Texas Risk Assessment for Type 2 Diabetes in Children

A Report to the Governor and the 85th Legislature of the State of Texas

The University of Texas Rio Grande Valley

The University of Texas Rio Grande Valley College of Health Affairs Border Health Office

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Table of Contents

Acknowledgements..... i

Message from the Director..... ii

Texas Risk Assessment for Type 2 Diabetes in Children Program..... 1

Public and Private Schools Reporting..... 2

TRAT2DC Training/Certification and Risk Factor Electronic System..... 3

Risk Assessments - Acanthosis Nigricans..... 4

Risk Assessments - Body Mass Index..... 5

Risk Assessments - Blood Pressure..... 6

Risk Assessment Referral Results/ICD-9 CPT code 701.2 member count data..... 7

Technical/Educational Services & TRAT2DC Budget..... 8

Suggested Readings

Texas Education Agency Regional Education Service Center Risk Assessment Fact Sheets

Acknowledgments

The Texas Risk Assessment for Type 2 Diabetes in Children, a legislatively mandated program developed, coordinated, and administrated by The University of Texas Pan-American College of Health Sciences and Human Services Border Health Office (now The University of Texas Rio Grande Valley College of Health Affairs Border Health Office), has proudly served the state of Texas by helping families in the fight against type 2 diabetes by identifying children with risk factors for the disease since 1999. The fight against type 2 diabetes cannot be won alone and we would like to extend a special thanks to those who truly make this initiative work - our Texas school nurses. Day-to-day, school nurses caringly assume many roles and responsibilities to ensure the health and safety of children in their communities. With this program, school nurses are truly an integral part to the solution in the prevention of this devastating disease.

Programs such as the Texas Risk Assessment for Type 2 Diabetes in Children program would not be possible without a champion advocating for the health and wellness for children in the Texas State Legislature. For his unwavering support and belief in the program, The University of Texas Rio Grande Valley College of Health Affairs Border Health Office would like to recognize and thank State Senator Eddie Lucio Jr., D-District 27 for his commitment to reduce the burden of type 2 diabetes in children throughout the State of Texas.

The Texas Risk Assessment for Type 2 Diabetes in Children program has been housed and supported by The University of Texas Rio Grande Valley. For their support and dedication in the continued fight against diabetes, we would like to thank President Dr. Guy Bailey and Provost Dr. Havidán Rodríguez. We would also like to thank Dr. Michael Lehker, Dean of the College of Health Affairs for cultivating the Border Health Office through new opportunities and inspiring our team to succeed.

Coordinating a program of such magnitude is a herculean task for a small office like The University of Texas Rio Grande Valley College of Health Affairs Border Health Office, but it is nurtured and groomed with professionalism, versatility and ingenuity. A sincere thanks to the staff of the Border Health Office for embracing the program with strength, endurance, humility, and perseverance.

Message from the Director

Since 1999, the Texas Risk Factor Assessment for Type 2 Diabetes in Children (TRAT2DC) program has been helping families across the state of Texas by identifying children who may be at high risk to develop type 2 diabetes through assessments in public and private schools. Through these assessments, parents are alerted if risk factors are present in children and are encouraged to seek further evaluation from a health professional. Utilizing risk assessments as a starting point for health promotion and disease prevention in a population who is at risk to develop type 2 diabetes has merit and complements concerted efforts to prevent or reduce future health problems. Through these risk assessments, families have become more aware of the signs and risk factors of type 2 diabetes. Equipped with the knowledge and awareness of what these risk factors mean, parents can take action by consulting with a health professional to give their child, and possibly their entire family, the opportunity to make positive lifestyle changes.

The program has also played a role in supporting coordinated school health education programs and public health policy for the prevention of diabetes. A unique and important feature of the Texas Risk Assessment for Type 2 Diabetes in Children program allows school administrators to readily access risk assessment results in real time. The risk assessment results have helped schools initiate systems changes, assist with other school health initiatives, and improve the school health environment.

This report is a descriptive presentation of risk assessments that were conducted in Texas Education Agency Education Service Center (ESC) Regions 1, 2, 3, 4, 10, 11, 13, 15, 18, 19, and 20 for the 2014-2015 and 2015-2016 school years. Included in this report:

- Total number of children assessed: **1,056,279** (2014-2015); **1,104,710** (2015-2016)
- Public and private schools reporting: **4,271** (2014-2015); **4,460** (2015-2016)
- Number of trained/certified individuals: **3,917** (2014-2015 & 2015-2016)
- Number of Risk Factor Electronic System users: **4,305** (2014-2015); **5,498** (2015-2016)
- Risk assessment results for acanthosis nigricans, body mass index, and blood pressure (pgs. 4-6)
- Risk assessment referral results (pg. 7)

The Texas Risk Factor Assessment for Type 2 Diabetes in Children program continues to support the Texas Diabetes Council's state plan for diabetes prevention and control. Risk assessment information is available to school administrators via website by state, Regional Education Service Center (ESC), school district, and individual schools. Risk assessment fact sheets by state and Regional ESCs for the 2014-2015 and 2015-2016 reporting periods are included in this report.

Doreen D. Garza, MPH
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Texas Risk Assessment for Type 2 Diabetes in Children Program

The Texas Risk Assessment for Type 2 Diabetes in Children (TRAT2DC) is a state mandated program developed, coordinated, and administrated by The University of Texas Rio Grande Valley (UTRGV) College of Health Affairs (COHA) Border Health Office (BHO). This program helps assess children who may be at high risk to develop type 2 diabetes. This assessment is conducted in public and private schools during vision/hearing and scoliosis screenings by individuals, mainly school nurses, who have been certified by the BHO to conduct and report the risk assessments.

Every year during vision/hearing and scoliosis screenings, children in 1st, 3rd, 5th, and 7th grades are assessed for the acanthosis nigricans marker - a skin marker that signals high insulin levels. Children who are identified with the marker are also assessed to determine body mass index (BMI) and blood pressure.

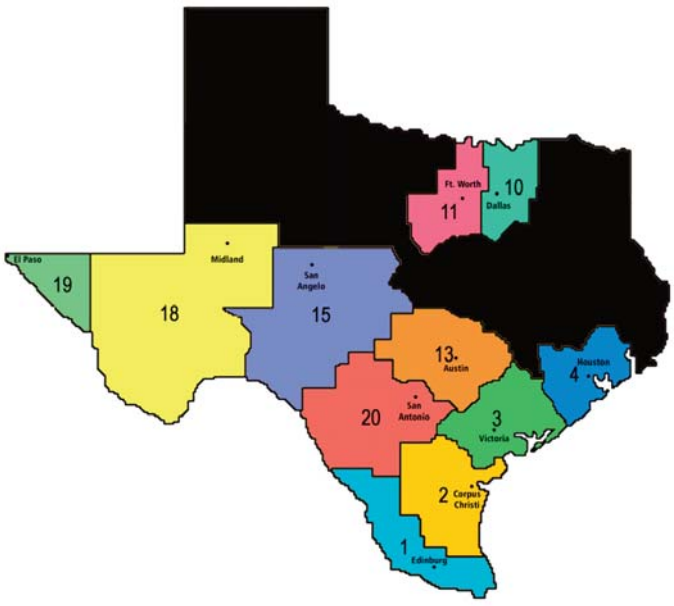
Risk assessment referrals are issued to the parents of these children, alerting parents of the child's risk factors and encouraging further evaluation from a health professional. The risk assessment referrals have been effective in getting at-risk children to seek appropriate follow-up evaluation/testing from a health care provider to prevent or delay future health problems.

The program assesses children who may be at-risk to develop type 2 diabetes in Texas Education Agency (TEA) Education Service Center (ESC) Regions 1, 2, 3, 4, 10, 11, 13, 15, 18, 19, and 20. The program also encourages and provides support to other TEA ESC Regions who are not identified by the mandate to conduct risk assessments as funding allows.

Total Number of Children Assessed (Grades 1st, 3rd, 5th, and 7th)

ESC	2014-2015	2015-2016
Region 1	116,854	111,605
Region 2	28,563	29,094
Region 3	14,958	14,746
Region 4	275,372	300,215
Region 10	175,646	187,258
Region 11	160,425	169,438
Region 13	99,907	105,802
Region 15	13,890	14,392
Region 18	18,291	20,873
Region 19	43,694	38,990
Region 20	108,679	112,297
Total	**1,056,279**	**1,104,710**

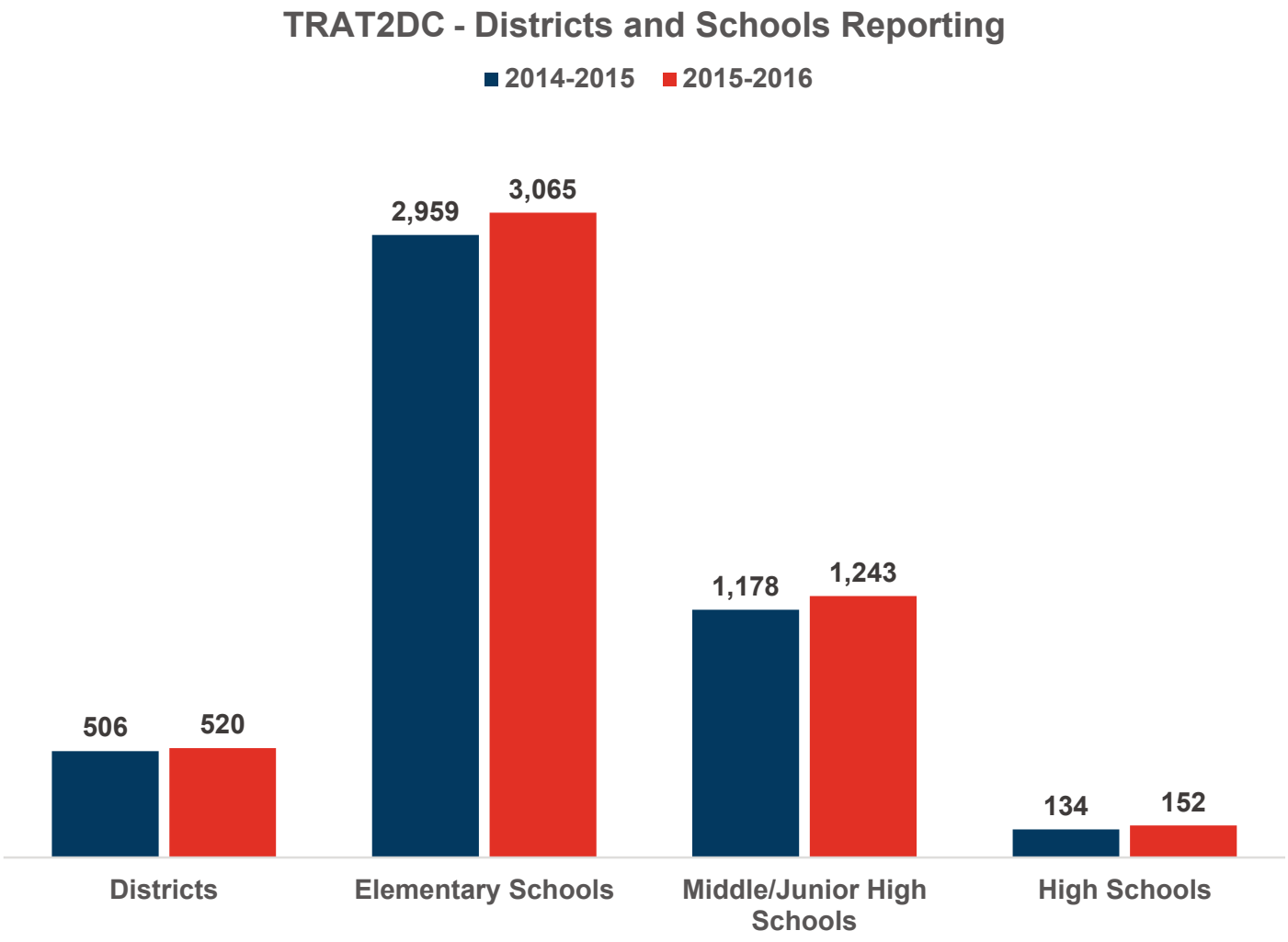
TRAT2DC Risk Assessment Map
(11 TEA ESC Regions)



The TRAT2DC program impacts over 1 million children throughout the State of Texas each year. The figure above represents the number of children who were assessed in 1st, 3rd, 5th, and 7th grades during the 2014-2015 and 2015-2016 school years. There was an increase of over 48,000 children assessed between school years.

Public and Private School Reporting

Legislation mandates that the TRAT2DC program conduct risk assessments for children attending 1st, 3rd, 5th, and 7th grades in public and private schools within the required 11 TEA ESC Regions. Most of the risk assessments are conducted by certified individuals in elementary and middle schools, with some districts carrying out the assessments in high school if they choose to conduct the assessment beyond the required grades. Prior to the start of each school year, the UTRGV COHA BHO provides program updates to participating districts and schools by correspondence or via website. BHO health education coordinators also contact participating districts for any changes regarding personnel responsible for conducting the risk assessments and the inclusion or removal of campuses to the TRAT2DC database.

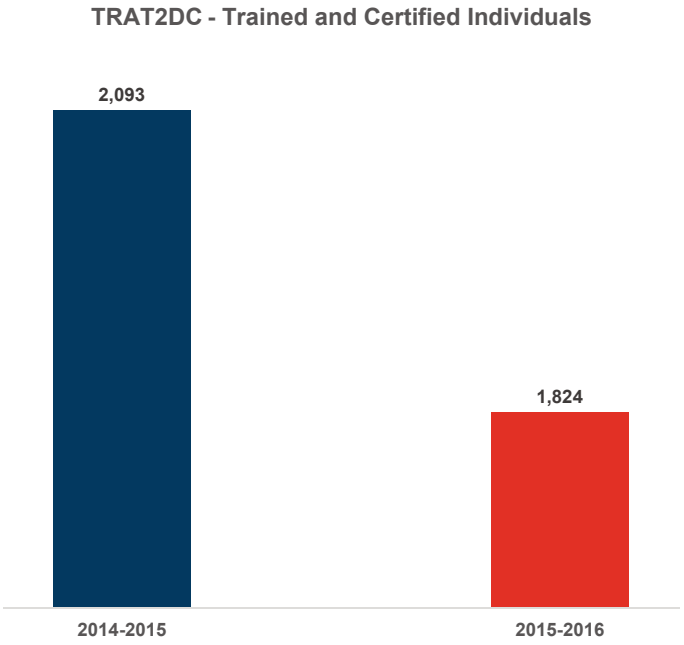


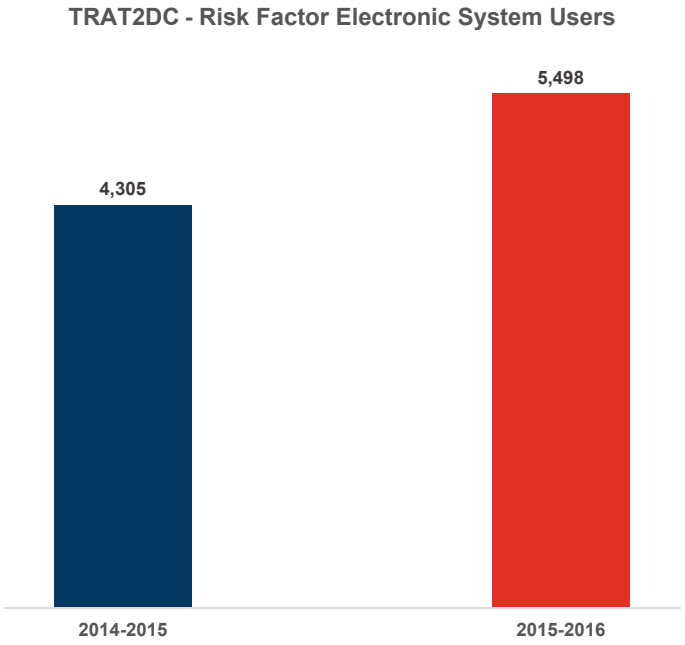
The TRAT2DC progam conduct risk assessments for children attending 1st, 3rd, 5th, and 7th grades in public and private schools within the required 11 TEA ESC Regions, with most assessments being conducted in elementary and middle schools. The 2015-2016 reporting period showed an increase in school district and school campus particiption from the 2014-2015 reporting period.

TRAT2DC Training/Certification and Risk Factor Electronic System

The UTRGV COHA BHO provides training and certification to school nurses or other desgnated individuals assigned to conduct risk assessments. Requests for materials and training and technical support for the Risk Factor Electronic System is also provided by the BHO. The TRAT2DC RFES is a unique secure- access, web-based risk assessment software that is mission critical to the UTRGV COHA BHO in order to fulfill requirements and responsibilities of the TRAT2DC program. The RFES is an indispensable complement to the TRAT2DC program because it eliminates the need for manual calculation and interpretation of the raw information being entered into the system. The RFES is also capable of plotting and printing individual growth charts and providing referral forms with the result and description of each assessment conducted (AN, BMI, and blood pressure).

