

Texas Risk Assessment for Type 2 Diabetes in Children

A Report to the Governor and the
87th Legislature of the State of Texas



The University of Texas
Rio Grande
Valley

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ACKNOWLEDGMENTS

The Texas Risk Assessment for Type 2 Diabetes in Children program, a legislatively mandated program developed, coordinated, and administrated by The University of Texas Rio Grande Valley College of Health Professions Border Health Office has been giving families a chance in the fight against type 2 diabetes by identifying children with risk factors for the disease across the state of Texas. School nurses are the true champions of this program – it is they who assess children for risk factors and connect parents to the necessary primary care and community resources that gives their child the best opportunity to prevent or delay the burden of this devastating disease. Even in the face of the coronavirus pandemic, school nurses remained dutiful and to task. We would like to express our sincere thanks to all Texas school nurses for their perseverance in these uncertain times and giving hope to families for a better tomorrow.

The Texas Risk Assessment for Type 2 Diabetes in Children program continues to make a positive impact on the health of children because the vision of a healthy Texas continues to be a priority for those who support the program in the Texas State Legislature. For advocating for the health and wellness of the children across the state, The University of Texas Rio Grande Valley College of Health Professions Border Health Office would like to recognize and thank State Senator Jesus “Chuy” Hinojosa, D-District 20 and State Senator Eddie Lucio Jr., D-District 27 for their continued support.

We are grateful for the leadership at The University of Texas Rio Grande Valley who understand that the Texas Risk Assessment for Type 2 Diabetes in Children program has connected with passion and purpose by providing this important public health service not just to families in the Rio Grande Valley, but across the state of Texas. For their support and dedication in the continued fight against diabetes, we would like to thank UTRGV President Dr. Guy Bailey and UTRGV School of Medicine Dean Dr. John H. Krouse. We would also like to thank Dr. Michael Lehker Dean of the College of Health Professions for his unwavering support of the Border Health Office.

The coronavirus pandemic stopped the world in its tracks. These unforeseen challenges required greater efforts to continue the mission of The University of Texas Rio Grande Valley College of Health Professions Border Health Office. Continuing our mission is paramount because the health of Texas families is at its core. A sincere thanks to the staff of the Border Health Office for moving forward when the natural tendency was to stay put.

MESSAGE FROM THE DIRECTOR

The coronavirus leapt onto the world stage and forever changed our lives. The mysterious disease initially perplexed doctors, scientists, and public health professionals – questions about its etiology, its pathogenesis, its evaluation, and its treatment. Scientists discovered many things about the coronavirus in the coming months, including that individuals who were overweight and/or had diabetes had an increased risk of severe illness with COVID-19. Obesity, then, carries an increased disease severity risk for individuals who contract the coronavirus along with an increased risk to develop diabetes, cancer, heart disease, high blood pressure, stroke, and other diseases. This is why the Texas Risk Assessment for Type 2 Diabetes in Children (TRAT2DC) program is such a valuable asset to the state of Texas. The risk assessments that are conducted as a part of this program can help families become aware of these risk factors for obesity and diabetes and give them the opportunity to make lifestyle changes that are necessary to reverse course of these conditions for their children and even themselves. In addition, the TRAT2DC program provides schools and researchers with important information to help schools and communities be healthier by making risk assessment data readily available.

Prior to the pandemic, the TRAT2DC program assessed over 1 million children annually across the state of Texas for risk factors associated with type 2 diabetes. A special section in this report details the impact of the coronavirus pandemic and the subsequent shutdown on the TRAT2DC reporting activity for the 2019-2020 school year. The TRAT2DC receives \$109,685 in annual nonformula funding to administer the program statewide. An economic impact analysis conducted in 2019 determined that for every \$1 the state of Texas invests in the TRAT2DC program, it generates \$338 in medical cost savings. Therefore, a total of \$37,126,643 of medical direct and indirect costs savings for the state are estimated based on the risk assessments that are conducted by the program.

This report includes 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 2018-2019 and 2019-2020 school years. These are some of the highlights of this year's report:

Total number of children assessed: 1,104,802 (2018-2019); 880,175 (2019-2020)
Public and private schools reporting: 5,473 (2018-2019); 4,327 (2019-2020)
Number of trained/certified individuals: 4,060 (2018-2019 & 2019-2020)
Number of Risk Factor Electronic System users: 7,712 (2018-2019); 9,092 (2019-2020)
Risk assessment results for acanthosis nigricans, body mass index, and blood pressure (pgs. 4-6)
Risk assessment referral results (pg. 7)

The Texas Risk 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 2018-2019 and 2019-2020 reporting periods are included in this report.

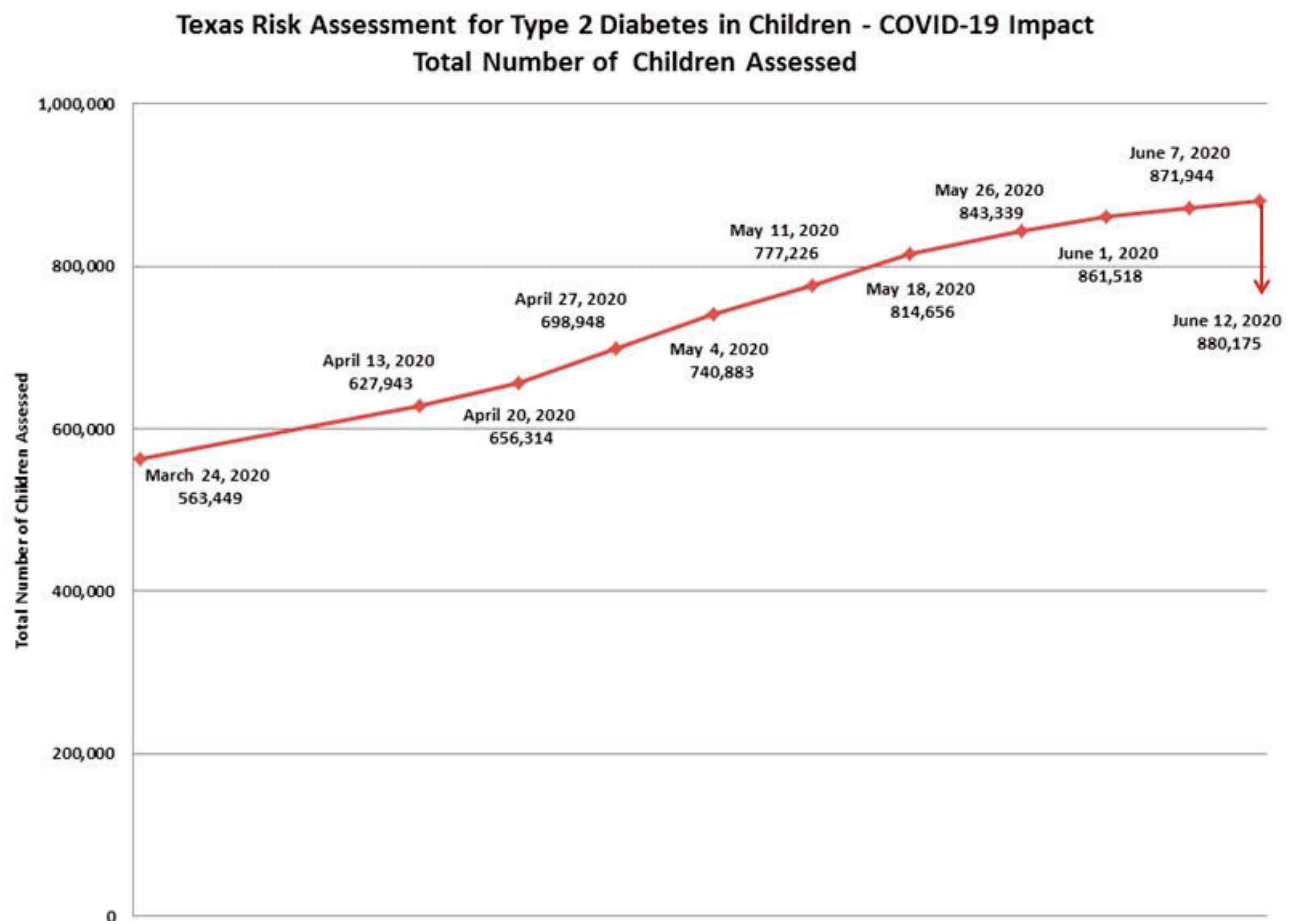
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THE IMPACT OF THE CORONAVIRUS PANDEMIC ON THE TRAT2DC PROGRAM

In mid-March 2020, public and private schools across Texas began sheltering in place because of the coronavirus pandemic. School nurse requests (both via phone and email) to access the Risk Factor Electronic System reporting database slowed down. Many school nurses communicated that their expertise was required at their campus to address the pandemic, while many others began sheltering in place at home without access to their records. With no clear understanding of how the shelter in place orders would impact the program, The University of Texas Rio Grande Valley College of Health Professionals Border Health Office (BHO) took measures to make school nurses aware that the Border Health Office still had the capacity to provide online training, issue usernames and passwords for their campuses, and provide technical support for data entry. The BHO began to track the TRAT2DC assessment entries on a weekly basis beginning in late March/early April to the end of reporting date of June 12, reasoning that the benchmark goal of assessing at least 1 million children annually would be difficult to attain this particular reporting period.

On March 24th, the total number of children assessed for the program was 563,449 or at 56% of the annual benchmark. As the weeks progressed, the reporting numbers steadily increased with most of the reporting activity taking place between April 13th and May 11th, and then gradually decreasing to the end of reporting date of June 12th. On June 12th, the total number of children assessed was 880,175 or 88% of its annual benchmark. In the face of this devastating pandemic, school nurses across Texas were still able to report assessments due to the unique reporting system and customer service provided to them by the BHO.

A chart that tracks the TRAT2DC reporting during the coronavirus pandemic can be seen below.



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 Professions (COHP) 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.

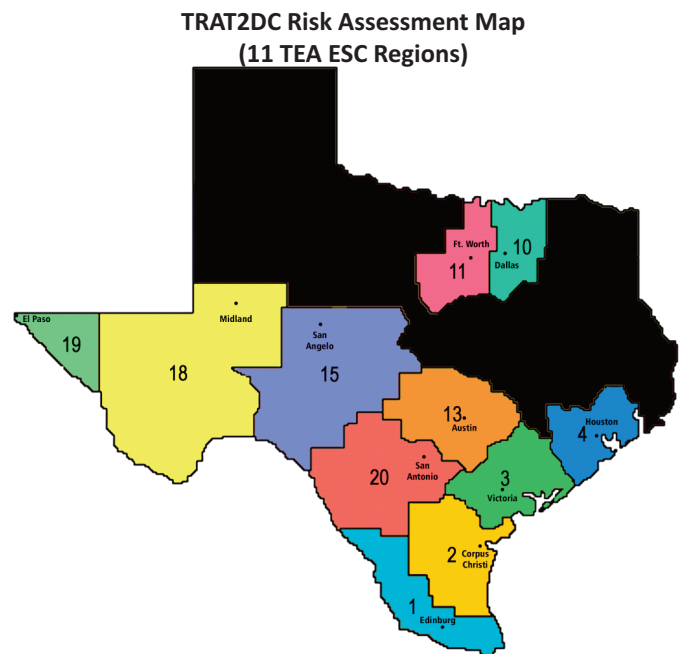
Every year during vision/hearing and scoliosis screenings, children in 1st, 3rd, 5th, and 7th grades are assessed for the acanthosis nigricans marker - a skin marker that signals high insulin levels. Children who are identified with the marker are also assessed to determine body mass index (BMI) and 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	2018-2019	2019-2020
Region 1	99,697	91,090
Region 2	27,018	22,608
Region 3	13,241	11,658
Region 4	287,419	212,693
Region 10	210,660	162,855
Region 11	146,656	117,806
Region 13	106,423	87,357
Region 15	13,885	11,013
Region 18	28,962	22,170
Region 19	40,138	27,982
Region 20	121,288	105,650
Other	9,415	7,293
Total	1,104,802	880,175

