Department of Health

Oral Health Screening Survey of Third Grade Schoolchildren in Ohio, 2023-2024

This data brief reports results of the Make Your Smile Count! oral health screening survey of third grade schoolchildren conducted by the Ohio Department of Health (ODH) during the 2023-2024 school year.

Summary of Findings

51%

Decay experience: About one in two children have a history of tooth decay (e.g., fillings, cavities, crowns, or extractions due to tooth decay).

19%

Untreated tooth decay: About one in five children have untreated tooth decay.

42%

Dental sealants: About two in five children have dental sealants on one or more permanent molars.

20%

Last dental visit: One in five children didn't see a dentist in the past year.

19%

Treatment urgency: About one in five children need to see a dentist for early or urgent dental care; of these, 4% needed to see a dentist right away.[1]

Statistically significant* differences in decay experience and untreated tooth decay are observed among children, depending on their insurance coverage and family income (Figure 1). Children insured by Medicaid and those from lower income families[2] are significantly more likely to have decay experience. Children who are insured by Medicaid or are uninsured, or those from lower income families are more than twice as likely to have untreated tooth decay compared to those with private dental insurance or from higher income families.

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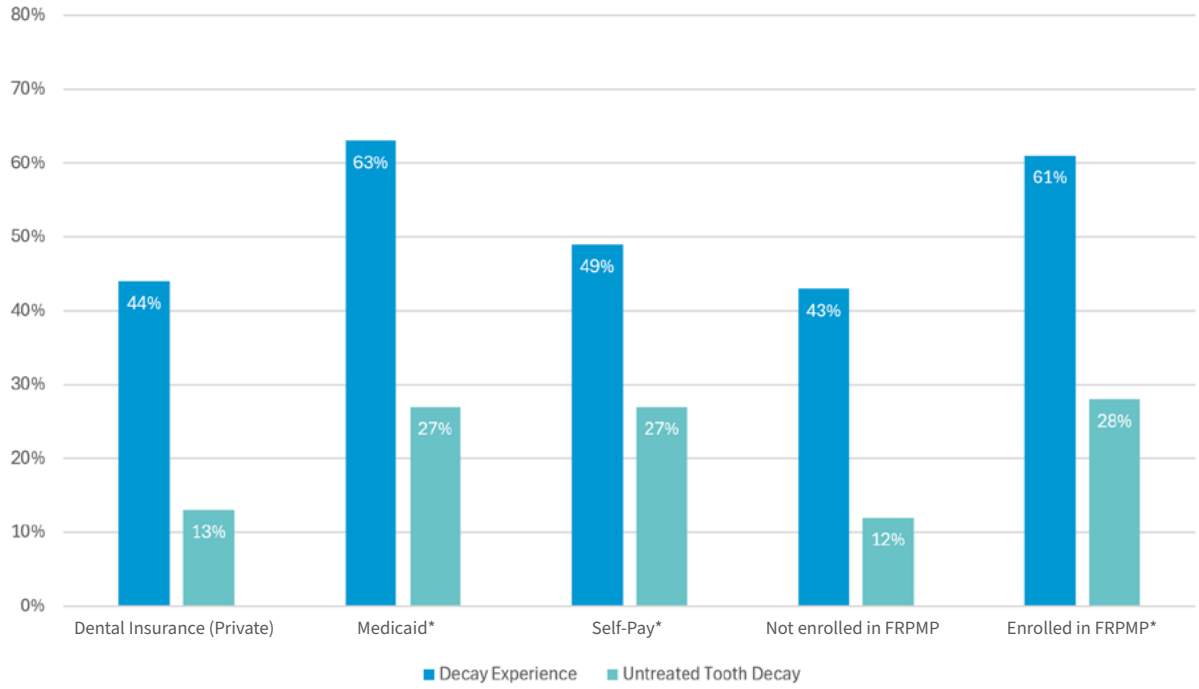
[1]Early dental care means the child needed to see a dentist within the next few weeks due to obvious tooth decay or other problem. Urgent dental care means that the child needed to see a dentist as soon as possible due to an infection or toothache.

[2]Participation in the Free and Reduced-Price Meal Program was used as a proxy for family income. Child Nutrition Programs - National School Lunch Program. US Department of Agriculture. Accessed 3.13.25

* "Statistically significant" means that the difference between populations is greater than what might be expected to happen by chance alone.

Figure 1: Percentage of Children with Decay Experience and Untreated Tooth Decay, by Insurance Coverage and Income, Ohio, 2023-24