Risk assessment certification offered through the TRAT2DC RFES is valid for 5 years. New users and users with expired certifications must complete and pass all modules associated with training in order to obtain certification. Risk assessment certification training and certification is an important on-going activity as new nurses are hired by districts every year due to growth or turnover. The UTRGV COHA BHO estimates that over 95% of individuals needing certification is achieved through the online certification system.





The UTRGV COHA BHO provides training and certification to school nurses or other designated individuals assigned to conduct risk assessments. Risk assessment certification offered through the TRAT2DC RFES is valid for 5 years. The number of trained individuals for the 2014-2015 and 2015-2016 reporting periods was 2,093 and 1,824 respectively.

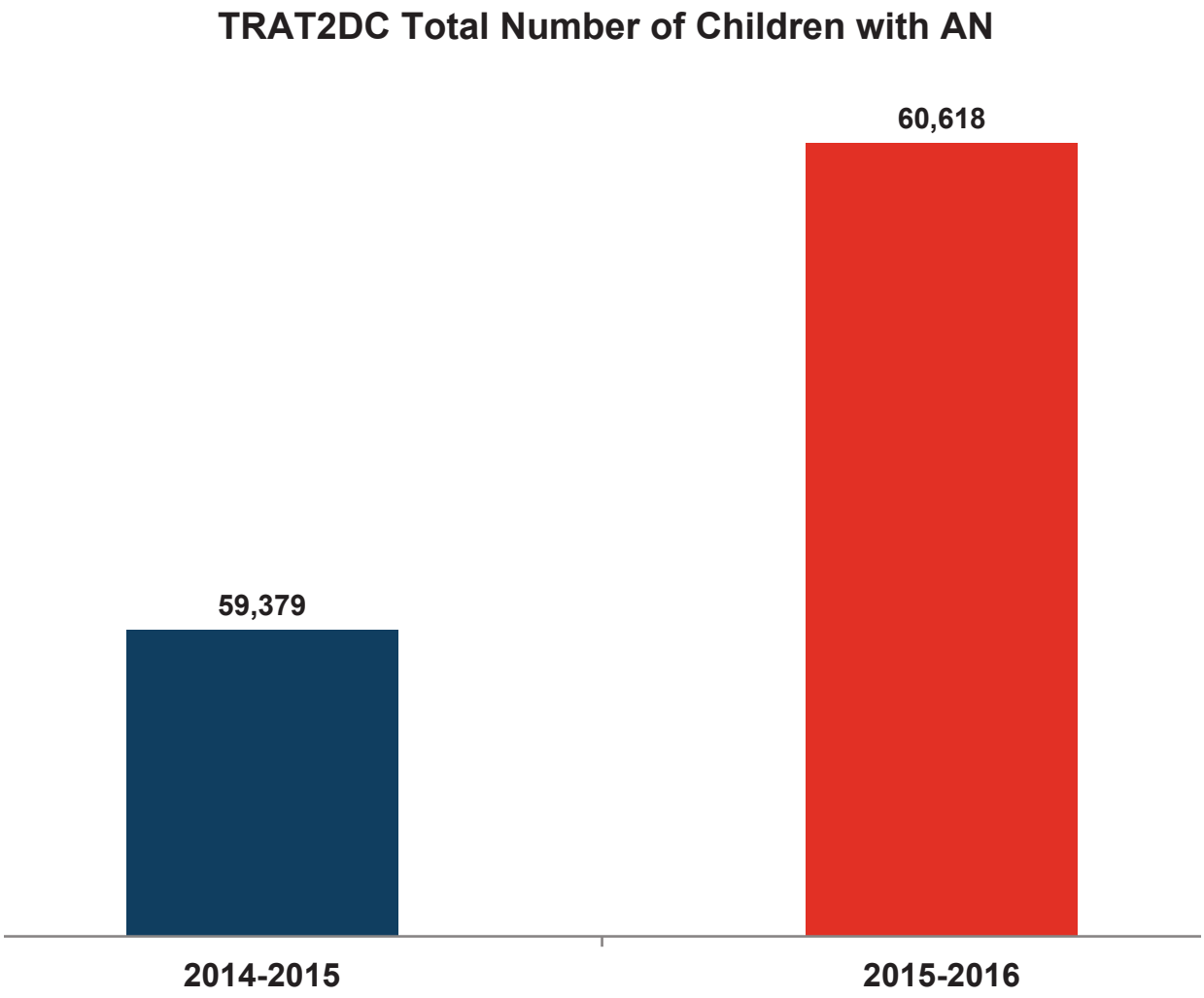
The TRAT2DC RFES is a unique secure-access, web-based risk assessment software that is mission critical to the UTRGV COHA BHO in order to fulfill requirements and responsibilities of the TRAT2DC program. The number of RFES users in the 2015-2016 reporting period increased by 1,193 users compared to the 2014-2015 reporting period.

Risk Assessments

Acanthosis Nigricans

Acanthosis nigricans (AN) is a cutaneous marker associated with hyperinsulinemia and insulin resistance and is considered a risk factor for type 2 diabetes and other chronic diseases. Because of the increasingly alarming rates of children developing type 2 diabetes, AN assessments are important and can help identify children with high insulin levels who may be at risk for developing the disease.

Acanthosis Nigricans(AN)

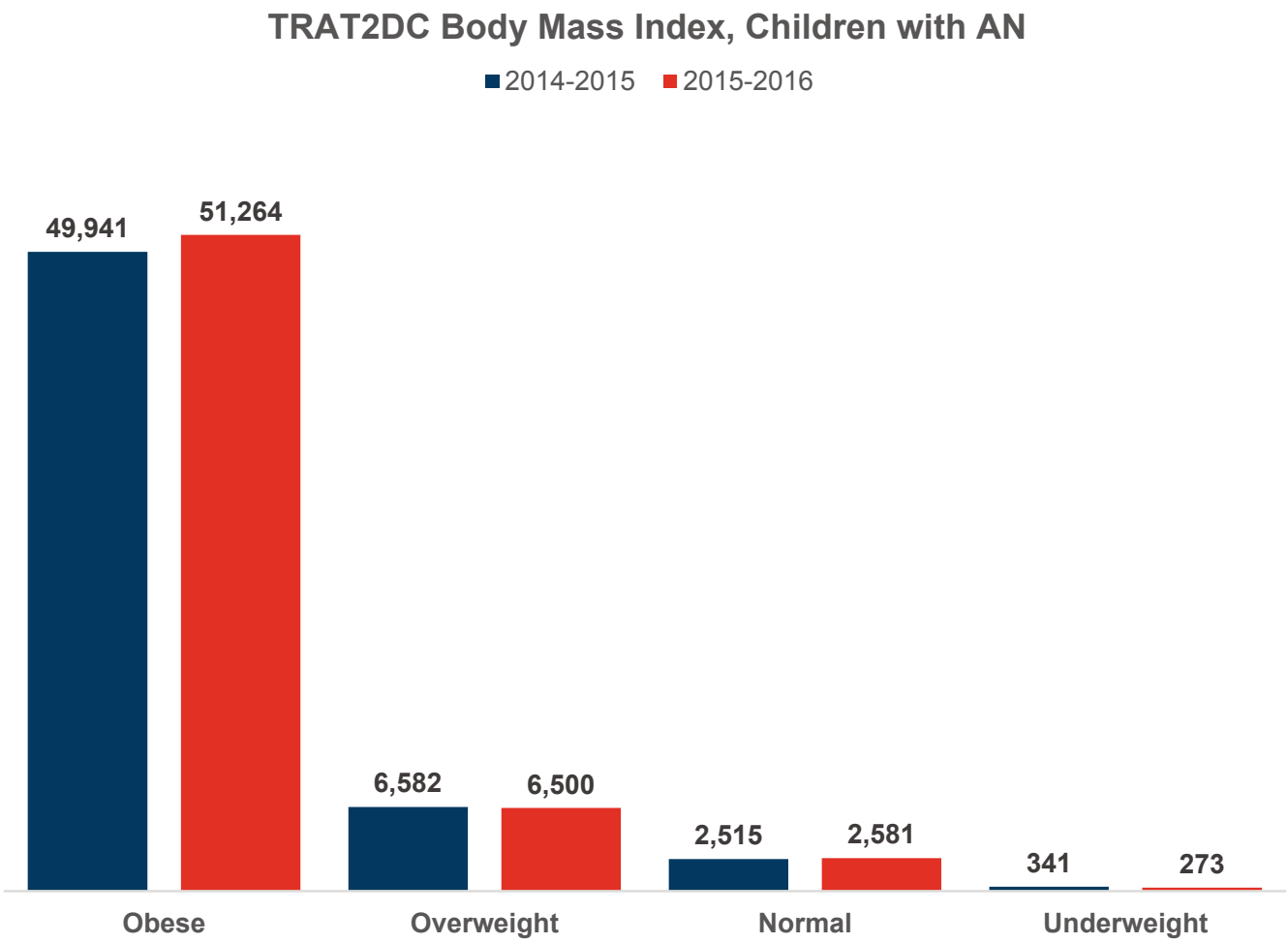


Acanthosis nigricans (AN) is a cutaneous marker associated with hyperinsulinemia and insulin resistance and is considered a risk factor for type 2 diabetes and other chronic diseases. During the 2014-2015 reporting period, 59, 379 children (6% of the total student population assessed) were identified with the AN marker while 60, 618 children (5% of the total student population assessed) were reported as having the marker in the 2015-2016 reporting period.

Risk Assessments

Body Mass Index

Body Mass Index (BMI) is a measurement that helps determine overweight status by using a mathematical formula that takes into account age, height, and weight. After BMI is calculated for children and teens with acanthosis nigricans, the BMI number is plotted on Center for Diseases Control and Prevention (CDC) BMI-for-age growth charts. BMI categories are obese, overweight, normal, and underweight. A child with a BMI greater or equal to the 95th percentile is considered obese and has a greater chance of maintaining obesity into adulthood. This is also significant since studies have shown that BMI above the 95th percentile is associated with elevated blood pressure, hyperlipidemia, and obesity-related disease and mortality. A child whose BMI falls between the 85th and 94th percentile is considered overweight and should be evaluated carefully and should be given particular attention to secondary complications of obesity.

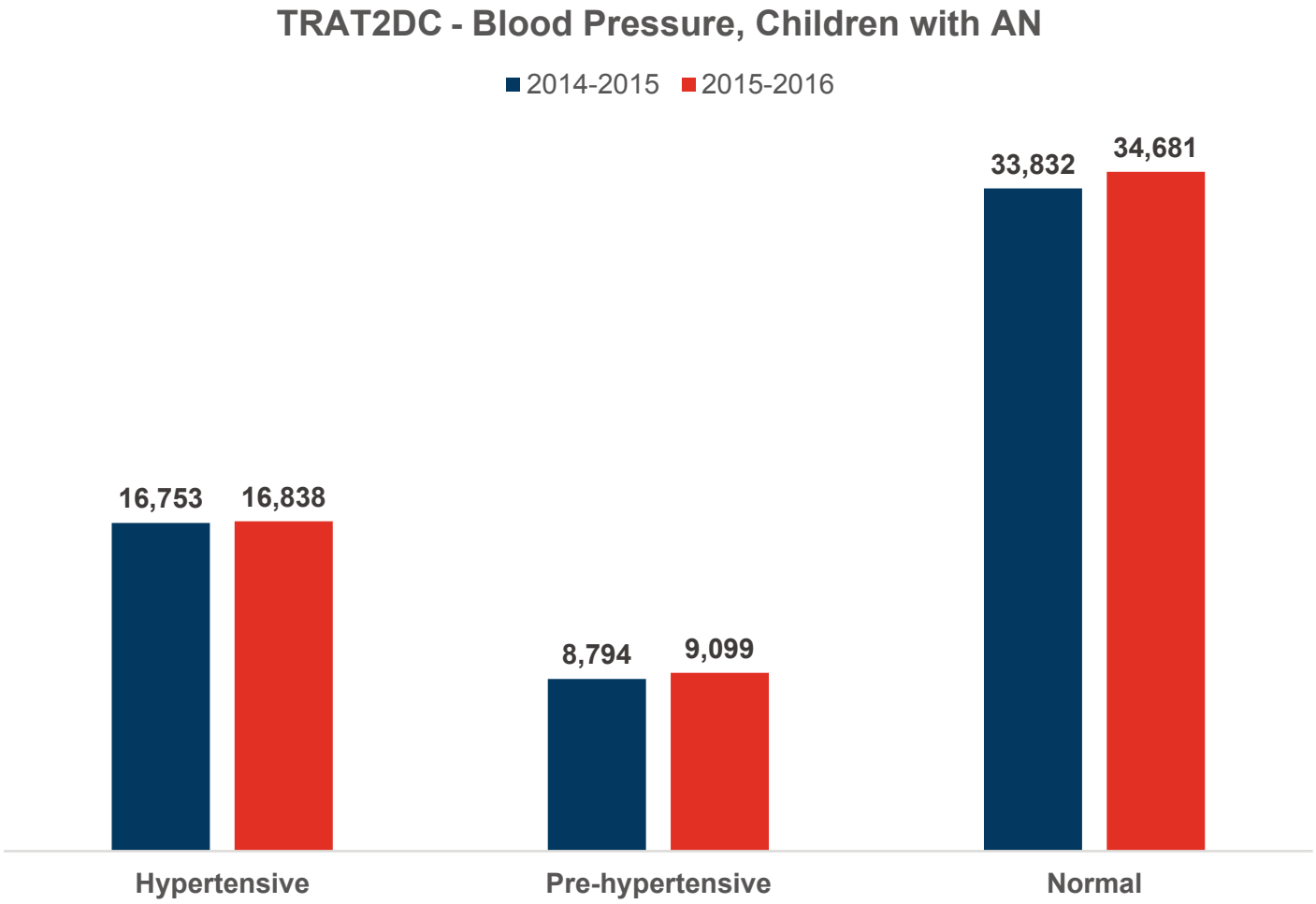


Body Mass Index (BMI) is a measurement that helps determine overweight status by using a mathematical formula that takes into account age, height, and weight. The graph above illustrates the number of children with AN who were identified as obese, overweight, normal, or underweight for the 2014-2015 and 2015 and 2016 reporting periods. Over 84% of the children with AN were classified at or above the 95th%-ile for BMI for age in both reporting years.

Risk Assessments

Blood Pressure

Hypertension increases the risk for cardiovascular disease and is a complication of obesity. Hypertension is also associated with insulin resistance and hyperinsulinemia. Elevated blood pressure in childhood correlates with hypertension in early adulthood, supporting the need to track blood pressure in children. As part of this program, certified personnel perform two blood pressure measures on children who have the AN marker. Blood pressure is taken on the child's right arm in a controlled environment, allowing three-to-five minutes of rest in between each reading as recommended by the National High Blood Pressure Education Program Working Group on High Blood Pressure in Children and Adolescents. Blood pressure categories are identified as hypertensive, prehypertensive, or normal.



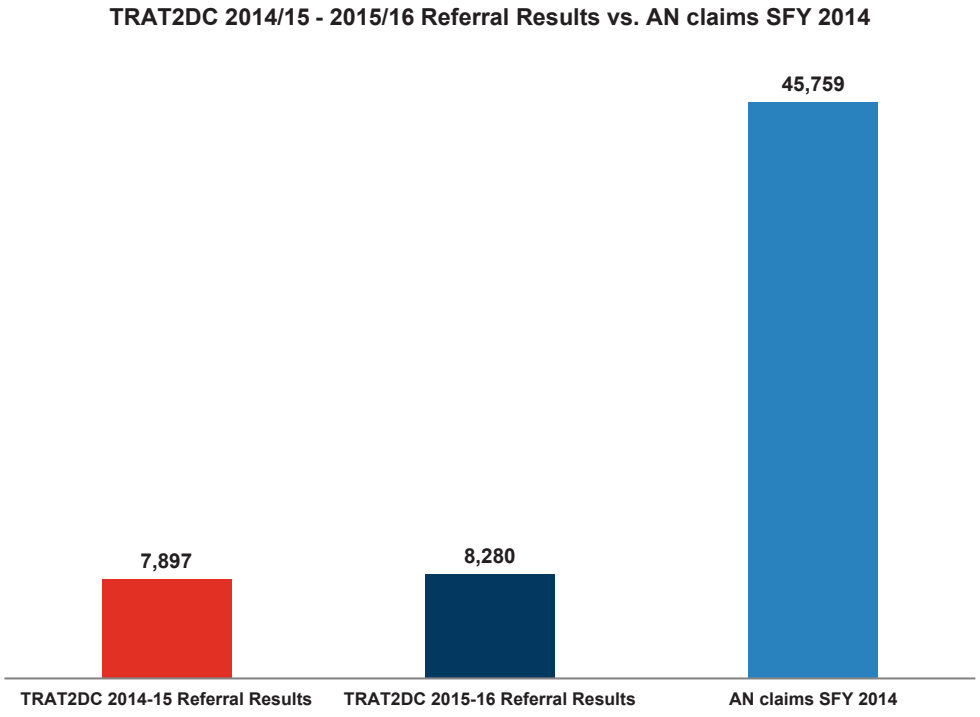
Hypertension increases the risk for cardiovascular disease and is a complication of obesity. Hypertension is also associated with insulin resistance and hyperinsulinemia. For both school years, 28% and 15% of children with AN were classified as hypertensive and prehypertensive, respectively.