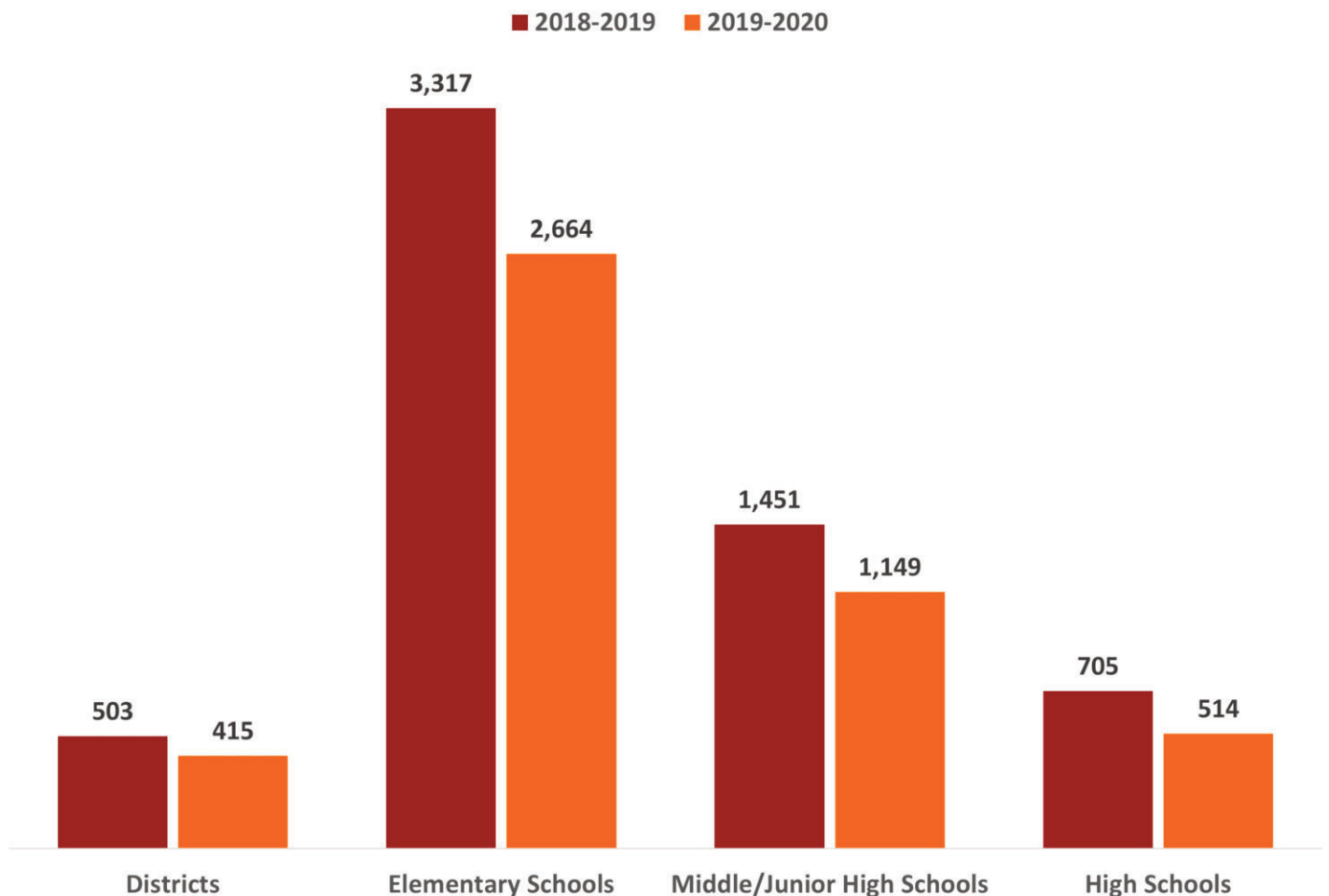


The TRAT2DC program assesses over 1 million children throughout the State of Texas each year for risk factors associated with type 2 diabetes. The figure represents the number of children assessed in 1st, 3rd, 5th, and 7th grades during the 2018-2019 and 2019-2020 school years.

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 COHP 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.

TRAT2DC - Districts and Schools Reporting



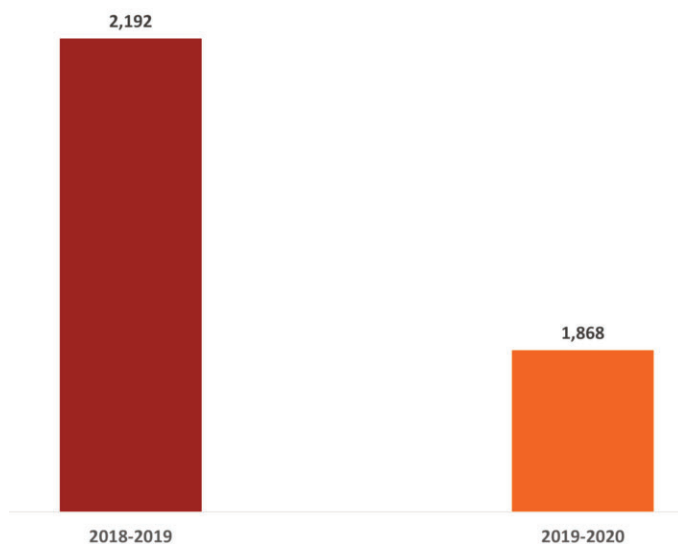
The TRAT2DC program conducts risk assessments for children attending 1st, 3rd, 5th, and 7th grades in public and private schools within the required 11 TEA ESC Regions, with most assessments being conducted in elementary and middle schools. The COVID-19 pandemic impacted the school district and campus reporting numbers for the 2019-2020 school year.

TRAT2DC Training/Certification and Risk Factor Electronic System

The UTRGV COHP BHO provides training and certification to school nurses or other designated individuals assigned to conduct risk assessments. Requests for materials and training and technical support for the Risk Factor Electronic System (RFES) 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 COHP 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).

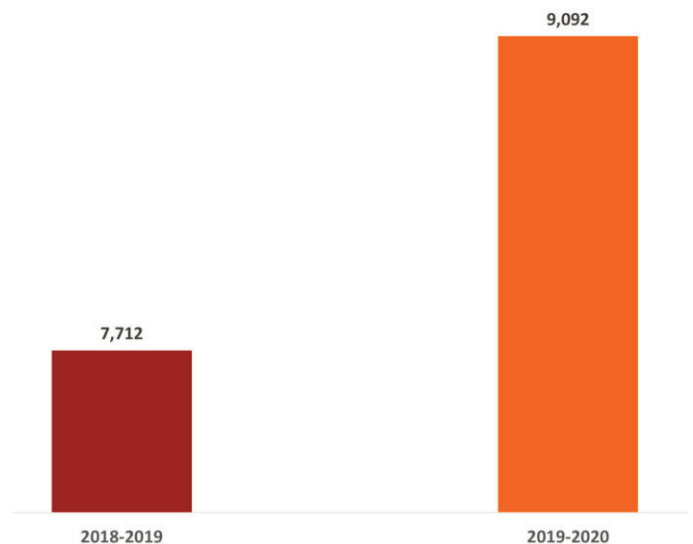
Risk assessment certification offered through the TRAT2DC RFES is valid for 5 years. New users and users with expired certifications must complete and pass all modules associated with training in order to obtain certification. Risk assessment certification training and certification is an important on-going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

TRAT2DC - Trained and Certified Individuals



The UTRGV COHP 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 individuals who were trained and certified to conduct risk assessments was 2,192 in 2018-2019 and 1,868 in 2019-2020.

TRAT2DC - Risk Factor Electronic System Users



The TRAT2DC RFES is a unique secure-access, web-based risk assessment software that is mission critical to the UTRGV COHP BHO in order to fulfill requirements and responsibilities of the TRAT2DC program. The number of RFES users increased by 1,380 between the 2018-2019 and 2019-2020 reporting periods.

Risk Assessments

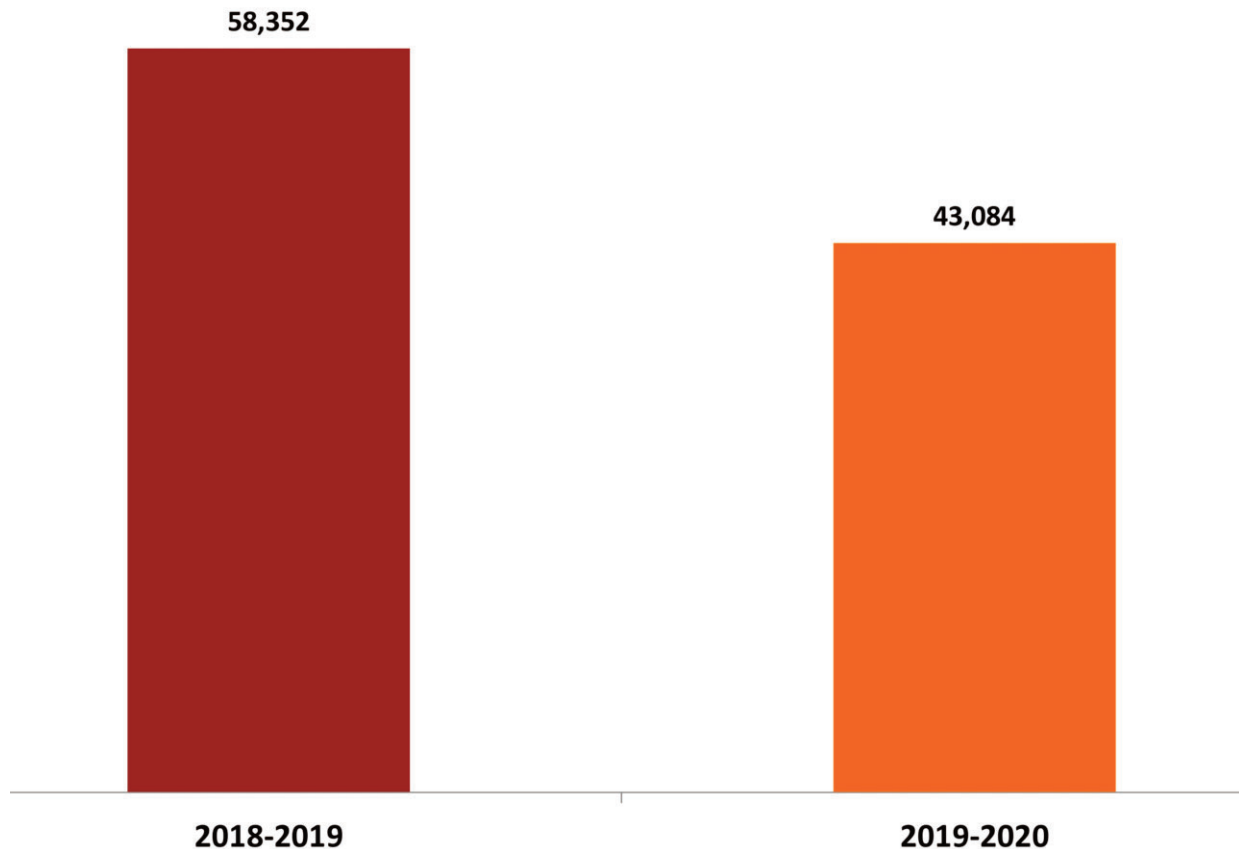
Acanthosis Nigricans

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)

TRAT2DC Total Number of Children with AN



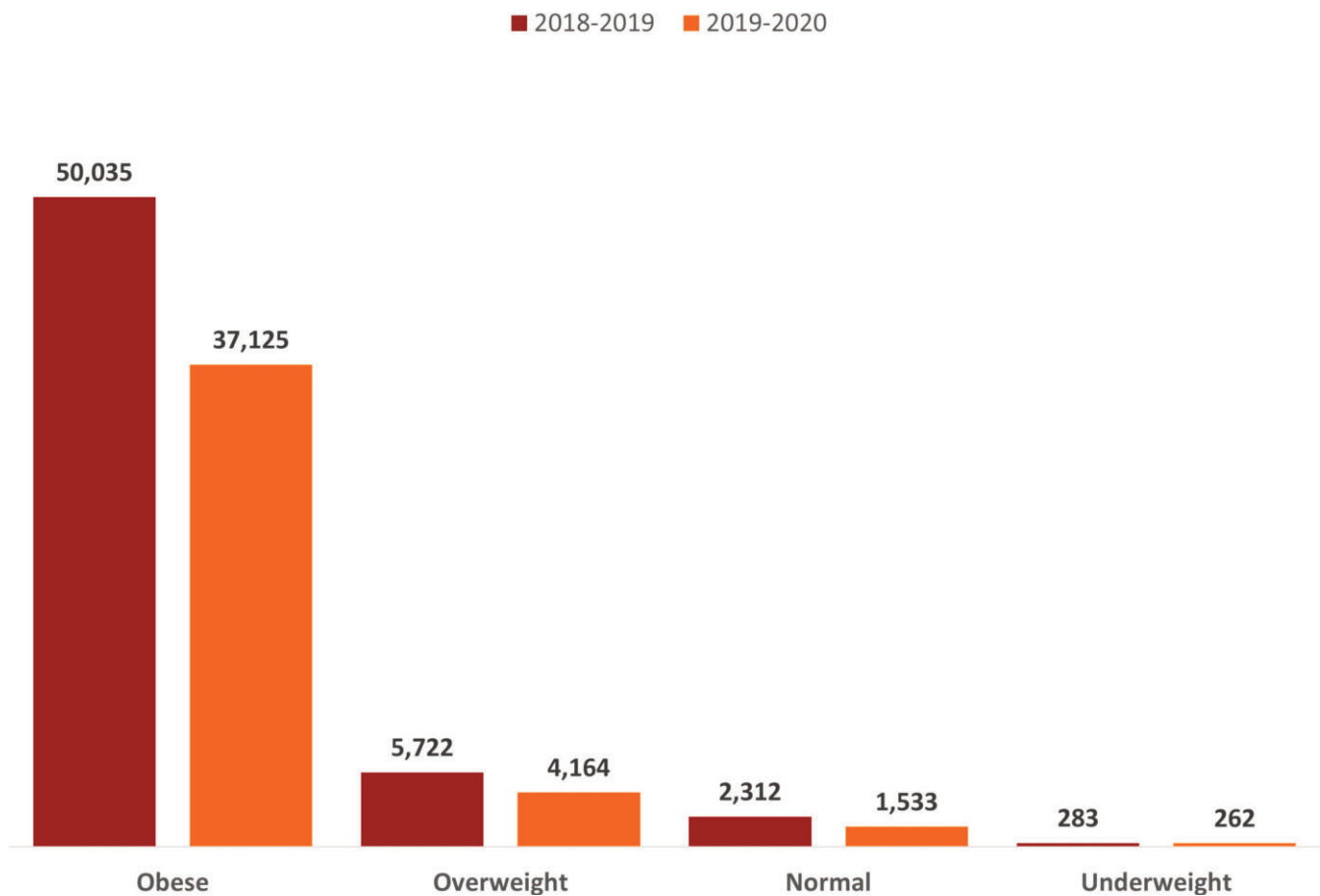
Acanthosis nigricans (AN) is a cutaneous marker associated with hyperinsulinemia and insulin resistance and is considered a risk factor for type 2 diabetes and other chronic diseases. During the 2018-2019 reporting period, 58,352 children were identified with the AN marker while 43,084 children were reported as having the marker in the 2019-2020 reporting period. The COVID-19 pandemic impacted the reporting ability of some districts and campuses during the 2019-2020 school year.

