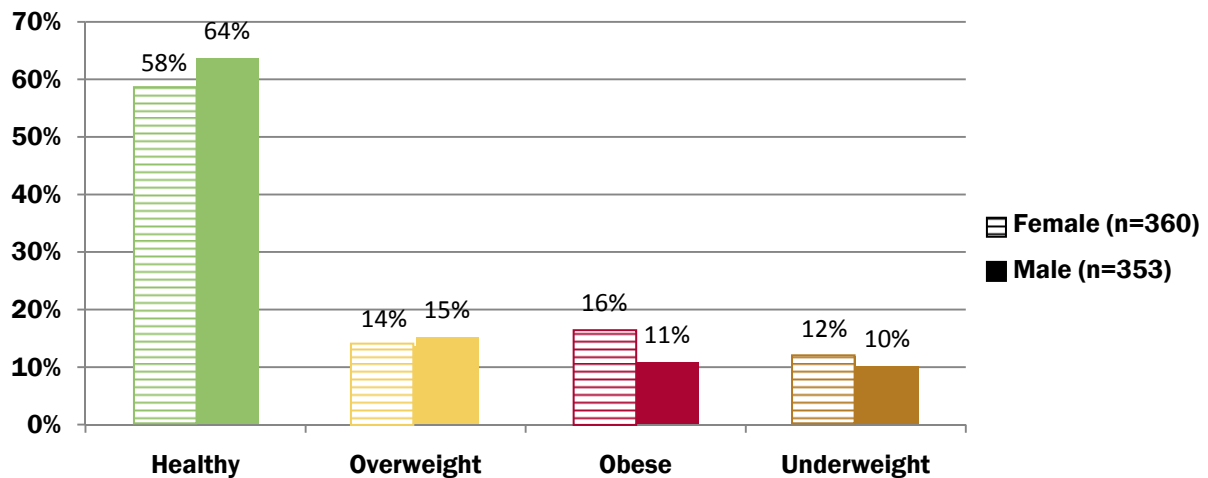
2008-09: Overall BMI Status for LA 4 Preschool Students in Lafayette Parish



2008-09 BMI Status by Race/Ethnicity for LA 4 Preschool Students in Lafayette Parish

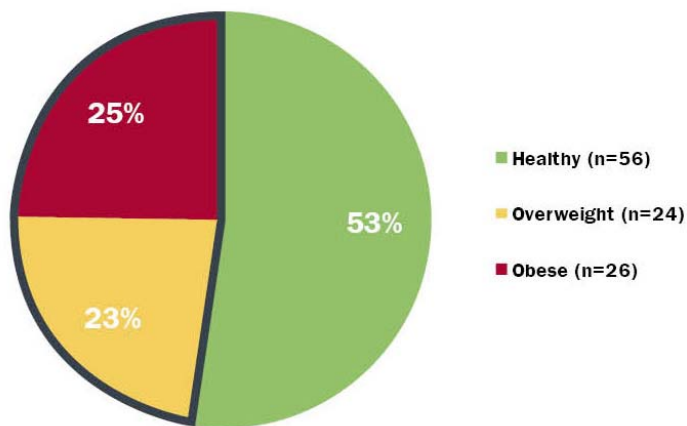


2008-09 BMI Status by Gender for LA 4 Preschool Students in Lafayette Parish



Lincoln Parish

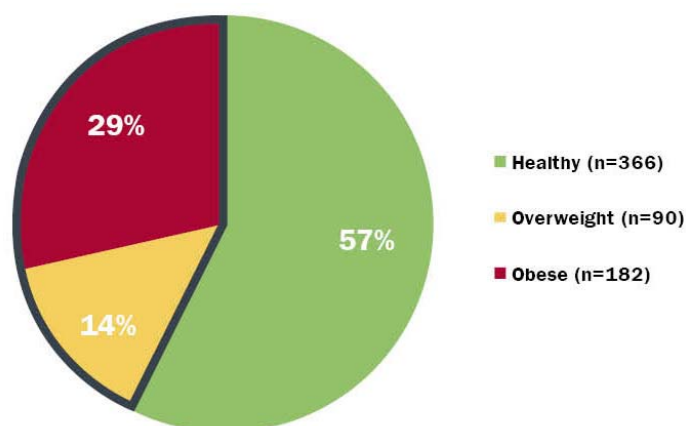
2008-09: Overall BMI Status for K-12 Students in Caddo Parish