Risk Assessment Referral Results/Internatitional Classification of Diseases-9 Code 701.2 Acquired Acanthosis Nigricans Member Count Data

The Texas Risk Assessment for Type 2 Diabetes in Children program helps identify those children who may be at-risk to develop type 2 diabetes through simple, non-invasive assessments that have been identified as risk factors for the development of the disease and other complications. During vision/hearing and scoliosis screenings, certified individuals assess school children for these risk factors. If these risk factors are present, a referral is issued to the parents of the child explaining what was found and why it is of concern. The referral includes recommendations to seek further evaluation from a health professional.

Research shows that the origins of type 2 diabetes are firmly rooted in childhood and experts agree that the best chance to reduce the burden of diabetes is to identify those with pre-diabetes to prevent its onset. It is important then for children with these risk factors to be evaluated by a health care professional. This contact between child, parent, and physician is a significant first step to reduce the burden of diabetes in the State of Texas.

Texas Department of State Health Services Medicaid/CHIP member claims helps understand the medical community's response to the Texas Risk Assessment for Type 2 Diabetes in Children program. Data on International Classification of Diseases (ICD-9) Code 701.2 Acquired Acanthosis Nigricans (AN)member claims among children 0-17 years of age shows an increase since the program began in 1999.



A total number of 16, 177 students followed their risk assessment with a health care professional during the 2014-2015/2015-2106 reporting periods . Member claim data for ICD-9 Code 701.2 in SFY 2014 (45,759 claims) suggests that more children may be following up with their risk assessment than is being reported to the RFES. This number may reflect the awareness and education promoted through the TRATDC2 program as well as physician response to the risk assessment referral.

Technical/Educational Services & TRAT2DC Budget

The Texas Risk Assessment for Type 2 Diabetes in Children program provides training and certification to school nurses or other certified individuals in conducting risk assessments. Training and certification is an important on-going activity as new nurses are hired by districts every year due to growth or turnover. Technical assistance is provided by 3 health education coordinators that are assigned, but not restricted to, certain Texas Education Agency Regional Education Service Centers. Requests for materials and training and technical support for the Risk Factor Electronic System is also provided by these coordinators. Providing these services is pertinent to the success of the program. Services are provided year round.

The TRAT2DC program provides educational materials to school nurses/certified individuals who take part in the risk assessments . These materials are an excellent resource for parents. A colorful foldout easy-to-read bilingual brochure is available for comprehensible use by school nurses to assist in educating parents and the community-at-large about TRAT2DC program and the risk factors assessments. Training posters that include helpful tips on how to identify and assess for the acanthosis nigricans marker are provided on request.

The TRAT2DC program is funded in the amount of $158,656 annually.

TRAT2DC Brochure

TRAT2DC Acanthosis Nigricans Assessment Poster

Suggested Readings

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Texas Risk Assessment for Type 2 Diabetes in Children Program
Texas Education Agency Regional Education Service Center
2014-2015/2015-2016 Fact Sheets

The University of Texas Rio Grande Valley

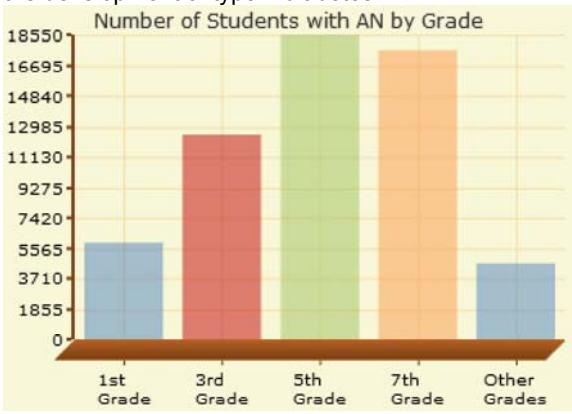
Risk Assessment for Type 2 Diabetes in Children Fact Sheet
MANDATED REGIONS
2014-2015

The Risk Assessment for the Type 2 Diabetes in Children is a legislatively mandated program developed, coordinated, and administered by The University of Texas Rio Grande Valley Border Health Office (BHO). The program assesses children who may be at high risk of developing type 2 diabetes. During vision/hearing and scoliosis screenings of 1st, 3rd, 5th and 7th graders in public and private schools, certified individuals assess children for the acanthosis nigricans (AN) marker, a skin condition that signals high insulin levels. Children who are identified with the marker undergo additional assessments of body mass index (BMI), BMI percentile, and blood pressure. Referrals are issued to the parents of these children, alerting each parent of what the risk factors are and what changes will be necessary to prevent or delay future health problems for children at risk of developing type 2 diabetes and other health conditions.
The following results are for the assessments conducted in your Mandate:

Assessment Information	Assessment Outcomes	
Assessed: 1061787	Already under care: 791	Referral not issued: 92
Acanthosis Nigricans: 59325	Seen by Physician: 7101	Referral not returned: 44923
		Not Seen by Physician: 511

Acanthosis Nigricans

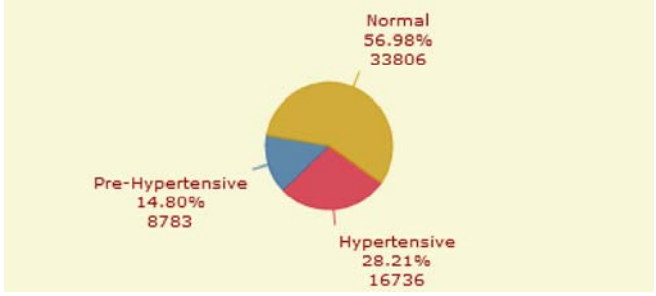
Acanthosis nigricans is a skin condition that is frequently seen on the nape of the neck. It appears as a dark/black, rough, or velvety area on the surface of the skin. The AN marker is important because it most often signals high insulin levels circulating within the body. The AN marker is considered a risk factor in the development of type 2 diabetes.



Blood Pressure

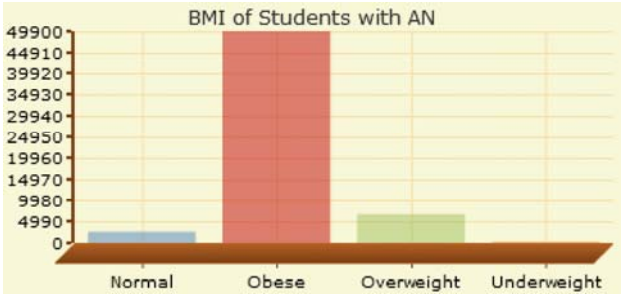
Hypertension has also been associated with insulin resistance and hyperinsulinemia, which is important for children with the AN marker. Elevated blood pressure in childhood correlates with hypertension in early adulthood, supporting the need to measure blood pressure in children.

	1st	3rd	5th	7th	Other Grades	Female	Male
Normal	3791	7684	10499	9433	2399	19155	14651
Pre-Hypertensive	769	1716	2950	2629	719	4698	4085
Hypertensive	1376	3148	5095	5576	1541	9075	7661



Body Mass Index

A high Body Mass Index (BMI) for age percentile is also considered a risk factor for the development of type 2 diabetes. BMI is calculated using the student's sex, age, height, and weight. The BMI percentiles are determined by the Centers for Disease Control BMI for age percentile growth charts. The percentiles are separated into four categories: Underweight, Normal, Overweight, and Obesity. In the development of type 2 diabetes, special emphasis is placed on the Overweight and Obesity categories.



	1st	3rd	5th	7th	Other Grades
Normal	330	467	742	798	175
Obesity	5166	10867	15394	14480	3986
Overweight	372	1119	2305	2305	478
Underweight	68	95	103	55	20

The University of Texas Rio Grande Valley

Risk Assessment for Type 2 Diabetes in Children Fact Sheet

REGION 1

2014-2015

The Risk Assessment for the Type 2 Diabetes in Children is a legislatively mandated program developed, coordinated, and administered by The University of Texas Rio Grande Valley Border Health Office (BHO). The program assesses children who may be at high risk of developing type 2 diabetes. During vision/hearing and scoliosis screenings of 1st, 3rd, 5th and 7th graders in public and private schools, certified individuals assess children for the acanthosis nigricans (AN) marker, a skin condition that signals high insulin levels. Children who are identified with the marker undergo additional assessments of body mass index (BMI), BMI percentile, and blood pressure. Referrals are issued to the parents of these children, alerting each parent of what the risk factors are and what changes will be necessary to prevent or delay future health problems for children at risk of developing type 2 diabetes and other health conditions.
The following results are for the assessments conducted in your Region:

Assessment Information	Assessment Outcomes	
Assessed: 116854	Already under care: 244	Referral not issued: 17
Acanthosis Nigricans: 10724	Seen by Physician: 1870	Referral not returned: 7167
		Not Seen by Physician: 81

Acanthosis Nigricans

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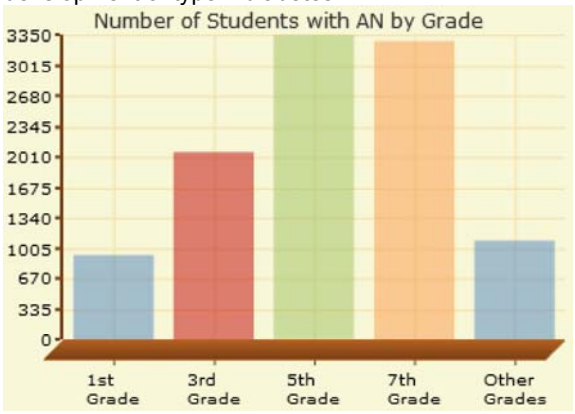
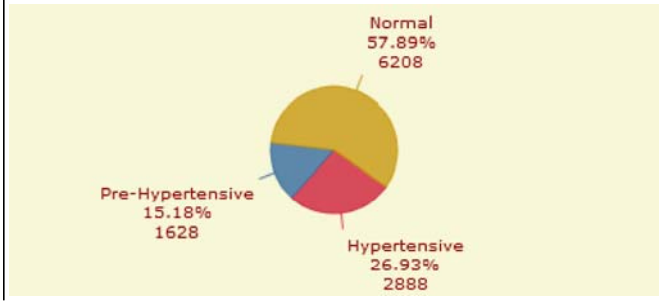


Blood Pressure

Hypertension has also been associated with insulin resistance and hyperinsulinemia, which is important for children with the AN marker. Elevated blood pressure in childhood correlates with hypertension in early adulthood, supporting the need to measure blood pressure in children.

	1st	3rd	5th	7th	Other Grades	Female	Male
Normal	600	1330	1930	1813	535	3359	2849
Pre-Hypertensive	124	285	532	525	162	844	784
Hypertensive	211	447	881	950	399	1508	1380



Body Mass Index

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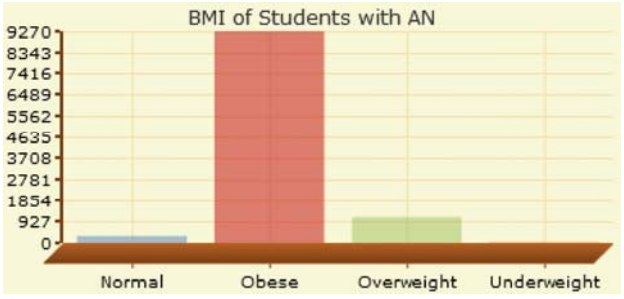

	1st	3rd	5th	7th	Other Grades
Normal	22	38	116	93	32
Obesity	864	1842	2792	2803	968
Overweight	41	173	424	381	91
Underweight	8	9	11	11	5

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Risk Assessment for Type 2 Diabetes in Children Fact Sheet

REGION 2

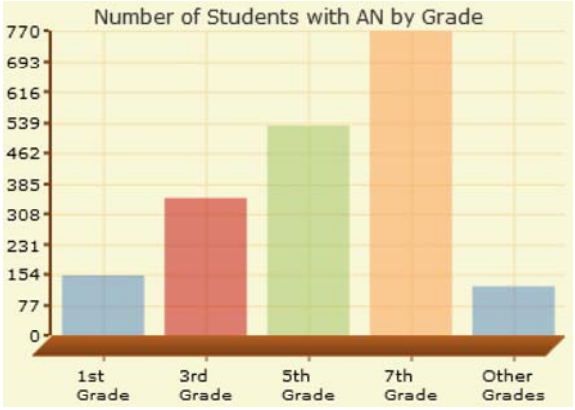
2014-2015

The Risk Assessment for the Type 2 Diabetes in Children is a legislatively mandated program developed, coordinated, and administered by The University of Texas Rio Grande Valley Border Health Office (BHO). The program assesses children who may be at high risk of developing type 2 diabetes. During vision/hearing and scoliosis screenings of 1st, 3rd, 5th and 7th graders in public and private schools, certified individuals assess children for the acanthosis nigricans (AN) marker, a skin condition that signals high insulin levels. Children who are identified with the marker undergo additional assessments of body mass index (BMI), BMI percentile, and blood pressure. Referrals are issued to the parents of these children, alerting each parent of what the risk factors are and what changes will be necessary to prevent or delay future health problems for children at risk of developing type 2 diabetes and other health conditions.
The following results are for the assessments conducted in your Region:

Assessment Information	Assessment Outcomes	Referral not issued:
Assessed: 28563	Already under care: 31	Referral not returned: 1518
Acanthosis Nigricans: 1927	Seen by Physician: 279	Not Seen by Physician: 26

Acanthosis Nigricans

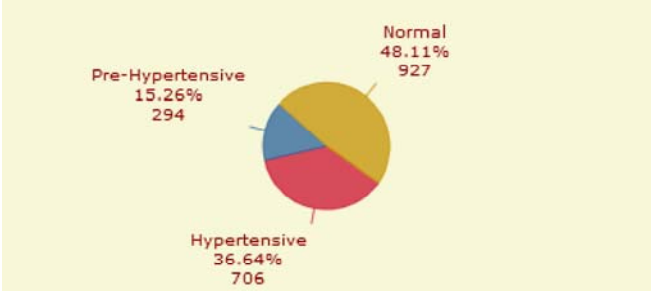
Acanthosis nigricans is a skin condition that is frequently seen on the nape of the neck. It appears as a dark/black, rough, or velvety area on the surface of the skin. The AN marker is important because it most often signals high insulin levels circulating within the body. The AN marker is considered a risk factor in the development of type 2 diabetes.



Blood Pressure

Hypertension has also been associated with insulin resistance and hyperinsulinemia, which is important for children with the AN marker. Elevated blood pressure in childhood correlates with hypertension in early adulthood, supporting the need to measure blood pressure in children.

	1st	3rd	5th	7th	Other Grades	Female	Male
Normal	80	183	255	368	41	522	405
Pre-Hypertensive	21	46	94	111	22	160	134
Hypertensive	51	121	183	290	61	384	322



Body Mass Index

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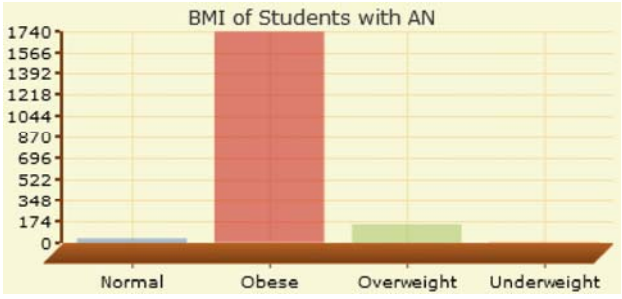

	1st	3rd	5th	7th	Other Grades
Normal	3	2	9	19	4
Obesity	146	329	461	687	111
Overweight	2	17	60	60	8
Underweight	1	2	2	3	1

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Risk Assessment for Type 2 Diabetes in Children Fact Sheet

REGION 3

2014-2015

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The following results are for the assessments conducted in your Region:

Assessment Information	Assessment Outcomes	Referral not issued:
Assessed: 14958	Already under care: 9	Referral not returned: 519
Acanthosis Nigricans: 658	Seen by Physician: 78	Not Seen by Physician: 4

Acanthosis Nigricans

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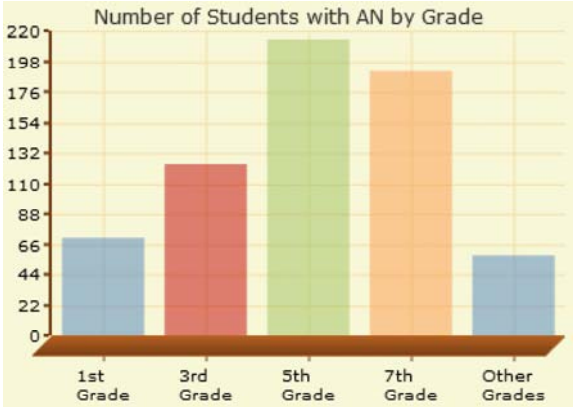
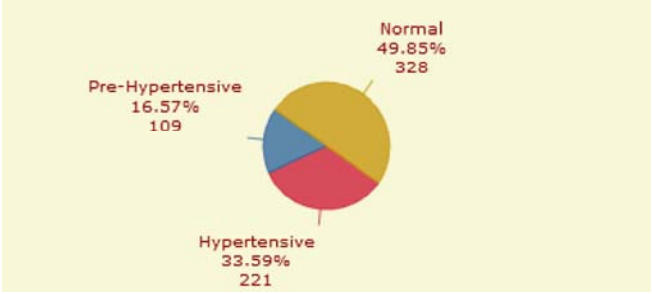


Blood Pressure

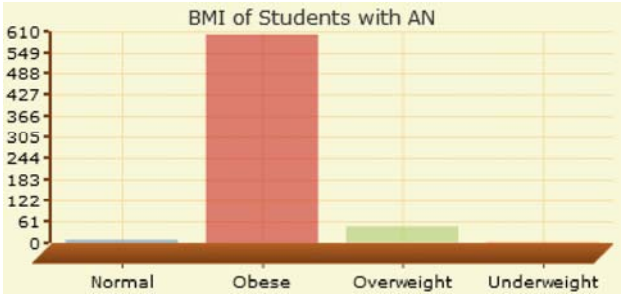
Hypertension has also been associated with insulin resistance and hyperinsulinemia, which is important for children with the AN marker. Elevated blood pressure in childhood correlates with hypertension in early adulthood, supporting the need to measure blood pressure in children.