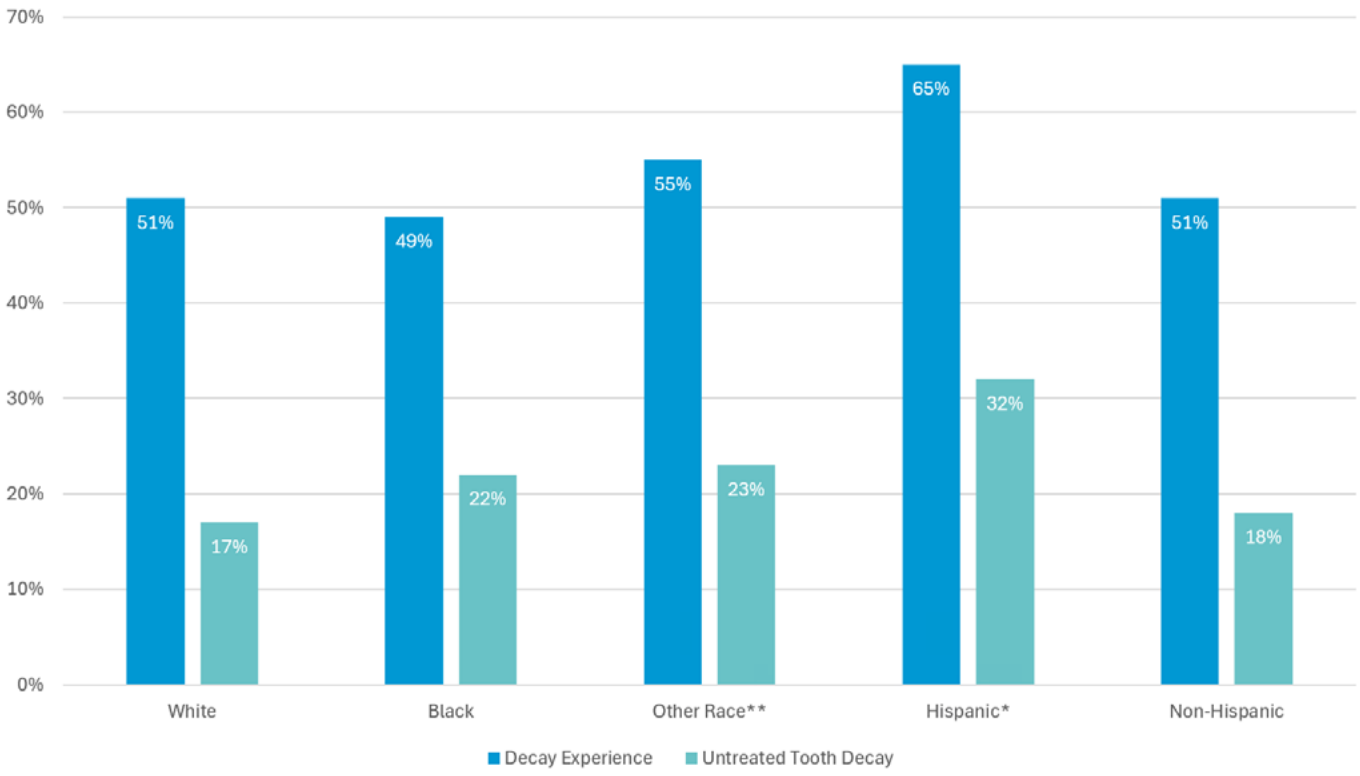
**Statistically significant differences*

FRPMP refers to the Free and Reduced-Price Meal Program.

Disparities in Oral Health Status

Survey results indicate that decay experience and untreated tooth decay do not differ significantly by race. However, these metrics do differ by geographic region of the state (Appalachian, metropolitan, rural/non-Appalachian, or suburban) and by ethnicity. A significantly higher proportion of children experience decay in rural/non-Appalachian counties than in metropolitan counties. Figure 2 illustrates that the percentages of Hispanic children with decay experience and untreated tooth decay are significantly higher than that of non-Hispanic children.

Figure 2: Percentage of Children with Decay Experience and Untreated Tooth Decay, by Race and Ethnicity, Ohio, 2023-24



**Statistically significant difference between Hispanic and non-Hispanic children for decay experience and untreated tooth decay.*

***"Other Race" includes American Indian or Alaska Native, Asian, Native Hawaiian or other Pacific Islander, multiracial, or another race not specified.*

Access to Dental Care

Access to dental care means getting the dental care you need when you need it. Overall, 80% of parents/guardians in this survey report that their child received a dental visit within the past year. However, as can be seen in Table 1, the percentage varies by race/ethnicity, insurance coverage and income. Hispanic children and those who are Black or of other races are significantly less likely to have had a dental visit in the past year, as are those from lower income families, uninsured or covered by Medicaid. Nearly one-third of children from lower income families and 40% of uninsured children did not have a dental visit in the past year.

Table 1: Factors Associated with Frequency of Dental Visits, Ohio, 2023-24		
	Percentage of Children with a Dental Visit Within the Past Year	Percentage of Children with a Dental Visit More Than One Year Ago
Race and Ethnicity		
White	83%	17%
Black*	64%	36%
Other Race*	74%	26%
Hispanic*	70%	31%
Non-Hispanic	80%	20%
Payment Type for Dental Care		
Dental Insurance (Private)	89%	11%
Medicaid*	66%	34%
Self-Pay	61%	39%
Income		
Not enrolled in the FRPMP (higher income)	89%	11%
Enrolled in the FRPMP (lower income)*	68%	32%

** Significantly less likely to have had a dental visit in the past year.*

FRPMP refers to the Free and Reduced-Price Meal Program.

Respondents were asked whether there was a time their child needed dental care but could not get it. Overall, 9% report this occurred, an increase in the percentage reported in 2017-18 (7%).[3] In the current survey, respondents of children identified as Black are significantly more likely to report difficulties getting dental care for their child, as are children insured by Medicaid, those uninsured, or those in lower-income families. Differences were in the order of three to four times more likely to report challenges (see Table 2).