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.

TRAT2DC Body Mass Index, Children with AN



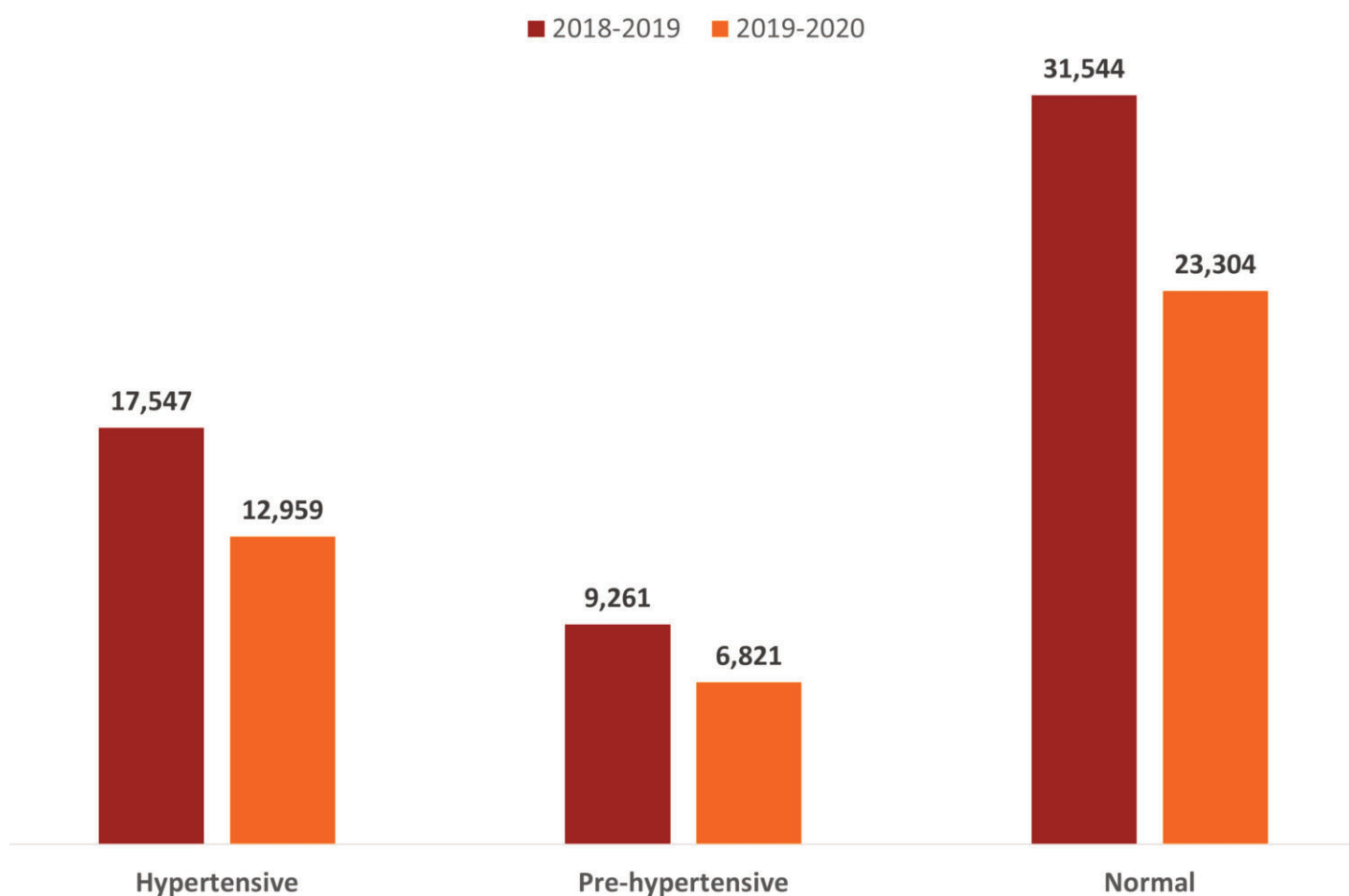
Body Mass Index (BMI) is a measurement that helps determine overweight status by using a mathematical formula that takes into account age, height, and weight. The graph above illustrates the number of children with AN who were identified as obese, overweight, normal, or underweight for the 2018-2019 and 2019-2020 reporting periods. Most children with the AN marker are above the 95th percentile for body mass index for age despite the difference in numbers between reporting periods due to COVID-19 pandemic.

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.

TRAT2DC - Blood Pressure, Children with AN



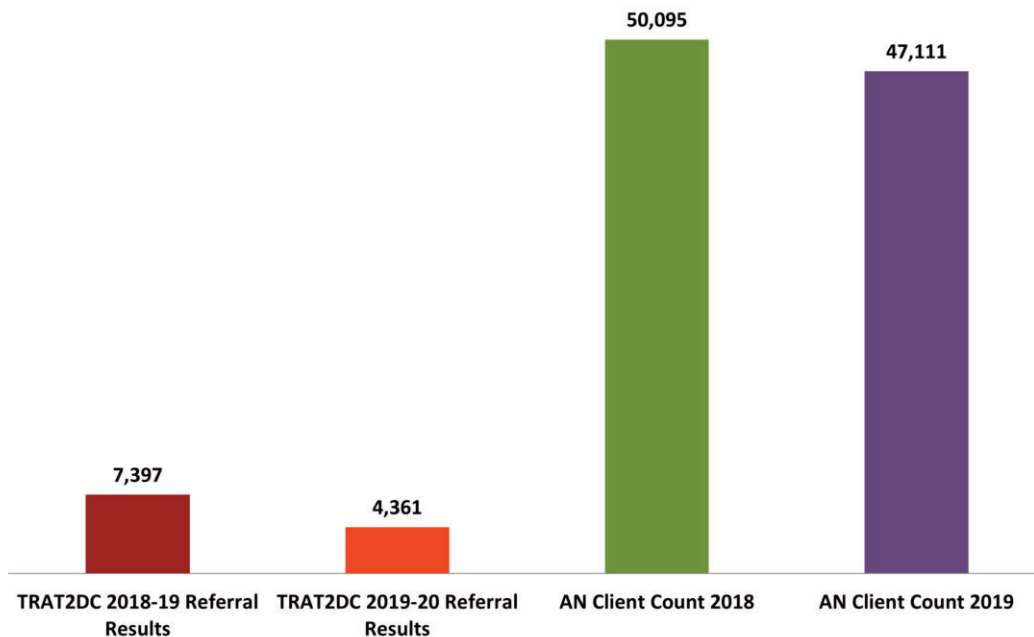
Hypertension increases the risk for cardiovascular disease and is a complication of obesity. Hypertension is also associated with insulin resistance and hyperinsulinemia. Despite the difference in reporting periods due to the COVID-19 pandemic, 30% and 15% of children with AN were classified as hypertensive and prehypertensive, respectively.

Risk Assessment Referral Results/International Classification of Diseases-9 Code 701.2 Acquired Acanthosis Nigricans Member Claim/Encounter 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.

Texas Department of State Health Services Medicaid/CHIP claims data 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) claims/encounters among children 0-17 years of age shows an increase since the program began in 1999.

TRAT2DC 2018/19 - 2019/20 Referral Results vs. AN Client Count 2018 and 2019



A total number of 11,758 students followed their risk assessment with a health care professional during the 2018-2019/2019-2020 reporting periods. Medicaid/CHIP data for ICD-9 Code 701.2 in FY 2018 (50,095 client claims) and FY 2019 (47,111 client claims) suggest that more children are following up with their risk assessment than what is being reported to the RFES. This number reflects the awareness and education promoted through the TRATDC2 program as well as physician response to the risk assessment referral.

Data Source:

AHQP Claims Universe, TMHP; Enc_Best Picture Universe, TMHP; 8mo Eligibility and CHIP HX Eligibility tables HHSC.

Prepared By:

Data Dissemination, Center for Analytics and Decision Support, HHSC. October 2020 (laef)

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 2 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 \$109,685 annually.



TRAT2DC Brochure



TRAT2DC Acanthosis Nigricans Assessment Poster

Suggested Readings

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- Villas, P, Chen, Z, Garza, D, Salazar, D. An electronic system to assist schools in determining the health risk of students. Am J Health Studies 2006;2(1):57-61
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**TEXAS RISK ASSESSMENT FOR TYPE 2 DIABETES IN CHILDREN PROGRAM
TEXAS EDUCATION AGENCY REGIONAL EDUCATION SERVICE CENTER
2018-2019/2019-2020 FACT SHEETS**

Risk Assessment for Type 2 Diabetes in Children Fact Sheet
MANDATED REGIONS
2018-2019

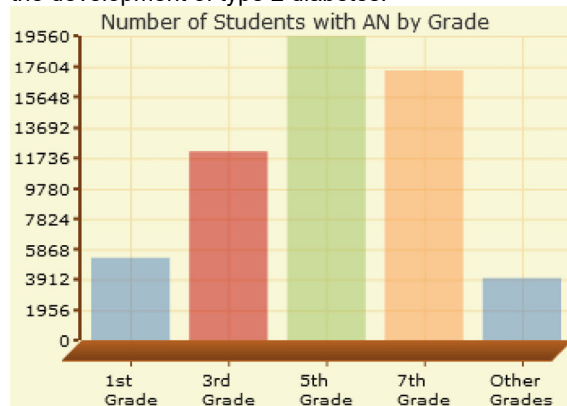
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The following results are for the assessments conducted in your Mandate:

Assessment Information	Assessment Outcomes	
Assessed: 1104802	Already under care: 1105	Referral not issued: 85
Acanthosis Nigricans: 58352	Seen by Physician: 6292	Referral not returned: 43842
		Not Seen by Physician: 326

Acanthosis Nigricans

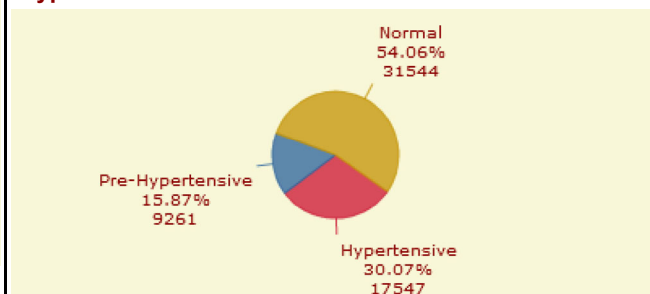
Acanthosis nigricans is a skin condition that is frequently seen on the nape of the neck. It appears as a dark/black, rough, or velvety area on the surface of the skin. The AN marker is important because it most often signals high insulin levels circulating within the body. The AN marker is considered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



Blood Pressure

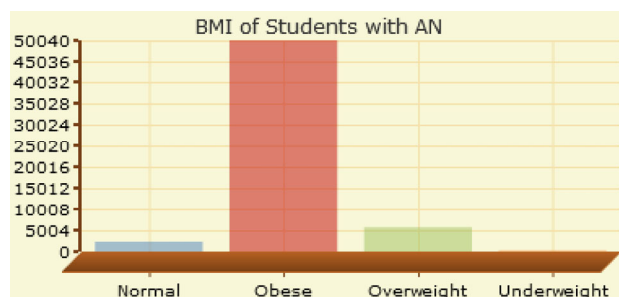
Hypertension has also been associated with insulin resistance and hyperinsulinemia, which is important for children with the AN marker. Elevated blood pressure in childhood correlates with hypertension in early adulthood, supporting the need to measure blood pressure in children.

	1st	3rd	5th	7th	Other Grades	Female	Male
Normal	3235	7088	10885	8340	1996	17151	14393
Pre-Hypertensive	749	1841	3219	2840	612	4895	4366
Hypertensive	1331	3212	5446	6188	1370	9313	8234



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	329	446	734	662	141
Obesity	4619	10680	16566	14677	3493
Overweight	328	949	2155	1971	319
Underweight	39	66	95	58	25

Risk Assessment for Type 2 Diabetes in Children Fact Sheet
REGION 1
2018-2019

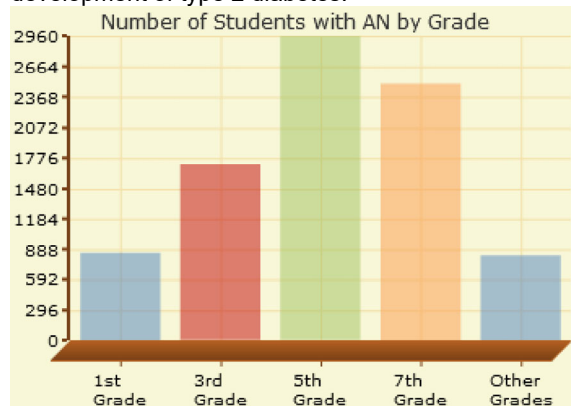
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The following results are for the assessments conducted in your Region:

Assessment Information	Assessment Outcomes	
Assessed: 99697	Already under care: 259	Referral not issued: 3
Acanthosis Nigricans: 8846	Seen by Physician: 1517	Referral not returned: 5864
		Not Seen by Physician: 72

Acanthosis Nigricans

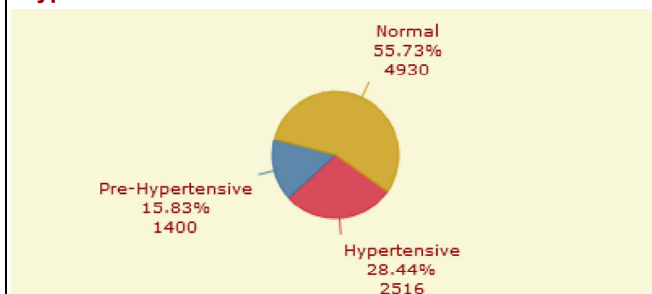
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Blood Pressure

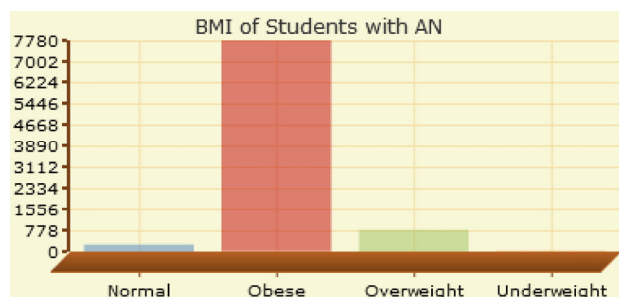
Hypertension has also been associated with insulin resistance and hyperinsulinemia, which is important for children with the AN marker. Elevated blood pressure in childhood correlates with hypertension in early adulthood, supporting the need to measure blood pressure in children.