	1st	3rd	5th	7th	Other Grades	Female	Male
Normal	41	71	99	92	25	179	149
Pre-Hypertensive	8	11	35	40	15	54	55
Hypertensive	22	42	80	59	18	134	87



Body Mass Index

A high Body Mass Index (BMI) for age percentile is also considered a risk factor for the development of type 2 diabetes. BMI is calculated using the student's sex, age, height, and weight. The BMI percentiles are determined by the Centers for Disease Control BMI for age percentile growth charts. The percentiles are separated into four categories: Underweight, Normal, Overweight, and Obesity. In the development of type 2 diabetes, special emphasis is placed on the Overweight and Obesity categories.



	1st	3rd	5th	7th	Other Grades
Normal	3	1	1	4	0
Obesity	67	115	193	169	57
Overweight	1	7	19	17	1
Underweight	0	1	1	1	0

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Risk Assessment for Type 2 Diabetes in Children Fact Sheet

REGION 4

2014-2015

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The following results are for the assessments conducted in your Region:

Assessment Information	Assessment Outcomes	
Assessed: 275372	Already under care: 200	Referral not issued: 25
Acanthosis Nigricans: 16092	Seen by Physician: 1799	Referral not returned: 12534
		Not Seen by Physician: 202

Acanthosis Nigricans

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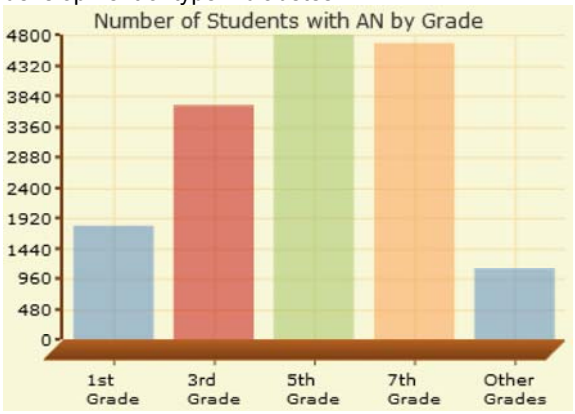
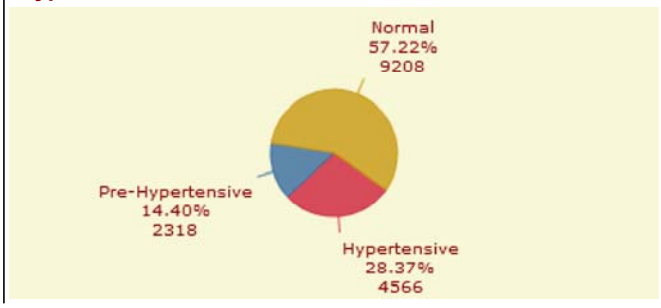


Blood Pressure

Hypertension has also been associated with insulin resistance and hyperinsulinemia, which is important for children with the AN marker. Elevated blood pressure in childhood correlates with hypertension in early adulthood, supporting the need to measure blood pressure in children.

	1st	3rd	5th	7th	Other Grades	Female	Male
Normal	1115	2249	2667	2569	608	5198	4010
Pre-Hypertensive	251	507	771	643	146	1227	1091
Hypertensive	428	942	1361	1470	365	2442	2124



Body Mass Index

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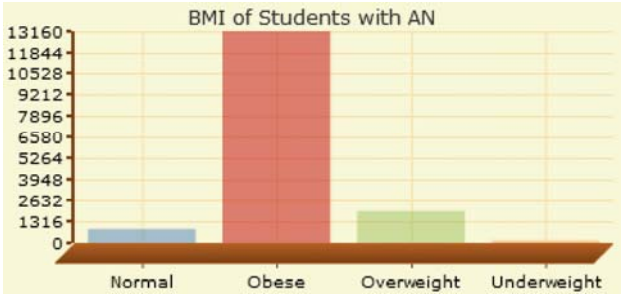

	1st	3rd	5th	7th	Other Grades
Normal	120	188	236	238	41
Obesity	1497	3090	3896	3717	954
Overweight	144	369	605	712	121
Underweight	33	51	62	15	3

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Risk Assessment for Type 2 Diabetes in Children Fact Sheet

REGION 10

2014-2015

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The following results are for the assessments conducted in your Region:

Assessment Information	Assessment Outcomes	
Assessed: 175646	Already under care: 71	Referral not issued: 8
Acanthosis Nigricans: 7572	Seen by Physician: 1018	Referral not returned: 5393
		Not Seen by Physician: 51

Acanthosis Nigricans

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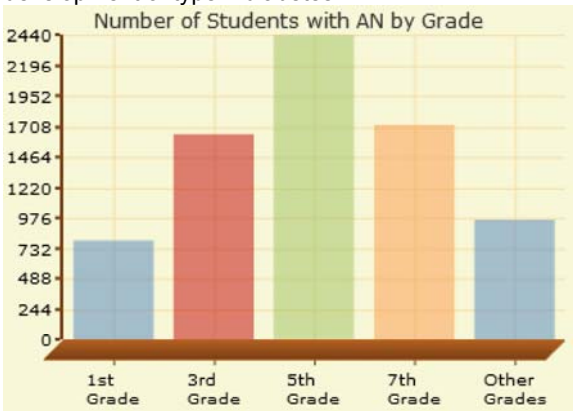
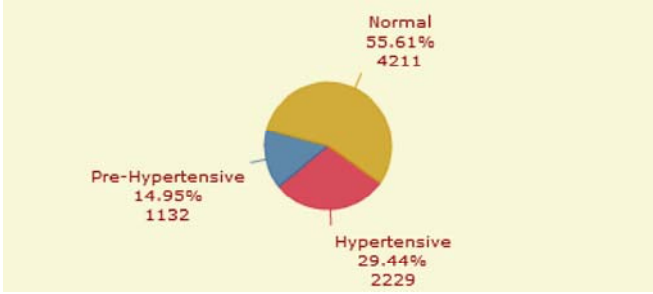


Blood Pressure

Hypertension has also been associated with insulin resistance and hyperinsulinemia, which is important for children with the AN marker. Elevated blood pressure in childhood correlates with hypertension in early adulthood, supporting the need to measure blood pressure in children.

	1st	3rd	5th	7th	Other Grades	Female	Male
Normal	499	978	1355	880	499	2541	1670
Pre-Hypertensive	112	233	385	242	160	642	490
Hypertensive	186	442	696	603	302	1246	983



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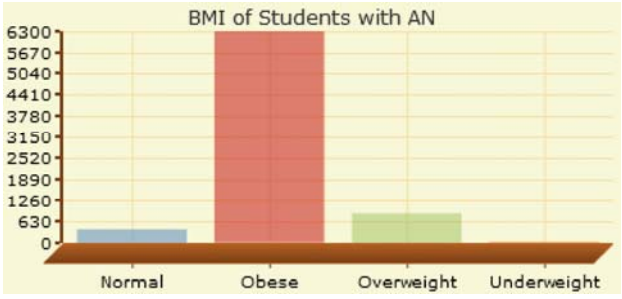

	1st	3rd	5th	7th	Other Grades
Normal	54	61	86	123	58
Obesity	687	1436	2020	1369	781
Overweight	49	139	319	227	120
Underweight	7	17	11	6	2

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Risk Assessment for Type 2 Diabetes in Children Fact Sheet

REGION 11

2014-2015

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The following results are for the assessments conducted in your Region:

Assessment Information	Assessment Outcomes	
Assessed: 160425	Already under care: 66	Referral not issued: 7
Acanthosis Nigricans: 5971	Seen by Physician: 558	Referral not returned: 4948
	Not Seen by Physician: 57	

Acanthosis Nigricans

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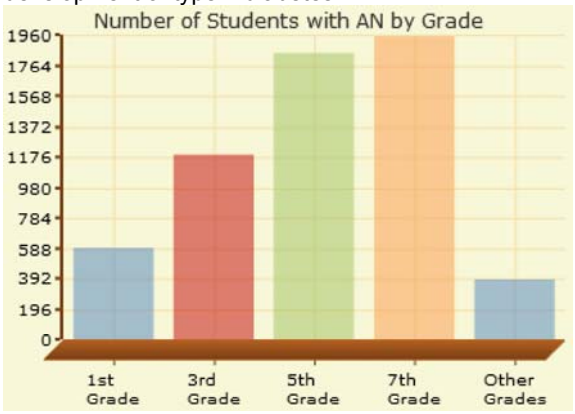
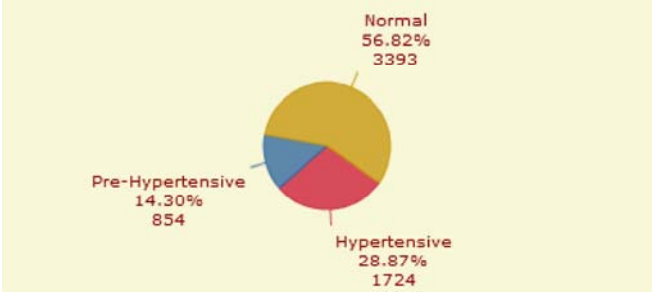


Blood Pressure

Hypertension has also been associated with insulin resistance and hyperinsulinemia, which is important for children with the AN marker. Elevated blood pressure in childhood correlates with hypertension in early adulthood, supporting the need to measure blood pressure in children.

	1st	3rd	5th	7th	Other Grades	Female	Male
Normal	378	698	1096	1011	210	1941	1452
Pre-Hypertensive	67	164	265	303	55	460	394
Hypertensive	149	329	488	637	121	975	749



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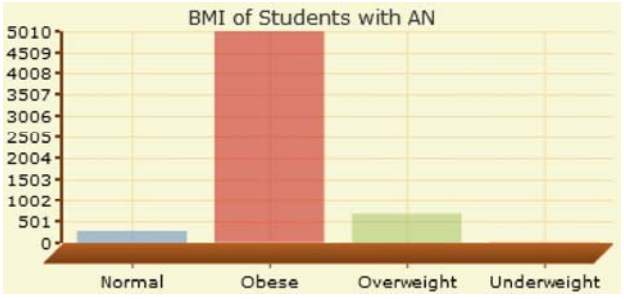

	1st	3rd	5th	7th	Other Grades
Normal	32	46	67	98	22
Obesity	525	1041	1539	1585	317
Overweight	33	99	236	260	44
Underweight	4	5	7	8	3

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Risk Assessment for Type 2 Diabetes in Children Fact Sheet

REGION 13

2014-2015

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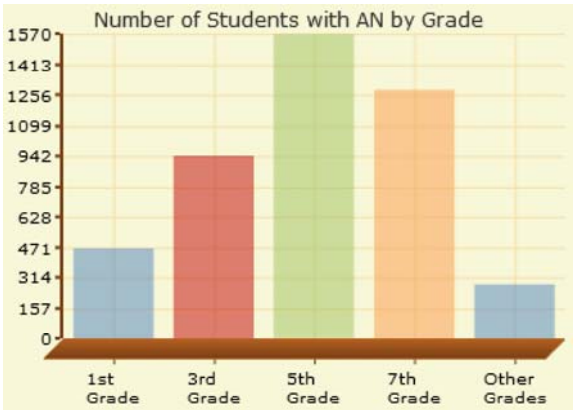
The following results are for the assessments conducted in your Region:

Assessment Information	Assessment Outcomes	
Assessed: 99907	Already under care: 45	Referral not issued: 17
Acanthosis Nigricans: 4539	Seen by Physician: 320	Referral not returned: 3885
	Not Seen by Physician: 10	

Acanthosis Nigricans

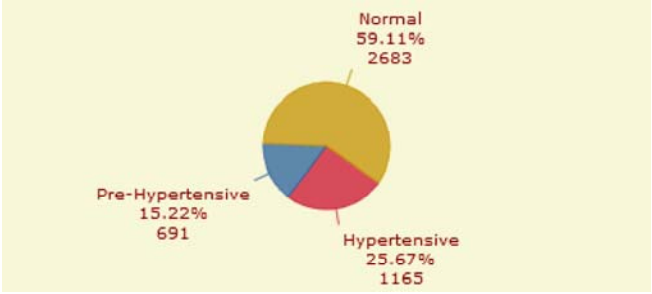
Acanthosis nigricans is a skin condition that is frequently seen on the nape of the neck. It appears as a dark/black, rough, or velvety area on the surface of the skin. The AN marker is important because it most often signals high insulin levels circulating within the body. The AN marker is considered a risk factor in the development of type 2 diabetes.



Blood Pressure

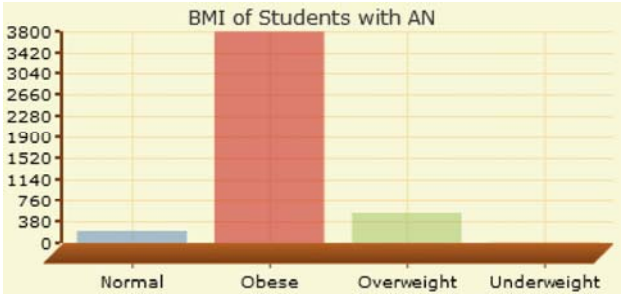
Hypertension has also been associated with insulin resistance and hyperinsulinemia, which is important for children with the AN marker. Elevated blood pressure in childhood correlates with hypertension in early adulthood, supporting the need to measure blood pressure in children.

	1st	3rd	5th	7th	Other Grades	Female	Male
Normal	332	592	928	687	144	1529	1154
Pre-Hypertensive	49	130	260	188	64	379	312
Hypertensive	87	221	379	408	70	658	507



Body Mass Index

A high Body Mass Index (BMI) for age percentile is also considered a risk factor for the development of type 2 diabetes. BMI is calculated using the student's sex, age, height, and weight. The BMI percentiles are determined by the Centers for Disease Control BMI for age percentile growth charts. The percentiles are separated into four categories: Underweight, Normal, Overweight, and Obesity. In the development of type 2 diabetes, special emphasis is placed on the Overweight and Obesity categories.



	1st	3rd	5th	7th	Other Grades
Normal	39	25	64	68	10
Obesity	391	841	1300	1039	222
Overweight	36	74	199	173	44
Underweight	2	3	4	3	2

The University of Texas Rio Grande Valley

Risk Assessment for Type 2 Diabetes in Children Fact Sheet

REGION 15

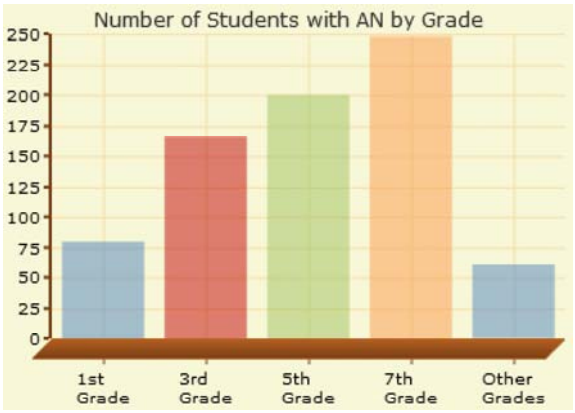
2014-2015

The Risk Assessment for the Type 2 Diabetes in Children is a legislatively mandated program developed, coordinated, and administered by The University of Texas Rio Grande Valley Border Health Office (BHO). The program assesses children who may be at high risk of developing type 2 diabetes. During vision/hearing and scoliosis screenings of 1st, 3rd, 5th and 7th graders in public and private schools, certified individuals assess children for the acanthosis nigricans (AN) marker, a skin condition that signals high insulin levels. Children who are identified with the marker undergo additional assessments of body mass index (BMI), BMI percentile, and blood pressure. Referrals are issued to the parents of these children, alerting each parent of what the risk factors are and what changes will be necessary to prevent or delay future health problems for children at risk of developing type 2 diabetes and other health conditions.
The following results are for the assessments conducted in your Region:

Assessment Information	Assessment Outcomes	Referral not issued:
Assessed: 13890	Already under care: 19	Referral not returned: 624
Acanthosis Nigricans: 755	Seen by Physician: 76	Not Seen by Physician: 3

Acanthosis Nigricans

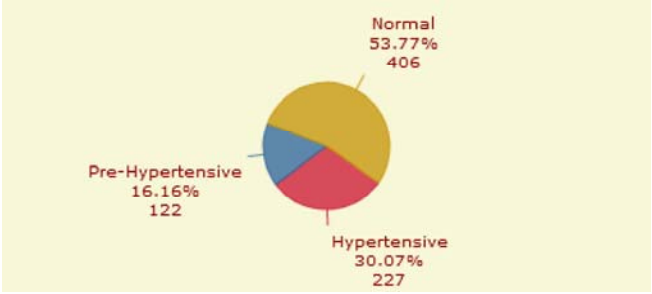
Acanthosis nigricans is a skin condition that is frequently seen on the nape of the neck. It appears as a dark/black, rough, or velvety area on the surface of the skin. The AN marker is important because it most often signals high insulin levels circulating within the body. The AN marker is considered a risk factor in the development of type 2 diabetes.



