TEXAS MEDICAL ASSOCIATION
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Texas Pediatric Society
The Texas Chapter of the American Academy of Pediatrics

tafp.org
TEXAS ACADEMY OF FAMILY PHYSICIANS

TEXAS PUBLIC HEALTH COALITION

Senate Education Committee
Senate Bill 226 by Senator Jane Nelson
March 31, 2011
Presented by: Texas Medical Association, Texas Pediatric Society, Texas Academy of Family Physicians, and the Texas Public Health Coalition

Madame Chair Shapiro and members of the Senate Education Committee, my name is Dr. Stephen Pont. I am a pediatrician in Austin at Dell Children's Medical Center where I serve as the Medical Director of the Texas Center for the Prevention and Treatment of Childhood Obesity. I am an Assistant Professor of Pediatrics with UT Southwestern in Austin and I serve as the Medical Director for Children's/Austin Independent School District (AISD) Student Health Services. I am here today on behalf of the Texas Medical Association, the Texas Pediatric Society, and the Texas Academy of Family Physicians which represents more than 48,000 physicians and medical students in the state along with the thousands of public health advocates that compose the Texas Public Health Coalition. We believe that promoting physical activity on school campuses is a key to preventing obesity among our Texas children and are in full support of SB 226 by Senator Jane Nelson.

The state of Texas is suffering from an obesity epidemic, which is most glaring among our youth. Obesity usually begins in childhood. Obese children have an 80-percent chance of staying obese their entire lives. The average lifetime cost of obesity is more than half a million dollars for an obese child who remains obese throughout adulthood. **In Texas, the numbers are staggering. Forty percent of children are either overweight or obese.**

A survey conducted by the Cleveland Clinic revealed that most Americans believe their health is good. Thirty percent of those surveyed gave themselves an "A" on personal health while most of their doctors gave them a "C" or lower. Although a child might appear to be healthy, his or her condition can be determined only by measuring various aspects of the child's physical condition.

Fitnessgram, a physical education assessment and reporting program required under current law for children in grades 3 through 12, measures a child's aerobic capacity, muscular strength, muscular endurance, flexibility and body composition.

Senate Bill 226 seeks to enhance this data by requiring school districts to provide the results of individual student performance **without** identifiers such as a student's name, social security number or date of birth. The data is currently reported in aggregate form.

Research undeniably reveals a direct correlation between physical fitness and academic achievement. In Texas we've largely had to rely on national data to make that case. In fact, in July of 2010, the U.S. Department of Health and Human Services through the Centers for Disease Control released "The Association Between School-Based Physical Activity, Including Physical Education, and Academic Performance" which confirms what our mothers and teachers always knew: improving the quantity and quality of PE will improve the education and health status of students. Allowing Fitnessgram data to be reported in a non-identifiable, individual format would allow Texas to begin examining our own data.

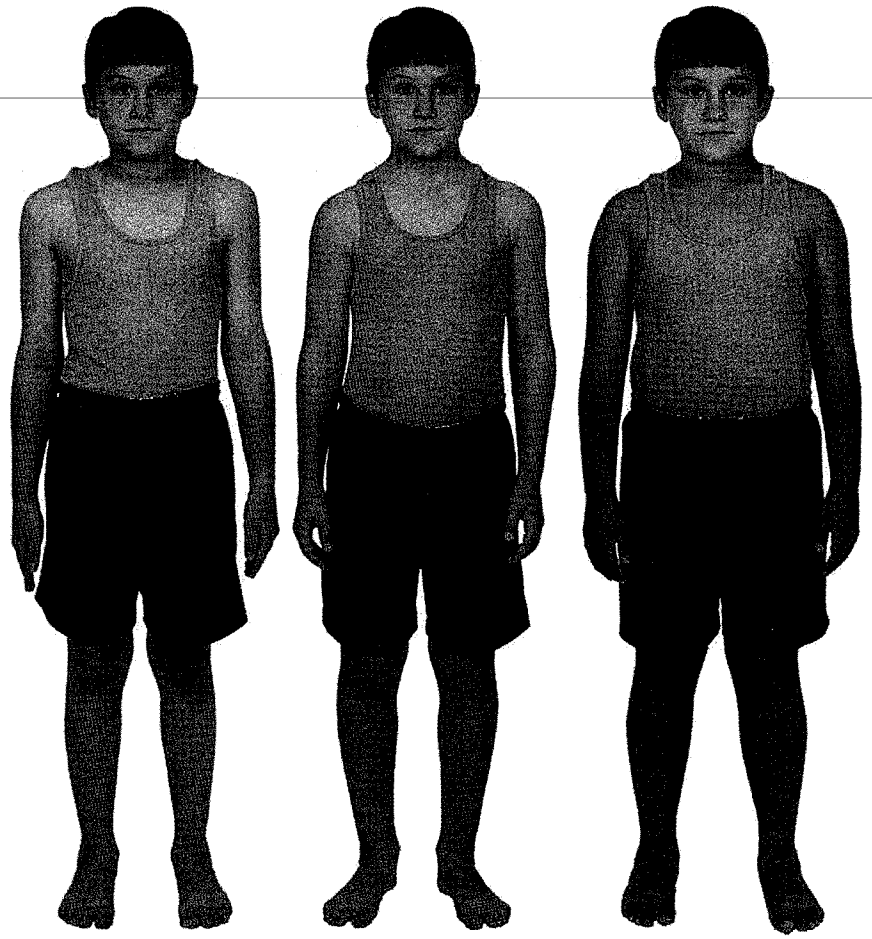
For example, administrators and teachers from a low-academically performing school could compare/contrast their physical activity programs with programs from higher-performing schools. Just as school administrators can look at TAKS results, pinpoint low scores and identify where additional resources should be allocated, Fitnessgram scores can provide similar guidance. Allowing the Fitnessgram data to be reported as outlined in SB 226 will only enhance the ability of parents and communities across the state to begin combatting the current crisis which is sure to grow as state funding resources for obesity prevention programs wane.

In 2007, AISD and Children's/AISD Student Health Services partnered with the Children's Optimal Health (COH) collaborative to raise community awareness about the child obesity epidemic. You'll note that I've distributed copies of a report, compiled by the COH that pinpoints AISD campuses, highlights the prevalence of obese children and then compares those maps with the availability of fresh fruits and vegetables. This data has been invaluable to both parents and the community beginning an important dialogue. In fact, I spent Tuesday night at a community forum where parents, armed with similar information, are making informed decisions about community-level obesity interventions.

Texas physicians see the health effects of childhood obesity every day, including 9 and 11 year olds with newly diagnosed type II diabetes and 8 year olds with high blood pressure — all a result of their obesity. Ultimately, it is more expensive to treat an obese adult than provide primary prevention for children. A 2003 study in the *Obesity* research journal concluded that $14 a year invested in student nutrition and physical activity programs can save more than $15,000 in medical costs and over $25,000 in loss-of-productivity costs associated with adult obesity. There is no better time than now to make decisions that will improve both the academic future of our students as well as the physical and fiscal health of our state.

The budget picture of late has been abundantly clear; Texas can no longer afford to ignore the ramifications of a growing, obese childhood population. We respectfully urge you to support the enhancement of Fitnessgram data outlined in SB 226.

Three boys with BMI values from normal weight to obese



55th%ile **75th%ile** **95th%ile**

PEDIATRICS Volume 124, Supplement 1, Sept. 2009

dell children's medical center of central texas
A member of the Seton Family of Hospitals

Texas Center for the Prevention and Treatment of Childhood Obesity

dellchildrens.net/HealthyLiving
(512) 324-9999 ext.86437

September, 2010

children's optimal health

Child Obesity

By Neighborhood and Middle School

Where are the Middle School students who are at risk for obesity related health issues?

Contents

Child Obesity Series
Volume 2

Project Overview

In 2007, Austin Independent School District (AISD) and AISD Student Health Services approached the newly formed Children's Optimal Health (COH) collaborative to assist them in raising community awareness about the child obesity epidemic. Knowing the obesity epidemic was not something the district could resolve on its own, AISD sought to reach out to other community partners. The COH Board, understanding the cross cutting impact that obesity has on health, education, and the overall well-being of a child, decided to adopt the obesity project as one of its first board projects and feature it in a community summit. In November 2009, COH presented the *Child Obesity by Neighborhood and Middle School: Volume 1* at Community Summit V. Using 2007 – 2008 school year data helped participants visualize the obesity epidemic within our community. The maps presented here in Volume 2 are the same series of maps used in Volume 1 however, this volume was created by using 2008 – 2009 school year data.

Background

Childhood obesity has fast become a global epidemic, with dramatic increases seen in developed as well as developing countries over the past three decades. In the United States, obesity is a major health problem for all communities, but disproportionately affects families of low income and minority populations. According to the FITNESSGRAM data from AISD for school year 2008-2009, the prevalence of obesity among white children grades 6-8 was 9% but increased to 23% for African American children and 25% for Hispanic children.

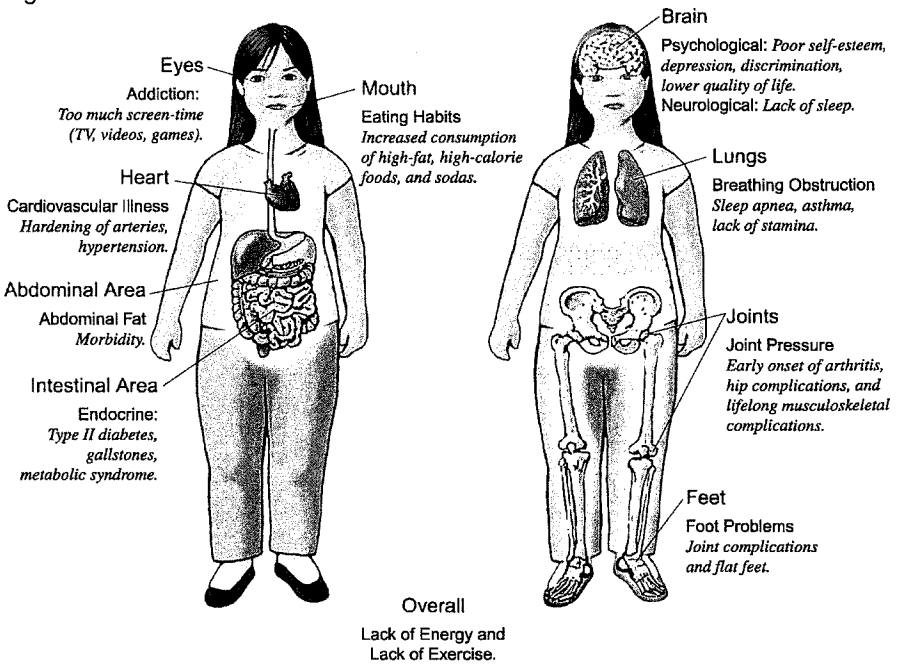
Obesity is defined as having a body mass index greater than or equal to the 95th percentile and is caused by too many calories taken in relative to those used. This imbalance can be caused by many physical, socioeconomic, environmental, and even cultural factors. Obesity can impact the quality of a child's life (level of ability to be active, bullying, self-esteem, depression, etc.) and, it can have or exacerbate a number of health conditions, including - cadiovascular illness, early onset arthritis, asthma, etc (See Figure 1). To help the community take action COH's goal with this mapping project is to raise awareness about the prevalence of childhood obesity in different areas of the county for a designated population - AISD middle school students.

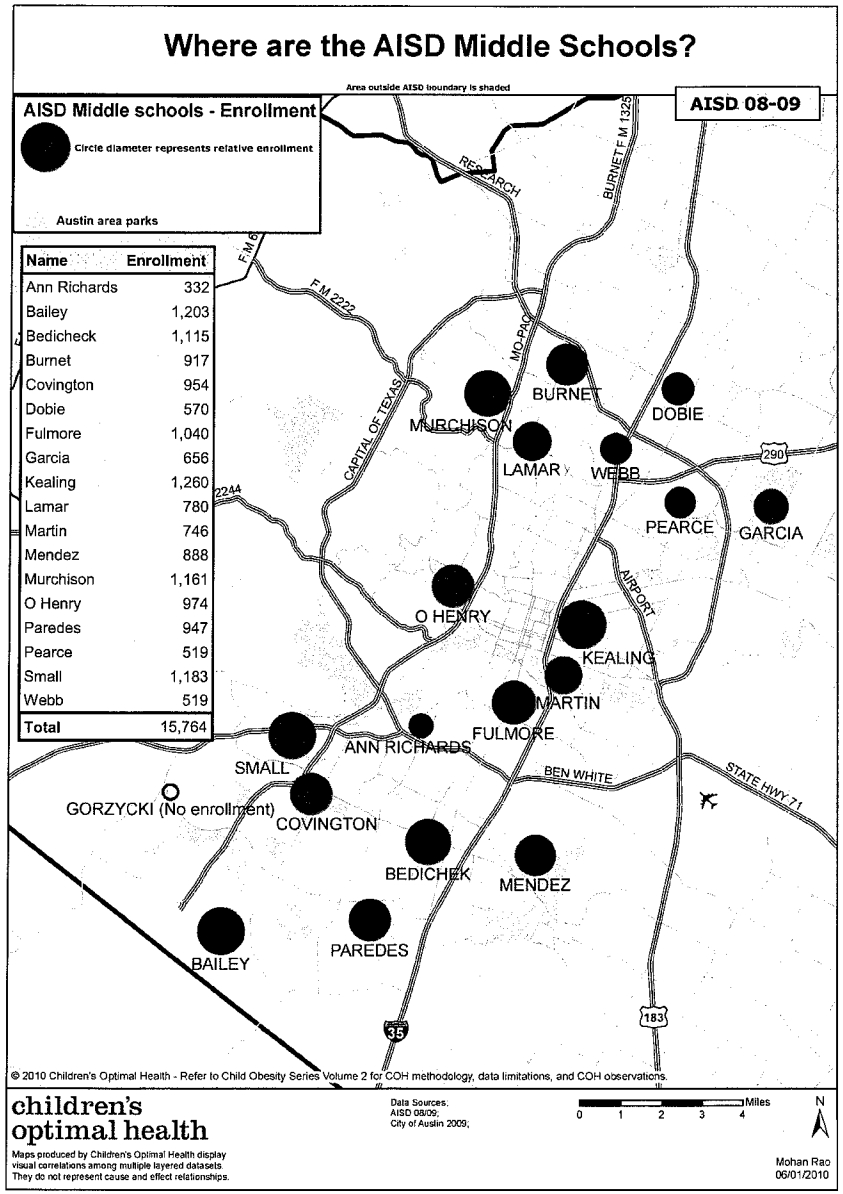
The maps presented here are Volume II of COH's obesity mapping project and are included because current research has identified a number of potentially modifiable community factors that are related to a child's level of physical activity and consumption of unhealthy foods. They include data represented at the school level and the student home neighborhood level. Within each location, maps are presented illustrating concentrations of obese students, level of cardiovascular fitness, patterns of economic disadvantage, proportions of ethnic/racial identification and crime statistics. In addition, selected neighborhoods are presented in closer detail where related neighborhood characteristics are displayed on the maps. These characteristics include parks, recreation facilities, grocery store outlets, fast food restaurants, hospitals and other health care facilities, and places of worship.