	1st	3rd	5th	7th	Other Grades	Female	Male
Normal	565	1046	1698	1185	436	2533	2397
Pre-Hypertensive	111	235	484	424	146	681	719
Hypertensive	175	434	772	885	250	1283	1233



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	41	43	76	76	19
Obesity	771	1557	2555	2145	748
Overweight	38	108	316	267	61
Underweight	1	7	7	6	4

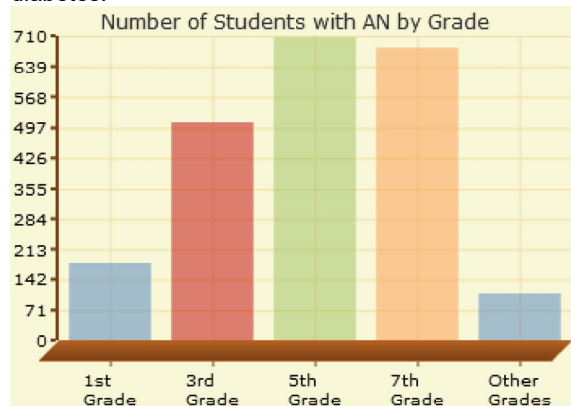
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The following results are for the assessments conducted in your Region:

Assessment Information	Assessment Outcomes	
Assessed: 27018	Already under care: 54	Referral not issued: 1
Acanthosis Nigricans: 2189	Seen by Physician: 332	Referral not returned: 1677
		Not Seen by Physician: 21

Acanthosis Nigricans

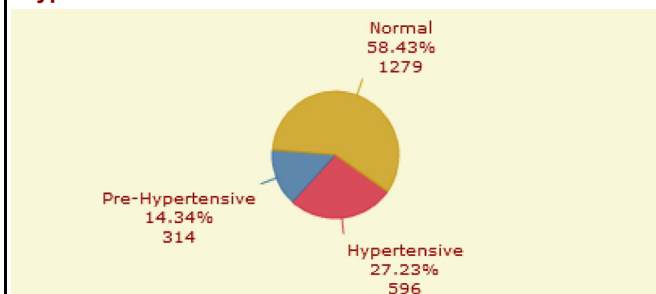
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Blood Pressure

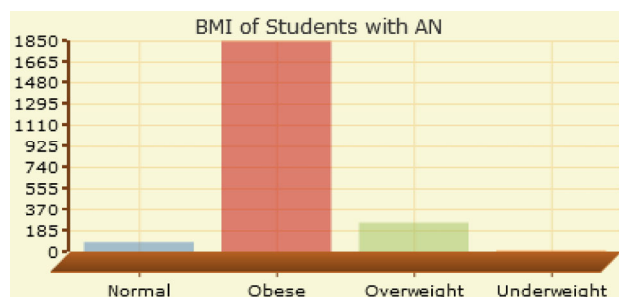
Hypertension has also been associated with insulin resistance and hyperinsulinemia, which is important for children with the AN marker. Elevated blood pressure in childhood correlates with hypertension in early adulthood, supporting the need to measure blood pressure in children.

	1st	3rd	5th	7th	Other Grades	Female	Male
Normal	112	342	413	349	63	701	578
Pre-Hypertensive	19	62	103	111	19	155	159
Hypertensive	50	106	191	222	27	307	289



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	15	27	37	2
Obesity	168	434	589	554	98
Overweight	9	58	87	88	7
Underweight	1	3	4	3	2

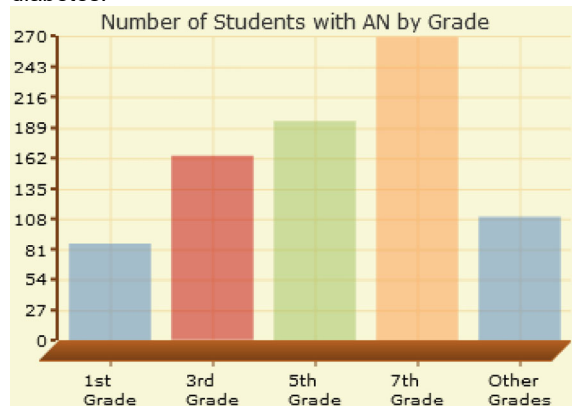
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The following results are for the assessments conducted in your Region:

Assessment Information	Assessment Outcomes	Referral not issued:
Assessed: 13241	Already under care: 11	Referral not returned: 645
Acanthosis Nigricans: 824	Seen by Physician: 96	Not Seen by Physician: 30

Acanthosis Nigricans

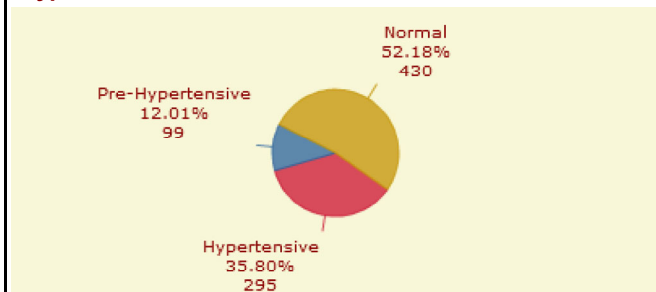
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Blood Pressure

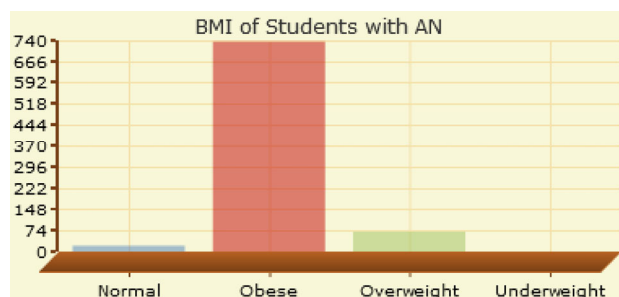
Hypertension has also been associated with insulin resistance and hyperinsulinemia, which is important for children with the AN marker. Elevated blood pressure in childhood correlates with hypertension in early adulthood, supporting the need to measure blood pressure in children.

	1st	3rd	5th	7th	Other Grades	Female	Male
Normal	52	86	102	126	64	255	175
Pre-Hypertensive	9	19	21	45	5	53	46
Hypertensive	25	59	72	98	41	153	142



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	1	4	12	0
Obesity	80	155	173	224	104
Overweight	4	8	18	33	6
Underweight	0	0	0	0	0

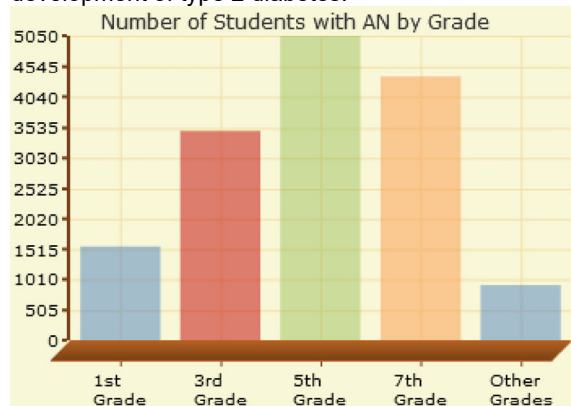
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The following results are for the assessments conducted in your Region:

Assessment Information	Assessment Outcomes	
Assessed: 287419	Already under care: 280	Referral not issued: 29
Acanthosis Nigricans: 15387	Seen by Physician: 1520	Referral not returned: 11686
		Not Seen by Physician: 92

Acanthosis Nigricans

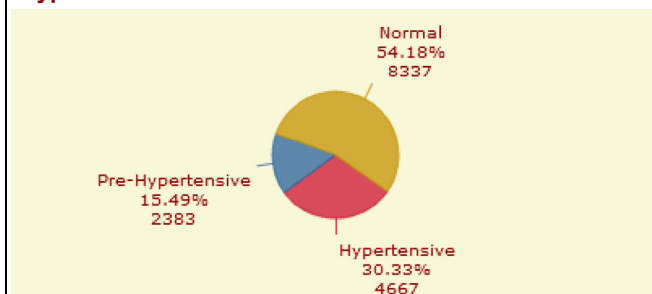
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Blood Pressure

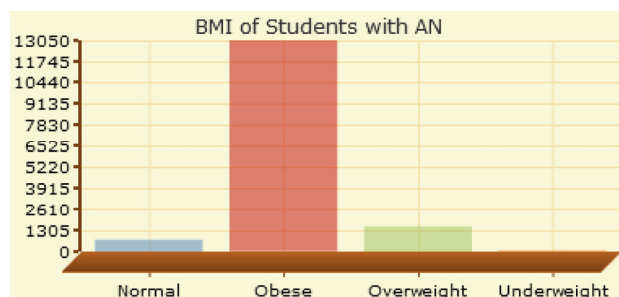
Hypertension has also been associated with insulin resistance and hyperinsulinemia, which is important for children with the AN marker. Elevated blood pressure in childhood correlates with hypertension in early adulthood, supporting the need to measure blood pressure in children.

	1st	3rd	5th	7th	Other Grades	Female	Male
Normal	917	2015	2790	2129	486	4490	3847
Pre-Hypertensive	222	523	811	705	122	1286	1097
Hypertensive	424	949	1447	1540	307	2417	2250



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	112	170	228	173	37
Obesity	1320	3003	4225	3696	799
Overweight	118	288	556	497	72
Underweight	13	26	39	8	7

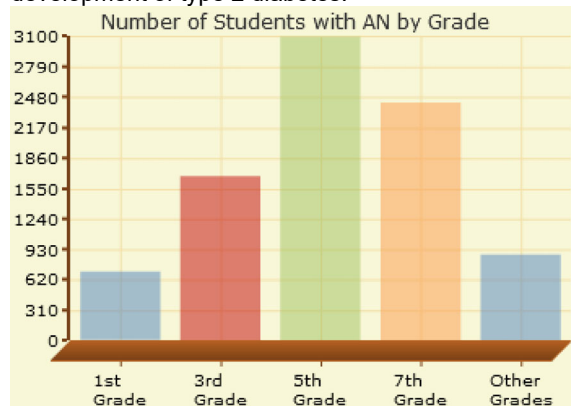
Risk Assessment for Type 2 Diabetes in Children Fact Sheet
REGION 10
2018-2019

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Assessment Information	Assessment Outcomes	
Assessed: 210660	Already under care: 170	Referral not issued: 10
Acanthosis Nigricans: 8763	Seen by Physician: 919	Referral not returned: 6200
		Not Seen by Physician: 26

Acanthosis Nigricans

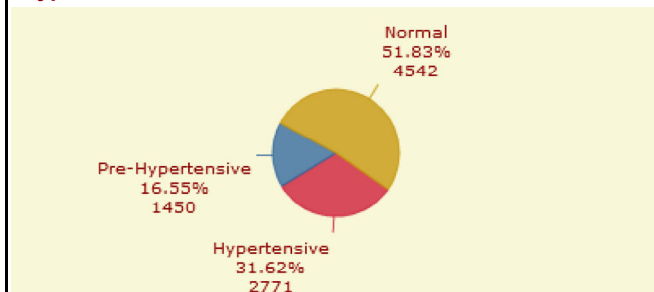
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Blood Pressure

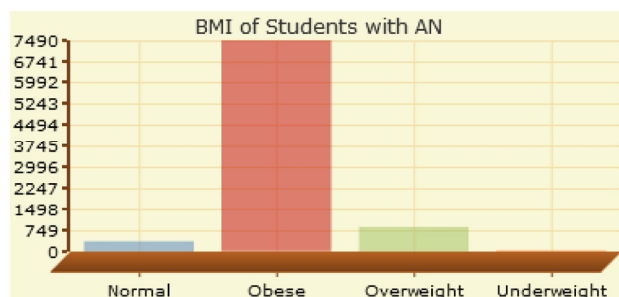
Hypertension has also been associated with insulin resistance and hyperinsulinemia, which is important for children with the AN marker. Elevated blood pressure in childhood correlates with hypertension in early adulthood, supporting the need to measure blood pressure in children.