Blood Pressure

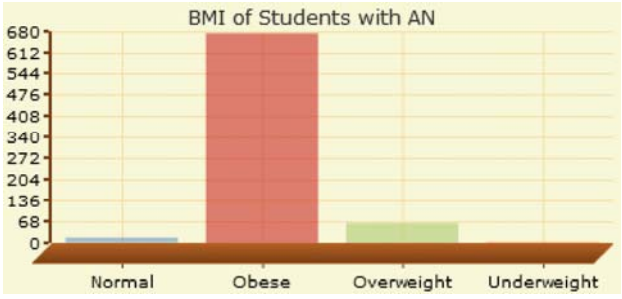
Hypertension has also been associated with insulin resistance and hyperinsulinemia, which is important for children with the AN marker. Elevated blood pressure in childhood correlates with hypertension in early adulthood, supporting the need to measure blood pressure in children.

	1st	3rd	5th	7th	Other Grades	Female	Male
Normal	47	89	98	134	38	236	170
Pre-Hypertensive	13	32	34	37	6	67	55
Hypertensive	20	45	68	77	17	139	88



Body Mass Index

A high Body Mass Index (BMI) for age percentile is also considered a risk factor for the development of type 2 diabetes. BMI is calculated using the student's sex, age, height, and weight. The BMI percentiles are determined by the Centers for Disease Control BMI for age percentile growth charts. The percentiles are separated into four categories: Underweight, Normal, Overweight, and Obesity. In the development of type 2 diabetes, special emphasis is placed on the Overweight and Obesity categories.



	1st	3rd	5th	7th	Other Grades
Normal	2	2	9	2	1
Obesity	75	153	171	220	54
Overweight	3	11	19	23	6
Underweight	0	0	1	3	0

The University of Texas Rio Grande Valley

Risk Assessment for Type 2 Diabetes in Children Fact Sheet

REGION 18

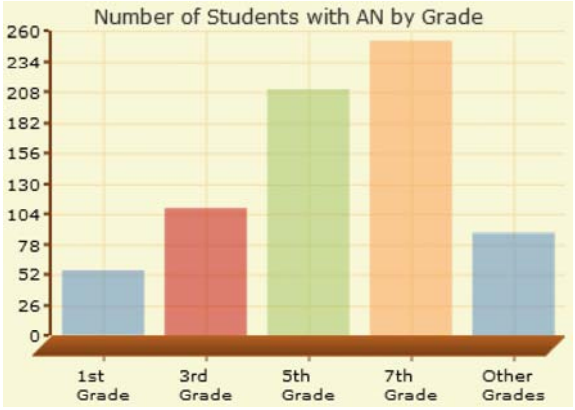
2014-2015

The Risk Assessment for the Type 2 Diabetes in Children is a legislatively mandated program developed, coordinated, and administered by The University of Texas Rio Grande Valley Border Health Office (BHO). The program assesses children who may be at high risk of developing type 2 diabetes. During vision/hearing and scoliosis screenings of 1st, 3rd, 5th and 7th graders in public and private schools, certified individuals assess children for the acanthosis nigricans (AN) marker, a skin condition that signals high insulin levels. Children who are identified with the marker undergo additional assessments of body mass index (BMI), BMI percentile, and blood pressure. Referrals are issued to the parents of these children, alerting each parent of what the risk factors are and what changes will be necessary to prevent or delay future health problems for children at risk of developing type 2 diabetes and other health conditions.
The following results are for the assessments conducted in your Region:

Assessment Information	Assessment Outcomes	
Assessed: 18291	Already under care: 10	Referral not issued: 1
Acanthosis Nigricans: 714	Seen by Physician: 77	Referral not returned: 593
		Not Seen by Physician: 2

Acanthosis Nigricans

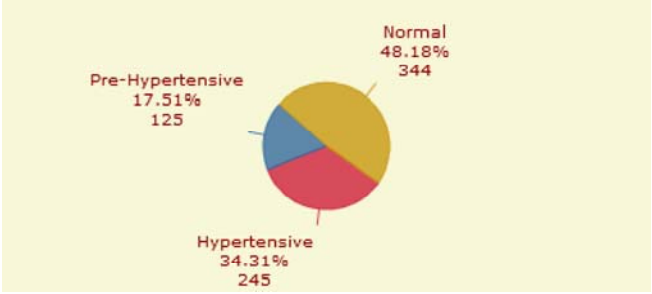
Acanthosis nigricans is a skin condition that is frequently seen on the nape of the neck. It appears as a dark/black, rough, or velvety area on the surface of the skin. The AN marker is important because it most often signals high insulin levels circulating within the body. The AN marker is considered a risk factor in the development of type 2 diabetes.



Blood Pressure

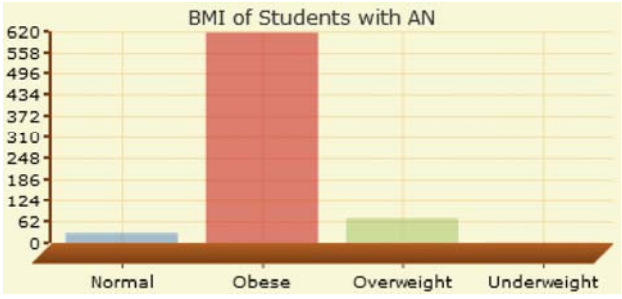
Hypertension has also been associated with insulin resistance and hyperinsulinemia, which is important for children with the AN marker. Elevated blood pressure in childhood correlates with hypertension in early adulthood, supporting the need to measure blood pressure in children.

	1st	3rd	5th	7th	Other Grades	Female	Male
Normal	32	59	109	103	41	202	142
Pre-Hypertensive	11	14	42	44	14	69	56
Hypertensive	12	36	59	105	33	140	105



Body Mass Index

A high Body Mass Index (BMI) for age percentile is also considered a risk factor for the development of type 2 diabetes. BMI is calculated using the student's sex, age, height, and weight. The BMI percentiles are determined by the Centers for Disease Control BMI for age percentile growth charts. The percentiles are separated into four categories: Underweight, Normal, Overweight, and Obesity. In the development of type 2 diabetes, special emphasis is placed on the Overweight and Obesity categories.



	1st	3rd	5th	7th	Other Grades
Normal	3	3	9	11	1
Obesity	47	95	183	212	79
Overweight	5	11	18	29	7
Underweight	0	0	0	0	1

The University of Texas Rio Grande Valley

Risk Assessment for Type 2 Diabetes in Children Fact Sheet

REGION 19

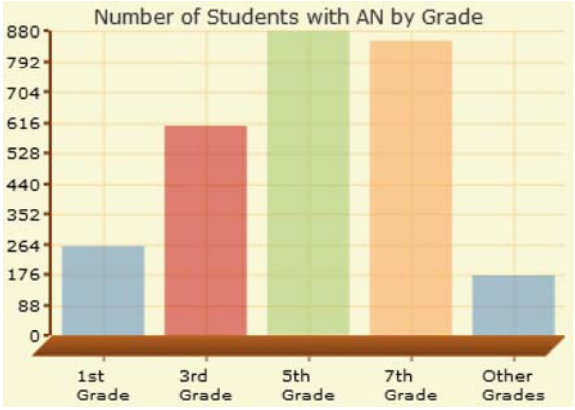
2014-2015

The Risk Assessment for the Type 2 Diabetes in Children is a legislatively mandated program developed, coordinated, and administered by The University of Texas Rio Grande Valley Border Health Office (BHO). The program assesses children who may be at high risk of developing type 2 diabetes. During vision/hearing and scoliosis screenings of 1st, 3rd, 5th and 7th graders in public and private schools, certified individuals assess children for the acanthosis nigricans (AN) marker, a skin condition that signals high insulin levels. Children who are identified with the marker undergo additional assessments of body mass index (BMI), BMI percentile, and blood pressure. Referrals are issued to the parents of these children, alerting each parent of what the risk factors are and what changes will be necessary to prevent or delay future health problems for children at risk of developing type 2 diabetes and other health conditions.
The following results are for the assessments conducted in your Region:

Assessment Information	Assessment Outcomes	
Assessed: 43694	Already under care: 30	Referral not issued: 14
Acanthosis Nigricans: 2773	Seen by Physician: 391	Referral not returned: 2056
		Not Seen by Physician: 26

Acanthosis Nigricans

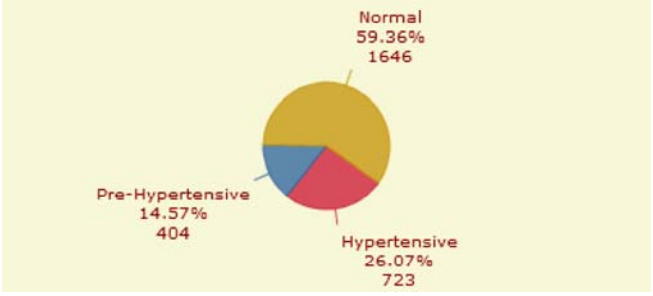
Acanthosis nigricans is a skin condition that is frequently seen on the nape of the neck. It appears as a dark/black, rough, or velvety area on the surface of the skin. The AN marker is important because it most often signals high insulin levels circulating within the body. The AN marker is considered a risk factor in the development of type 2 diabetes.



Blood Pressure

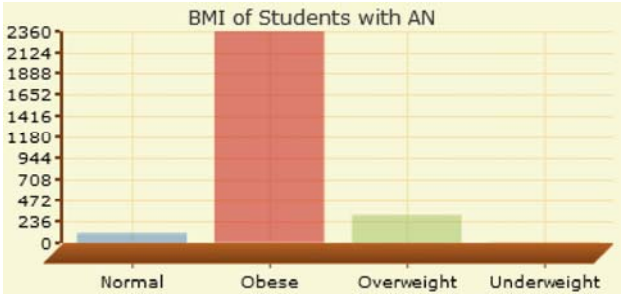
Hypertension has also been associated with insulin resistance and hyperinsulinemia, which is important for children with the AN marker. Elevated blood pressure in childhood correlates with hypertension in early adulthood, supporting the need to measure blood pressure in children.

	1st	3rd	5th	7th	Other Grades	Female	Male
Normal	181	393	523	447	102	911	735
Pre-Hypertensive	29	87	132	133	23	202	202
Hypertensive	50	129	223	273	48	349	374



Body Mass Index

A high Body Mass Index (BMI) for age percentile is also considered a risk factor for the development of type 2 diabetes. BMI is calculated using the student's sex, age, height, and weight. The BMI percentiles are determined by the Centers for Disease Control BMI for age percentile growth charts. The percentiles are separated into four categories: Underweight, Normal, Overweight, and Obesity. In the development of type 2 diabetes, special emphasis is placed on the Overweight and Obesity categories.



	1st	3rd	5th	7th	Other Grades
Normal	13	28	25	34	5
Obesity	232	520	736	717	152
Overweight	14	59	117	99	16
Underweight	1	2	0	3	0

The University of Texas Rio Grande Valley

Risk Assessment for Type 2 Diabetes in Children Fact Sheet

REGION 20

2014-2015

The Risk Assessment for the Type 2 Diabetes in Children is a legislatively mandated program developed, coordinated, and administered by The University of Texas Rio Grande Valley Border Health Office (BHO). The program assesses children who may be at high risk of developing type 2 diabetes. During vision/hearing and scoliosis screenings of 1st, 3rd, 5th and 7th graders in public and private schools, certified individuals assess children for the acanthosis nigricans (AN) marker, a skin condition that signals high insulin levels. Children who are identified with the marker undergo additional assessments of body mass index (BMI), BMI percentile, and blood pressure. Referrals are issued to the parents of these children, alerting each parent of what the risk factors are and what changes will be necessary to prevent or delay future health problems for children at risk of developing type 2 diabetes and other health conditions.
The following results are for the assessments conducted in your Region:

Assessment Information	Assessment Outcomes	
Assessed: 108679	Already under care: 66	Referral not issued: 3
Acanthosis Nigricans: 7600	Seen by Physician: 635	Referral not returned: 5686
		Not Seen by Physician: 49

Acanthosis Nigricans

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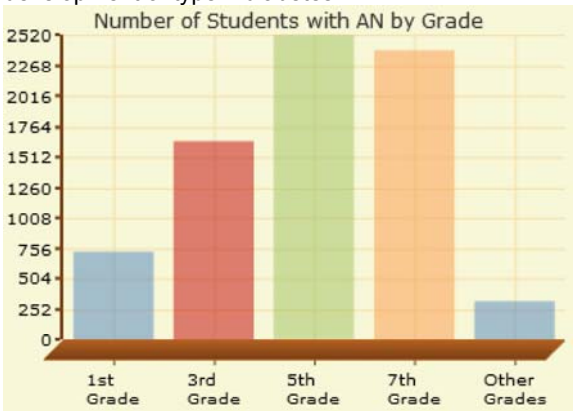
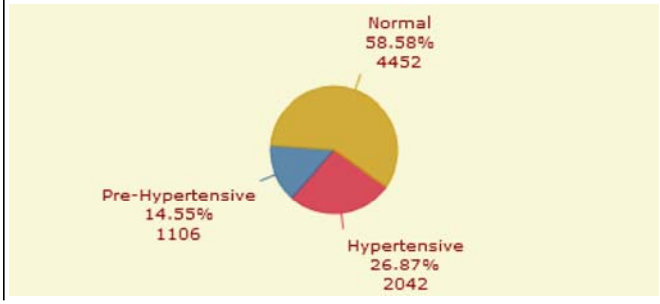


Blood Pressure

Hypertension has also been associated with insulin resistance and hyperinsulinemia, which is important for children with the AN marker. Elevated blood pressure in childhood correlates with hypertension in early adulthood, supporting the need to measure blood pressure in children.