[3]Oral Health Screening Survey of Third Grade Schoolchildren in Ohio, 2017-18. Ohio Department of Health. Accessed 3.6.25.

Table 2: Percentage of Parents/Guardians Who Report Difficulty Getting Dental Care for Their Child, By Race/Ethnicity, Type of Insurance, and Income, Ohio, 2023-24	
Race and Ethnicity	
White	7%
Black*	20%
Other Race	14%
Hispanic	11%
Non-Hispanic	9%
Payment Type for Dental Care	
Dental Insurance (Private)	4%
Medicaid**	17%
Self-Pay**	16%
Income	
Not enrolled in the FRPMP (higher income)	3%
Enrolled in the FRPMP (lower income)†	17%

** Significantly higher than for White children or those of other races*

***Significantly higher than for children with private dental insurance.*

† Significantly higher than for those from high income families.

Respondents were asked to indicate reasons they have difficulty getting dental care. The most common reasons selected are:

- Cost (22%).
- Their dental office was not open at convenient times (17%).
- Their insurance did not cover the procedures (17%).
- They could not take time off work (14%).
- The dental office was too far away (12%).

Respondents also had the opportunity to provide comments about their challenges getting dental care for their child. Examples include:

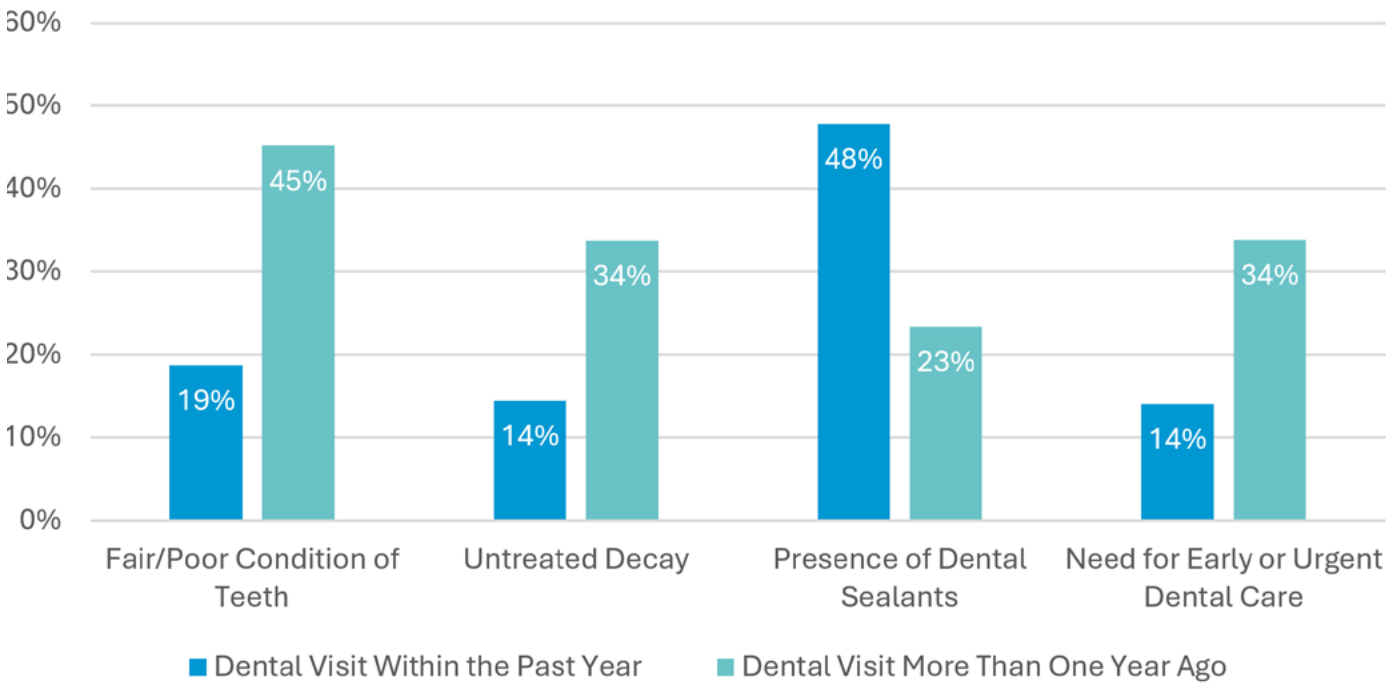
"Appointments being scheduled four to six months out."
"Dental office won't see us because of insurance."
"No dentists accept Medicaid or new patients."
"We don't have a car."
"Needed (a) dentist that does sedation, but many places weren't accepting new patients or weren't accepting our insurance."
"Could not afford the $100 fee for laughing gas."
"Difficult to find right doctor for autistic child."

Impact of Limited Access to Dental Care on Oral Health Status

Access to regular dental care is critical to maintaining oral health. This survey shows that children who don't go to the dentist on a regular basis have worse oral health. As seen in Figure 3, those who did not visit the dentist at least once a year have a significantly higher prevalence of untreated decay, a significantly lower prevalence of dental sealants, are significantly more likely to need early or urgent dental care, and are significantly more likely to be rated by their parents/guardians as having fair to poor oral health.