	1st	3rd	5th	7th	Other Grades	Female	Male
Normal	416	920	1674	1157	375	2598	1944
Pre-Hypertensive	100	284	529	395	142	822	628
Hypertensive	177	473	889	872	360	1573	1198



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	42	42	105	132	37
Obesity	601	1499	2656	1993	737
Overweight	46	127	303	290	98
Underweight	4	9	28	9	5

Risk Assessment for Type 2 Diabetes in Children Fact Sheet
REGION 11
2018-2019

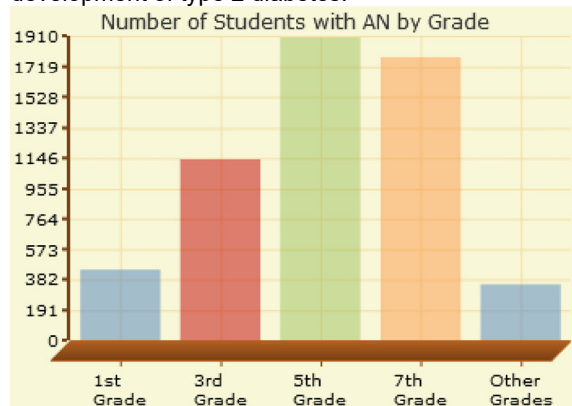
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The following results are for the assessments conducted in your Region:

Assessment Information	Assessment Outcomes	
Assessed: 146656	Already under care: 48	Referral not issued: 3
Acanthosis Nigricans: 5612	Seen by Physician: 474	Referral not returned: 4846
		Not Seen by Physician: 22

Acanthosis Nigricans

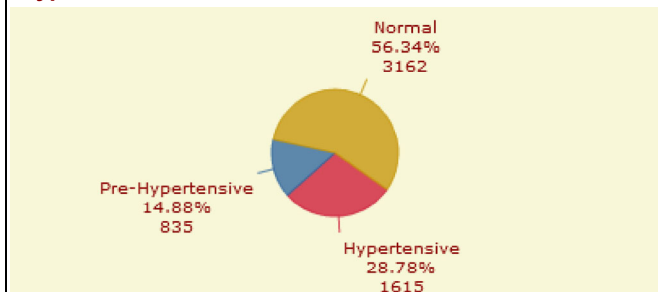
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Blood Pressure

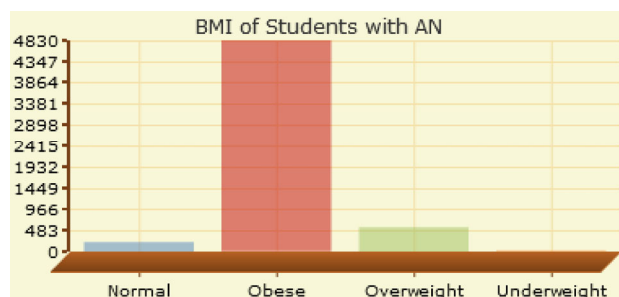
Hypertension has also been associated with insulin resistance and hyperinsulinemia, which is important for children with the AN marker. Elevated blood pressure in childhood correlates with hypertension in early adulthood, supporting the need to measure blood pressure in children.

	1st	3rd	5th	7th	Other Grades	Female	Male
Normal	268	687	1163	868	176	1749	1413
Pre-Hypertensive	65	163	283	268	56	427	408
Hypertensive	108	289	455	643	120	885	730



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	25	54	77	46	11
Obesity	390	990	1587	1544	314
Overweight	24	88	233	181	25
Underweight	2	7	4	8	2

Risk Assessment for Type 2 Diabetes in Children Fact Sheet
REGION 13
2018-2019

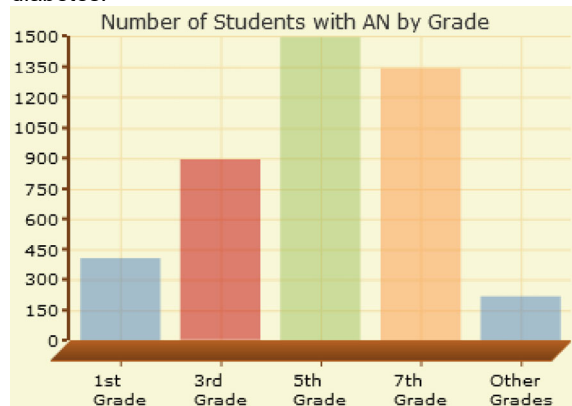
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The following results are for the assessments conducted in your Region:

Assessment Information	Assessment Outcomes	
Assessed: 106423	Already under care: 51	Referral not issued: 34
Acanthosis Nigricans: 4353	Seen by Physician: 298	Referral not returned: 3770
		Not Seen by Physician: 16

Acanthosis Nigricans

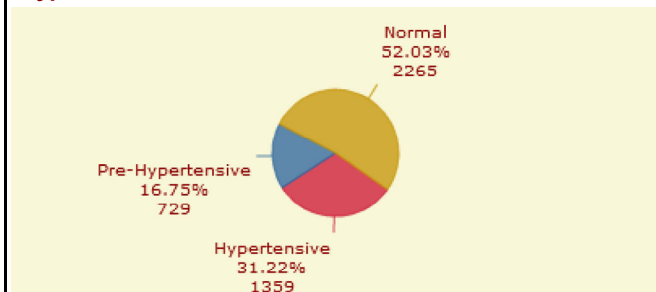
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Blood Pressure

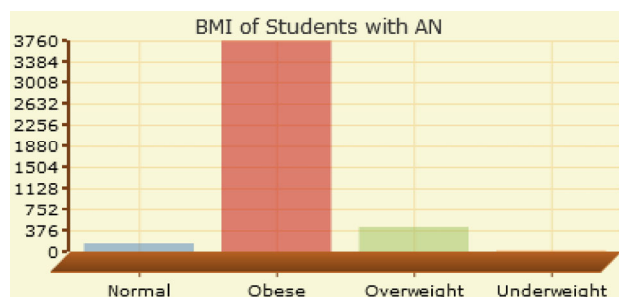
Hypertension has also been associated with insulin resistance and hyperinsulinemia, which is important for children with the AN marker. Elevated blood pressure in childhood correlates with hypertension in early adulthood, supporting the need to measure blood pressure in children.

	1st	3rd	5th	7th	Other Grades	Female	Male
Normal	236	509	808	619	93	1234	1031
Pre-Hypertensive	61	137	261	232	38	407	322
Hypertensive	110	247	425	491	86	731	628



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	20	26	49	45	3
Obesity	356	794	1290	1108	203
Overweight	24	70	147	187	7
Underweight	7	3	8	2	4

Risk Assessment for Type 2 Diabetes in Children Fact Sheet
REGION 15
2018-2019

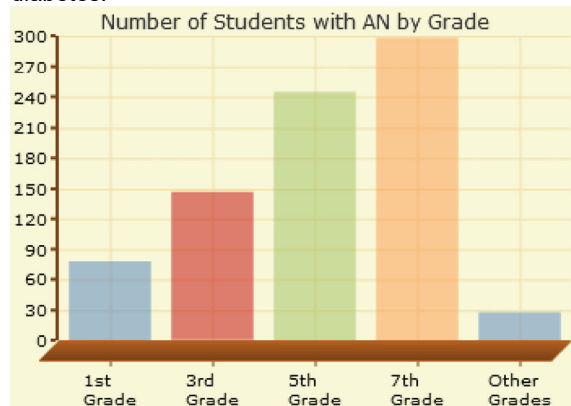
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The following results are for the assessments conducted in your Region:

Assessment Information	Assessment Outcomes	Referral not issued:
Assessed: 13885	Already under care: 59	Referral not returned: 623
Acanthosis Nigricans: 796	Seen by Physician: 53	Not Seen by Physician: 1

Acanthosis Nigricans

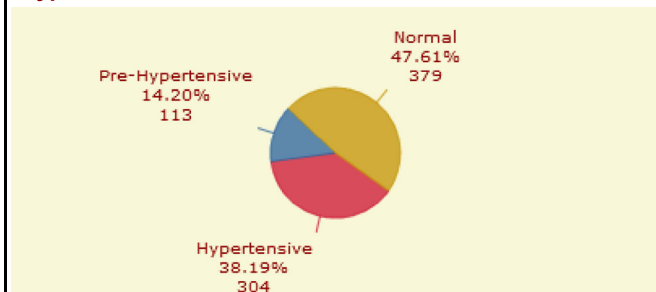
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Blood Pressure

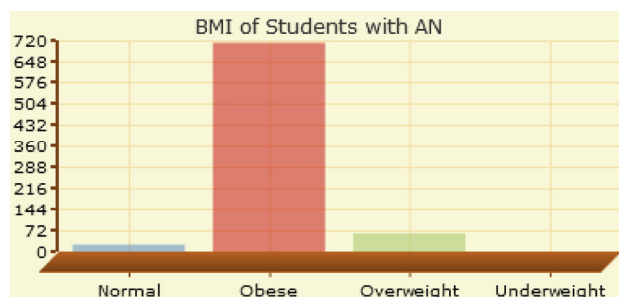
Hypertension has also been associated with insulin resistance and hyperinsulinemia, which is important for children with the AN marker. Elevated blood pressure in childhood correlates with hypertension in early adulthood, supporting the need to measure blood pressure in children.

	1st	3rd	5th	7th	Other Grades	Female	Male
Normal	47	68	122	127	15	202	177
Pre-Hypertensive	11	26	34	38	4	59	54
Hypertensive	20	53	89	133	9	160	144



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	3	8	6	1
Obesity	67	135	215	269	25
Overweight	5	9	22	23	2
Underweight	0	0	0	0	0

Risk Assessment for Type 2 Diabetes in Children Fact Sheet
REGION 18
2018-2019

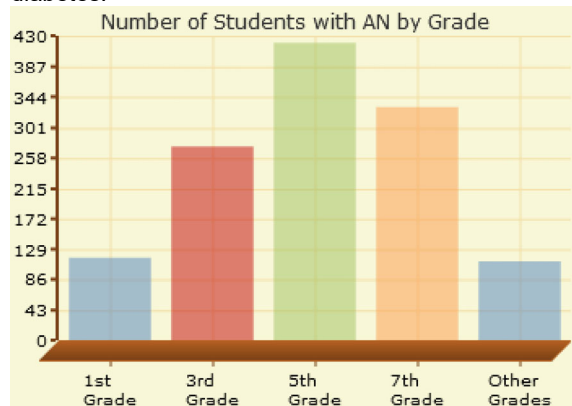
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The following results are for the assessments conducted in your Region:

Assessment Information	Assessment Outcomes	Referral not issued:
Assessed: 28962	Already under care: 23	Referral not returned: 862
Acanthosis Nigricans: 1253	Seen by Physician: 125	Not Seen by Physician: 5

Acanthosis Nigricans

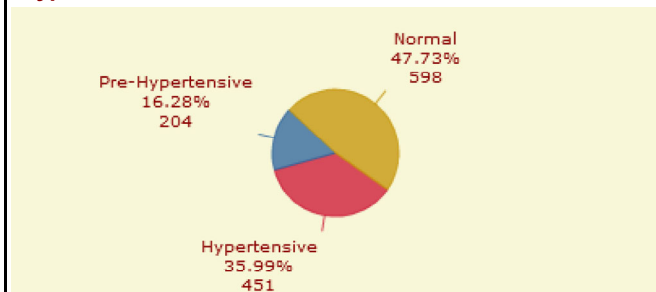
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Blood Pressure

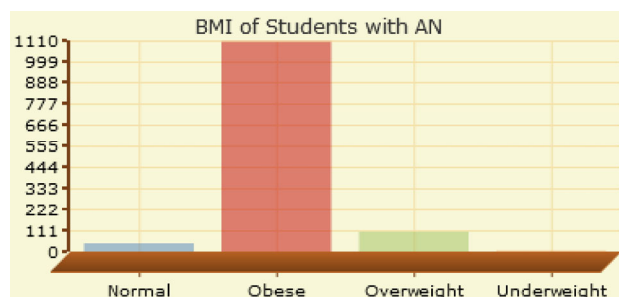
Hypertension has also been associated with insulin resistance and hyperinsulinemia, which is important for children with the AN marker. Elevated blood pressure in childhood correlates with hypertension in early adulthood, supporting the need to measure blood pressure in children.

	1st	3rd	5th	7th	Other Grades	Female	Male
Normal	57	155	202	123	61	334	264
Pre-Hypertensive	22	46	74	45	17	111	93
Hypertensive	38	73	144	162	34	237	214



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	8	9	12	10
Obesity	108	246	365	292	94
Overweight	5	20	45	25	8
Underweight	1	0	1	1	0

Risk Assessment for Type 2 Diabetes in Children Fact Sheet
REGION 19
2018-2019

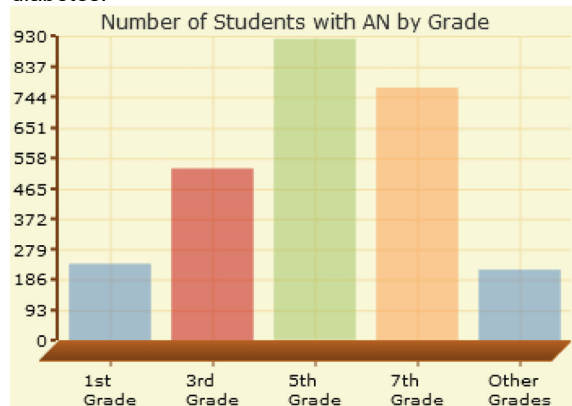
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The following results are for the assessments conducted in your Region:

Assessment Information	Assessment Outcomes	
Assessed: 40138	Already under care: 77	Referral not issued: 3
Acanthosis Nigricans: 2669	Seen by Physician: 416	Referral not returned: 2078
		Not Seen by Physician: 6

Acanthosis Nigricans

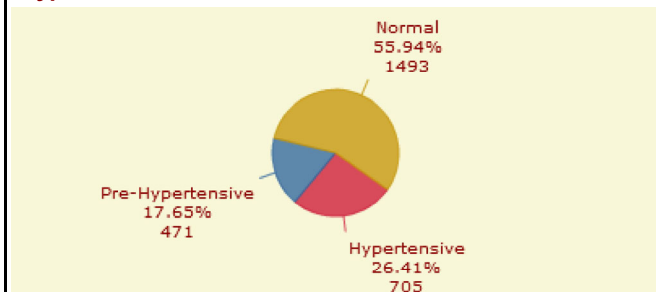
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Blood Pressure

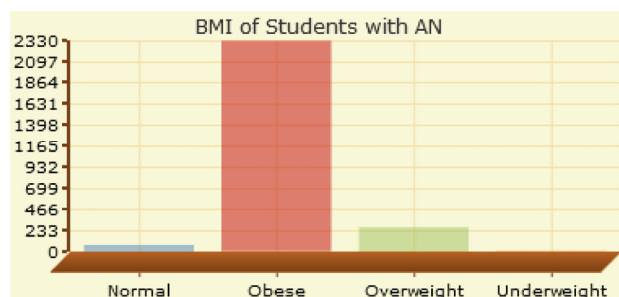
Hypertension has also been associated with insulin resistance and hyperinsulinemia, which is important for children with the AN marker. Elevated blood pressure in childhood correlates with hypertension in early adulthood, supporting the need to measure blood pressure in children.