	1st	3rd	5th	7th	Other Grades	Female	Male
Normal	486	1042	1439	1329	156	2537	1915
Pre-Hypertensive	84	207	400	363	52	594	512
Hypertensive	160	394	677	704	107	1100	942



Body Mass Index

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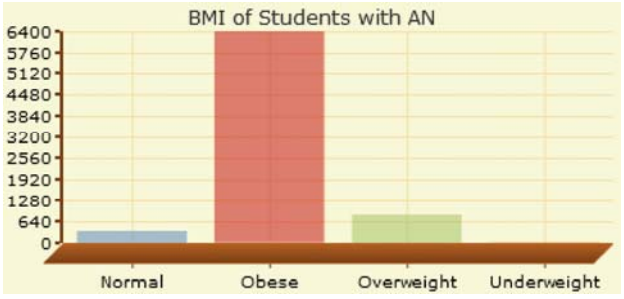

	1st	3rd	5th	7th	Other Grades
Normal	39	73	120	108	1
Obesity	635	1405	2103	1962	291
Overweight	44	160	289	324	20
Underweight	12	5	4	2	3

The University of Texas Rio Grande Valley

Risk Assessment for Type 2 Diabetes in Children Fact Sheet
MANDATED REGIONS
2015-2016

The Risk Assessment for the Type 2 Diabetes in Children is a legislatively mandated program developed, coordinated, and administered by The University of Texas Rio Grande Valley Border Health Office (BHO). The program assesses children who may be at high risk of developing type 2 diabetes. During vision/hearing and scoliosis screenings of 1st, 3rd, 5th and 7th graders in public and private schools, certified individuals assess children for the acanthosis nigricans (AN) marker, a skin condition that signals high insulin levels. Children who are identified with the marker undergo additional assessments of body mass index (BMI), BMI percentile, and blood pressure. Referrals are issued to the parents of these children, alerting each parent of what the risk factors are and what changes will be necessary to prevent or delay future health problems for children at risk of developing type 2 diabetes and other health conditions.
The following results are for the assessments conducted in your Mandate:

Assessment Information	Assessment Outcomes	
Assessed: 1114186	Already under care: 945	Referral not issued: 89
Acanthosis Nigricans: 60544	Seen by Physician: 7333	Referral not returned: 45673
		Not Seen by Physician: 564

Acanthosis Nigricans

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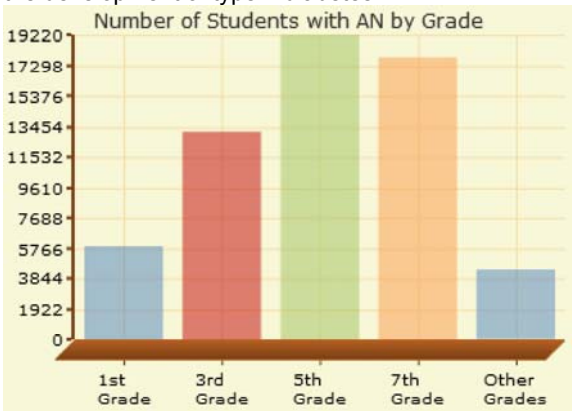
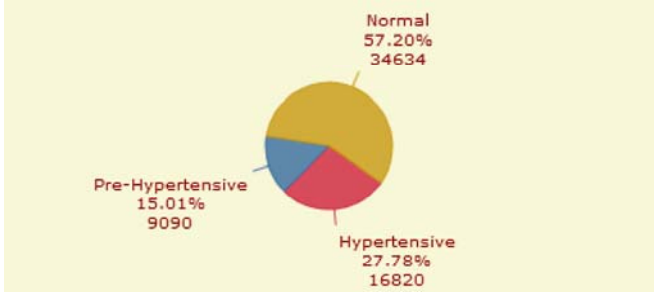


Blood Pressure

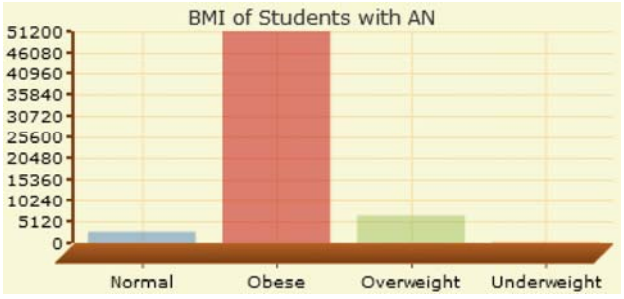
Hypertension has also been associated with insulin resistance and hyperinsulinemia, which is important for children with the AN marker. Elevated blood pressure in childhood correlates with hypertension in early adulthood, supporting the need to measure blood pressure in children.

	1st	3rd	5th	7th	Other Grades	Female	Male
Normal	3775	8156	10998	9383	2322	19256	15378
Pre-Hypertensive	820	1712	3049	2851	658	4930	4160
Hypertensive	1337	3299	5165	5610	1409	8964	7856



Body Mass Index

A high Body Mass Index (BMI) for age percentile is also considered a risk factor for the development of type 2 diabetes. BMI is calculated using the student's sex, age, height, and weight. The BMI percentiles are determined by the Centers for Disease Control BMI for age percentile growth charts. The percentiles are separated into four categories: Underweight, Normal, Overweight, and Obesity. In the development of type 2 diabetes, special emphasis is placed on the Overweight and Obesity categories.



	1st	3rd	5th	7th	Other Grades
Normal	352	548	768	738	173
Obesity	5123	11356	16006	14915	3797
Overweight	409	1198	2370	2126	392
Underweight	48	65	68	65	27

The University of Texas Rio Grande Valley

Risk Assessment for Type 2 Diabetes in Children Fact Sheet

REGION 1

2015-2016

The Risk Assessment for the Type 2 Diabetes in Children is a legislatively mandated program developed, coordinated, and administered by The University of Texas Rio Grande Valley Border Health Office (BHO). The program assesses children who may be at high risk of developing type 2 diabetes. During vision/hearing and scoliosis screenings of 1st, 3rd, 5th and 7th graders in public and private schools, certified individuals assess children for the acanthosis nigricans (AN) marker, a skin condition that signals high insulin levels. Children who are identified with the marker undergo additional assessments of body mass index (BMI), BMI percentile, and blood pressure. Referrals are issued to the parents of these children, alerting each parent of what the risk factors are and what changes will be necessary to prevent or delay future health problems for children at risk of developing type 2 diabetes and other health conditions.
The following results are for the assessments conducted in your Region:

Assessment Information	Assessment Outcomes	
Assessed: 111605	Already under care: 253	Referral not issued: 13
Acanthosis Nigricans: 10697	Seen by Physician: 1905	Referral not returned: 6877
	Not Seen by Physician: 94	

Acanthosis Nigricans

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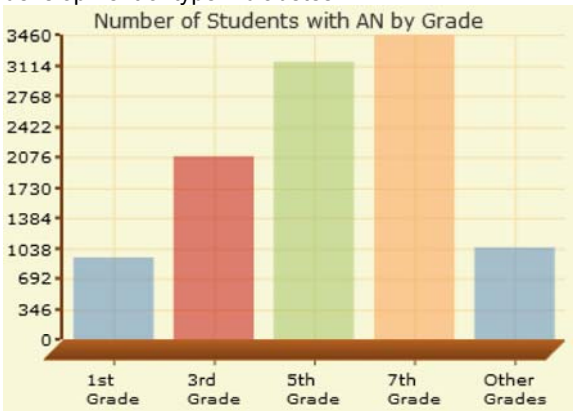
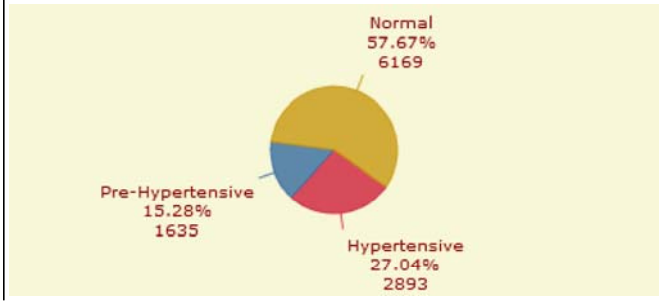


Blood Pressure

Hypertension has also been associated with insulin resistance and hyperinsulinemia, which is important for children with the AN marker. Elevated blood pressure in childhood correlates with hypertension in early adulthood, supporting the need to measure blood pressure in children.

	1st	3rd	5th	7th	Other Grades	Female	Male
Normal	610	1289	1837	1893	540	3254	2915
Pre-Hypertensive	134	281	497	547	176	845	790
Hypertensive	194	514	829	1018	338	1458	1435



Body Mass Index

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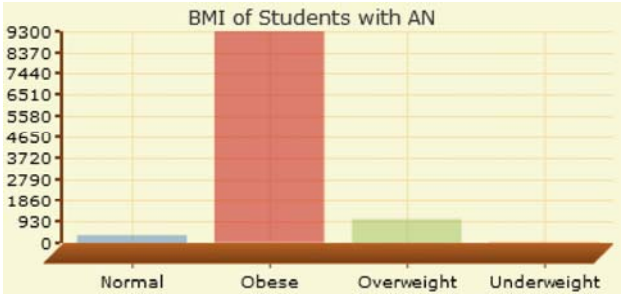


	1st	3rd	5th	7th	Other Grades
Normal	33	64	102	113	21
Obesity	860	1844	2697	2945	948
Overweight	36	161	357	390	77
Underweight	9	15	7	10	8

The University of Texas Rio Grande Valley

Risk Assessment for Type 2 Diabetes in Children Fact Sheet

REGION 2

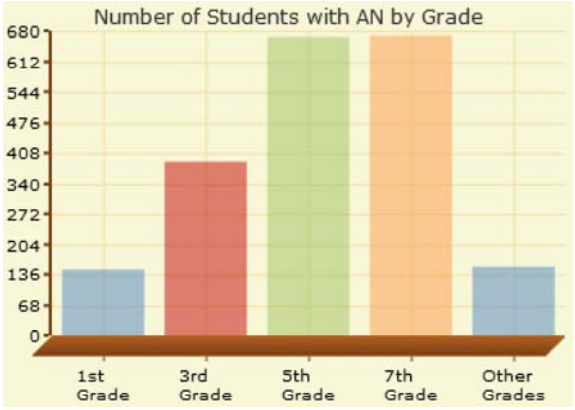
2015-2016

The Risk Assessment for the Type 2 Diabetes in Children is a legislatively mandated program developed, coordinated, and administered by The University of Texas Rio Grande Valley Border Health Office (BHO). The program assesses children who may be at high risk of developing type 2 diabetes. During vision/hearing and scoliosis screenings of 1st, 3rd, 5th and 7th graders in public and private schools, certified individuals assess children for the acanthosis nigricans (AN) marker, a skin condition that signals high insulin levels. Children who are identified with the marker undergo additional assessments of body mass index (BMI), BMI percentile, and blood pressure. Referrals are issued to the parents of these children, alerting each parent of what the risk factors are and what changes will be necessary to prevent or delay future health problems for children at risk of developing type 2 diabetes and other health conditions.
The following results are for the assessments conducted in your Region:

Assessment Information	Assessment Outcomes	
Assessed: 29094	Already under care: 31	Referral not issued: 3
Acanthosis Nigricans: 2025	Seen by Physician: 272	Referral not returned: 1555
		Not Seen by Physician: 19

Acanthosis Nigricans

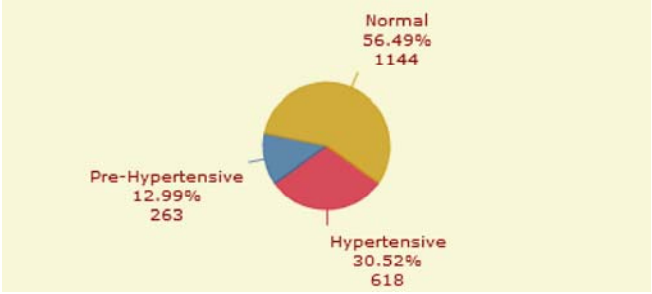
Acanthosis nigricans is a skin condition that is frequently seen on the nape of the neck. It appears as a dark/black, rough, or velvety area on the surface of the skin. The AN marker is important because it most often signals high insulin levels circulating within the body. The AN marker is considered a risk factor in the development of type 2 diabetes.



Blood Pressure

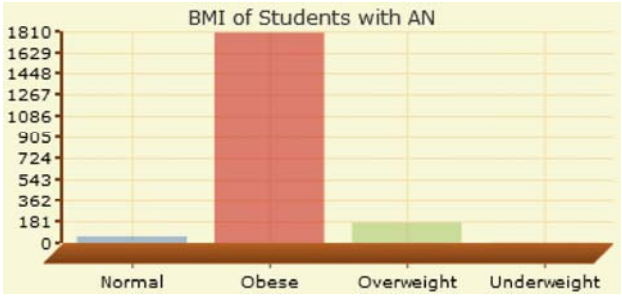
Hypertension has also been associated with insulin resistance and hyperinsulinemia, which is important for children with the AN marker. Elevated blood pressure in childhood correlates with hypertension in early adulthood, supporting the need to measure blood pressure in children.

	1st	3rd	5th	7th	Other Grades	Female	Male
Normal	100	228	392	329	95	648	496
Pre-Hypertensive	14	53	89	87	20	139	124
Hypertensive	32	108	186	254	38	317	301



Body Mass Index

A high Body Mass Index (BMI) for age percentile is also considered a risk factor for the development of type 2 diabetes. BMI is calculated using the student's sex, age, height, and weight. The BMI percentiles are determined by the Centers for Disease Control BMI for age percentile growth charts. The percentiles are separated into four categories: Underweight, Normal, Overweight, and Obesity. In the development of type 2 diabetes, special emphasis is placed on the Overweight and Obesity categories.



	1st	3rd	5th	7th	Other Grades
Normal	6	13	12	18	5
Obesity	132	353	591	585	139
Overweight	8	23	63	66	8
Underweight	0	0	1	1	1

The University of Texas Rio Grande Valley

Risk Assessment for Type 2 Diabetes in Children Fact Sheet

REGION 3

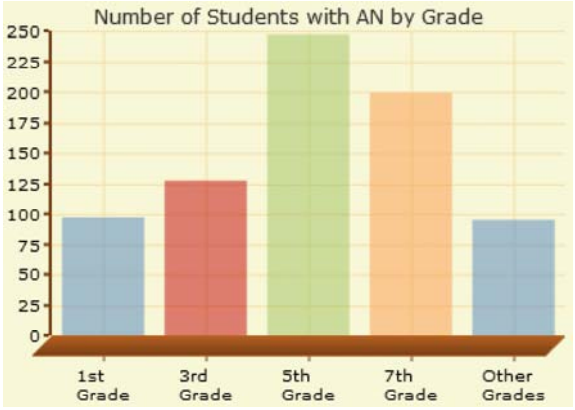
2015-2016

The Risk Assessment for the Type 2 Diabetes in Children is a legislatively mandated program developed, coordinated, and administered by The University of Texas Rio Grande Valley Border Health Office (BHO). The program assesses children who may be at high risk of developing type 2 diabetes. During vision/hearing and scoliosis screenings of 1st, 3rd, 5th and 7th graders in public and private schools, certified individuals assess children for the acanthosis nigricans (AN) marker, a skin condition that signals high insulin levels. Children who are identified with the marker undergo additional assessments of body mass index (BMI), BMI percentile, and blood pressure. Referrals are issued to the parents of these children, alerting each parent of what the risk factors are and what changes will be necessary to prevent or delay future health problems for children at risk of developing type 2 diabetes and other health conditions.
The following results are for the assessments conducted in your Region:

Assessment Information	Assessment Outcomes	
Assessed: 14746	Already under care: 5	Referral not issued: 2
Acanthosis Nigricans: 766	Seen by Physician: 100	Referral not returned: 614
	Not Seen by Physician: 18	

Acanthosis Nigricans

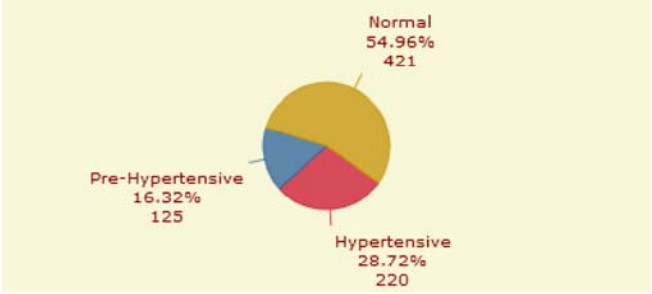
Acanthosis nigricans is a skin condition that is frequently seen on the nape of the neck. It appears as a dark/black, rough, or velvety area on the surface of the skin. The AN marker is important because it most often signals high insulin levels circulating within the body. The AN marker is considered a risk factor in the development of type 2 diabetes.



Blood Pressure

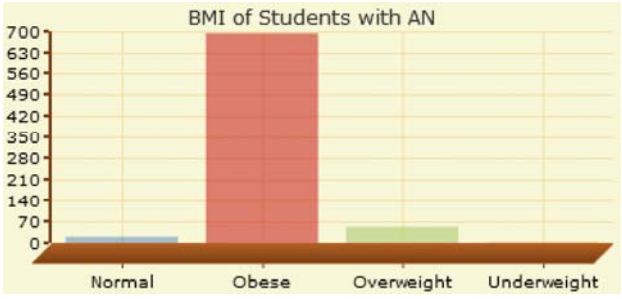
Hypertension has also been associated with insulin resistance and hyperinsulinemia, which is important for children with the AN marker. Elevated blood pressure in childhood correlates with hypertension in early adulthood, supporting the need to measure blood pressure in children.

	1st	3rd	5th	7th	Other Grades	Female	Male
Normal	58	78	129	103	53	251	170
Pre-Hypertensive	13	19	41	39	13	71	54
Hypertensive	26	31	77	57	29	113	107



Body Mass Index

A high Body Mass Index (BMI) for age percentile is also considered a risk factor for the development of type 2 diabetes. BMI is calculated using the student's sex, age, height, and weight. The BMI percentiles are determined by the Centers for Disease Control BMI for age percentile growth charts. The percentiles are separated into four categories: Underweight, Normal, Overweight, and Obesity. In the development of type 2 diabetes, special emphasis is placed on the Overweight and Obesity categories.