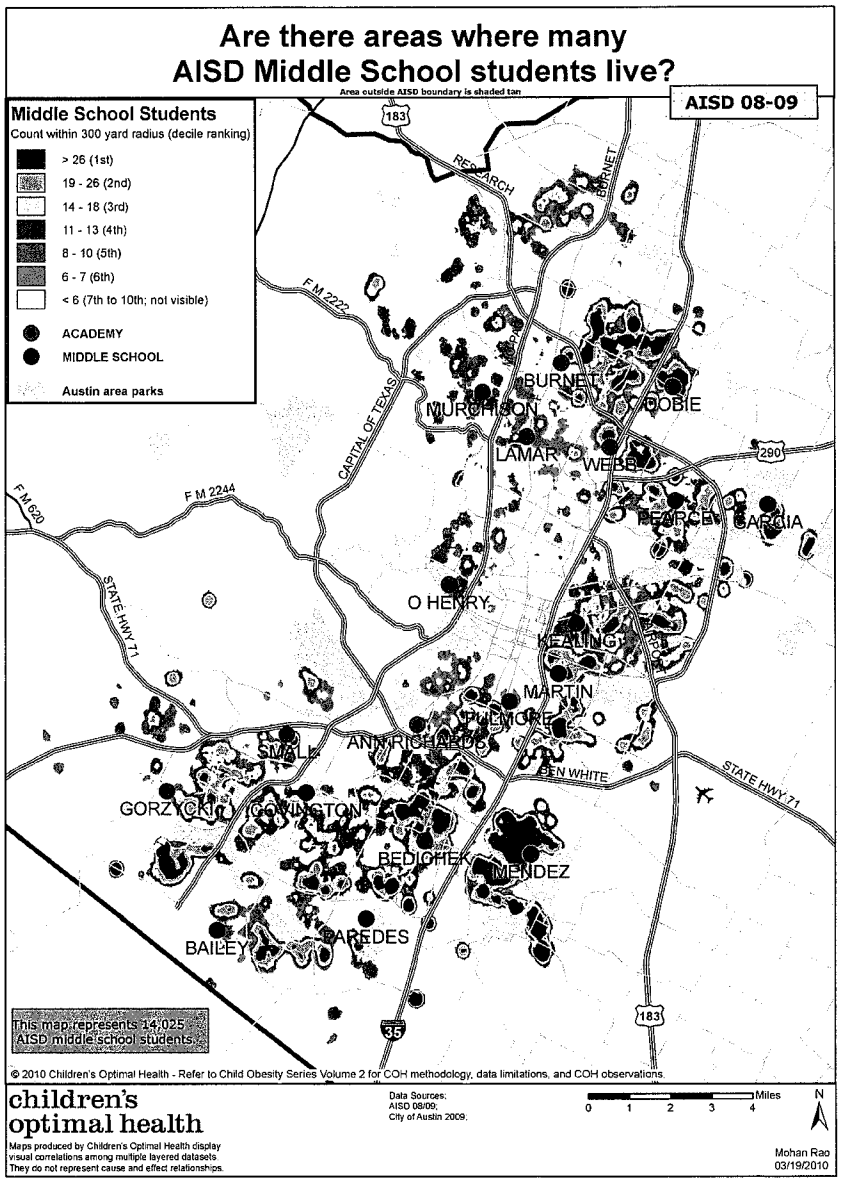
For maps that represent trends over time, it should be noted that the AISD data represents overall school trends not necessarily changes for the same children. Also, the number/percentage of children tested at each school varies by year.

To further inform this study, future COH maps include obesity-related data for AISD elementary and high school students..

Figure 1

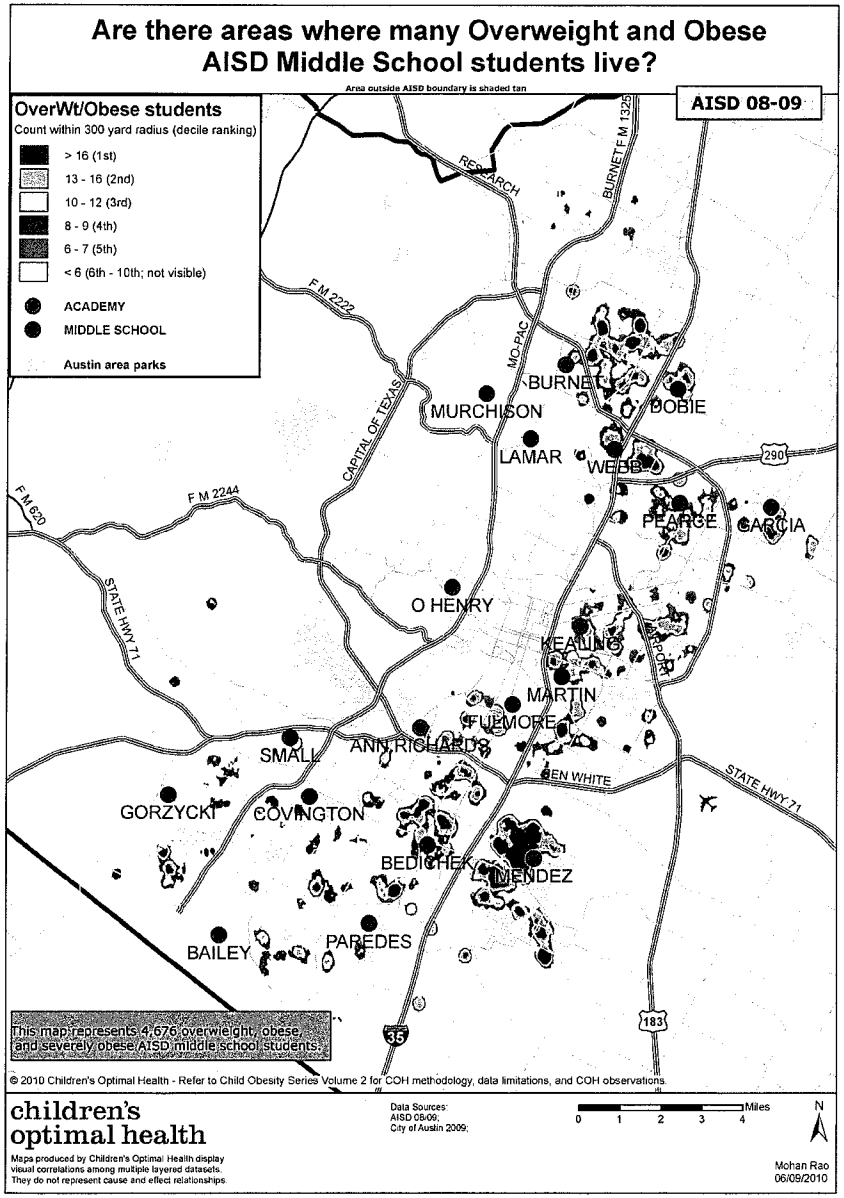




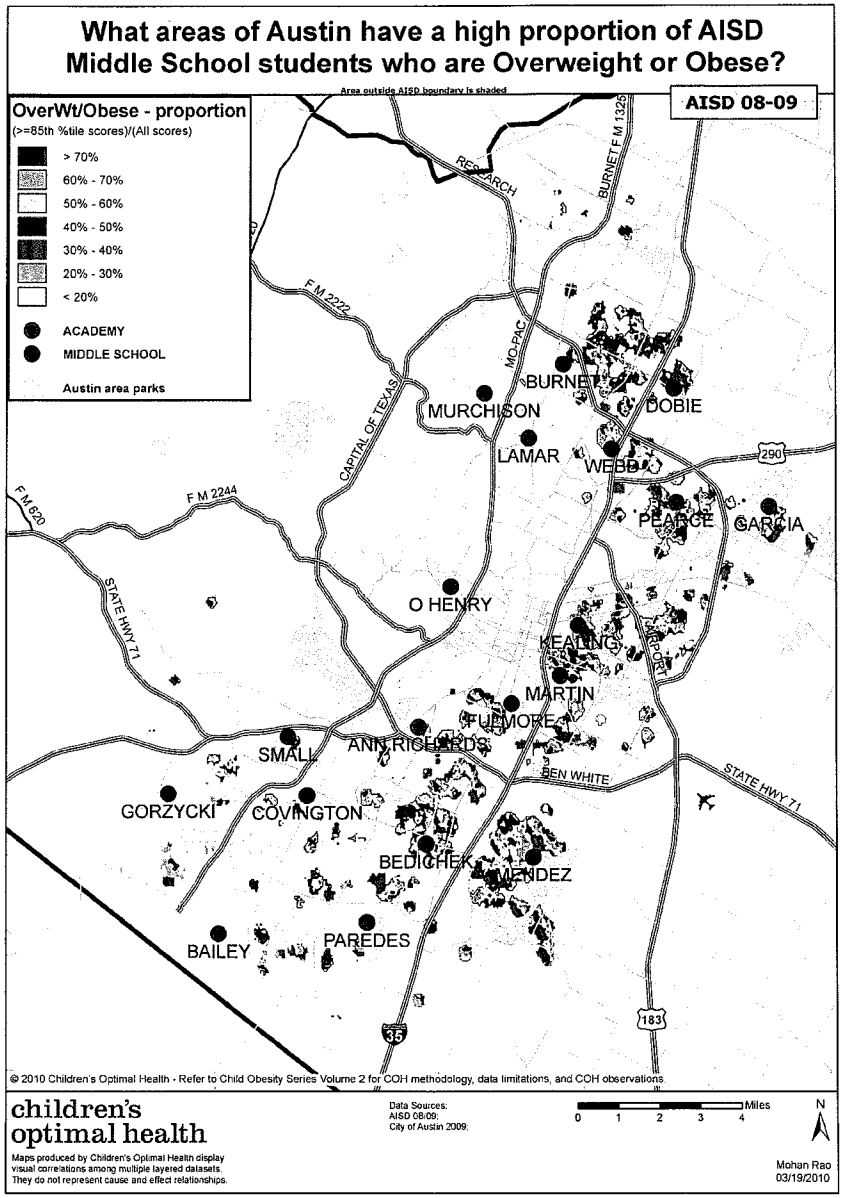


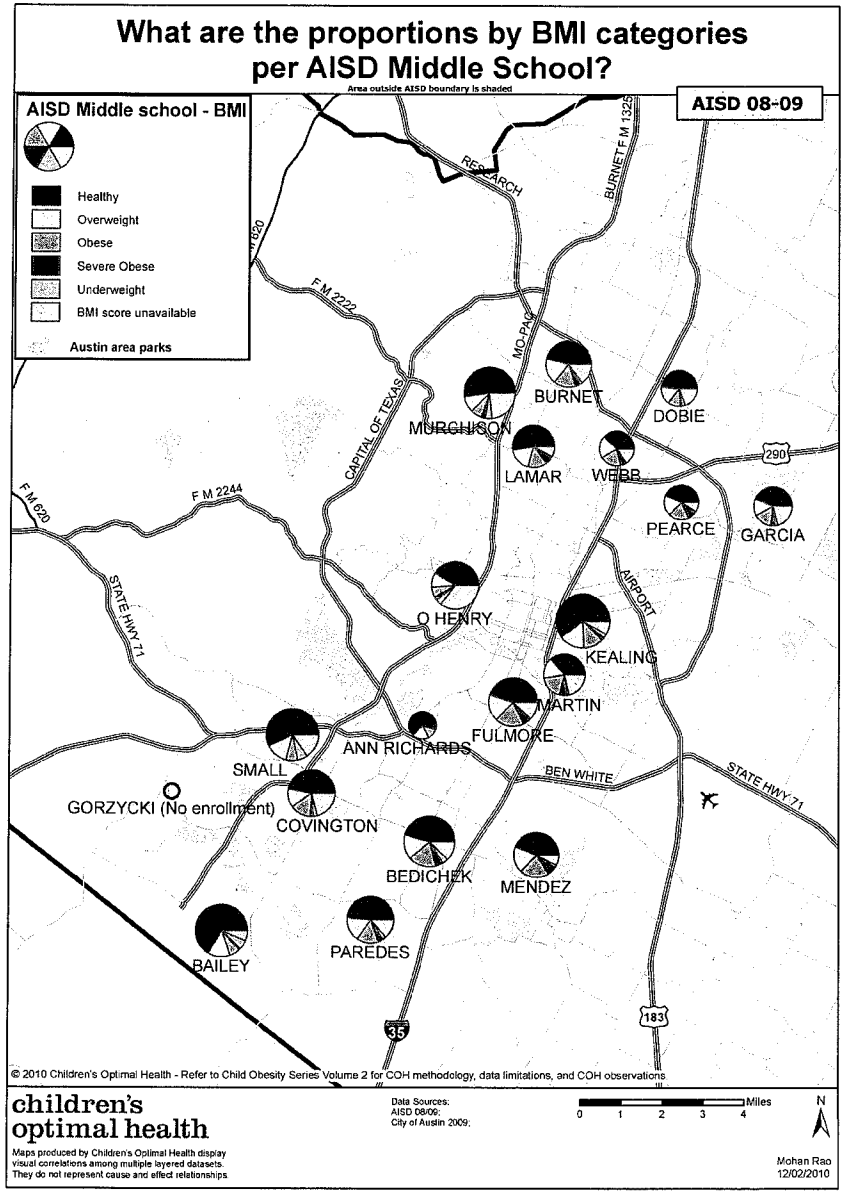
* Gorzycki Middle school was not open in school year 2008 - 2009.

Are there areas where many Overweight and Obese AISD Middle School students live?



What areas of Austin have a high proportion of AISD Middle School students who are Overweight or Obese?