	1st	3rd	5th	7th	Other Grades	Female	Male
Normal	152	330	525	380	106	789	704
Pre-Hypertensive	25	97	171	141	37	231	240
Hypertensive	57	100	225	251	72	361	344



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	8	13	27	17	8
Obesity	208	476	765	683	192
Overweight	14	37	127	72	14
Underweight	4	1	2	0	1

Risk Assessment for Type 2 Diabetes in Children Fact Sheet
REGION 20
2018-2019

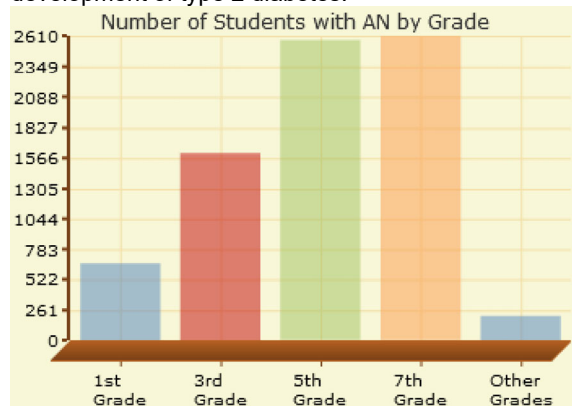
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The following results are for the assessments conducted in your Region:

Assessment Information	Assessment Outcomes	
Assessed: 121288	Already under care: 73	Referral not issued: 2
Acanthosis Nigricans: 7660	Seen by Physician: 542	Referral not returned: 5591
		Not Seen by Physician: 35

Acanthosis Nigricans

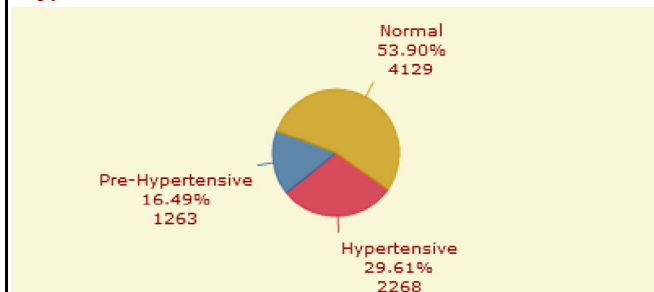
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Blood Pressure

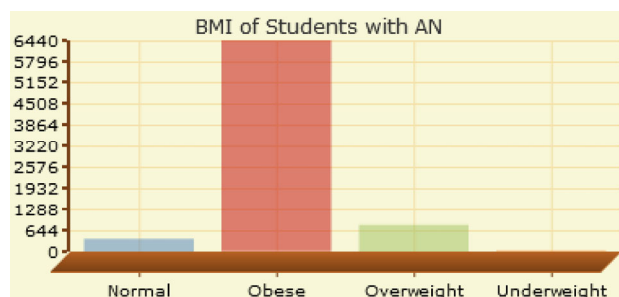
Hypertension has also been associated with insulin resistance and hyperinsulinemia, which is important for children with the AN marker. Elevated blood pressure in childhood correlates with hypertension in early adulthood, supporting the need to measure blood pressure in children.

	1st	3rd	5th	7th	Other Grades	Female	Male
Normal	413	930	1388	1277	121	2266	1863
Pre-Hypertensive	104	249	448	436	26	663	600
Hypertensive	147	429	737	891	64	1206	1062



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	67	71	124	106	13
Obesity	550	1391	2146	2169	179
Overweight	41	136	301	308	19
Underweight	6	10	2	21	0

Risk Assessment for Type 2 Diabetes in Children Fact Sheet

MANDATED REGIONS

2019-2020

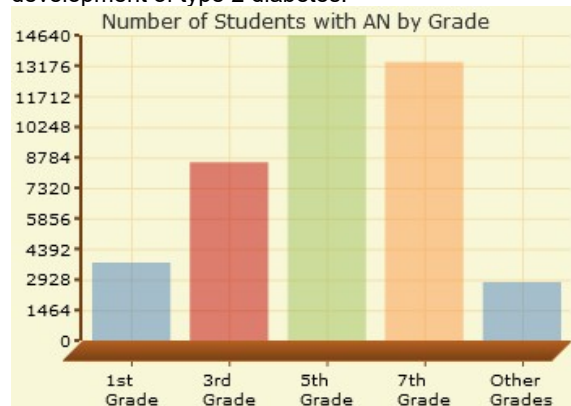
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The following results are for the assessments conducted in your Mandate:

Assessment Information	Assessment Outcomes	
Assessed: 880175	Already under care: 627	Referral not issued: 82
Acanthosis Nigricans: 43084	Seen by Physician: 3734	Referral not returned: 33439
		Not Seen by Physician: 224

Acanthosis Nigricans

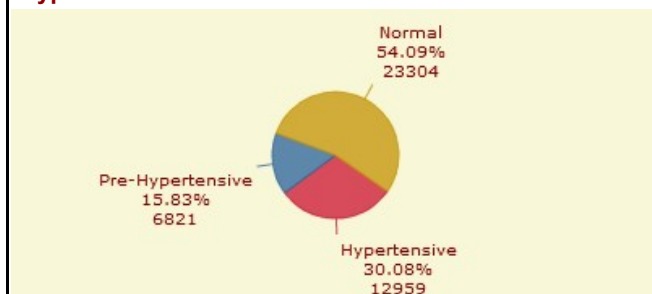
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Blood Pressure

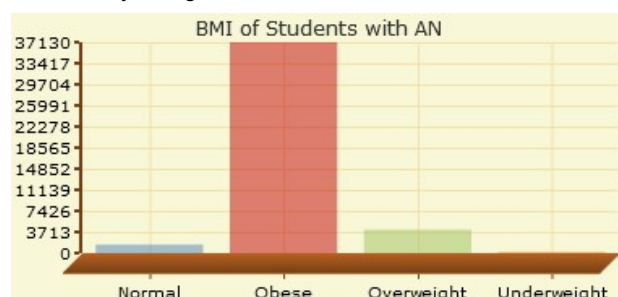
Hypertension has also been associated with insulin resistance and hyperinsulinemia, which is important for children with the AN marker. Elevated blood pressure in childhood correlates with hypertension in early adulthood, supporting the need to measure blood pressure in children.

	1st	3rd	5th	7th	Other Grades	Female	Male
Normal	2241	4973	8005	6662	1423	12338	10966
Pre-Hypertensive	515	1296	2365	2187	458	3528	3293
Hypertensive	982	2276	4266	4500	935	6704	6255



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	225	289	501	449	69
Obesity	3231	7521	12479	11404	2490
Overweight	240	670	1577	1437	240
Underweight	42	65	79	59	17

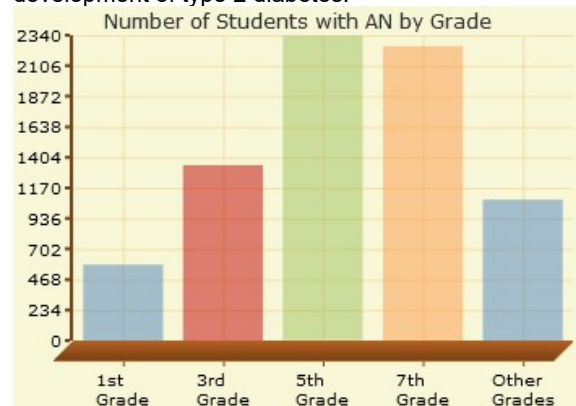
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The following results are for the assessments conducted in your Region:

Assessment Information	Assessment Outcomes	
Assessed: 91090	Already under care: 174	Referral not issued: 4
Acanthosis Nigricans: 7596	Seen by Physician: 911	Referral not returned: 5501
		Not Seen by Physician: 96

Acanthosis Nigricans

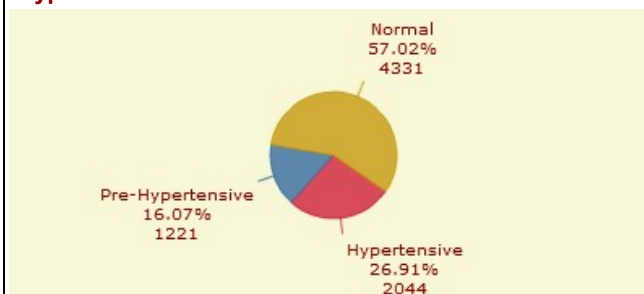
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Blood Pressure

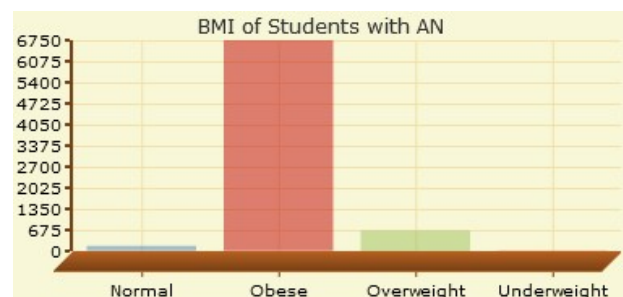
Hypertension has also been associated with insulin resistance and hyperinsulinemia, which is important for children with the AN marker. Elevated blood pressure in childhood correlates with hypertension in early adulthood, supporting the need to measure blood pressure in children.

	1st	3rd	5th	7th	Other Grades	Female	Male
Normal	379	849	1337	1223	543	2212	2119
Pre-Hypertensive	76	197	352	392	204	601	620
Hypertensive	127	298	647	640	332	1027	1017



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	11	20	62	46	21
Obesity	537	1242	2042	1976	948
Overweight	31	78	223	225	105
Underweight	3	4	9	8	5

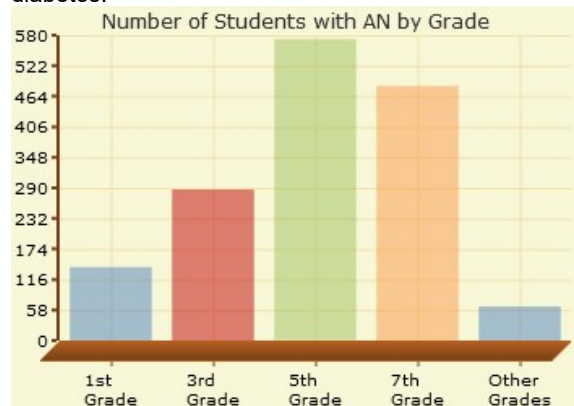
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The following results are for the assessments conducted in your Region:

Assessment Information	Assessment Outcomes	
Assessed: 22608	Already under care: 33	Referral not issued: 19
Acanthosis Nigricans: 1548	Seen by Physician: 154	Referral not returned: 1204
		Not Seen by Physician: 1

Acanthosis Nigricans

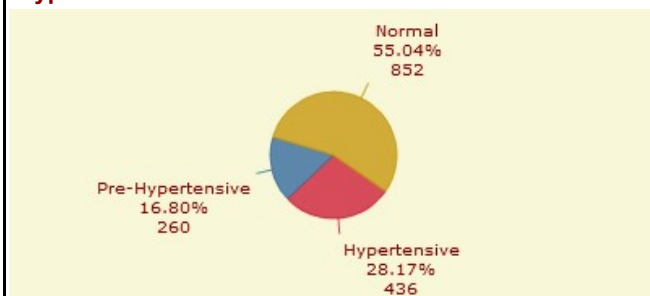
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Blood Pressure

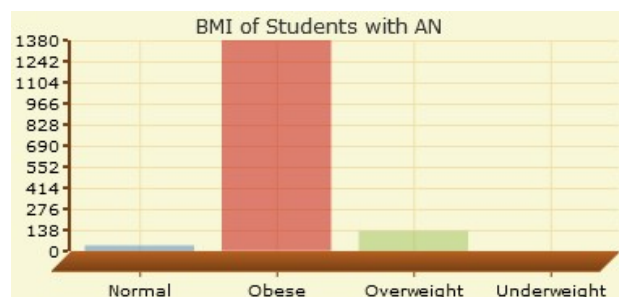
Hypertension has also been associated with insulin resistance and hyperinsulinemia, which is important for children with the AN marker. Elevated blood pressure in childhood correlates with hypertension in early adulthood, supporting the need to measure blood pressure in children.