	1st	3rd	5th	7th	Other Grades
Normal	2	6	3	9	0
Obesity	92	118	226	165	92
Overweight	3	2	18	25	3
Underweight	0	2	0	0	0

The University of Texas Rio Grande Valley

Risk Assessment for Type 2 Diabetes in Children Fact Sheet

REGION 4

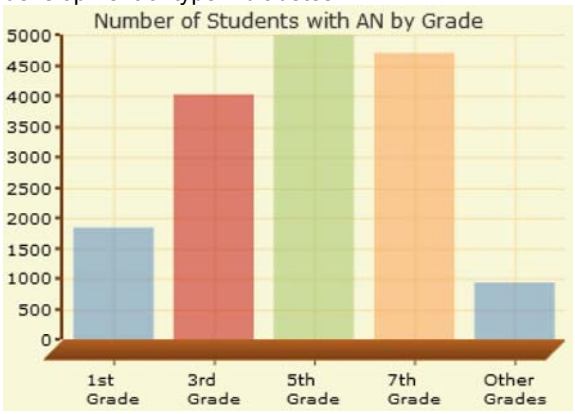
2015-2016

The Risk Assessment for the Type 2 Diabetes in Children is a legislatively mandated program developed, coordinated, and administered by The University of Texas Rio Grande Valley Border Health Office (BHO). The program assesses children who may be at high risk of developing type 2 diabetes. During vision/hearing and scoliosis screenings of 1st, 3rd, 5th and 7th graders in public and private schools, certified individuals assess children for the acanthosis nigricans (AN) marker, a skin condition that signals high insulin levels. Children who are identified with the marker undergo additional assessments of body mass index (BMI), BMI percentile, and blood pressure. Referrals are issued to the parents of these children, alerting each parent of what the risk factors are and what changes will be necessary to prevent or delay future health problems for children at risk of developing type 2 diabetes and other health conditions.
The following results are for the assessments conducted in your Region:

Assessment Information	Assessment Outcomes	
Assessed: 300215	Already under care: 238	Referral not issued: 18
Acanthosis Nigricans: 16498	Seen by Physician: 1906	Referral not returned: 13091
		Not Seen by Physician: 167

Acanthosis Nigricans

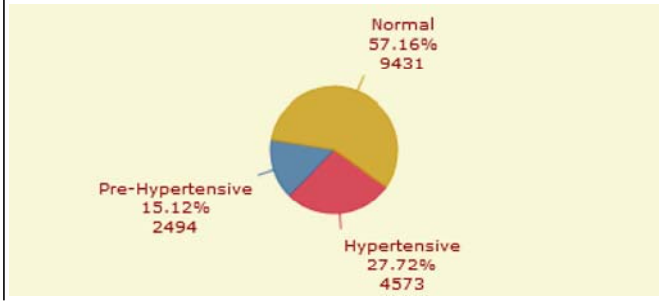
Acanthosis nigricans is a skin condition that is frequently seen on the nape of the neck. It appears as a dark/black, rough, or velvety area on the surface of the skin. The AN marker is important because it most often signals high insulin levels circulating within the body. The AN marker is considered a risk factor in the development of type 2 diabetes.



Blood Pressure

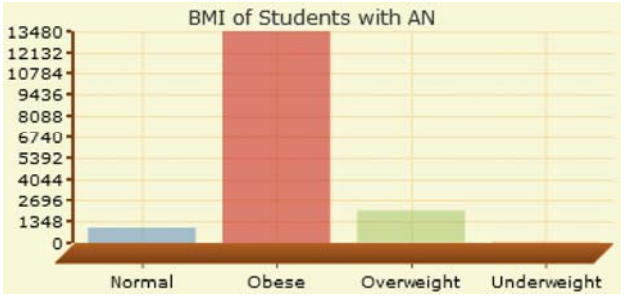
Hypertension has also been associated with insulin resistance and hyperinsulinemia, which is important for children with the AN marker. Elevated blood pressure in childhood correlates with hypertension in early adulthood, supporting the need to measure blood pressure in children.

	1st	3rd	5th	7th	Other Grades	Female	Male
Normal	1170	2416	2791	2512	542	5248	4183
Pre-Hypertensive	270	513	809	781	121	1364	1130
Hypertensive	401	1090	1396	1421	265	2455	2118



Body Mass Index

A high Body Mass Index (BMI) for age percentile is also considered a risk factor for the development of type 2 diabetes. BMI is calculated using the student's sex, age, height, and weight. The BMI percentiles are determined by the Centers for Disease Control BMI for age percentile growth charts. The percentiles are separated into four categories: Underweight, Normal, Overweight, and Obesity. In the development of type 2 diabetes, special emphasis is placed on the Overweight and Obesity categories.



	1st	3rd	5th	7th	Other Grades
Normal	164	223	256	248	41
Obesity	1479	3352	4029	3823	796
Overweight	181	431	692	618	89
Underweight	17	13	19	25	2

The University of Texas Rio Grande Valley

Risk Assessment for Type 2 Diabetes in Children Fact Sheet

REGION 10

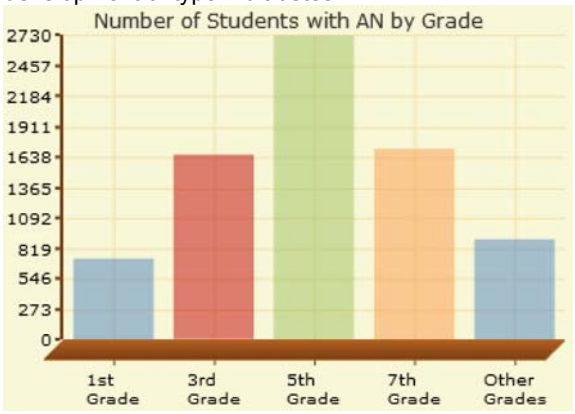
2015-2016

The Risk Assessment for the Type 2 Diabetes in Children is a legislatively mandated program developed, coordinated, and administered by The University of Texas Rio Grande Valley Border Health Office (BHO). The program assesses children who may be at high risk of developing type 2 diabetes. During vision/hearing and scoliosis screenings of 1st, 3rd, 5th and 7th graders in public and private schools, certified individuals assess children for the acanthosis nigricans (AN) marker, a skin condition that signals high insulin levels. Children who are identified with the marker undergo additional assessments of body mass index (BMI), BMI percentile, and blood pressure. Referrals are issued to the parents of these children, alerting each parent of what the risk factors are and what changes will be necessary to prevent or delay future health problems for children at risk of developing type 2 diabetes and other health conditions.
The following results are for the assessments conducted in your Region:

Assessment Information	Assessment Outcomes	
Assessed: 187258	Already under care: 99	Referral not issued: 9
Acanthosis Nigricans: 7721	Seen by Physician: 991	Referral not returned: 5297
	Not Seen by Physician: 90	

Acanthosis Nigricans

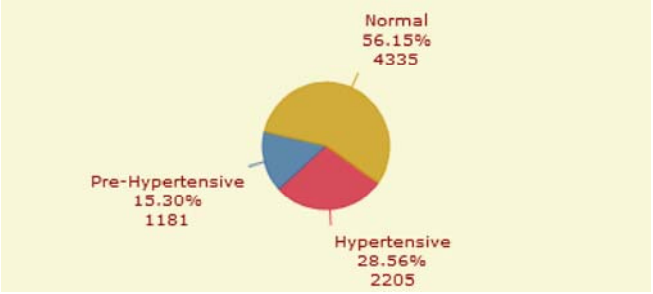
Acanthosis nigricans is a skin condition that is frequently seen on the nape of the neck. It appears as a dark/black, rough, or velvety area on the surface of the skin. The AN marker is important because it most often signals high insulin levels circulating within the body. The AN marker is considered a risk factor in the development of type 2 diabetes.



Blood Pressure

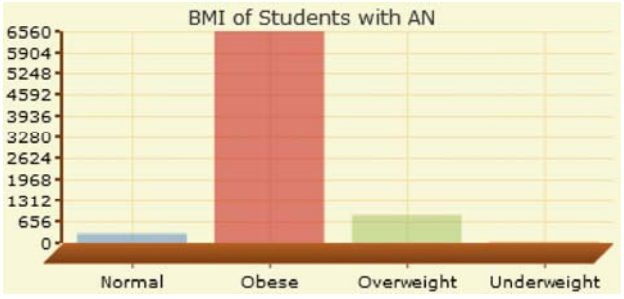
Hypertension has also been associated with insulin resistance and hyperinsulinemia, which is important for children with the AN marker. Elevated blood pressure in childhood correlates with hypertension in early adulthood, supporting the need to measure blood pressure in children.

	1st	3rd	5th	7th	Other Grades	Female	Male
Normal	462	1046	1557	826	444	2543	1792
Pre-Hypertensive	101	222	446	279	133	696	485
Hypertensive	167	390	719	603	326	1246	959



Body Mass Index

A high Body Mass Index (BMI) for age percentile is also considered a risk factor for the development of type 2 diabetes. BMI is calculated using the student's sex, age, height, and weight. The BMI percentiles are determined by the Centers for Disease Control BMI for age percentile growth charts. The percentiles are separated into four categories: Underweight, Normal, Overweight, and Obesity. In the development of type 2 diabetes, special emphasis is placed on the Overweight and Obesity categories.



	1st	3rd	5th	7th	Other Grades
Normal	24	52	100	60	42
Obesity	657	1441	2261	1452	746
Overweight	43	155	342	192	110
Underweight	6	10	19	4	5

The University of Texas Rio Grande Valley

Risk Assessment for Type 2 Diabetes in Children Fact Sheet

REGION 11

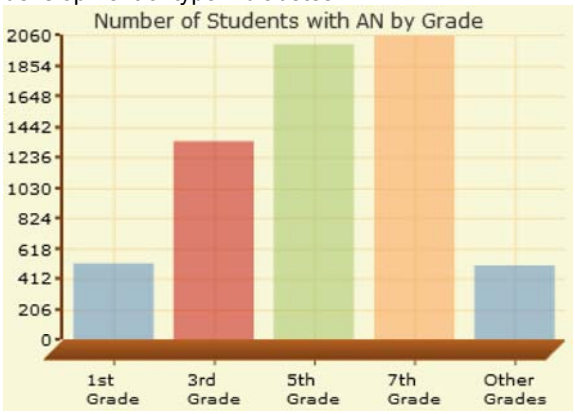
2015-2016

The Risk Assessment for the Type 2 Diabetes in Children is a legislatively mandated program developed, coordinated, and administered by The University of Texas Rio Grande Valley Border Health Office (BHO). The program assesses children who may be at high risk of developing type 2 diabetes. During vision/hearing and scoliosis screenings of 1st, 3rd, 5th and 7th graders in public and private schools, certified individuals assess children for the acanthosis nigricans (AN) marker, a skin condition that signals high insulin levels. Children who are identified with the marker undergo additional assessments of body mass index (BMI), BMI percentile, and blood pressure. Referrals are issued to the parents of these children, alerting each parent of what the risk factors are and what changes will be necessary to prevent or delay future health problems for children at risk of developing type 2 diabetes and other health conditions.
The following results are for the assessments conducted in your Region:

Assessment Information	Assessment Outcomes	
Assessed: 169438	Already under care: 68	Referral not issued: 11
Acanthosis Nigricans: 6416	Seen by Physician: 583	Referral not returned: 5498
	Not Seen by Physician: 34	

Acanthosis Nigricans

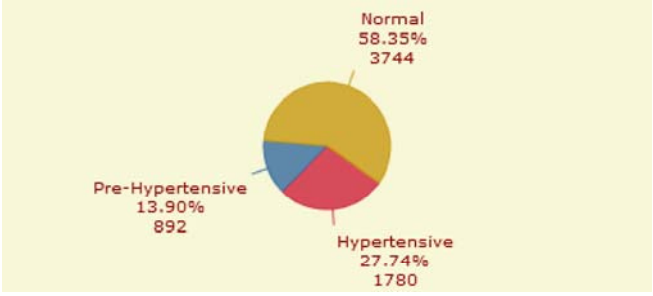
Acanthosis nigricans is a skin condition that is frequently seen on the nape of the neck. It appears as a dark/black, rough, or velvety area on the surface of the skin. The AN marker is important because it most often signals high insulin levels circulating within the body. The AN marker is considered a risk factor in the development of type 2 diabetes.



Blood Pressure

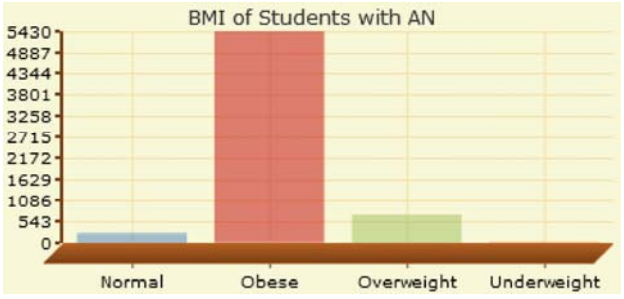
Hypertension has also been associated with insulin resistance and hyperinsulinemia, which is important for children with the AN marker. Elevated blood pressure in childhood correlates with hypertension in early adulthood, supporting the need to measure blood pressure in children.

	1st	3rd	5th	7th	Other Grades	Female	Male
Normal	317	851	1211	1093	272	2179	1565
Pre-Hypertensive	67	152	275	311	87	490	402
Hypertensive	133	340	514	648	145	972	808



Body Mass Index

A high Body Mass Index (BMI) for age percentile is also considered a risk factor for the development of type 2 diabetes. BMI is calculated using the student's sex, age, height, and weight. The BMI percentiles are determined by the Centers for Disease Control BMI for age percentile growth charts. The percentiles are separated into four categories: Underweight, Normal, Overweight, and Obesity. In the development of type 2 diabetes, special emphasis is placed on the Overweight and Obesity categories.



	1st	3rd	5th	7th	Other Grades
Normal	32	44	78	75	18
Obesity	436	1153	1677	1722	439
Overweight	42	140	242	250	39
Underweight	7	6	3	5	8

The University of Texas Rio Grande Valley

Risk Assessment for Type 2 Diabetes in Children Fact Sheet

REGION 13

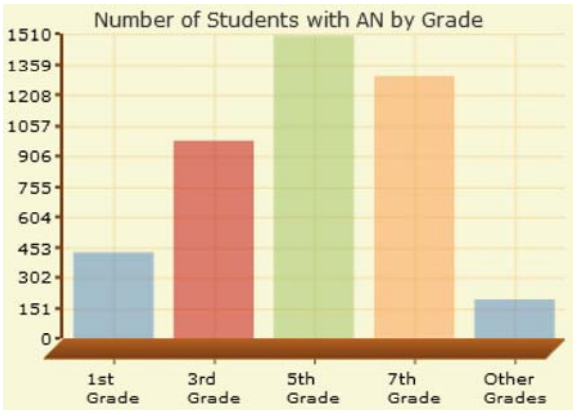
2015-2016

The Risk Assessment for the Type 2 Diabetes in Children is a legislatively mandated program developed, coordinated, and administered by The University of Texas Rio Grande Valley Border Health Office (BHO). The program assesses children who may be at high risk of developing type 2 diabetes. During vision/hearing and scoliosis screenings of 1st, 3rd, 5th and 7th graders in public and private schools, certified individuals assess children for the acanthosis nigricans (AN) marker, a skin condition that signals high insulin levels. Children who are identified with the marker undergo additional assessments of body mass index (BMI), BMI percentile, and blood pressure. Referrals are issued to the parents of these children, alerting each parent of what the risk factors are and what changes will be necessary to prevent or delay future health problems for children at risk of developing type 2 diabetes and other health conditions.
The following results are for the assessments conducted in your Region:

Assessment Information	Assessment Outcomes	
Assessed: 105802	Already under care: 90	Referral not issued: 25
Acanthosis Nigricans: 4403	Seen by Physician: 360	Referral not returned: 3546
		Not Seen by Physician: 15

Acanthosis Nigricans

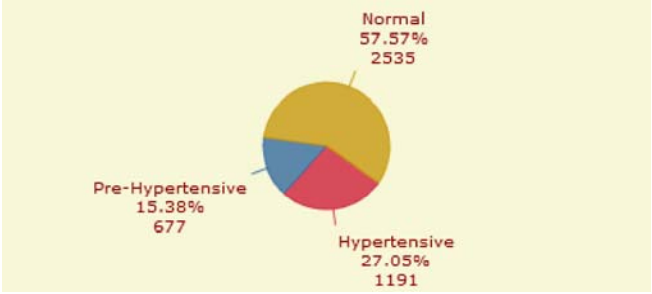
Acanthosis nigricans is a skin condition that is frequently seen on the nape of the neck. It appears as a dark/black, rough, or velvety area on the surface of the skin. The AN marker is important because it most often signals high insulin levels circulating within the body. The AN marker is considered a risk factor in the development of type 2 diabetes.



Blood Pressure

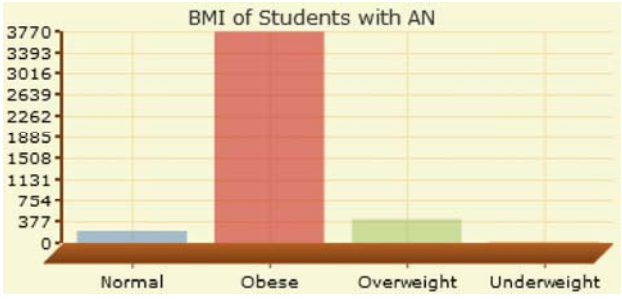
Hypertension has also been associated with insulin resistance and hyperinsulinemia, which is important for children with the AN marker. Elevated blood pressure in childhood correlates with hypertension in early adulthood, supporting the need to measure blood pressure in children.

	1st	3rd	5th	7th	Other Grades	Female	Male
Normal	284	619	858	682	92	1396	1139
Pre-Hypertensive	53	145	244	207	28	371	306
Hypertensive	93	217	398	411	72	652	539



Body Mass Index

A high Body Mass Index (BMI) for age percentile is also considered a risk factor for the development of type 2 diabetes. BMI is calculated using the student's sex, age, height, and weight. The BMI percentiles are determined by the Centers for Disease Control BMI for age percentile growth charts. The percentiles are separated into four categories: Underweight, Normal, Overweight, and Obesity. In the development of type 2 diabetes, special emphasis is placed on the Overweight and Obesity categories.