Observations

These observations are based upon the Body Mass Index (BMI) scores recorded by the AISD Middle School's in school year (SY) 2008-09. Although many key findings can be derived from the maps, several are highlighted here:

1) The percentage of overweight and obese students varied widely by school, from 23.5% to 53.5%. The target percentage of overweight and obese students based upon a normal distribution would be 15% of the students.
2) Obesity rates by school vary widely, from 8.6% to 32.1%. The target percentage of obese students based upon a normal distribution would be 5% of the students.
3) Obesity affects students across the District as seen in the proportions of overweight/obese students throughout.
4) Obesity rates by student neighborhood of residence vary. Higher concentrations are found near I-35, north and south.

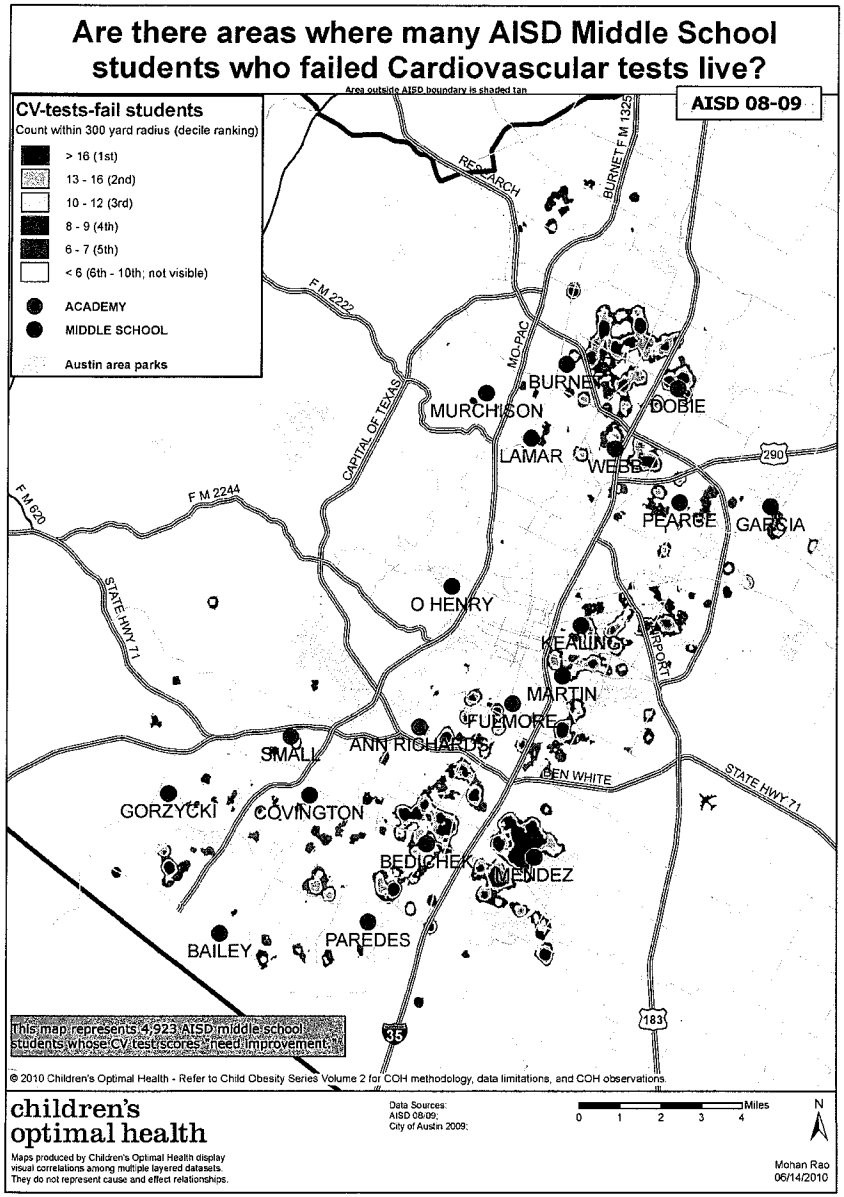
Obesity Rates by AISD Middle School

School	% of tested students who were obese	Change in % from SY07-08 to SY08-09	School	% of tested students who were obese	Change in % from SY07-08 to SY08-09
Ann Richards*	16.1%	▼ **11.2%**	Lamar	21.3%	▼ **1.7%**
Bailey	8.3%	▼ **3.2%**	Martin	31.2%	▲ **5.2%**
Bedicheck	26.0%	▲ **3.2%**	Mendez	30.0%	▲ **0.3%**
Burnet	22.5%	▼ **1.6%**	Murchison	12.6%	▲ **1.1%**
Covington	21.0%	▼ **3.1%**	O Henry	14.8%	▲ **0.6%**
Dobie	16.3%	▼ **1.3%**	Paredes	21.1%	▲ **1.5%**
Fulmore	27.2%	▲ **3.4%**	Pearce	28.1%	▲ **1.6%**
Garcia	23.7%	▲ **0.4%**	Small	9.8%	▲ **0.9%**
Kealing	15.1%	▼ **0.4%**	Webb	30.3%	▲ **1.1%**

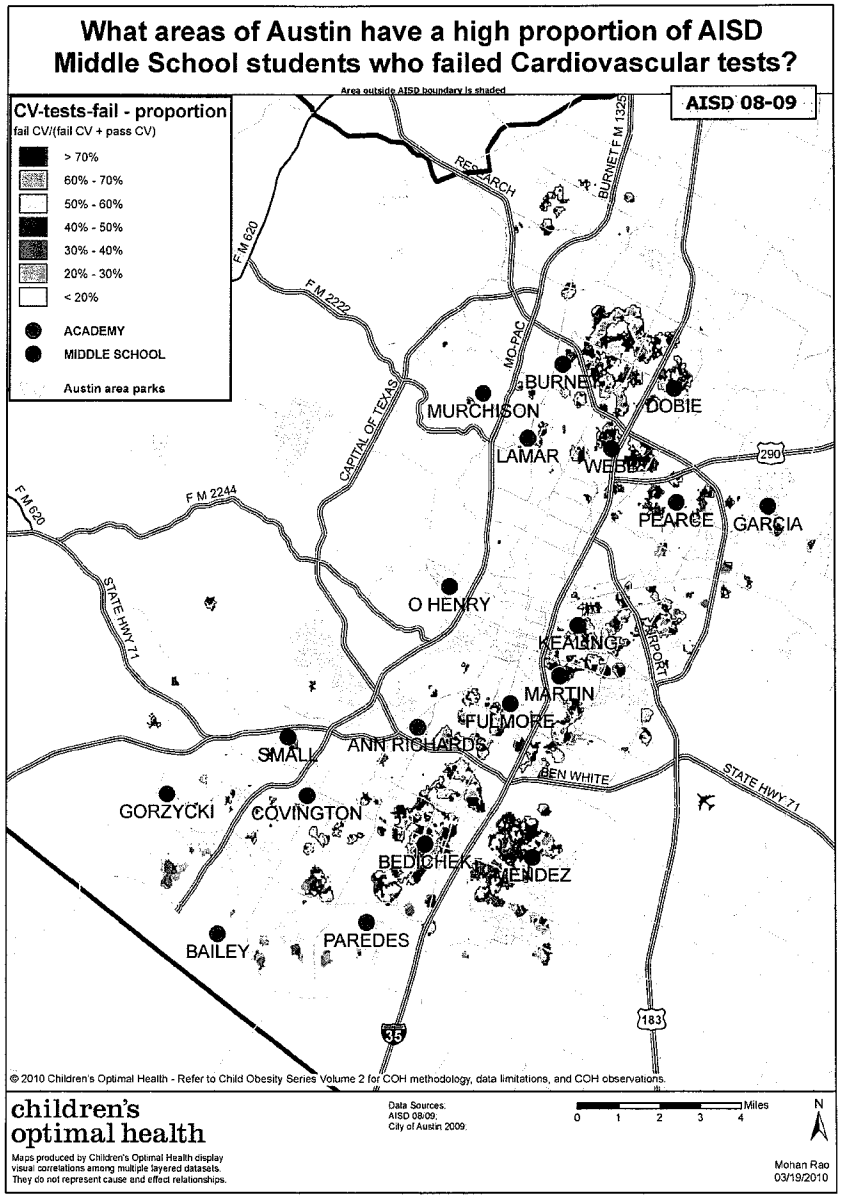
* Ann Richards Academy added a grade level in SY08-09 to enroll 6th, 7th, and 8th grade students.

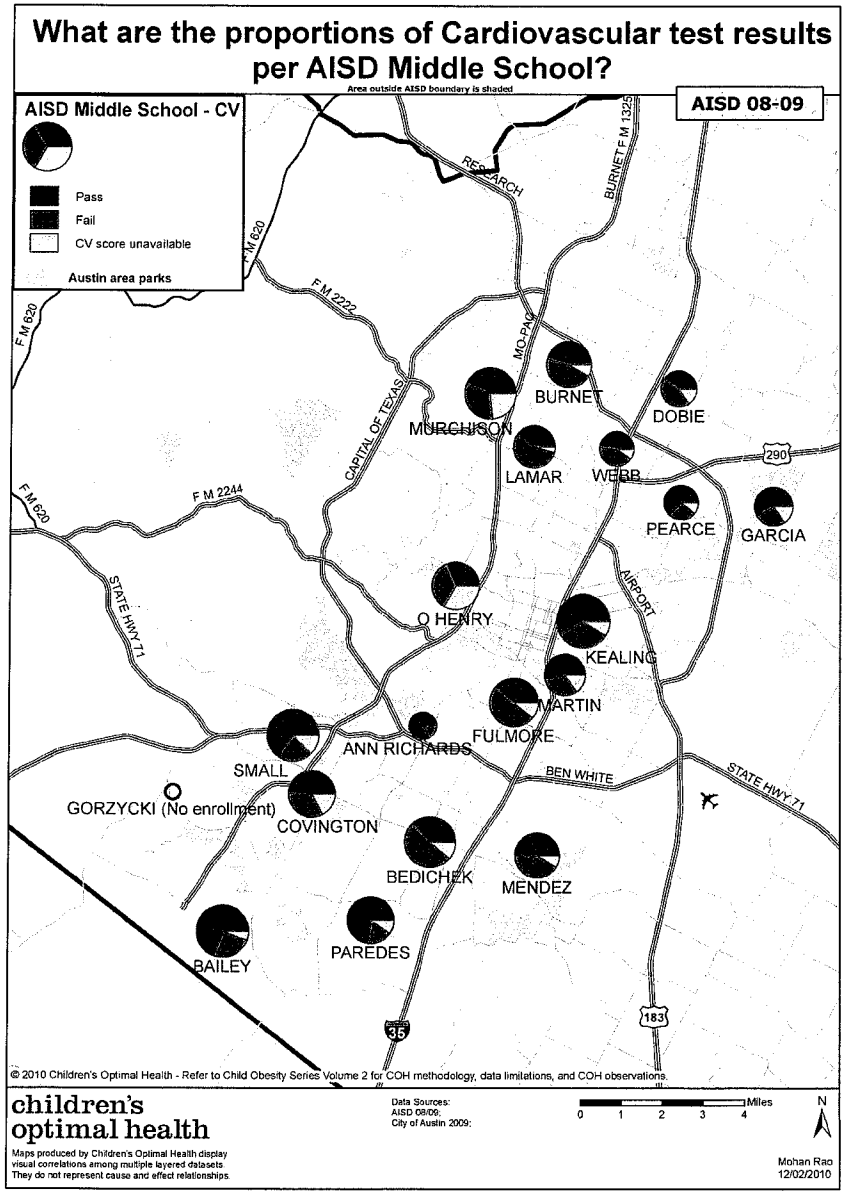
Note: The SY07-08 maps can be found in *Child Obesity: Volume 1* located on the web at www.childrensoptimalhealth.org.

Are there areas where many AISD Middle School students who failed Cardiovascular tests live?



What areas of Austin have a high proportion of AISD Middle School students who failed Cardiovascular tests?





Observations

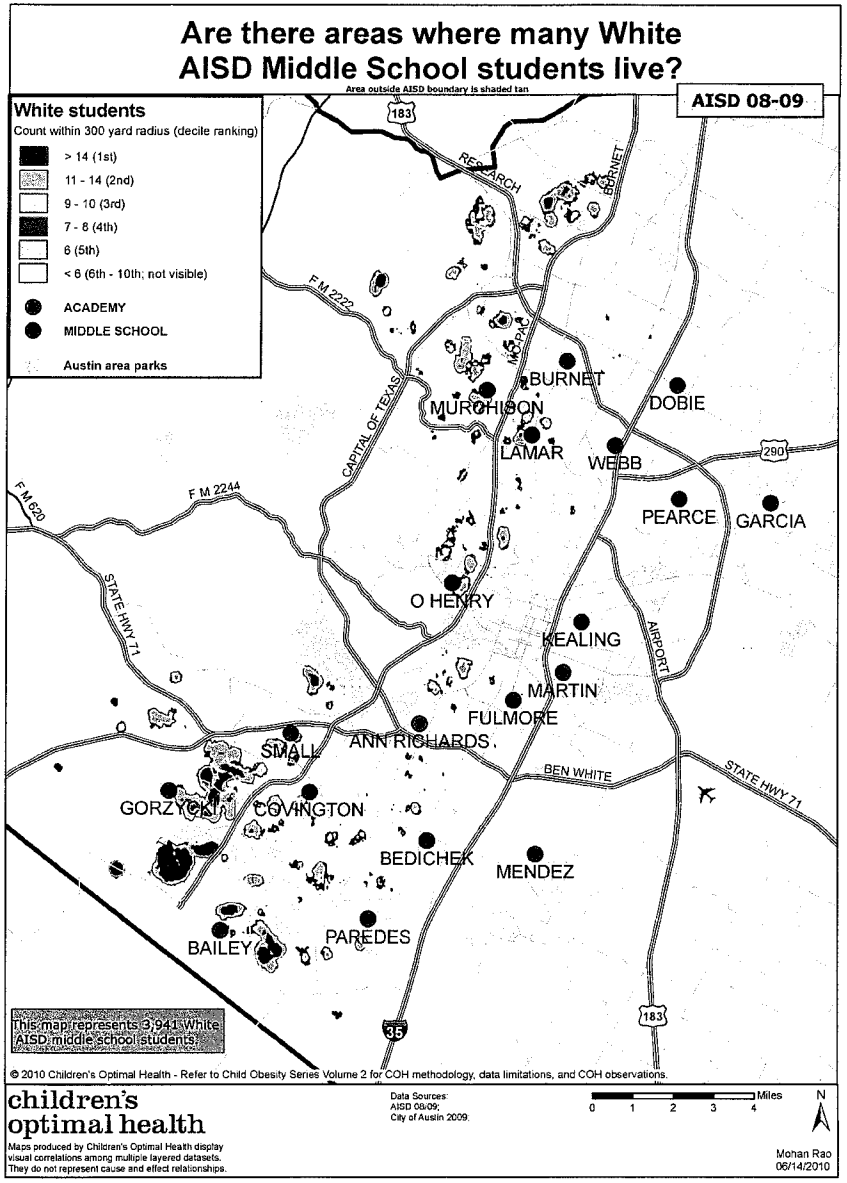
These observations are based upon the Cardiovascular (CV) scores recorded by the AISD Middle Schools in school year (SY) 2008-09. Although many key findings can be derived from the maps, several are highlighted here:

1) Neighborhoods with a large proportion of students with a high BMI correlate well, but not perfectly, with neighborhoods with a high proportion of students who did not pass the CV test.
2) Cardiovascular test failure rates by school vary widely, from 15.2% at Ann Richards to 57.8% at Lamar.
3) There is a lot more variability in cardiovascular test results from year to year than there is with BMI. An in depth look at the reason for this is needed.
4) Some reasons for the variability seen in CV test results include in and out migration at a school, changes in sporting equipment, new programmatic efforts, and the Physical Education schedule each school implements.