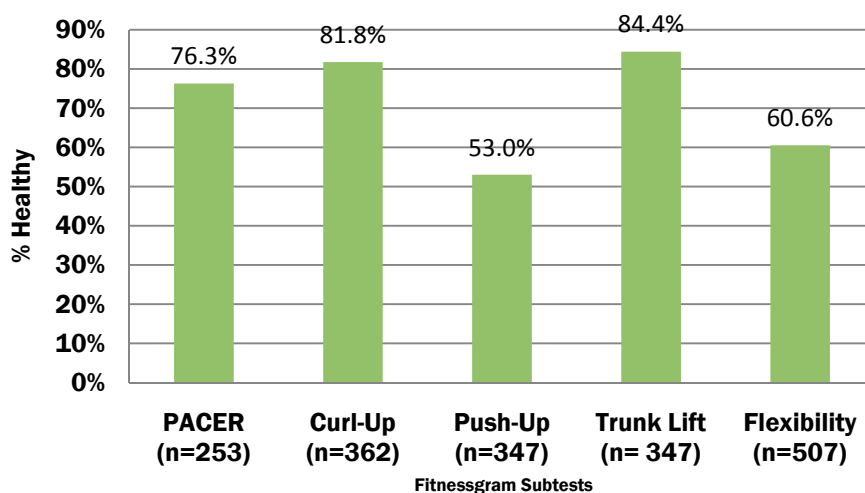
Fitnessgram Assessment data was not collected in Lincoln Parish Schools for 2008-09. Only BMI data was collected and reported.

Natchitoches Parish

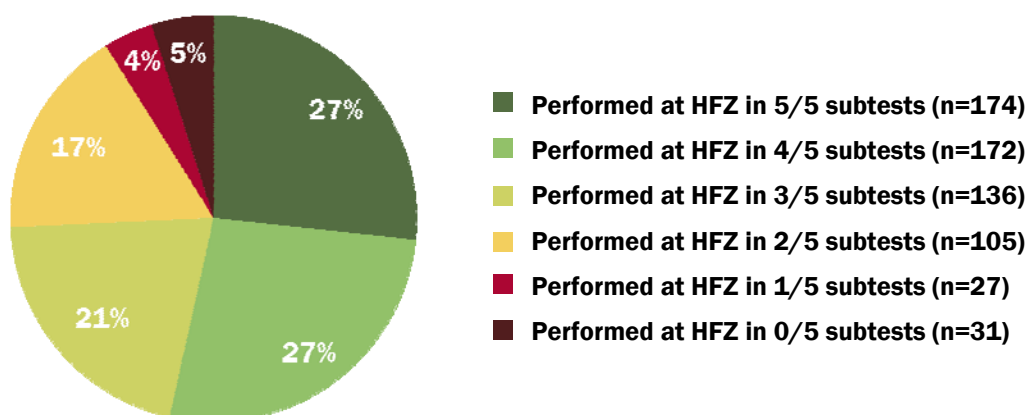
2008-09: Overall BMI Status for K-12 Students in Natchitoches Parish



2008-09 Fitnessgram Healthy Fitness Zone Rates by Sub-test for K-12 Students in Natchitoches Parish