Children who hadn't seen a dentist in the past year have nearly 2.5 times the prevalence of untreated tooth decay (34% vs. 14%) and have a substantially lower prevalence of dental sealants (23% vs. 48%), one of the most effective means to prevent tooth decay in children.

Figure 3: Relationship Between Oral Health Status and Regular Dental Care, Ohio, 2023-2024



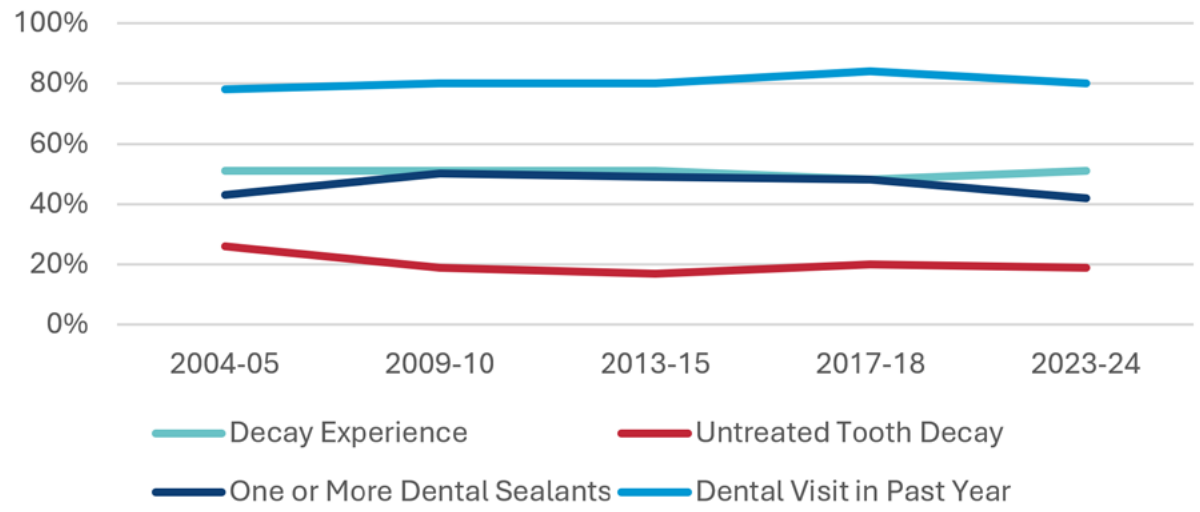
Trends in Oral Health Status

Figure 4 presents data on several indicators of oral health in Ohio's children over the past 20 years. The graph shows the following trends:

- Neither the 2023-24 estimates for the prevalence of decay experience nor a dental visit in the past year are significantly different from those seen in previous years.
- The 2023-24 estimate for the prevalence of untreated tooth decay is significantly lower than the estimate in 2004-05 but not significantly different from the prevalence in other years.
- The prevalence of dental sealants has fluctuated over time. The prevalence in 2023-24 is not significantly different from estimates in 2004-05 and 2017-18, but is significantly lower than the estimates in 2013-15 and 2009-10.

Dental sealants are thin, plastic coatings that are painted on to the chewing surfaces of the back teeth. When hardened, they prevent food and bacteria from entering the tiny pits and narrow grooves of these teeth, areas much too small to be effectively cleaned by a toothbrush. The Ohio Department of Health has promoted the use of dental sealants and supported school-based dental sealant programs in underserved areas for many years. Despite their proven effectiveness, the prevalence of dental sealants has fluctuated over the past 20 years but remains less than 50%. Current survey data indicate that children in suburban and Appalachian counties have the highest prevalence of dental sealants (49% and 42%, respectively), while the prevalence is lower in metropolitan counties (40%) and rural/non-Appalachian counties (39%).

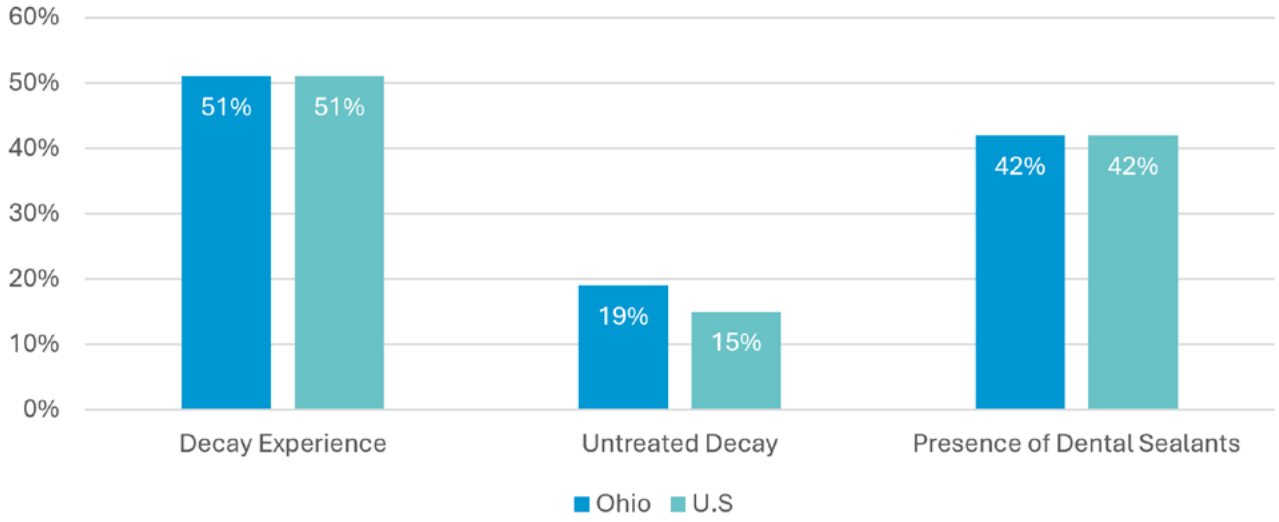
Figure 4: Trends in Measures of Oral Health, Ohio, 2004-2024



Comparison of Ohio to the U.S.