	1st	3rd	5th	7th	Other Grades	Female	Male
Normal	78	179	305	253	37	441	411
Pre-Hypertensive	25	32	116	77	10	138	122
Hypertensive	37	76	151	154	18	229	207



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	5	1	18	12	1
Obesity	126	261	493	437	61
Overweight	9	25	61	35	3
Underweight	0	0	0	0	0

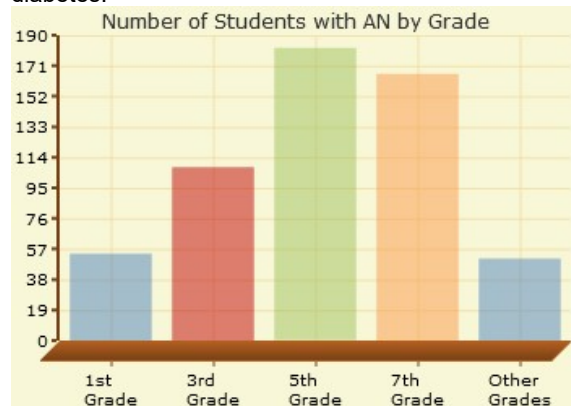
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The following results are for the assessments conducted in your Region:

Assessment Information	Assessment Outcomes	Referral not issued:
Assessed: 11658	Already under care: 9	Referral not returned: 486
Acanthosis Nigricans: 561	Seen by Physician: 50	Not Seen by Physician: 2

Acanthosis Nigricans

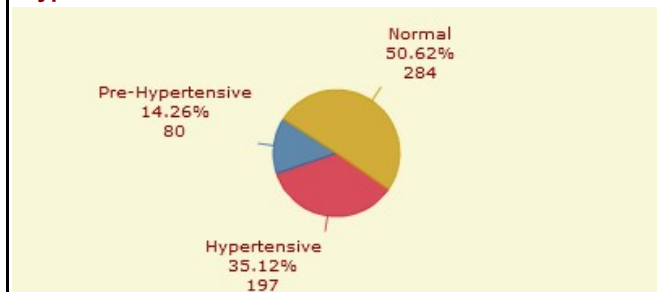
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Blood Pressure

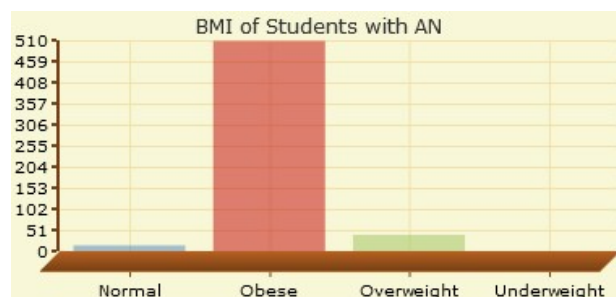
Hypertension has also been associated with insulin resistance and hyperinsulinemia, which is important for children with the AN marker. Elevated blood pressure in childhood correlates with hypertension in early adulthood, supporting the need to measure blood pressure in children.

	1st	3rd	5th	7th	Other Grades	Female	Male
Normal	26	65	92	73	28	155	129
Pre-Hypertensive	8	16	24	26	6	41	39
Hypertensive	20	27	66	67	17	95	102



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	1	2	6	1
Obesity	45	97	170	147	49
Overweight	5	10	10	13	1
Underweight	0	0	0	0	0

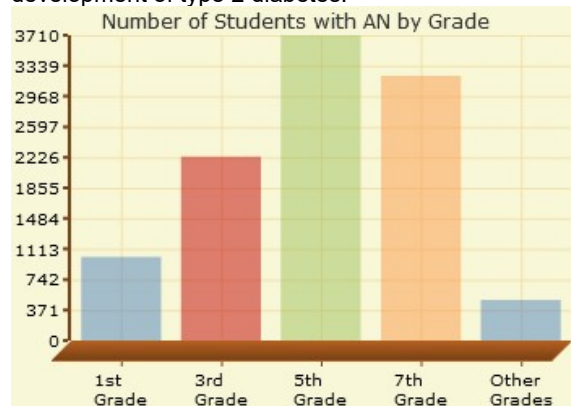
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The following results are for the assessments conducted in your Region:

Assessment Information	Assessment Outcomes	
Assessed: 212693	Already under care: 122	Referral not issued: 13
Acanthosis Nigricans: 10668	Seen by Physician: 775	Referral not returned: 8681
		Not Seen by Physician: 25

Acanthosis Nigricans

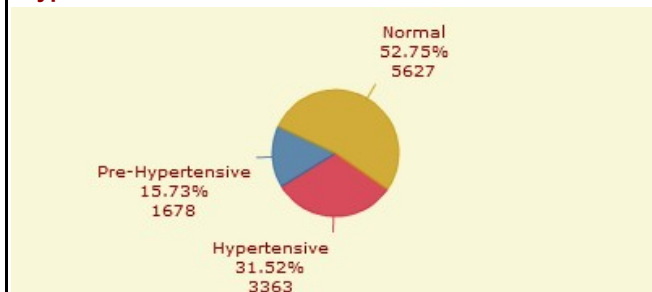
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Blood Pressure

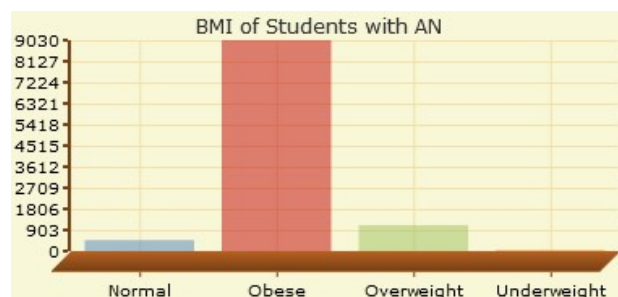
Hypertension has also been associated with insulin resistance and hyperinsulinemia, which is important for children with the AN marker. Elevated blood pressure in childhood correlates with hypertension in early adulthood, supporting the need to measure blood pressure in children.

	1st	3rd	5th	7th	Other Grades	Female	Male
Normal	570	1248	1993	1545	271	3014	2613
Pre-Hypertensive	144	362	602	502	68	886	792
Hypertensive	301	622	1114	1170	156	1777	1586



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	103	101	133	116	14
Obesity	803	1905	3153	2727	441
Overweight	98	204	410	361	38
Underweight	11	22	13	13	2

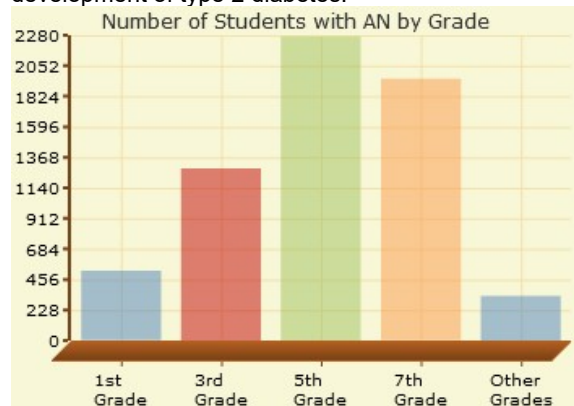
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The following results are for the assessments conducted in your Region:

Assessment Information	Assessment Outcomes	
Assessed: 162855	Already under care: 104	Referral not issued: 1
Acanthosis Nigricans: 6368	Seen by Physician: 516	Referral not returned: 4897
		Not Seen by Physician: 35

Acanthosis Nigricans

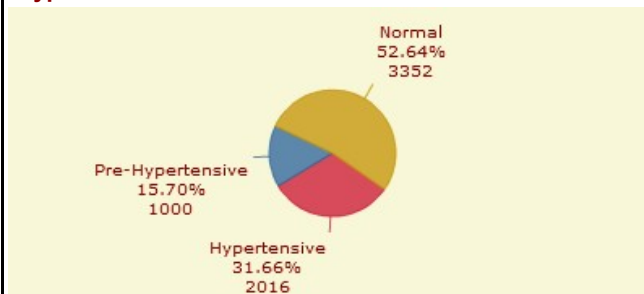
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Blood Pressure

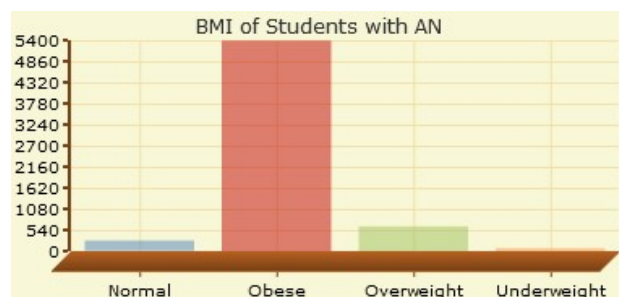
Hypertension has also been associated with insulin resistance and hyperinsulinemia, which is important for children with the AN marker. Elevated blood pressure in childhood correlates with hypertension in early adulthood, supporting the need to measure blood pressure in children.

	1st	3rd	5th	7th	Other Grades	Female	Male
Normal	311	711	1207	964	159	1845	1507
Pre-Hypertensive	71	179	370	331	49	545	455
Hypertensive	138	397	695	660	126	1072	944



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	27	56	96	76	10
Obesity	455	1104	1910	1632	290
Overweight	26	103	234	244	28
Underweight	12	24	32	3	6

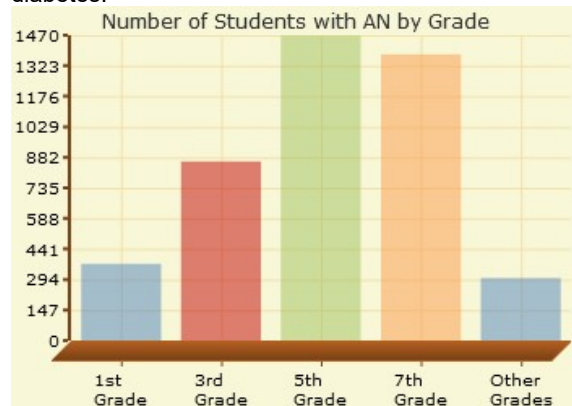
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The following results are for the assessments conducted in your Region:

Assessment Information	Assessment Outcomes	
Assessed: 117806	Already under care: 29	Referral not issued: 3
Acanthosis Nigricans: 4381	Seen by Physician: 263	Referral not returned: 3590
		Not Seen by Physician: 9

Acanthosis Nigricans

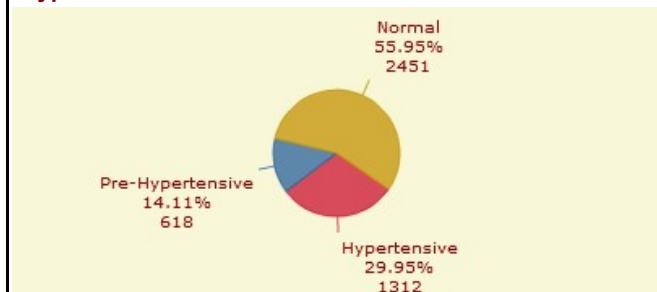
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Blood Pressure

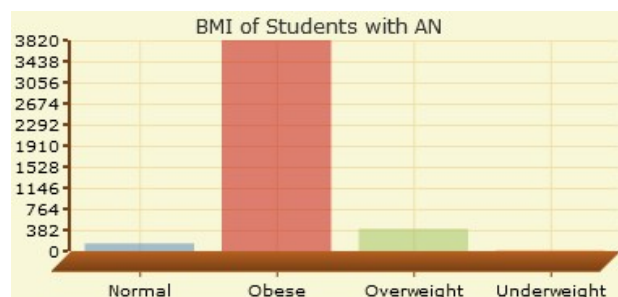
Hypertension has also been associated with insulin resistance and hyperinsulinemia, which is important for children with the AN marker. Elevated blood pressure in childhood correlates with hypertension in early adulthood, supporting the need to measure blood pressure in children.

	1st	3rd	5th	7th	Other Grades	Female	Male
Normal	225	526	894	652	154	1356	1095
Pre-Hypertensive	45	123	208	204	38	320	298
Hypertensive	99	213	367	523	110	691	621



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	22	31	50	34	5
Obesity	328	766	1255	1199	271
Overweight	10	64	160	144	24
Underweight	9	1	4	2	2

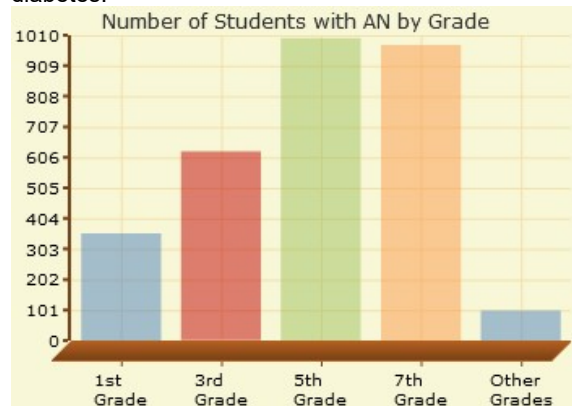
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The following results are for the assessments conducted in your Region:

Assessment Information	Assessment Outcomes	
Assessed: 87357	Already under care: 27	Referral not issued: 42
Acanthosis Nigricans: 3058	Seen by Physician: 193	Referral not returned: 2521
		Not Seen by Physician: 15

Acanthosis Nigricans

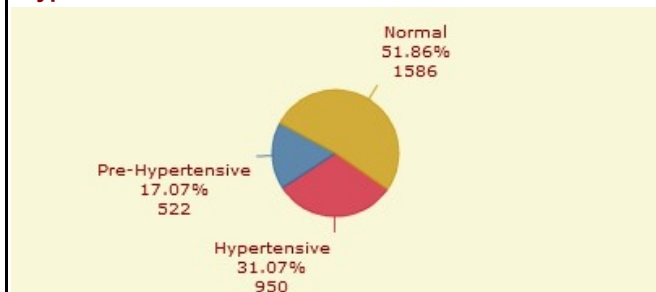
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Blood Pressure

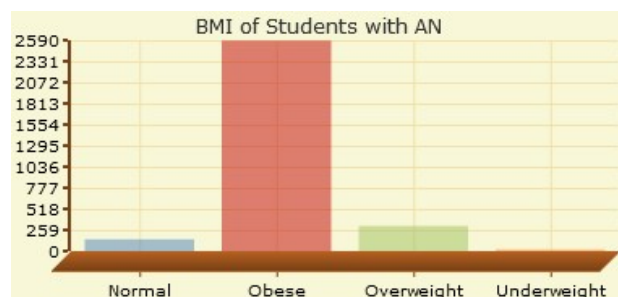
Hypertension has also been associated with insulin resistance and hyperinsulinemia, which is important for children with the AN marker. Elevated blood pressure in childhood correlates with hypertension in early adulthood, supporting the need to measure blood pressure in children.