Cardiovascular Test Failure by AISD Middle School

School	% of students who failed the CV Test	Change in % from SY07-08 to 08-09	School	% of students who failed the CV Test	Change in % from SY07-08 to 08-09
Ann Richards	15.5%	▼ **5.5%**	Lamar	57.9%	▼ **2.6%**
Bailey	26.5%	▲ **22.0%**	Martin	38.7%	▲ **2.6%**
Bedicheck	58.3%	▼ **1.2%**	Mendez	45.7%	▼ **13.2%**
Burnet	50.7%	▼ **23.4%**	Murchison	43.0%	▼ **1.1%**
Covington	40.5%	▼ **5.9%**	O Henry	53.0%	▲ **28.7%**
Dobie	52.2%	▼ **21.2%**	Paredes	19.6%	▼ **7.8%**
Fulmore	56.5%	▼ **5.9%**	Pearce	29.6%	▲ **2.4%**
Garcia	31.6%	▼ **14.0%**	Small	26.2%	▲ **1.9%**
Kealing	36.6%	▲ **8.1%**	Webb	46.6%	▼ **9.5%**

Note: Percentage is calculated based upon the number of students who were tested.


Are there areas where many White AISD Middle School students live?
Area outside AISD boundary is shaded tan
AISD 08-09
White students
Count within 300 yard radius (decile ranking)
> 14 (1st)
11 - 14 (2nd)
9 - 10 (3rd)
7 - 8 (4th)
6 (5th)
< 6 (6th - 10th; not visible)
ACADEMY
MIDDLE SCHOOL
Austin area parks
183
RESEARCH
BURNET
F M 2222
MO-PAC
CAPITAL OF TEXAS
BURNET
MURCHISON
LAMAR
DOBIE
WEBB
290
F M 2244
F M 620
PEARCE
GARCIA
STATE HWY 71
O HENRY
AIRPORT
KEALING
MARTIN
FULMORE
SMALL
ANN RICHARDS
BEN WHITE
STATE HWY 71
GORZYCKI
COVINGTON
BEDICHEK
MENDEZ
BAILEY
PAREDES
35
183
This map represents 3,941 White AISD middle school students.
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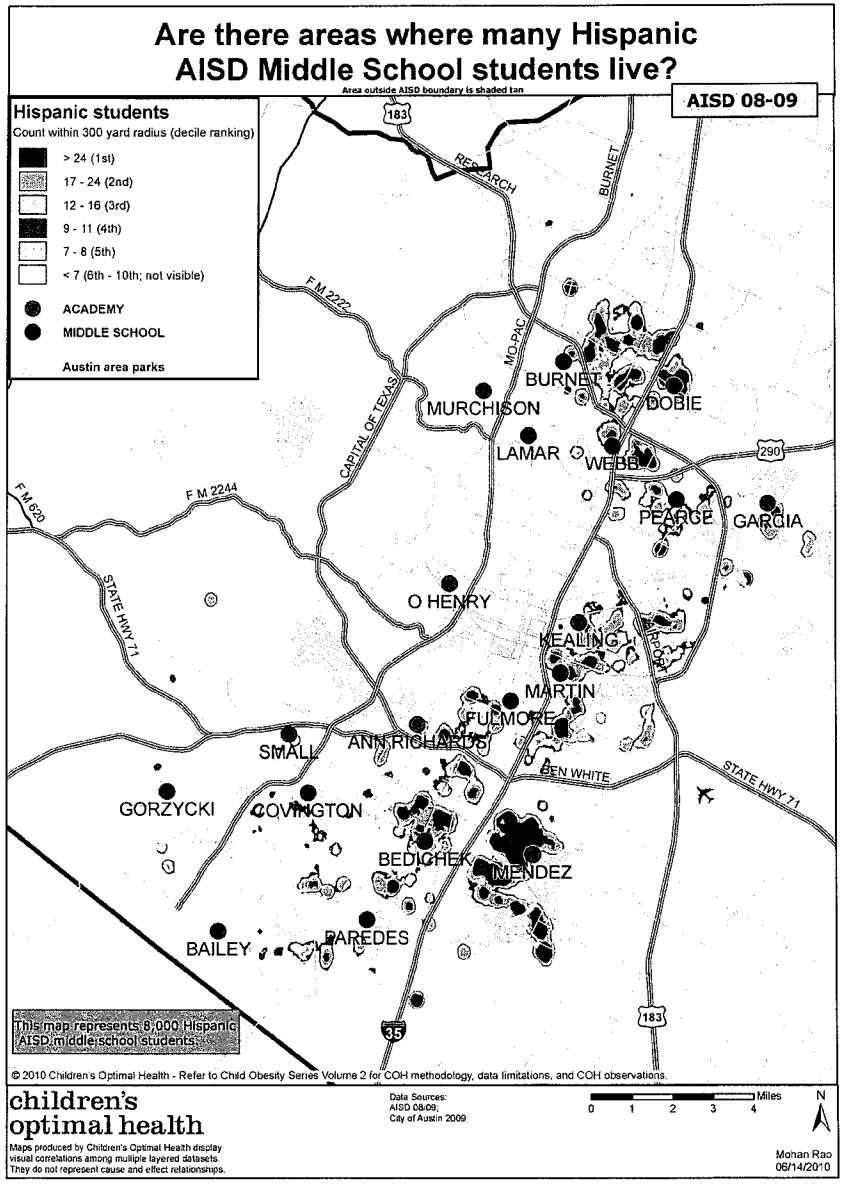
children's optimal health
Maps produced by Children's Optimal Health display visual correlations among multiple layered datasets. They do not represent cause and effect relationships.
Data Sources: AISD 08/09; City of Austin 2009.
Miles
0 1 2 3 4
N
Mohan Rao
06/14/2010


Are there areas where many Hispanic AISD Middle School students live?
Area outside AISD boundary is shaded tan
AISD 08-09
Hispanic students
Count within 300 yard radius (decile ranking)
> 24 (1st)
17 - 24 (2nd)
12 - 16 (3rd)
9 - 11 (4th)
7 - 8 (5th)
< 7 (6th - 10th; not visible)
ACADEMY
MIDDLE SCHOOL
Austin area parks
183
RESEARCH
BURNET
F M 2222
MO-PAC
CAPITAL OF TEXAS
BURNET
MURCHISON
LAMAR
DOBIE
WEBB
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KEALING
MARTIN
FULMORE
SMALL
ANN RICHARDS
BEN WHITE
STATE HWY 71
GORZYCKI
COVINGTON
BEDICHEK
MENDEZ
BAILEY
PAREDES
35
183
This map represents 8,000 Hispanic AISD middle school students.
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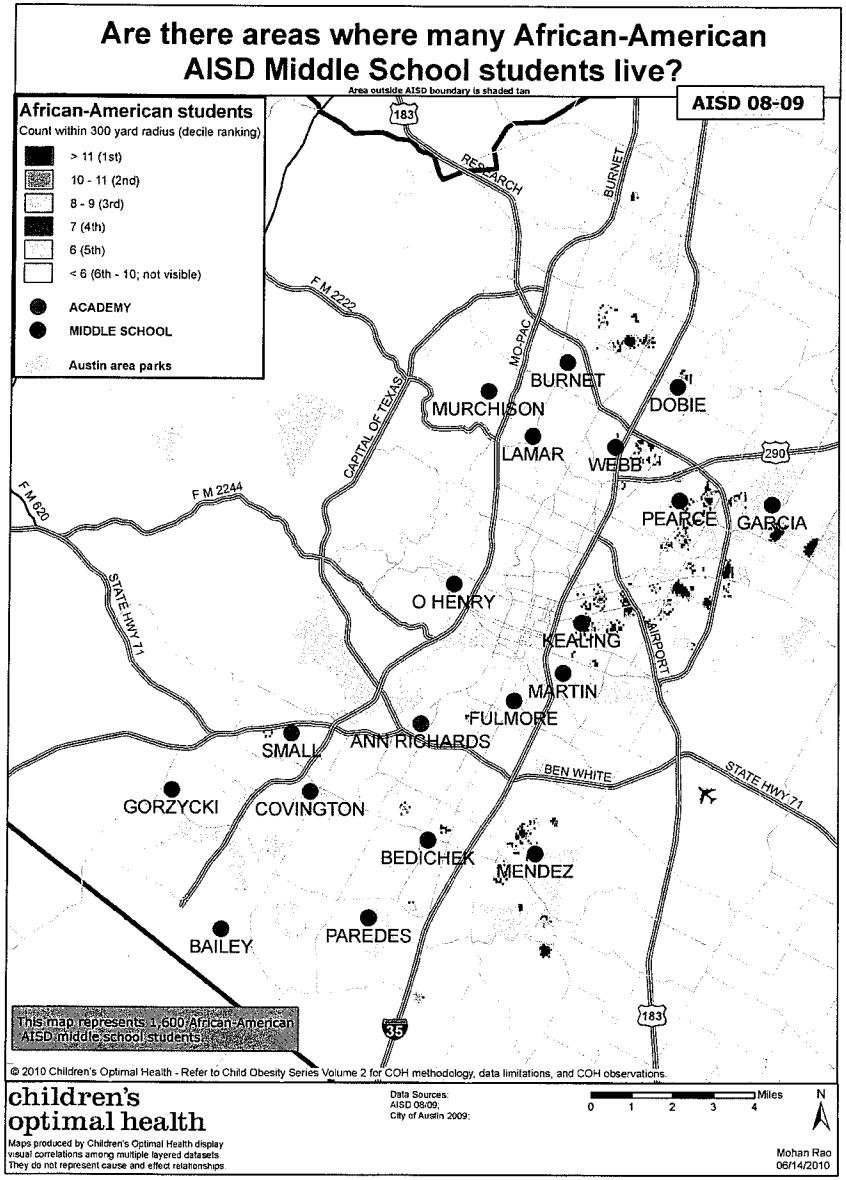
Miles
0 1 2 3 4
N
Mohan Rao
06/14/2010


Are there areas where many African-American AISD Middle School students live?
AISD 08-09
Area outside AISD boundary is shaded tan
African-American students
Count within 300 yard radius (decile ranking)
> 11 (1st)
10 - 11 (2nd)
8 - 9 (3rd)
7 (4th)
6 (5th)
< 6 (6th - 10; not visible)
ACADEMY
MIDDLE SCHOOL
Austin area parks
RESEARCH
BURNET
F M 2222
MO-PAC
CAPITAL OF TEXAS
MURCHISON
LAMAR
WEBB
DOBIE
290
F M 2244
F M 620
PEARCE
GARCIA
STATE HWY 71
O HENRY
KEALING
AIRPORT
MARTIN
FULMORE
SMALL
ANN RICHARDS
BEN WHITE
GORZYCKI
COVINGTON
BEDICHEK
MENDEZ
BAILEY
PAREDES
35
183
This map represents 1,600 African-American AISD middle school students
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children's optimal health
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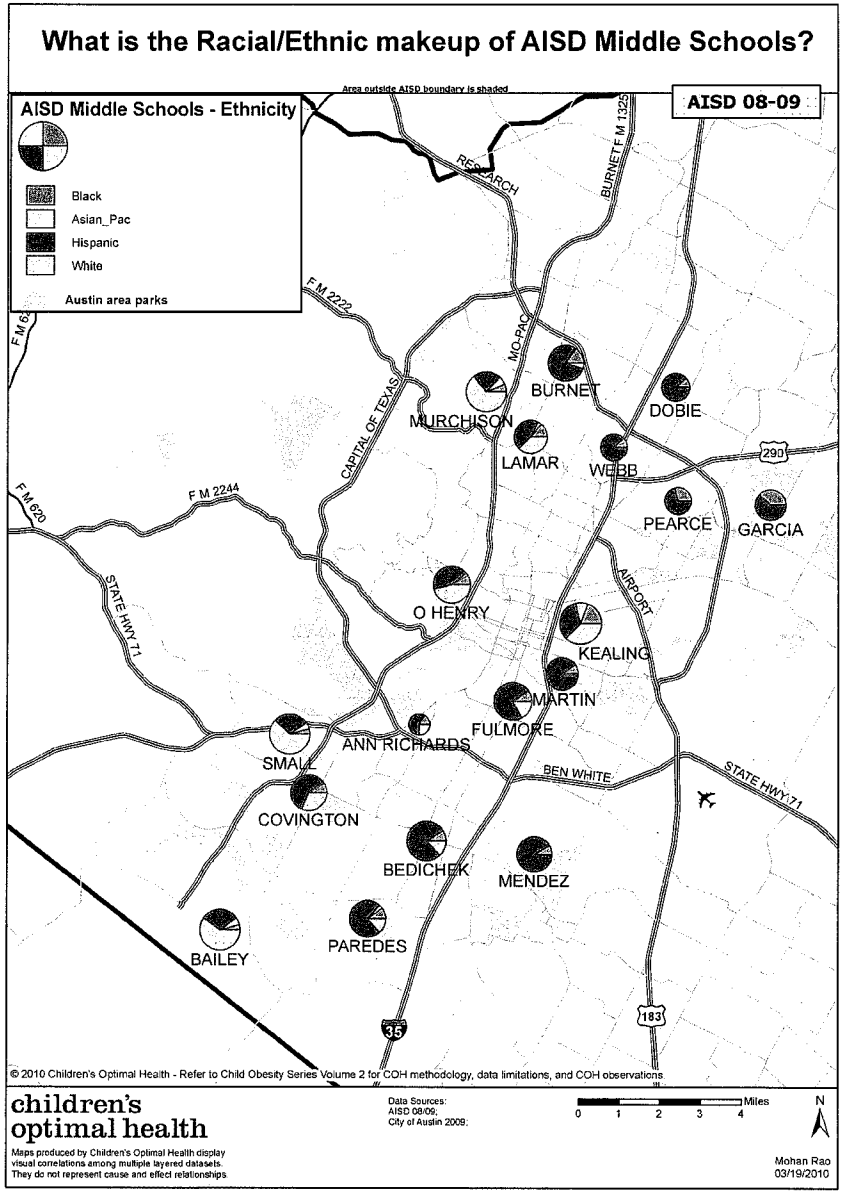
Data Sources:
AISD 08/09;
City of Austin 2009;
Miles
0 1 2 3 4
N
Mohan Rao
06/14/2010