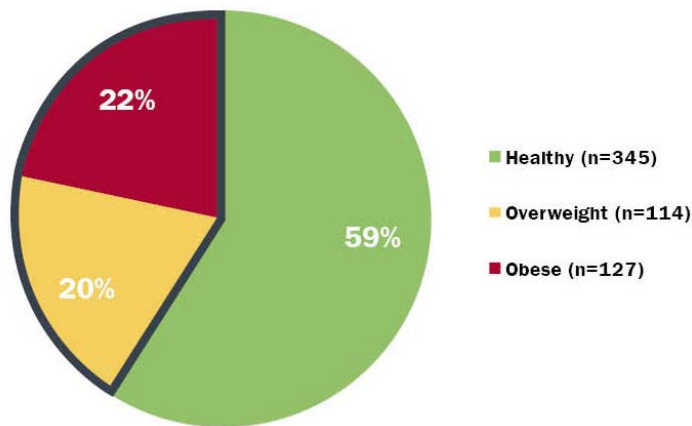


2008-09 K-12 Students' Performance at Healthy Fitness Zone on Overall Fitnessgram for Natchitoches Parish

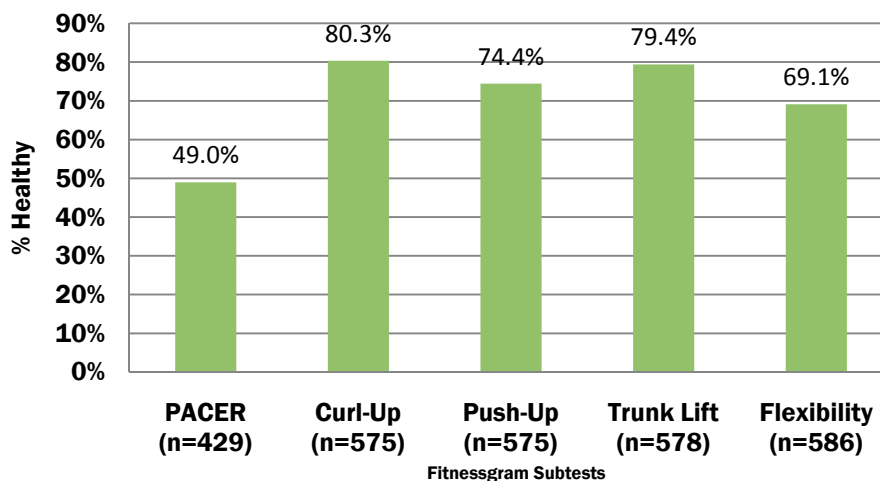


Sabine Parish

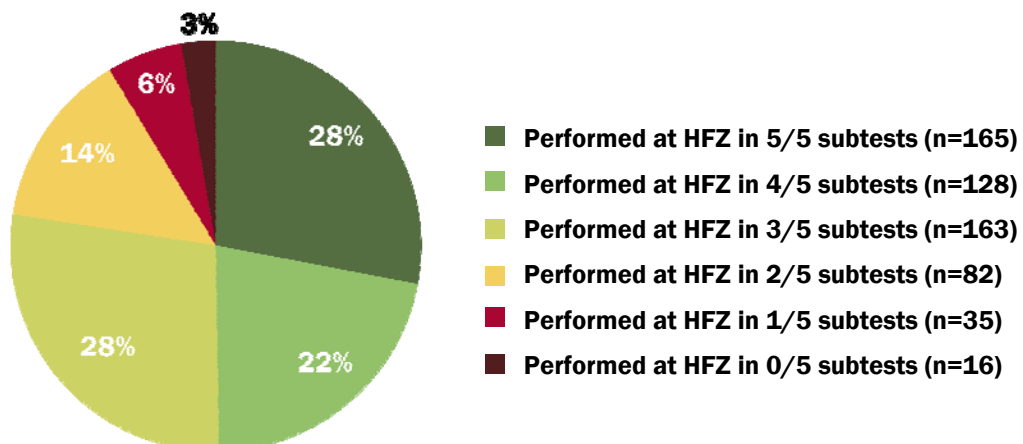
2008-09: Overall BMI Status for K-12 Students in Sabine Parish



2008-09 Fitnessgram Healthy Fitness Zone Rates by Sub-test for K-12 Students in Sabine Parish