	1st	3rd	5th	7th	Other Grades
Normal	26	35	57	65	18
Obesity	383	870	1279	1076	155
Overweight	20	68	158	150	17
Underweight	1	8	6	9	2

The University of Texas Rio Grande Valley

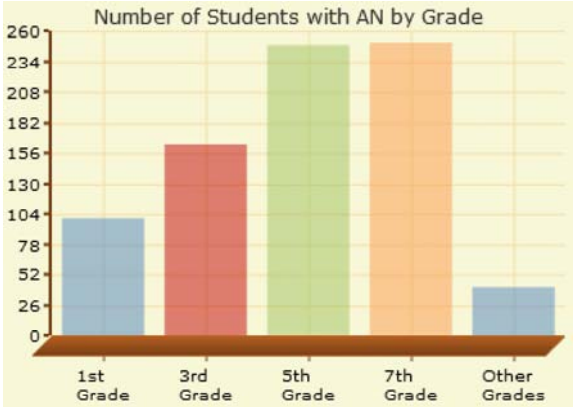
Risk Assessment for Type 2 Diabetes in Children Fact Sheet
REGION 15
2015-2016

The Risk Assessment for the Type 2 Diabetes in Children is a legislatively mandated program developed, coordinated, and administered by The University of Texas Rio Grande Valley Border Health Office (BHO). The program assesses children who may be at high risk of developing type 2 diabetes. During vision/hearing and scoliosis screenings of 1st, 3rd, 5th and 7th graders in public and private schools, certified individuals assess children for the acanthosis nigricans (AN) marker, a skin condition that signals high insulin levels. Children who are identified with the marker undergo additional assessments of body mass index (BMI), BMI percentile, and blood pressure. Referrals are issued to the parents of these children, alerting each parent of what the risk factors are and what changes will be necessary to prevent or delay future health problems for children at risk of developing type 2 diabetes and other health conditions.
The following results are for the assessments conducted in your Region:

Assessment Information	Assessment Outcomes	
Assessed: 14392	Already under care: 27	Referral not issued: 1
Acanthosis Nigricans: 802	Seen by Physician: 71	Referral not returned: 666
	Not Seen by Physician: 7	

Acanthosis Nigricans

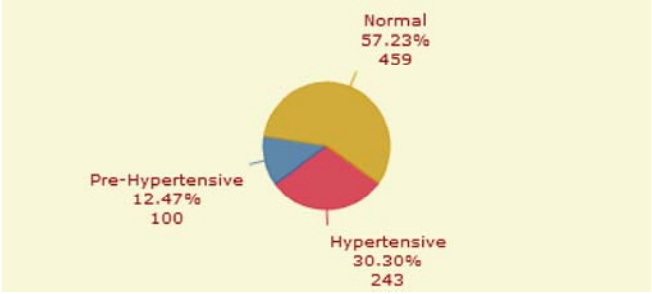
Acanthosis nigricans is a skin condition that is frequently seen on the nape of the neck. It appears as a dark/black, rough, or velvety area on the surface of the skin. The AN marker is important because it most often signals high insulin levels circulating within the body. The AN marker is considered a risk factor in the development of type 2 diabetes.



Blood Pressure

Hypertension has also been associated with insulin resistance and hyperinsulinemia, which is important for children with the AN marker. Elevated blood pressure in childhood correlates with hypertension in early adulthood, supporting the need to measure blood pressure in children.

	1st	3rd	5th	7th	Other Grades	Female	Male
Normal	46	92	144	150	27	268	191
Pre-Hypertensive	14	20	34	27	5	52	48
Hypertensive	40	51	70	73	9	129	114



Body Mass Index

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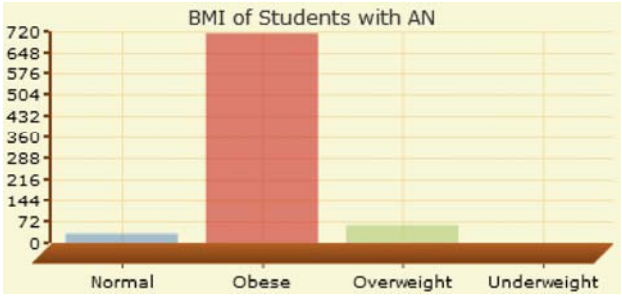


	1st	3rd	5th	7th	Other Grades
Normal	5	10	7	7	2
Obesity	88	146	221	222	36
Overweight	7	7	20	21	3
Underweight	0	0	0	0	0

The University of Texas Rio Grande Valley

Risk Assessment for Type 2 Diabetes in Children Fact Sheet

REGION 18

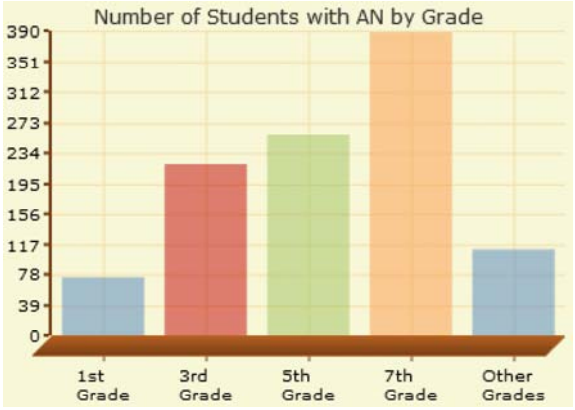
2015-2016

The Risk Assessment for the Type 2 Diabetes in Children is a legislatively mandated program developed, coordinated, and administered by The University of Texas Rio Grande Valley Border Health Office (BHO). The program assesses children who may be at high risk of developing type 2 diabetes. During vision/hearing and scoliosis screenings of 1st, 3rd, 5th and 7th graders in public and private schools, certified individuals assess children for the acanthosis nigricans (AN) marker, a skin condition that signals high insulin levels. Children who are identified with the marker undergo additional assessments of body mass index (BMI), BMI percentile, and blood pressure. Referrals are issued to the parents of these children, alerting each parent of what the risk factors are and what changes will be necessary to prevent or delay future health problems for children at risk of developing type 2 diabetes and other health conditions.
The following results are for the assessments conducted in your Region:

Assessment Information	Assessment Outcomes	Referral not issued:
Assessed: 20873	Already under care: 6	Referral not returned: 877
Acanthosis Nigricans: 1050	Seen by Physician: 80	Not Seen by Physician: 2

Acanthosis Nigricans

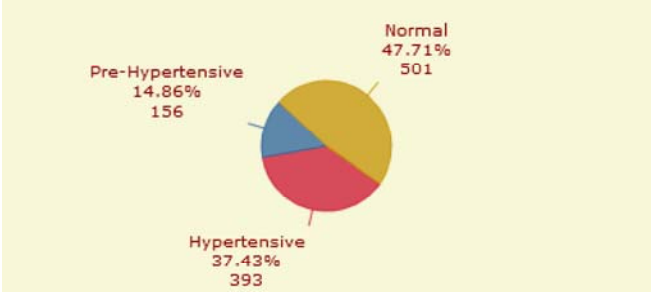
Acanthosis nigricans is a skin condition that is frequently seen on the nape of the neck. It appears as a dark/black, rough, or velvety area on the surface of the skin. The AN marker is important because it most often signals high insulin levels circulating within the body. The AN marker is considered a risk factor in the development of type 2 diabetes.



Blood Pressure

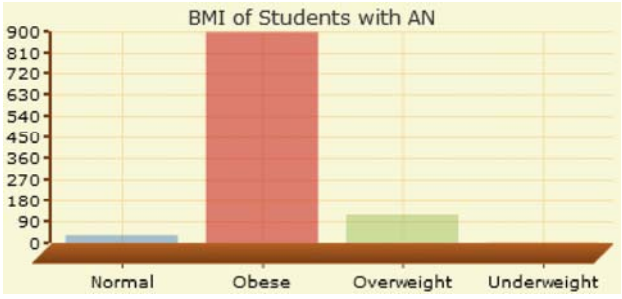
Hypertension has also been associated with insulin resistance and hyperinsulinemia, which is important for children with the AN marker. Elevated blood pressure in childhood correlates with hypertension in early adulthood, supporting the need to measure blood pressure in children.

	1st	3rd	5th	7th	Other Grades	Female	Male
Normal	48	114	136	162	41	294	207
Pre-Hypertensive	14	28	39	55	20	93	63
Hypertensive	12	78	82	171	50	214	179



Body Mass Index

A high Body Mass Index (BMI) for age percentile is also considered a risk factor for the development of type 2 diabetes. BMI is calculated using the student's sex, age, height, and weight. The BMI percentiles are determined by the Centers for Disease Control BMI for age percentile growth charts. The percentiles are separated into four categories: Underweight, Normal, Overweight, and Obesity. In the development of type 2 diabetes, special emphasis is placed on the Overweight and Obesity categories.



	1st	3rd	5th	7th	Other Grades
Normal	3	7	6	14	2
Obesity	66	194	207	327	102
Overweight	5	19	41	46	7
Underweight	0	0	3	1	0

The University of Texas Rio Grande Valley

Risk Assessment for Type 2 Diabetes in Children Fact Sheet

REGION 19

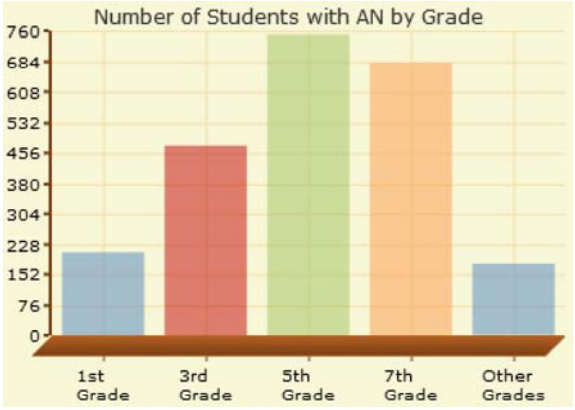
2015-2016

The Risk Assessment for the Type 2 Diabetes in Children is a legislatively mandated program developed, coordinated, and administered by The University of Texas Rio Grande Valley Border Health Office (BHO). The program assesses children who may be at high risk of developing type 2 diabetes. During vision/hearing and scoliosis screenings of 1st, 3rd, 5th and 7th graders in public and private schools, certified individuals assess children for the acanthosis nigricans (AN) marker, a skin condition that signals high insulin levels. Children who are identified with the marker undergo additional assessments of body mass index (BMI), BMI percentile, and blood pressure. Referrals are issued to the parents of these children, alerting each parent of what the risk factors are and what changes will be necessary to prevent or delay future health problems for children at risk of developing type 2 diabetes and other health conditions.
The following results are for the assessments conducted in your Region:

Assessment Information	Assessment Outcomes	
Assessed: 38990	Already under care: 49	Referral not issued: 3
Acanthosis Nigricans: 2294	Seen by Physician: 315	Referral not returned: 1800
		Not Seen by Physician: 2

Acanthosis Nigricans

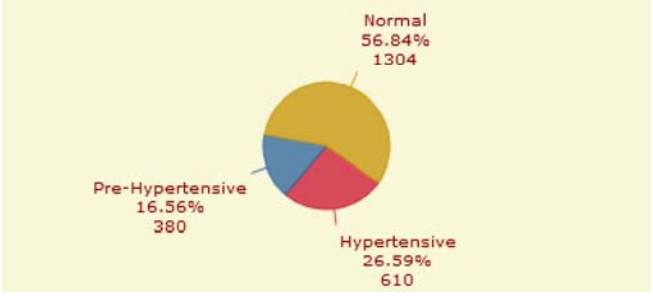
Acanthosis nigricans is a skin condition that is frequently seen on the nape of the neck. It appears as a dark/black, rough, or velvety area on the surface of the skin. The AN marker is important because it most often signals high insulin levels circulating within the body. The AN marker is considered a risk factor in the development of type 2 diabetes.



Blood Pressure

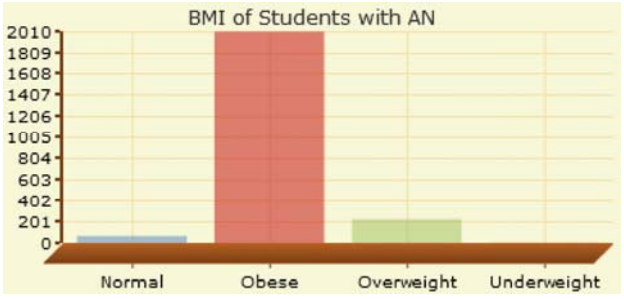
Hypertension has also been associated with insulin resistance and hyperinsulinemia, which is important for children with the AN marker. Elevated blood pressure in childhood correlates with hypertension in early adulthood, supporting the need to measure blood pressure in children.

	1st	3rd	5th	7th	Other Grades	Female	Male
Normal	144	326	430	299	105	674	630
Pre-Hypertensive	29	58	146	117	30	194	186
Hypertensive	36	90	175	265	44	314	296



Body Mass Index

A high Body Mass Index (BMI) for age percentile is also considered a risk factor for the development of type 2 diabetes. BMI is calculated using the student's sex, age, height, and weight. The BMI percentiles are determined by the Centers for Disease Control BMI for age percentile growth charts. The percentiles are separated into four categories: Underweight, Normal, Overweight, and Obesity. In the development of type 2 diabetes, special emphasis is placed on the Overweight and Obesity categories.



	1st	3rd	5th	7th	Other Grades
Normal	4	17	18	19	6
Obesity	187	419	651	597	152
Overweight	17	37	81	65	20
Underweight	1	1	1	0	1

The University of Texas Rio Grande Valley

Risk Assessment for Type 2 Diabetes in Children Fact Sheet

REGION 20

2015-2016

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The following results are for the assessments conducted in your Region:

Assessment Information	Assessment Outcomes	
Assessed: 112297	Already under care: 79	Referral not issued: 4
Acanthosis Nigricans: 7872	Seen by Physician: 750	Referral not returned: 5852
		Not Seen by Physician: 116

Acanthosis Nigricans

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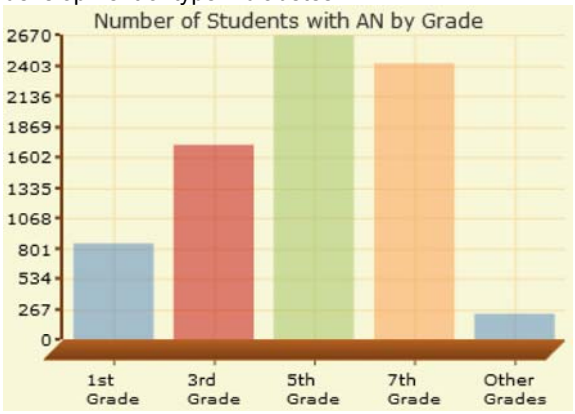

Blood Pressure

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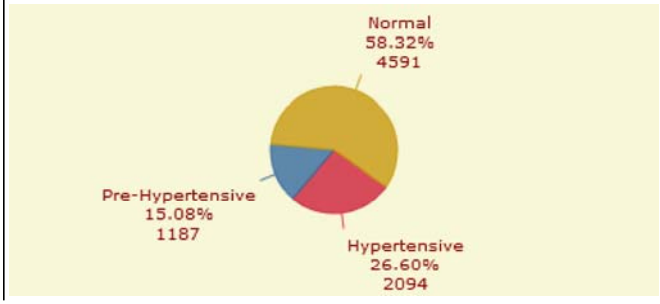
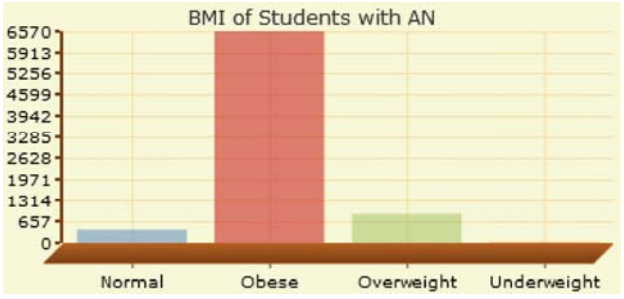
	1st	3rd	5th	7th	Other Grades	Female	Male
Normal	536	1097	1513	1334	111	2501	2090
Pre-Hypertensive	111	221	429	401	25	615	572
Hypertensive	203	390	719	689	93	1094	1000



Body Mass Index

A high Body Mass Index (BMI) for age percentile is also considered a risk factor for the development of type 2 diabetes. BMI is calculated using the student's sex, age, height, and weight. The BMI percentiles are determined by the Centers for Disease Control BMI for age percentile growth charts. The percentiles are separated into four categories: Underweight, Normal, Overweight, and Obesity. In the development of type 2 diabetes, special emphasis is placed on the Overweight and Obesity categories.



	1st	3rd	5th	7th	Other Grades
Normal	53	77	129	110	18
Obesity	743	1466	2167	2001	192
Overweight	47	155	356	303	19
Underweight	7	10	9	10	0