Figure 6 shows comparisons between Ohio and the U.S. on the percentage of children with decay experience, untreated tooth decay and the presence of dental sealants. As can be seen, findings from the most recent survey in Ohio are very similar to findings from national sources.[4] Ohio has a slightly higher prevalence of untreated decay than the U.S. (19% vs. 15%).

Figure 5: Comparison of the Oral Health of Third Grade Schoolchildren, Ohio and U.S.

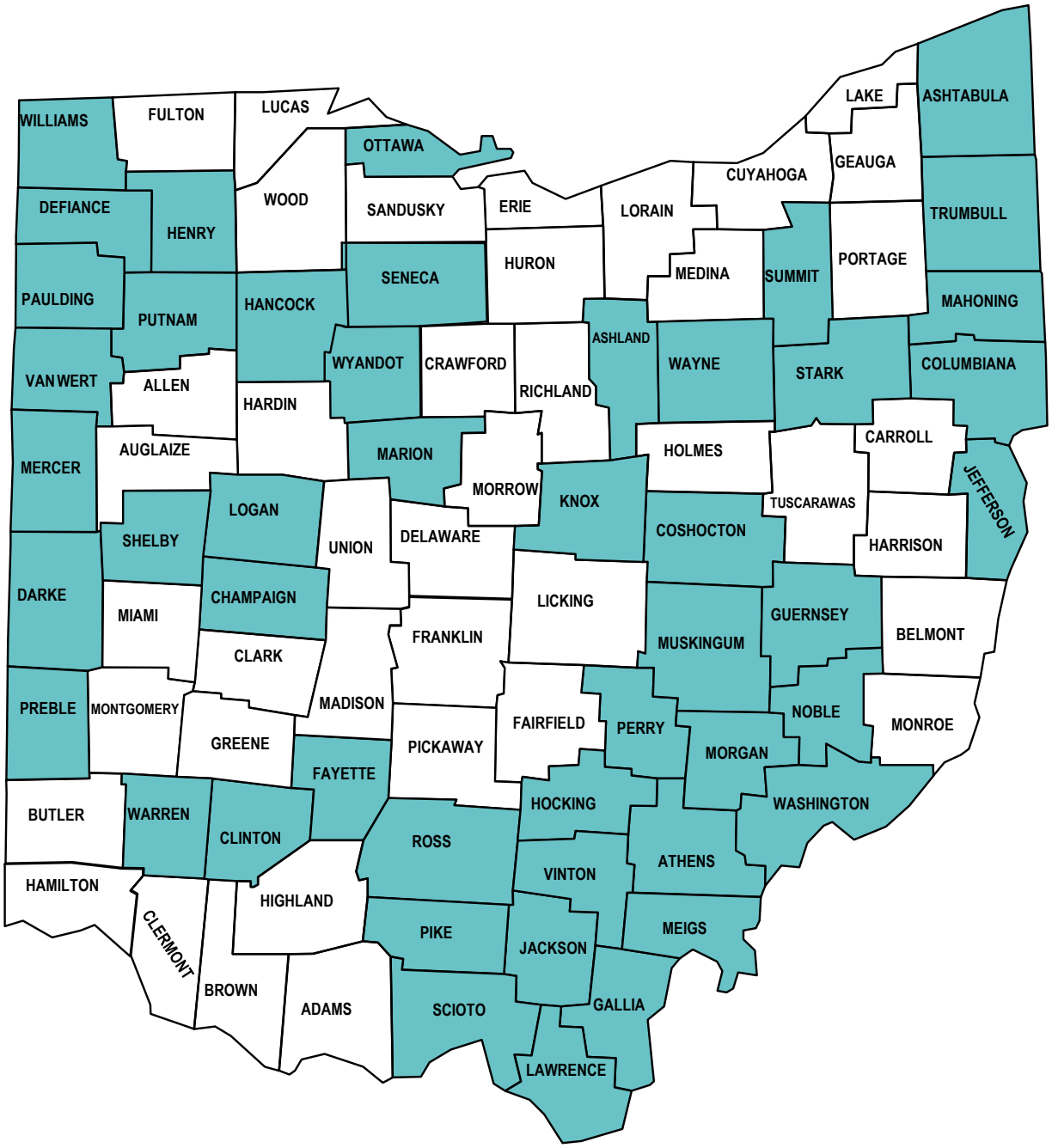


County-level Findings

Figure 7 and Appendix 1 present data on the prevalence of untreated tooth decay, decay experience and dental sealants for each Ohio county. These data can be used as a general indicator of the oral health status of children in a county compared to the statewide average of each measure. Shaded counties have a higher prevalence of untreated tooth decay and decay experience than the state and a lower prevalence of dental sealants. As can be seen in the figure below, counties with these characteristics tend to cluster in Appalachian and rural/non-Appalachian areas.