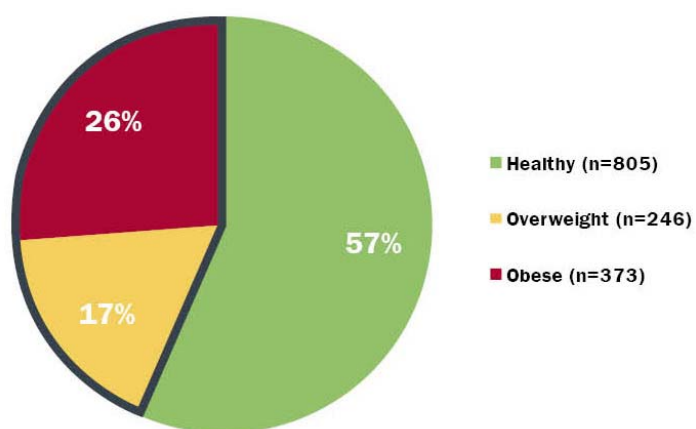


2008-09 K-12 Students' Performance at Healthy Fitness Zone on Overall Fitnessgram for Sabine Parish

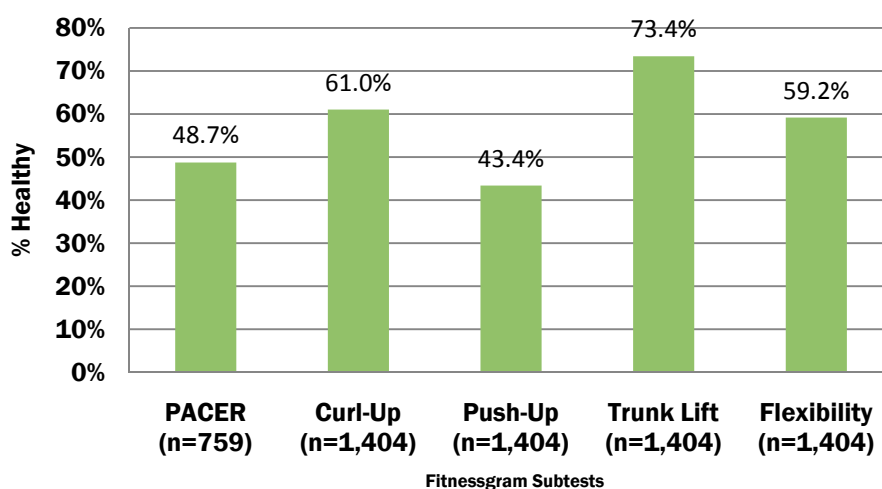


West Feliciana Parish

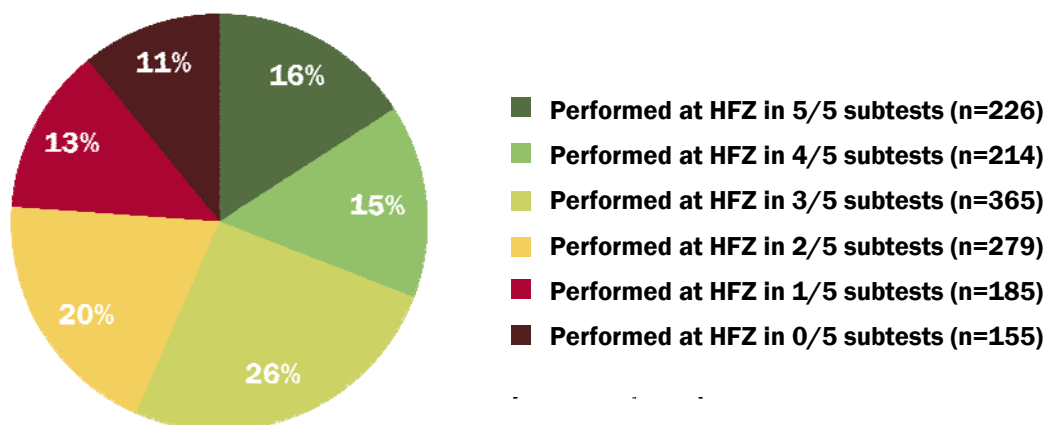
2008-09: Overall BMI Status for K-12 Students in West Feliciana Parish



2008-09 Fitnessgram Healthy Fitness Zone Rates by Sub-test for K-12 Students in West Feliciana Parish



2008-09 K-12 Students' Performance at Healthy Fitness Zone on Overall Fitnessgram for West Feliciana Parishes



Appendix B: Glossary

BMI: Body mass index (BMI) is a practical measure used to determine overweight and obesity. BMI is a measure of weight in relation to height that is used to determine weight status. While BMI is an accepted screening tool for the initial assessment of body fat in children and adolescents, it is not a diagnostic measure because BMI is not a direct measure of body fat.