What is the Racial/Ethnic makeup of AISD Middle Schools?
AISD 08-09
Area outside AISD boundary is shaded
AISD Middle Schools - Ethnicity
Black
Asian_Pac
Hispanic
White
Austin area parks
RESEARCH
BURNET F M 1325
F M 2222
MO-PAC
CAPITAL OF TEXAS
MURCHISON
BURNET
DOBIE
LAMAR
WEBB
290
F M 2244
F M 620
PEARCE
GARCIA
STATE HWY 71
AIRPORT
O HENRY
KEALING
MARTIN
FULMORE
SMALL
ANN RICHARDS
BEN WHITE
COVINGTON
BEDICHEK
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BAILEY
PAREDES
35
183
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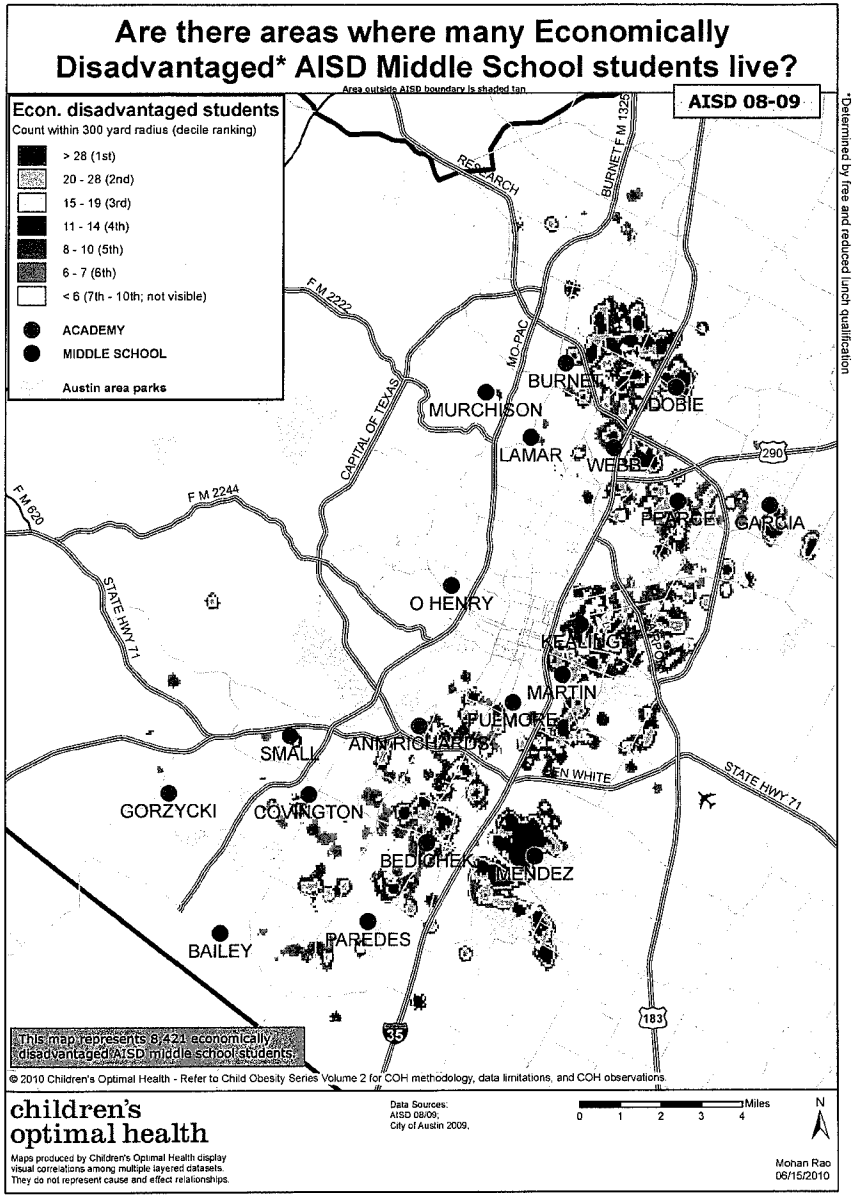
children's optimal health
Maps produced by Children's Optimal Health display visual correlations among multiple layered datasets. They do not represent cause and effect relationships.
Data Sources:
AISD 08/09;
City of Austin 2009;
Miles
0 1 2 3 4
N
Mohan Rao
03/19/2010


Are there areas where many Economically Disadvantaged* AISD Middle School students live?
Area outside AISD boundary is shaded tan
AISD 08-09
Econ. disadvantaged students
Count within 300 yard radius (decile ranking)
> 28 (1st)
20 - 28 (2nd)
15 - 19 (3rd)
11 - 14 (4th)
8 - 10 (5th)
6 - 7 (6th)
< 6 (7th - 10th; not visible)
ACADEMY
MIDDLE SCHOOL
Austin area parks
*Determined by free and reduced lunch qualification
RESEARCH
BURNET F M 1325
F M 2222
MO-PAC
CAPITAL OF TEXAS
F M 620
F M 2244
STATE HWY 71
BURNET
MURCHISON
DOBIE
LAMAR
WEBB
290
PEARCE
GARCIA
O HENRY
KEALING
MARTIN
FULMORE
SMALL
ANN RICHARDS
BEN WHITE
GORZYCKI
COVINGTON
BEDICHEK
MENDEZ
BAILEY
PAREDES
35
183
This map represents 8,421 economically disadvantaged AISD middle school students.
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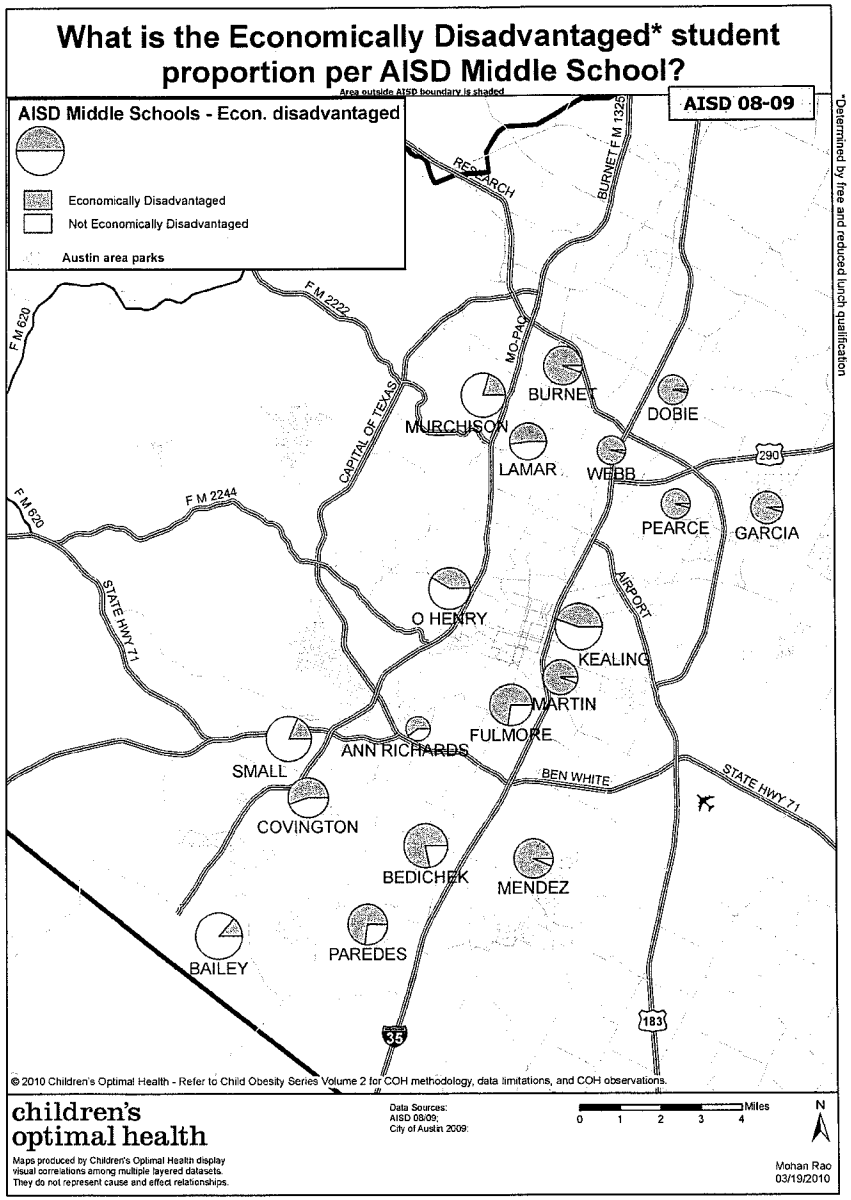
children's optimal health
Maps produced by Children's Optimal Health display visual correlations among multiple layered datasets. They do not represent cause and effect relationships.
Data Sources: AISD 08/09; City of Austin 2009.
Miles
0 1 2 3 4
N
Mohan Rao
06/15/2010