[4]National data for decay experience and untreated decay are from the Prevalence of Total and Untreated Dental Caries Among Youth: United States, 2015–2016. National Center for Health Statistics Data Brief, No. 307, April 2018. https://www.cdc.gov/nchs/data/databriefs/db307.pdf. Accessed 3.6.2025.
Data on dental sealants are from the Centers for Disease Control and Prevention. Sealant Prevalence in Children. Accessed 3.6.2025.

Figure 6: Comparison of the Prevalence of Oral Health Measures between the State and Ohio Counties, 2023-24



Shaded counties have a higher prevalence of untreated tooth decay and decay experience than the state and a lower prevalence of dental sealants.

Relationship of Daily Consumption of Sugar-Sweetened Beverages and Oral Health Status

The survey consent form included a question about the frequency of the child's consumption of sugar-sweetened beverages. Significant differences in oral health status and access to dental care are observed among children who reportedly consume three or more sugar-sweetened beverages per day. These children are:

- Thirty-seven percent more likely to have decay experience, 45% more likely to have untreated tooth decay, 48% more likely to have experienced a toothache in the past year, and 65% more likely to need urgent dental care.
- More likely to be Black/non-Hispanic, insured by Medicaid, live in lower-income families, and reside in Appalachian or metropolitan counties.
- Much less likely to have had a dental visit in the past year and more likely that their parents/guardians report difficulty getting dental care.

Significance of Findings

Oral health is crucial at all stages of life and can be particularly important during a child's growth and development. Healthy teeth are needed for chewing nutritious foods, speech development, and socialization. Pain from dental disease can impair sleep and the ability to learn. Research shows that children with oral health problems experience more absences from school and have poorer academic performance.[5]

Dental disease remains a very common condition among Ohio's children, experienced by slightly more than 50% of children by third grade. This finding has not dramatically changed over the past 20 years. Differences persist along sociodemographic lines in both oral health status and access to care. Children from lower income families and those covered by Medicaid or who are uninsured experience more tooth decay and have a more urgent need to see the dentist because of pain or infection. However, these children are also those who are less likely to see the dentist on a regular basis.

Overall, this survey found that children who hadn't seen a dentist in the past year have twice the prevalence of untreated tooth decay and have a substantially lower prevalence of dental sealants. Meanwhile, children with private dental insurance have less tooth decay, but are more likely to see the dentist at least once per year.

Dental sealants continue to be the most effective means of preventing and stopping the progression of the most common type of tooth decay seen—that found on the biting surfaces of the back teeth.[6] Despite this, the prevalence of dental sealants has remained relatively unchanged since 2004. ODH supports providing dental sealants to high-risk students through its school-based dental sealant programs (SBSPs), which are operated through grants to local agencies. SBSP grants are targeted to schools with a higher proportion of children from families with lower incomes and to areas of the state where access to dental care is more limited. Participation in ODH-funded SBSPs (both at the school and child-level) declined following the COVID-19 pandemic and has not entirely rebounded.