Defining Overweight and Obesity in Children:

After BMI is calculated for children and teens, the BMI number is plotted on the CDC BMI-for-age growth charts (for either girls or boys) to obtain a percentile ranking. Percentiles are the most commonly used indicator to assess the size and growth patterns of individual children in the United States. BMI-for-age weight status categories and the corresponding percentiles are shown in the following table*.

| Weight Status Category | Percentile Range |
|------------------------|---|
| Underweight | Less than the 5th percentile |
| Healthy weight | 5th percentile to less than the 85th percentile |
| Overweight | 85th to less than the 95th percentile |
| Obese | Equal to or greater than the 95th percentile |

*These definitions are based on the 2000 CDC Growth Charts for the United States and expert committee.

Fitnessgram **Healthy Fitness Zones** (HFZ) are research-based standards for aerobic capacity; body composition; and muscular strength, endurance, and flexibility. These standards indicate levels of fitness necessary for good health. The beginning of the HFZ represents a minimum level of fitness necessary to have acceptable health. These standards reflect reasonable levels of fitness that can be attained by most children that participate regularly in various types of physical activity. Please refer to appendix C to learn more about HFZ standards for each of Fitnessgram sub-tests.

Appendix C: Correlation Analysis of Participating K-12 Student BMI Status to Performance within HFZ on Fitnessgram Subtests

| PACER | | Outside HFZ | Inside HFZ |
|-------------------------|-------------------|--------------------|-------------------|
| | BMI Result | | |
| | Healthy | 49% | 51% |
| | Overweight | 24% | 76% |
| | Obese | 24.5% | 75.5% |
| Curl Up | BMI Result | | |
| | Healthy | 16.3% | 83.7% |
| | Overweight | 24.1% | 75.9% |
| | Obese | 33.3% | 66.7% |
| Push Up | BMI Result | | |
| | Healthy | 33% | 67% |
| | Overweight | 43.3% | 56.7% |
| | Obese | 61.9% | 38.1% |
| Trunk Lift | BMI Result | | |
| | Healthy | 9.7% | 90.3% |
| | Overweight | 10.1% | 89.9% |
| | Obese | 13.7% | 86.3% |
| Shoulder Stretch | BMI Result | | |
| | Healthy | 24.3% | 75.7% |
| | Overweight | 29.9% | 70.1% |
| | Obese | 42.1% | 57.9% |

Appendix D: Physical Fitness Assessment Survey (PFATS)

PFATS Survey Questions

1. Are any schools in your district currently using a physical fitness assessment tool?
2. If yes, how many schools in your district are currently using a physical fitness assessment tool?
3. If yes, in which grades are physical fitness assessment tools completed?
4. Which physical fitness assessment tool did you use for 2008-09?
5. Did your district and/or schools use your physical fitness assessment results to adjust the physical education curriculum for 2008-09?
6. If yes, please give us an example of how your district modified its curriculum to meet your district's specific needs?
7. If you are not currently using a physical fitness assessment tool, why not?
8. How satisfied are you with your current physical fitness assessment tool?
9. Would you consider implementing the Fitnessgram as your physical fitness assessment tool?
10. Are you interested in learning about implementing the Fitnessgram in your district through the 2009 Act 256, which encourages districts to implement the Fitnessgram?
11. Please give us the following demographic information:
 - District:
 - Physical Education Supervisor Name:
 - Physical Education Supervisor Title:

Appendix E: Geographic Information System Maps

Louisiana Map Illustrating Levels of Poverty by Parish

Percent of Population in Poverty in Louisiana Parishes, 2005