What is the Economically Disadvantaged* student proportion per AISD Middle School?
Area outside AISD boundary is shaded
AISD 08-09
AISD Middle Schools - Econ. disadvantaged
Economically Disadvantaged
Not Economically Disadvantaged
Austin area parks
*Determined by free and reduced lunch qualification
RESEARCH
BURNET F M 1325
F M 2222
MO-PAC
CAPITAL OF TEXAS
F M 620
F M 2244
STATE HWY 71
BURNET
MURCHISON
DOBIE
LAMAR
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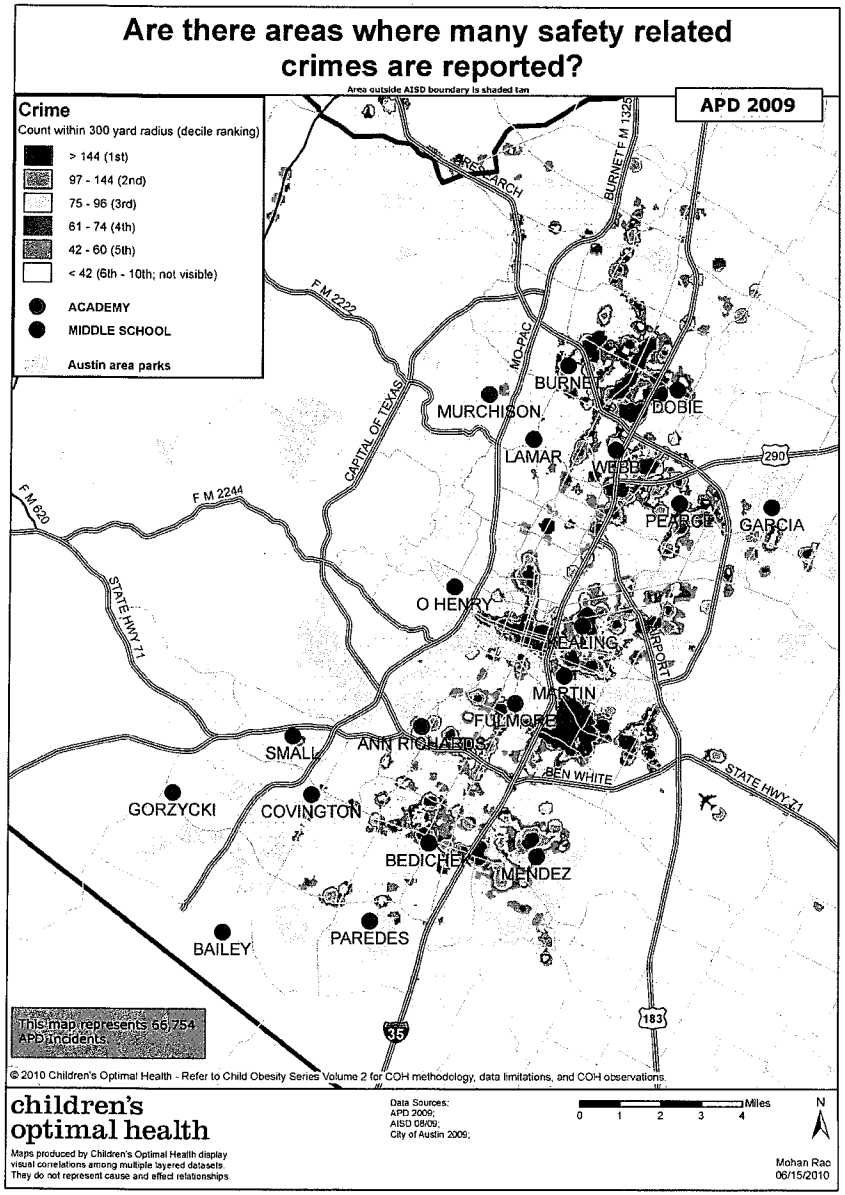
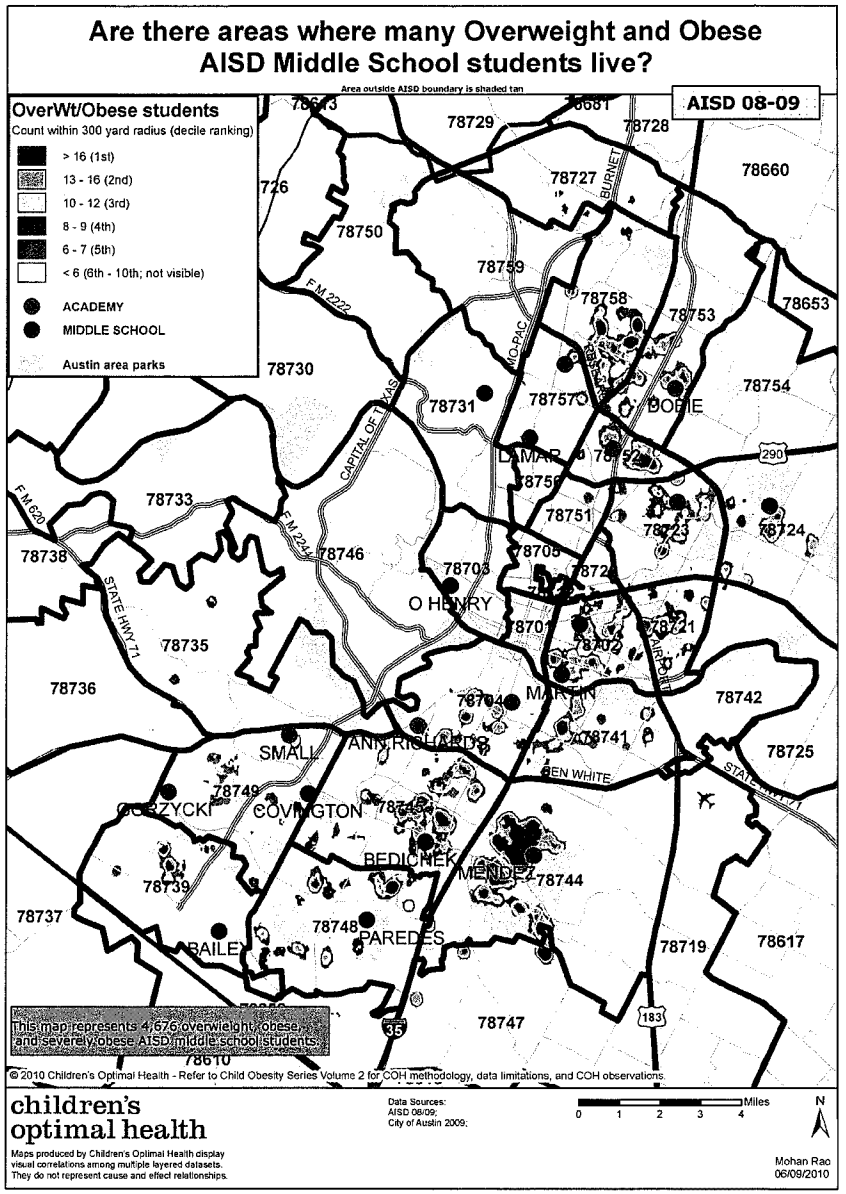
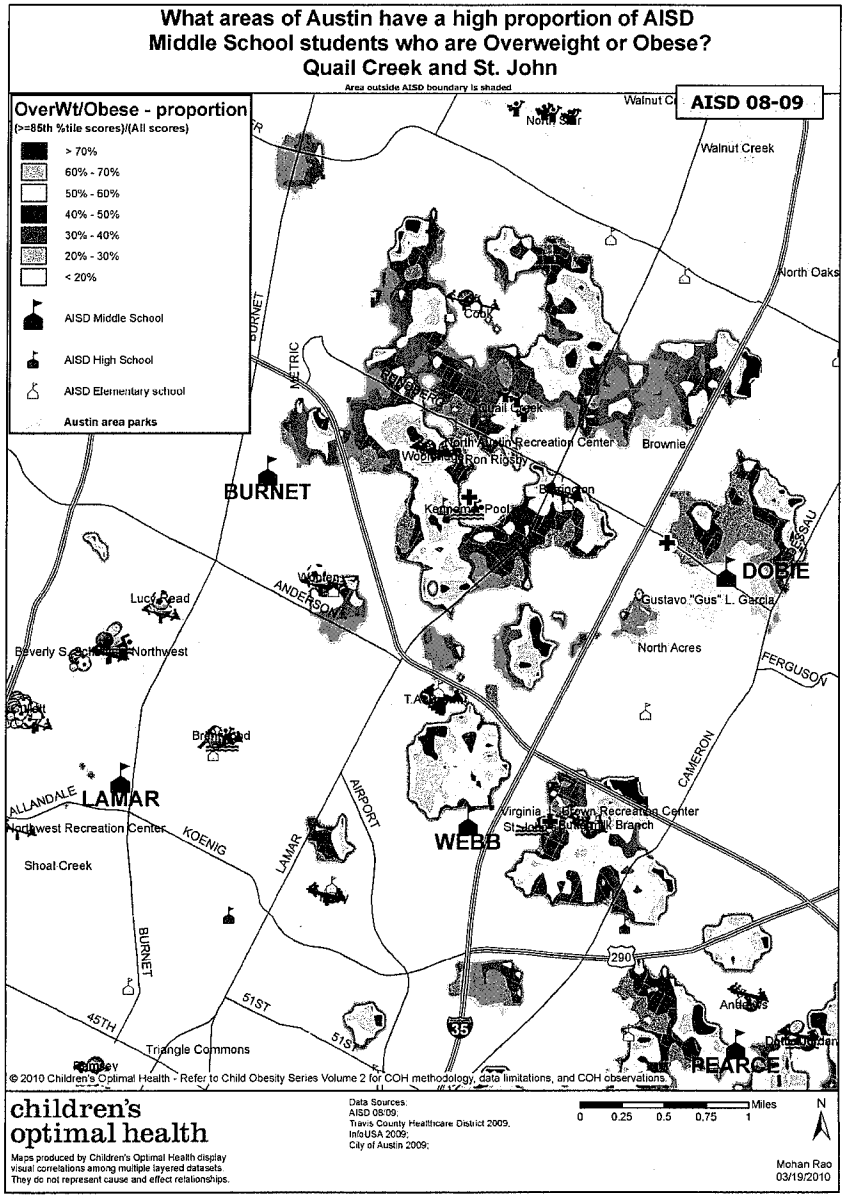
Data Sources: AISD 08/09; City of Austin 2009.
Miles
0 1 2 3 4
N
Mohan Rao
03/19/2010

Zip Code Layered with Overweight and Obese Students






What areas of Austin have a high proportion of AISD Middle School students who are Overweight or Obese?
Quail Creek and St. John
Area outside AISD boundary is shaded
AISD 08-09
OverWt/Obese - proportion
(>=85th %tile scores)/(All scores)
> 70%
60% - 70%
50% - 60%
40% - 50%
30% - 40%
20% - 30%
< 20%
AISD Middle School
AISD High School
AISD Elementary school
Austin area parks
Walnut Creek
North Oaks
BURNET
METRIC
Cook
Quail Creek
North Austin Recreation Center
Brownie
Ron Rigsby
Kennemer Pool
DOBIE
Gustavo "Gus" L. Garcia
North Acres
Lucy Read
Beverly S. Sheffield Northwest
ANDERSON
FERGUSON
CAMERON
AIRPORT
LAMAR
ALLANDALE
Northwest Recreation Center
KOENIG
Shoal Creek
Virginia L. Brown Recreation Center
Yarborough Branch
WEBB
290
35
51ST
45TH
Triangle Commons
Ramsey
PEARCE
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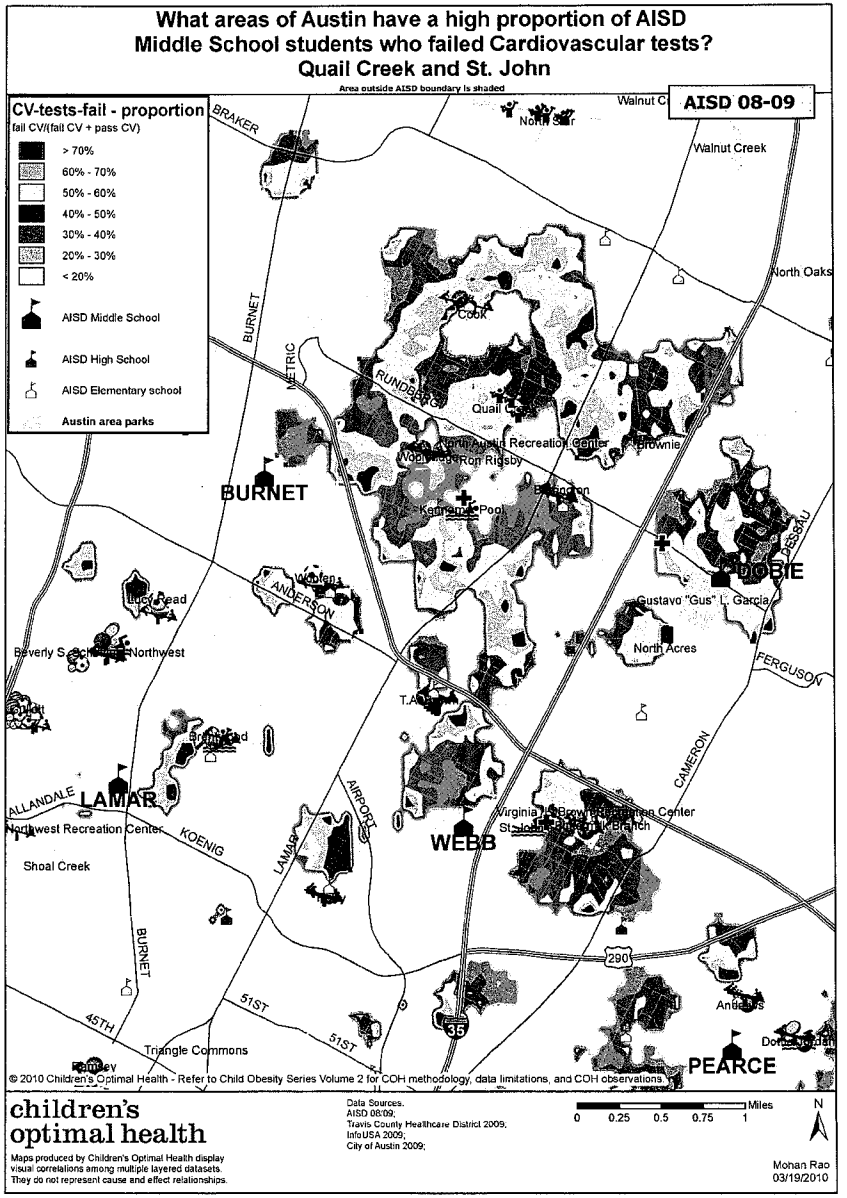
children's optimal health
Maps produced by Children's Optimal Health display visual correlations among multiple layered datasets. They do not represent cause and effect relationships.
Data Sources:
AISD 08/09;
Travis County Healthcare District 2009;
InfoUSA 2009;
City of Austin 2009;
0 0.25 0.5 0.75 1 Miles
N
Mohan Rao
03/19/2010


What areas of Austin have a high proportion of AISD Middle School students who failed Cardiovascular tests?
Quail Creek and St. John
Area outside AISD boundary is shaded
AISD 08-09
CV-tests-fail - proportion
fail CV/(fail CV + pass CV)
> 70%
60% - 70%
50% - 60%
40% - 50%
30% - 40%
20% - 30%
< 20%
AISD Middle School
AISD High School
AISD Elementary school
Austin area parks
BRAKER
Walnut Creek
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Mohan Rao
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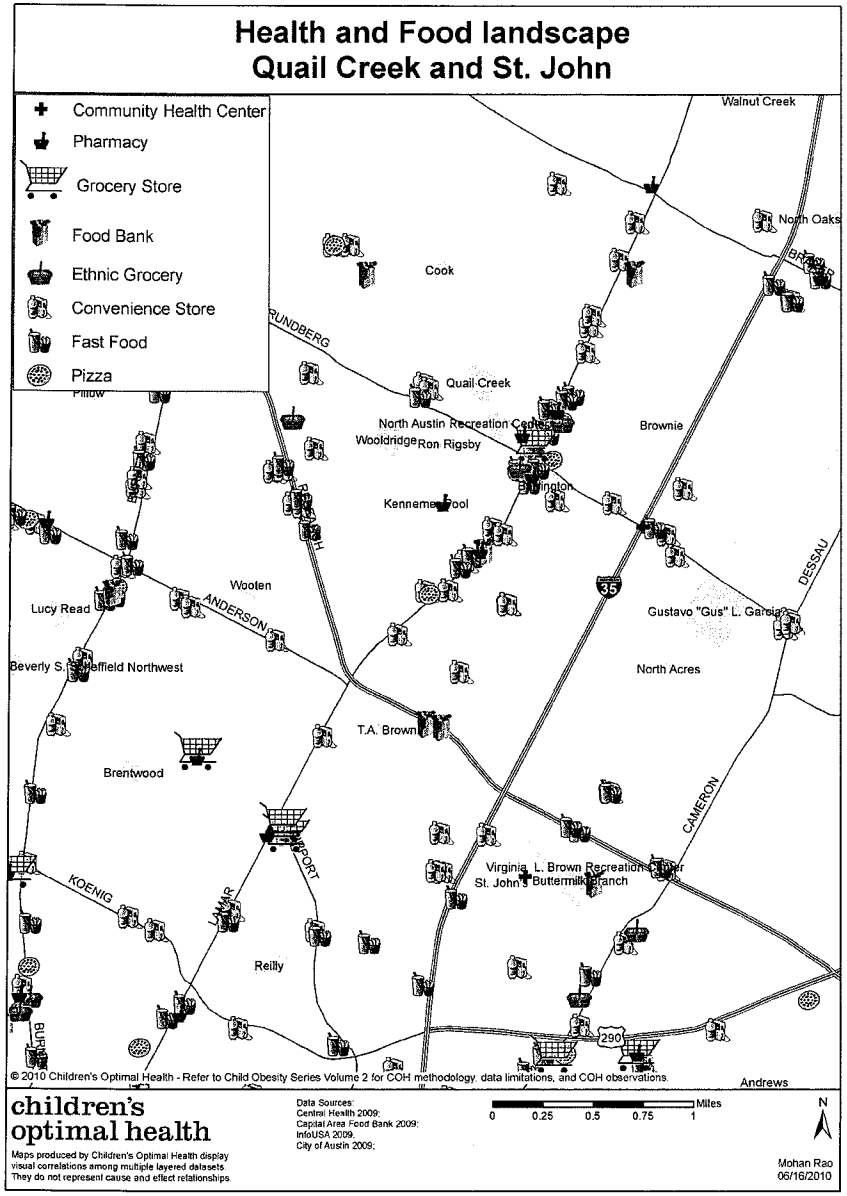