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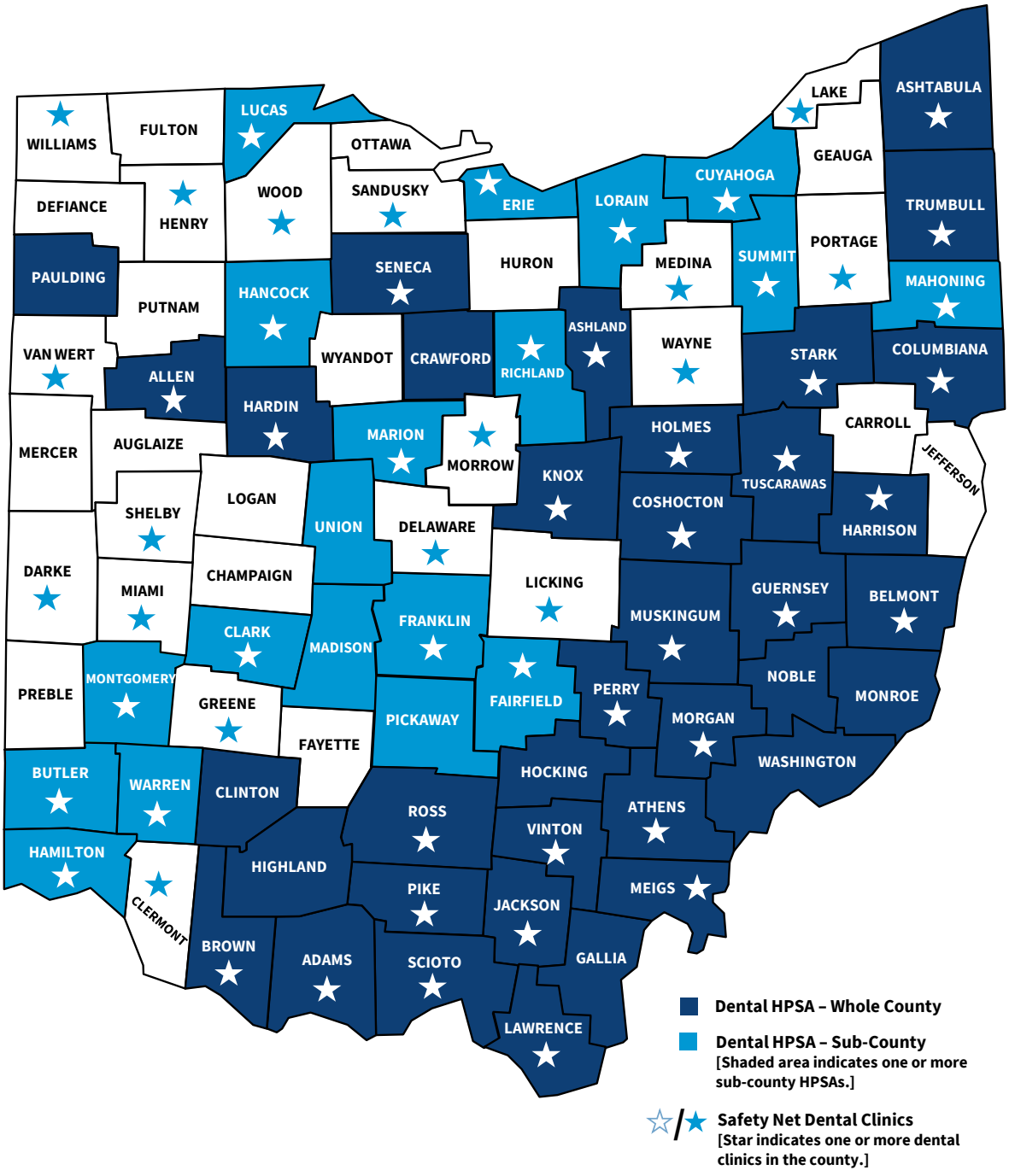
[5]Carol Cristina Guarnizo-Herreño, DDS, PhD, Wei Lyu, MS, and George L. Wehby, PhD. Children's Oral Health and Academic Performance: Evidence of a Persisting Relationship Over the Last Decade in the United States. The Journal of Pediatrics. https://pubmed.ncbi.nlm.nih.gov/30926152/. Accessed 3.12.25.

[6]A Concise Review of Dental Sealants in Caries Management. Frontiers in Oral Health, vol 4, April 17, 2023. https://pmc.ncbi.nlm.nih.gov/articles/PMC10149715/. Accessed 3/19/25.

Access to regular dental care also has an impact on oral health status. Figure 8 shows the dental health professional shortage areas (HPSAs) in Ohio and counties with at least one safety net dental program. A dental HPSA is often a geographic area where there aren't enough dentists to serve the dental needs of the people living there. A safety net dental program provides dental care to patients covered by Medicaid, and offers sliding fees, reduced fees, or free care to patients who can't afford to pay a private dentist. These clinics are mostly run by local health departments, community health centers, hospitals, and other organizations.

Many of the counties identified in this survey as having poorer oral health among school children also have a designation as a dental HPSA, particularly in the southeast region of the state, and some do not have a safety net dental program. Other counties in rural/non-Appalachian areas, while not designated as dental HPSAs, also do not have a safety net dental program. Insufficient numbers of dentists, particularly to serve families insured by Medicaid or uninsured, coupled with the lack of safety net dental programs, create significant challenges for families in accessing dental care for their children.

Figure 7: Safety Net Dental Clinics and Dental HPSAs* in Ohio



A dental HPSA (health professional shortage area) is a federally designated geographic area, population or facility with a shortage of primary dental health care providers.

Map current as of August 2024

Children who experience tooth decay in primary teeth are at higher risk of tooth decay in permanent (adult) teeth. Seeing that more than half of children have experienced tooth decay by the third grade emphasizes the need to expand oral health education and prevention strategies that:

- Integrate oral health into primary care practices, including oral health assessments, education, referrals for dental care, and the application of fluoride varnish by primary care providers.
- Teach parents and caregivers about proper oral hygiene habits and how to promote oral health for their children from birth.
- Promote a diet low in consumption of sugar-sweetened food and beverages.
- Increase ways in which children can access oral health services in private dental offices, safety net dental programs, and school-based/linked health centers.

Methodology

The Ohio Department of Health (ODH) conducted an open-mouth oral health screening survey of third grade schoolchildren during the 2023-24 school year with the written consent of their parents/guardian. This survey is the eighth conducted by ODH, dating back to the 1980's. Oral health surveillance of this population has enabled ODH and other state and local partners to monitor trends in oral health status and access to dental care. Third grade students are the target population for these surveys to enable ODH to report data to the Centers for Disease Control and Prevention (CDC) National Oral Health Surveillance System and to allow comparisons with the Healthy People 2030 national oral health objectives.

A randomized sample of 94 public elementary schools was selected to provide statewide estimates. A total of 3,614 third grade schoolchildren out of 9,072 enrolled received a partial or complete oral health screening, for a response rate of 40%. The Basic Screening Survey methodology supported by the Association of State and Territorial Dental Directors was used.[7] Schoolchildren were screened by a trained team of dental hygienists. Three indicators of oral health status were measured: caries experience (the presence of cavities, fillings, crowns, or teeth missing due to cavities), untreated tooth decay, and the presence of dental sealants. Children were also assessed for their need for dental care.