	1st	3rd	5th	7th	Other Grades	Female	Male
Normal	216	335	523	462	50	857	729
Pre-Hypertensive	51	107	167	185	12	258	264
Hypertensive	88	183	311	331	37	491	459



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	22	39	53	6
Obesity	305	558	824	815	82
Overweight	23	40	125	108	11
Underweight	3	5	13	2	0

Risk Assessment for Type 2 Diabetes in Children Fact Sheet
REGION 15
2019-2020

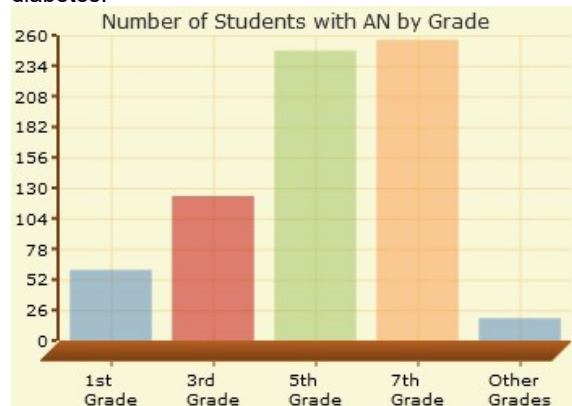
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The following results are for the assessments conducted in your Region:

Assessment Information	Assessment Outcomes	Referral not issued:
Assessed: 11013	Already under care: 24	Referral not returned: 551
Acanthosis Nigricans: 705	Seen by Physician: 49	Not Seen by Physician: 9

Acanthosis Nigricans

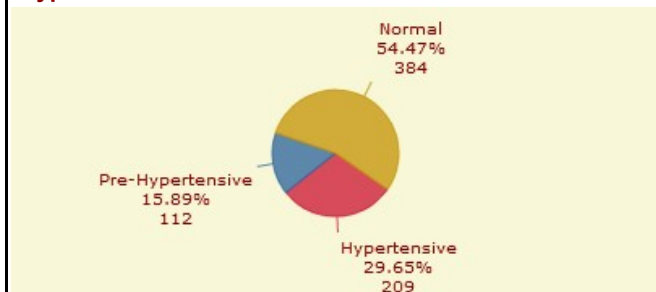
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Blood Pressure

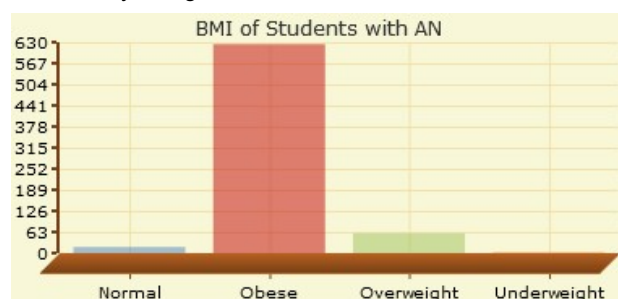
Hypertension has also been associated with insulin resistance and hyperinsulinemia, which is important for children with the AN marker. Elevated blood pressure in childhood correlates with hypertension in early adulthood, supporting the need to measure blood pressure in children.

	1st	3rd	5th	7th	Other Grades	Female	Male
Normal	34	70	127	141	12	210	174
Pre-Hypertensive	8	16	38	50	0	55	57
Hypertensive	18	37	82	65	7	105	104



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	4	7	3	0
Obesity	50	110	220	227	17
Overweight	5	8	19	25	2
Underweight	1	1	1	1	0

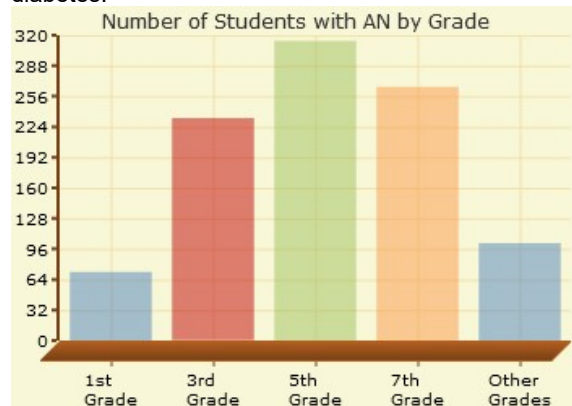
Risk Assessment for Type 2 Diabetes in Children Fact Sheet
REGION 18
2019-2020

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Assessment Information	Assessment Outcomes	Referral not issued:
Assessed: 22170	Already under care: 11	Referral not returned: 712
Acanthosis Nigricans: 987	Seen by Physician: 152	Not Seen by Physician: 12

Acanthosis Nigricans

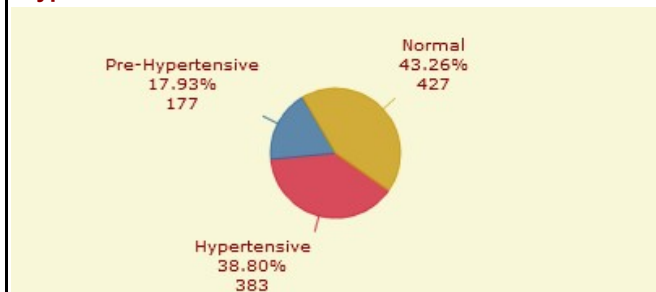
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Blood Pressure

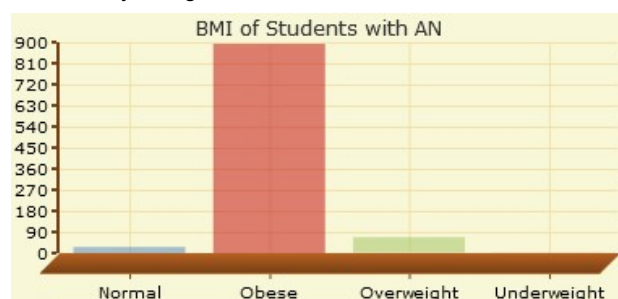
Hypertension has also been associated with insulin resistance and hyperinsulinemia, which is important for children with the AN marker. Elevated blood pressure in childhood correlates with hypertension in early adulthood, supporting the need to measure blood pressure in children.

	1st	3rd	5th	7th	Other Grades	Female	Male
Normal	37	118	134	99	39	248	179
Pre-Hypertensive	17	45	54	43	18	99	78
Hypertensive	18	70	126	124	45	194	189



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	3	6	12	3
Obesity	69	222	286	222	94
Overweight	1	8	22	31	5
Underweight	0	0	0	1	0

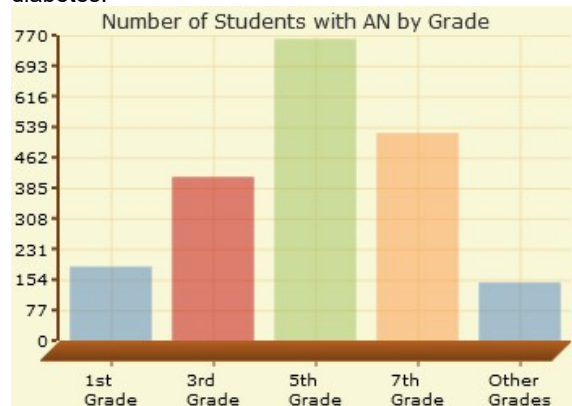
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The following results are for the assessments conducted in your Region:

Assessment Information	Assessment Outcomes	Referral not issued:
Assessed: 27982	Already under care: 41	Referral not returned: 1535
Acanthosis Nigricans: 2029	Seen by Physician: 286	Not Seen by Physician: 11

Acanthosis Nigricans

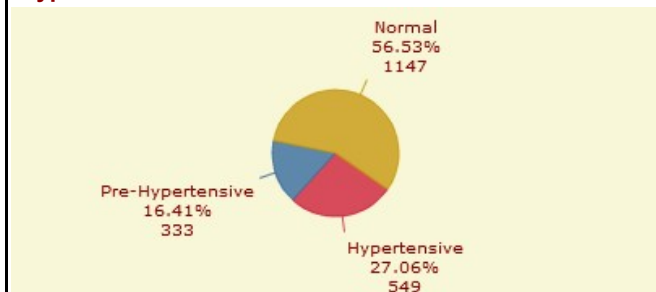
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Blood Pressure

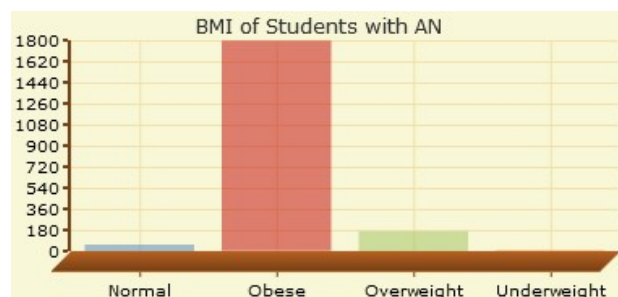
Hypertension has also been associated with insulin resistance and hyperinsulinemia, which is important for children with the AN marker. Elevated blood pressure in childhood correlates with hypertension in early adulthood, supporting the need to measure blood pressure in children.

	1st	3rd	5th	7th	Other Grades	Female	Male
Normal	120	273	416	257	81	554	593
Pre-Hypertensive	23	47	143	95	25	168	165
Hypertensive	43	93	202	171	40	271	278



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	11	26	8	6
Obesity	173	369	653	477	123
Overweight	8	27	82	36	17
Underweight	1	6	0	2	0

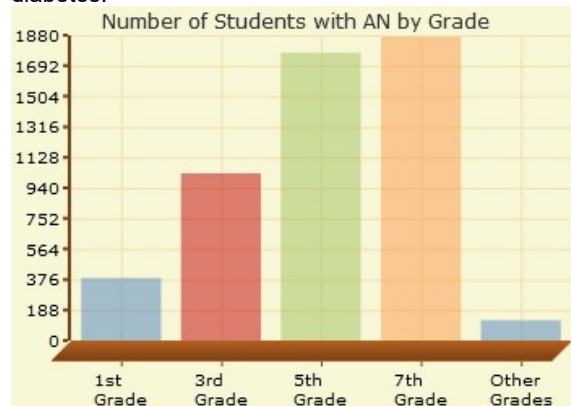
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The following results are for the assessments conducted in your Region:

Assessment Information	Assessment Outcomes	Referral not issued:
Assessed: 105650	Already under care: 53	Referral not returned: 3761
Acanthosis Nigricans: 5183	Seen by Physician: 385	Not Seen by Physician: 9

Acanthosis Nigricans

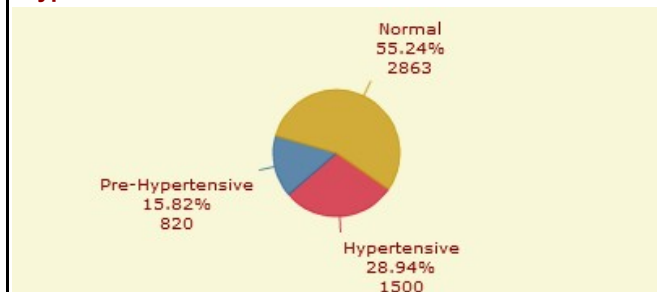
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Blood Pressure

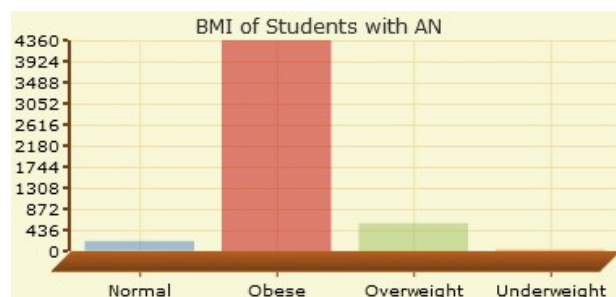
Hypertension has also been associated with insulin resistance and hyperinsulinemia, which is important for children with the AN marker. Elevated blood pressure in childhood correlates with hypertension in early adulthood, supporting the need to measure blood pressure in children.

	1st	3rd	5th	7th	Other Grades	Female	Male
Normal	245	599	977	993	49	1446	1417
Pre-Hypertensive	47	172	291	282	28	417	403
Hypertensive	93	260	505	595	47	752	748



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	19	39	62	83	2
Obesity	340	887	1473	1545	114
Overweight	24	103	231	215	6
Underweight	2	2	7	27	2