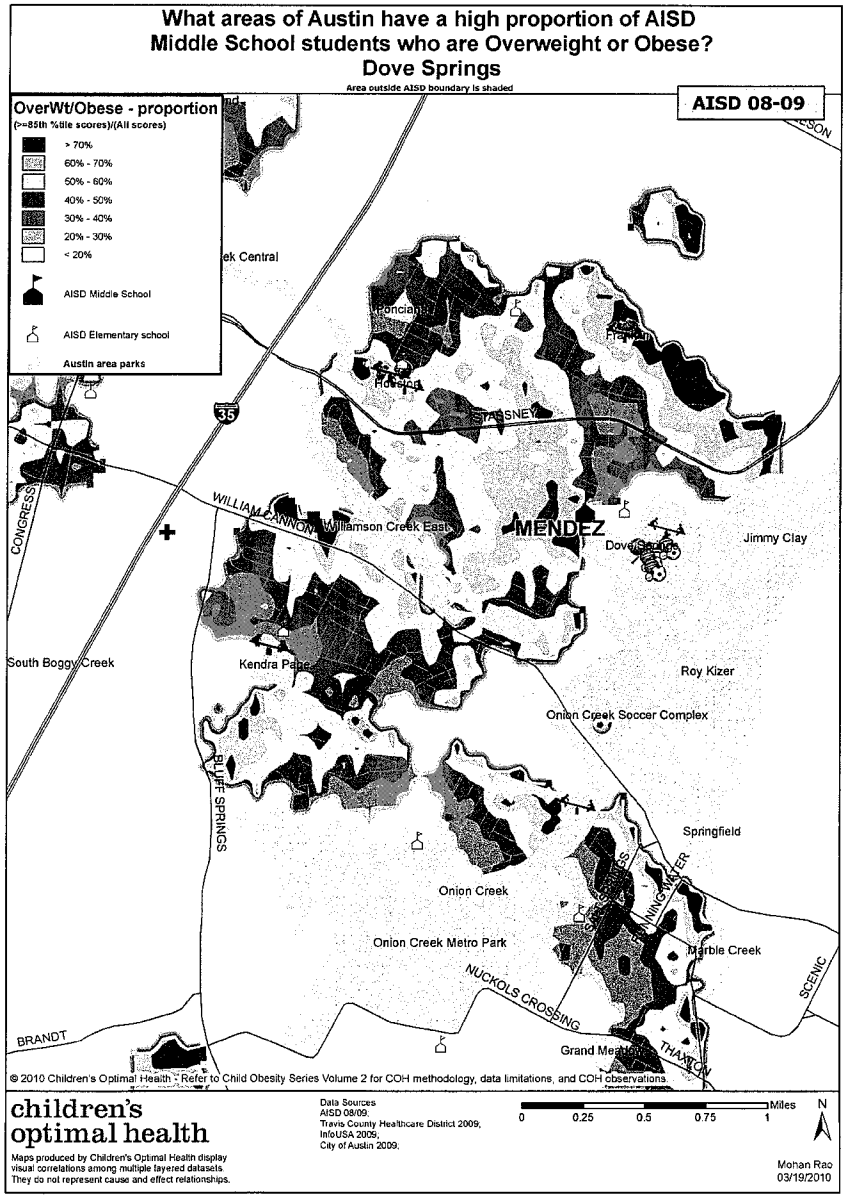
Observations

These observations are based upon the maps created for the Quail Creek/St. John area:

1) There are high concentrations of fast food establishments and convenience stores in this area.
2) Multiple opportunities to access healthy food options are in this area. However many negative influences (i.e. fast food and convenience stores) saturate the areas where people live.
3) There are large portions of this neighborhood where over 50% of the students are either overweight or obese.
4) Burnet (23.4% decrease), Dobie (21.2% decrease), Webb (9.5% decrease), and Lamar (2.6% decrease) all saw a decrease in the percentage of students who failed the cardiovascular test from SY07-08 to SY08-09.

Physical Fitness Symbols Key

- Soccer field
- Playscape
- Basketball court
- Multi-purpose field
- Tennis court
- Workout station
- Swimming pool
- Bus route (Jan 2009)
- Park


What areas of Austin have a high proportion of AISD Middle School students who are Overweight or Obese?
Dove Springs
Area outside AISD boundary is shaded
AISD 08-09
OverWt/Obese - proportion
(>=85th %tile scores)/(All scores)
> 70%
60% - 70%
50% - 60%
40% - 50%
30% - 40%
20% - 30%
< 20%
AISD Middle School
AISD Elementary school
Austin area parks
MENDEZ
Williamson Creek East
Jimmy Clay
Kendra Page
Roy Kizer
Onion Creek Soccer Complex
Springfield
Onion Creek
Onion Creek Metro Park
Marble Creek
Grand Meadow
South Boggy Creek
WILLIAM CANNON
CONGRESS
BLUFF SPRINGS
NUCKOLS CROSSING
BRANDT
SCENIC
THAXTON
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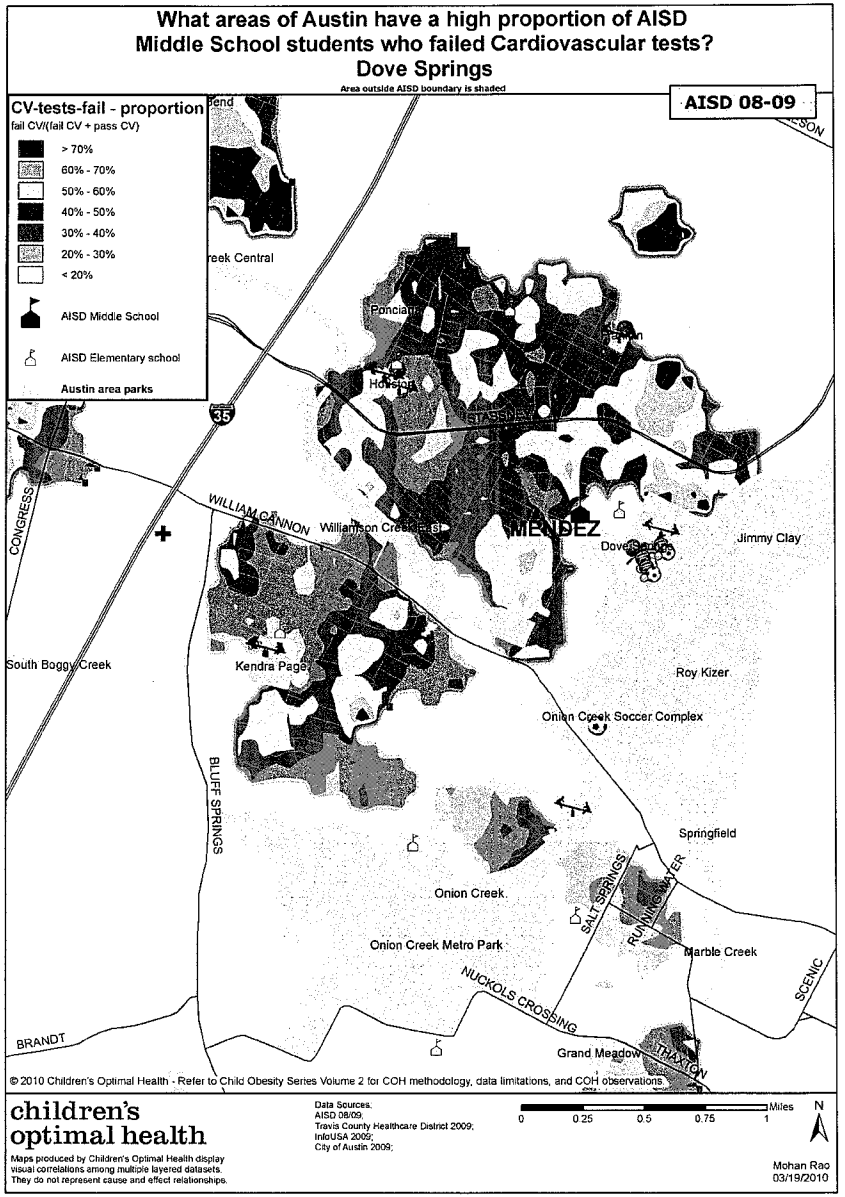
children's optimal health
Maps produced by Children's Optimal Health display visual correlations among multiple layered datasets. They do not represent cause and effect relationships.
Data Sources
AISD 08/09;
Travis County Healthcare District 2009;
InfoUSA 2005;
City of Austin 2009.
0 0.25 0.5 0.75 1 Miles
N
Mohan Rao
03/19/2010


What areas of Austin have a high proportion of AISD Middle School students who failed Cardiovascular tests?
Dove Springs
Area outside AISD boundary is shaded
AISD 08-09
CV-tests-fail - proportion
fail CV/(fail CV + pass CV)
> 70%
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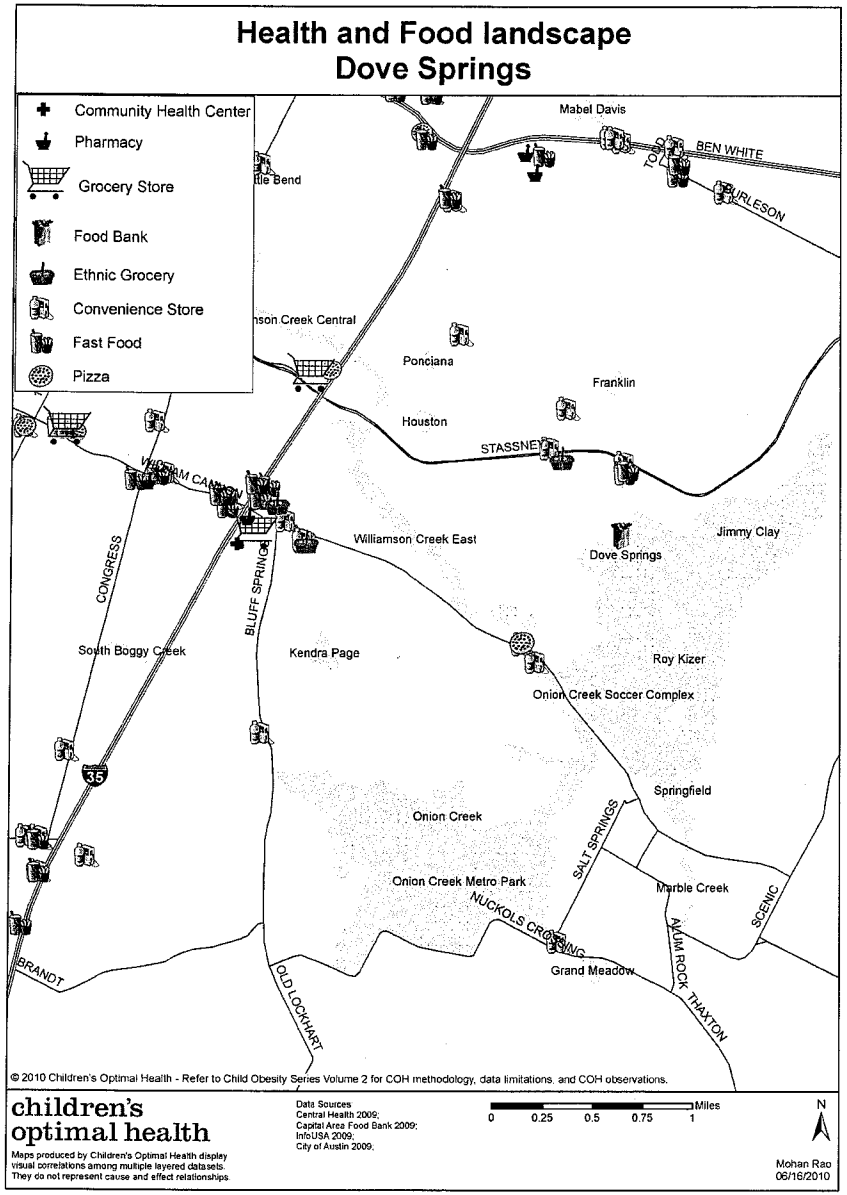
0 0.25 0.5 0.75 1 Miles
N
Mohan Rao
03/19/2010



Observations

These observations are based upon the maps created for the Dove Springs area:

1) There appear to be very few food outlets located close to where families live.
2) There are only few food establishments in the Dove Springs area that supply both fresh meat and fresh fruits and vegetables.
3) There appears to be a large amount of green space in the area but not all of it may be accessible for recreational use and appropriate for children to play in.
4) A higher proportion of students are affected by a high Body Mass Index than poor cardiovascular fitness.
5) Mendez, which is the neighborhood middle school for many of the students living in this area, decreased the percentage of students who failed the cardiovascular test by 13.2%.

Physical Fitness Symbols Key

- **Soccer field**
- **Playscape**
- **Basketball court**
- **Multi-purpose field**
- **Tennis court**
- **Workout station**
- **Swimming pool**
- **Bus route (Jan 2009)**
- **Park**

Data by Middle School - SY08-09

	BMI Test Results						CV Test Results			Economic Disadvantaged			Ethnic Breakdown					
Name	Under Wt.	Healthy Wt.	Over Wt.	Obese	Severe Obese	Other*	Pass	Fail	Other*	Not Econ Dis	Econ Dis	No Data	Nat. Am.	Asian	Black	Hispanic	White	No Data
Ann Richards	6	207	63	42	11	< 6	273	50	9	127	195	10	< 6	9	53	180	80	10-15.
Bailey	67	799	167	78	15	75-80	833	301	69	972	153	78	7	64	49	332	673	75-80
Bedichek	38	509	175	195	59	135-140	413	577	125	223	792	100	< 6	9	85	791	128	95-100
Burnet	17	421	168	143	33	135-140	415	426	76	43	747	127	< 6	12	118	622	37	125-130
Covington	25	447	124	133	25	200-205	469	319	166	382	477	95	6	15	74	500	264	95-100
Dobie	15	277	92	63	12	110-115	230	251	89	16	458	96	< 6	7	52	402	13	95-100
Fulmore	13	470	183	201	48	120-125	402	523	115	252	670	118	< 6	12	84	668	156	115-120
Garcia	15	286	94	99	24	135-140	379	175	102	25	533	98	< 6	< 6	211	343	< 6	95-100
Kealing	29	758	194	149	26	100-105	727	420	113	649	526	85	< 6	110	227	399	435	85-90
Lamar	13	411	140	116	37	60-65	314	432	34	341	373	66	< 6	27	98	317	269	65-70
Martin	13	273	118	136	47	155-160	388	245	113	36	603	107	< 6	< 6	59	565	11	105-110
Mendez	16	391	168	186	61	65-70	440	370	78	52	762	74	< 6	< 6	70	728	14	70-75
Murchison	51	607	118	85	27	270-275	506	382	273	825	213	123	7	71	65	230	665	120-125
O Henry	37	404	94	69	24	345-350	306	345	323	537	381	56	< 6	20	76	401	421	55-60
Paredes	25	461	159	140	33	125-130	688	168	91	234	617	96	< 6	28	84	623	114	95-100
Pearce	11	226	101	95	37	45-50	326	137	56	22	437	60	< 6	< 6	133	322	< 6	60-65
Small	72	671	160	87	11	180-185	763	271	149	880	201	102	< 6	56	45	308	667	100-105
Webb	< 6	196	106	101	32	80-85	250	218	51	17	424	78	< 6	< 6	51	385	< 6	75-80

* Other represents those students who did not receive a score because it was not recorded or because they were not tested.