The consent form asked parents/guardians questions about getting dental care for their child, the condition of their child's teeth, if the child had had a recent toothache, how recently their child had been to the dentist, if they had dental insurance, and their ability to get needed dental care. Other data collected on each child were race, ethnicity, and enrollment in the Free and Reduced-Price Meal Program (as an estimate of family income). Children were classified as to whether they lived in a metropolitan, suburban, Appalachian, or rural/non-Appalachian county. These data were collected so differences in oral health status and access to dental care could be studied among various subgroups. A question was also asked about the daily consumption of sugar-sweetened beverages.

[7]Basic Screening Survey: An Approach to Monitoring Community Oral Health, Head Start and School Children. Association of State and Territorial Dental Directors. https://www.astdd.org/basic-screening-survey-tool/. Accessed 3.14.25.

Appendix 1: Prevalence of Untreated Tooth Decay, Decay Experience and Dental Sealants, by Ohio County, 2023-2024

County	Estimated Percentage with Untreated Decay (Ohio = 19%)	Estimated Percentage with Decay Experience (Ohio = 51%)	Estimated Percentage with Dental Sealants (Ohio = 42%)
Adams	22%	55%	42%
Allen	19%	50%	41%
Ashland	21%	61%	41%
Ashtabula	22%	55%	41%
Athens	23%	56%	41%
Auglaize	21%	48%	50%
Belmont	20%	51%	42%
Brown	21%	54%	42%
Butler	19%	50%	41%
Carroll	21%	53%	42%
Champaign	20%	61%	41%
Clark	15%	54%	45%
Clermont	18%	49%	43%
Clinton	19%	62%	41%
Columbiana	22%	55%	41%
Coshocton	25%	59%	41%
Crawford	18%	64%	42%
Cuyahoga	18%	50%	40%
Darke	20%	61%	41%
Defiance	20%	62%	41%
Delaware	23%	45%	52%
Erie	19%	63%	41%
Fairfield	18%	50%	48%
Fayette	19%	63%	41%
Franklin	19%	50%	41%

Fulton	21%	48%	50%
Gallia	25%	60%	40%
Geauga	22%	46%	51%
Greene	17%	51%	47%
Guernsey	26%	60%	40%
Hamilton	18%	50%	41%
Hancock	22%	60%	40%
Hardin	18%	64%	42%
Harrison	20%	52%	42%
Henry	21%	61%	41%
Highland	21%	54%	42%
Hocking	28%	64%	40%
Holmes	17%	47%	43%
Huron	18%	63%	41%
Jackson	24%	58%	41%
Jefferson	24%	58%	41%
Knox	20%	62%	41%
Lake	18%	50%	48%
Lawrence	26%	61%	40%
Licking	16%	52%	46%
Logan	19%	62%	41%
Lorain	20%	48%	41%
Lucas	18%	51%	40%
Madison	19%	50%	48%
Mahoning	22%	55%	41%
Marion	16%	66%	42%
Medina	21%	47%	50%
Meigs	26%	60%	40%
Mercer	25%	57%	39%
Miami	19%	50%	48%
Monroe	21%	53%	42%
Montgomery	19%	49%	41%
Morgan	26%	61%	40%
Morrow	20%	61%	41%
Muskingum	23%	56%	41%
Noble	20%	52%	42%
Ottawa	21%	61%	40%
Paulding	19%	63%	41%

Perry	24%	58%	41%
Pickaway	17%	52%	46%
Pike	28%	64%	40%
Portage	18%	50%	48%
Preble	21%	61%	41%
Putnam	23%	58%	40%
Richland	19%	49%	41%
Ross	23%	56%	41%
Sandusky	17%	65%	42%
Scioto	24%	57%	41%
Seneca	21%	61%	41%
Shelby	23%	59%	40%
Stark	20%	48%	41%
Summit	19%	50%	41%
Trumbull	23%	57%	41%
Tuscarawas	20%	52%	42%
Union	22%	46%	51%
Van Wert	20%	62%	41%
Vinton	28%	64%	40%
Warren	23%	58%	40%
Washington	20%	51%	42%
Wayne	21%	61%	41%
Williams	21%	61%	41%
Wood	19%	49%	49%
Wyandot	21%	61%	40%

**These estimates are generated based on the percentage of students in each county identified as being socioeconomically disadvantaged (SED) by the Ohio Department of Education & Workforce.[8] SED was used because being from a disadvantaged household is the major risk factor for poor oral health.*

Counties that are shaded are those in which the prevalence of untreated tooth decay and decay experience was higher than for the state, and the prevalence of dental sealants was lower. County-level data should be used with caution as the estimates do not consider unique county level factors such as availability of preventive or restorative services. For example, the actual percentage of children with untreated tooth decay may be lower than the estimate if the county has a safety-net dental clinic or has a school-based health center providing dental services. This is especially true in small counties where small changes in the availability of services could have a big impact on the percentage of children with disease. Nevertheless, the data indicate that traditionally underserved areas of Ohio continue to experience oral health disparities.

[8]Ohio Department of Education and Workforce. FY2022 District Profile Report. https://education.ohio.gov/Topics/Finance-and-Funding/School-Payment-Reports/District-Profile-Reports/FY2022-District-Profile-Report. Accessed 3.19.25.