Data by Ethnicity - SY08-09

Ethnicity	BMI Test Results										CV Test Results				Economic Status			
	Under Wt.		Healthy Wt.		Over Wt.[1]		Obese[2]		Severe Obese[3]		Pass		Fail		Econ. Dis.		Not Econ. Dis.	
	Count	%	Count	%	Count	%	Count	%	Count	%	Count	%	Count	%	Count	%	Count	%
Native Amer.	< 6	< 14%	28	65%	9	21%	< 6	< 14%	< 6	< 14%	28	58%	20	42%	19	36%	34	64%
Asian	24	6%	320	74%	49	11%	27	6%	< 6	< 1%	320	68%	154	32%	152	29%	378	71%
African Amer.	32	2%	852	56%	281	18%	280	18%	83	5%	932	57%	694	43%	1,521	80%	372	20%
Hispanic	194	2%	4,081	52%	1,595	20%	1,547	20%	416	5%	4,435	56%	3,472	44%	7,315	82%	1,637	18%
White	216	6%	2,533	71%	490	14%	260	7%	61	2%	2,407	65%	1,270	35%	605	14%	3,731	86%

% represents portion of the population that had data available and is rounded to the nearest percentile

[1] 85 - 95th %ile

[2] 95 - 99th %ile

[3] > 99th %ile

Data by Economic Status - SY08-09

Economic Status	BMI Test Results										CV Test Results			
	Under Wt.		Healthy Wt.		Over Wt.		Obese		Severe Obese		Pass		Fail	
	Count	%	Count	%	Count	%	Count	%	Count	%	Count	%	Count	%
Economically Dis	199	2%	4,297	52%	1,646	20%	1,611	20%	449	5%	4,596	55%	3,806	45%
Not Economically Dis.	268	5%	3,517	68%	778	15%	507	10%	113	2%	3,526	66%	1,804	34%

% represents portion of the population that had data available and is rounded to the nearest percentile

What can you and/or your organization do to help turn the curve on child obesity?

At first glance, the obesity epidemic may appear to be an issue relegated to the medical professionals and physical fitness experts. While these two groups have a specific interest in turning the curve on child obesity, obesity isn't something that can be changed without a holistic approach from the entire community. Below is a list of groups within our Central Texas community that could play a role in positively impacting the child obesity trend and the suggested action steps for each to implement within each sphere of influence. How can you help turn the curve?

Local Government

- Build and maintain parks and playgrounds that are safe and attractive to playing, and close to residential areas.
- Implement a tax strategy to discourage consumption of foods and beverages that have minimal nutritional value.
- Plan, build, and maintain a network of sidewalks and street crossings that creates a safe and comfortable walking environment and that connects to destinations.

Community Organizations

- Mandate and implement strong nutrition standards for foods and beverages supplied at community programs.
- Incorporate nutrition messages into all classes and programs even if they aren't health related (ex. Emphasize healthy menus in cooking classes, use examples of people exercising in literacy curriculum, etc.)

Neighborhoods and Parents

- Adopt a community policing strategy that improves safety and security of streets and parks
- Develop and implement a *Safe Routes to School* program and encourage children to walk together to school.
- Set limits on a child's television, computer, and sedentary activity time.
- Get involved in knowing what your student is learning and doing in PE class.

What is AISD doing to address obesity?

Health-related problems play a major role in limiting the motivation and ability to learn of urban minority youth, and interventions to address those problems can improve educational as well as health outcomes. Healthier students are better learners." (Basch, Equity Matters: Research Review). Recent research provides compelling evidence for the causal role that health disparities play in the educational achievement gap that plagues urban minority youth.

Hence, AISD is targeting the reason for the disparities. The District has developed multiple health and physical education strategies aimed at producing healthier students, that will in turn increase academic success. The methods for reducing those disparities include:

- Integrating and aligning health concepts into Science and Physical Education
- Reviewing campus Fitnessgram data to make programmatic decisions
- Ensuring students have access to healthy, balanced, nutritious food that is offered and served at breakfast and lunch - fresh fruits and vegetables daily, fat-free and reduced fat milk, and whole grain products
- Core content teachers incorporating physical activity Brain Break activities into daily instruction
- Increasing technology in the classroom through use of the HopSports curriculum equipment
- The integration of health education, physical education, nutrition, and parent/community involvement through using the CATCH program.

Map Legend Conversion

Population densities are expressed as a count of individuals within a given area. For example, "12 taxable properties per acre" and "324 people per square mile" express densities of two different types of populations in appropriate areal units. Many of our maps show densities of various AISD sub-populations. Density in these maps is expressed in terms of the number of students residing within a 300 yard radius circle. Such an area is easy to visualize, is appropriately scaled to represent a "neighborhood," and contains easily understood student counts between five and one hundred.

Since human population densities are often expressed as a count of individuals within a square mile, we provide a table to convert densities from "300 yard radius" units to square mile. As the table (see below) shows, a square mile has approximately 11 times the area of a 300 yard radius circle.

Count in 300 yd radius	Square Mile Equivalent *	Count in 300 yd radius	Square Mile Equivalent *
1	11	30	329
5	55	40	438
6	66	50	548
7	77	60	657
8	88	70	767
9	99	80	876
10	110	90	986
12	131	100	1096
15	164	150	1643
20	219	200	2191
25	274		

* Square mile equivalent is rounded to the nearest whole number

Obesity Project Data Sources

AISD Student Population and Demographics, 2008-09:

Student demographic data was based upon the PEIMS 1 submission in October of 2008. This data pull is used by AISD to report enrollment statistics to the State of Texas Education Agency. COH received data on all students enrolled in AISD but for the purposes of this project, only students enrolled in Middle schools in the 6th, 7th, or 8th grade were used. The students from this dataset were linked to those in the AISD FITNESSGRAM® dataset.

AISD FITNESSGRAM® Post-test measures, 2007-08:

In 2003, the Austin Independent School District began assessing students in grades 3, 5, 7, and 9th using FITNESSGRAM® (FG). The FG assessment included measurement of student's height/weight, strength, and cardiovascular fitness via the PACER or mile-run. Since 2003 two additional assessments have been added: flexibility and trunk lift. The FG measurements are performed bi-annually ,in most cases, through the student's physical education class. The system allows staff to develop and query reports that evaluate and monitor programs, to track student health data, and to identify areas of focus/need. In 2007-2008, the Texas legislature passed SB 530 which requires all public schools to collect FG data on students in grades 3-12. AISD administers fitness tests in October and May, near the beginning and end of an academic year. The AISD FG data from the 2008-2009 school year comprise the bulk of the information presented here.

This data is based upon the final testing of 47,531 AISD students across grades 3 – 12. The testing was completed in the Physical Education class and was conducted by the Physical Education instructor. Of the 47,531 students tested, only the scores of 12,686 middle school students in grades 6, 7, and 8 were used in this project. The FITNESSGRAM® Post-test is the same data that is sent to the TEA and was collected in May of 2009.

ESRI, Select Business Dataset, 2008:

The business data was collected by InfoUSA and then compiled and distributed by ESRI. COH used the Standard Industrial Classification (SIC) codes in order to identify fast food restaurants, convenience stores, and grocery stores. InfoUSA is a commercial dataset that serves as a baseline and has been further enhanced at the granular level for the purposes of COH maps. InfoUSA dataset was dated January 2009 the timeframe may not be directly comparable with the other data sets.

Austin Police Department Incident data, 2009:

This data encompasses all crime incidents in which a citation was written by APD. The mapped location is based upon the address recorded for an incident. This data was collected from 1/1/2009 – 12/31/2009, so the timeframe may not be directly comparable to the AISD datasets.

The safety related maps show the density of crimes reported to the Austin Police Department (APD) during 2009. Only the reports for crimes that are likely to diminish a child's or parents' sense of safety and consequently discourage children from spending time outdoors are mapped. For example, reported burglary of residence, public intoxication, and assault by threat are mapped. However, reports of identity theft, theft of service, and counterfeiting are not mapped. Based on the APD 2009 data provided to us, 66,754 incidents across 159 offense codes were mapped.

Obesity Project Limitations

The limitations of each data set may impact the way an individual map can be interpreted as well as the story a map appears to tell. For additional questions regarding specific datasets and limitations, please contact COH.

For the purposes of this map series, student level data was only obtained from AISD and not from any of the surrounding school districts. The AISD boundary is represented as the white (un-shaded) area in the maps. The area shaded in yellow represents areas that are covered by other local school districts. Because of this, COH cannot draw inferences for any of the areas outside of AISD and a lack of representation on the map does not necessarily represent a lack of need.

While AISD serves students from pre-kindergarten through 12th grade, this project only focuses on middle school students, grades 6 – 8. Within AISD there were 15,197 middle school students enrolled (see Data Sources) for the 2007 – 2008 school year. Of those 15,197 enrolled students, 12,984 of them (85%) had final test measures in FITNESSGRAM®. The BMI percentile was based upon height and weight measures taken through FITNESSGRAM® and then converted to a BMI score as defined by the CDC. The percentiles were calculated using CDC cutoffs to determine the BMI category for individual students.

AISD also provided demographic data containing the Race/Ethnicity fields and the marker for economically disadvantaged.

AISD, and COH for the purposes of this project, define economically disadvantaged as those students who qualify for free/ reduced lunch. Among the multiple datasets incorporated in this project, the individual timeframes may not be directly comparable. Refer to the Data Sources sections for dataset timeframes.

Visual correlations in the map (e.g., proximity of overweight students to parks) do not necessarily represent causality; for more information about related research or possibilities for further research, please visit www.childrensoptimalhealth.org.

COH Methodology

Density Maps

Many Children's Optimal Health (COH) maps display *density* distribution of some particular population of interest. Density maps show where high concentrations of the mapped population live. All COH density maps are rendered from raster datasets. Our GIS tool, ESRI's ArcMap 9.3.1, supports a variety of ways to calculate and display density maps. We chose a methodology that we believe strikes a proper balance between accuracy and ease of interpretation without compromising individual privacy.

Spatial Analyst's *Neighborhood Statistics* tool was used to create the population density maps. The density maps' grid cells are squares representing an area equal to 100 yards by 100 yards. Neighborhood settings were set to a circle with a radius of 3 cells. The above parameters smoothed out the distribution of cell values to make the interpretation of hotspots easier to interpret visually, but retained enough locality to be meaningful at the neighborhood level. All density maps were categorized into deciles[1] with the top 3 deciles symbolized as red, orange, and yellow (in descending order). The remaining deciles were symbolized in a grayscale with lighter shades representing lower deciles. The symbolization of deciles forms the consistent thread across all density maps. Thus, although density values may vary greatly from map to map, the red areas on a density map always represent the top decile's density values. All pixels with values less than or equal to 5 were symbolized to "no color" to protect individual privacy. Density is expressed in terms of the number of individuals within a 300 yard radius circle.

[1] Decile: any one of nine numbers that divide a frequency distribution into 10 classes such that each contains the same number of individuals; **also: any one of these 10 classes** (source: Merriam-Webster).

To meet privacy-protection requirements of individuals' data, residence location latitude and longitude values were randomly shifted anywhere from 100 to 300 feet. This shifting can introduce significant errors for density values at the cell level. But at the neighborhood level, for example for a one mile by one mile zone, a shift of up to 300 feet does not significantly alter the overall distribution of the population within the zone. However, it is important to remember that the density value of a specific cell can vary substantially from the cell's true value due to the shifting algorithm used to protect privacy. Therefore, it is **not** appropriate to use density maps at a city block level.

Proportion Maps

Another kind of COH map that describes a population's distribution is a *proportion* map. The COH proportion maps display the distribution of ratios of a specific population's subset compared to the full set.

Each proportion map was derived from two or more density maps. Since proportion maps display ratios, the calculation of a proportion map's cell value involves dividing cell values from one set of density maps by the cell values of another set of density maps. For example, an obesity proportion map is derived by dividing the density map of overweight and obese students by the density map of *all* students with a BMI score, so that each individual cell's count of students with high BMI is divided by its corresponding count of all students.

All density maps underwent a reclassification process before they were used to derive proportions. Density cell values less than or equal to 5 were reclassified to 0 (zero) in order to remove them from the calculus and thus protect confidentiality. Since this reclassification occurs before proportion values are calculated, there was no need to hide any cells in the proportion maps to protect privacy.

For further information regarding the COH mapping methodology, contact Mohan Rao at (512) 324 – 1000 x 85980.

How to Get Involved

If you are interested in gaining more information about the partners working with COH to address the issue of obesity, please visit www.childrensoptimalhealth.org or you can contact COH at (512) 324 – 5980.

About COH

Children's Optimal Health is a collective leadership initiative that unites the efforts of Central Texas organizations in promoting community change to help our children reach a brighter future.

COH strives to give agencies and communities access to formerly proprietary data by using GIS mapping to illuminate issues involving Central Texas children. By layering data from multiple sources, COH can help communities visualize the health of their neighborhoods, identify assets and needs, and unearth opportunities for collaborative change.

Through a commitment to shared data, collaboration, and ongoing communication, Children's Optimal Health is a collective leadership initiative to ensure that every child in Central Texas becomes a healthy, productive adult engaged in his or her community.

The goal of COH is to use visual images to inform policy, improve operations, promote research, and mobilize the community to better the lives of our children and youth.

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Matt Balthazar, Project Coordinator
Mohan Rao, Spatial Data Analyst

COH would like to extend special recognition and thanks to the Technical Advisory Committee for the time and effort they have dedicated to ensure the integrity of this project.

Co-Chairs:

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