

Quick Facts

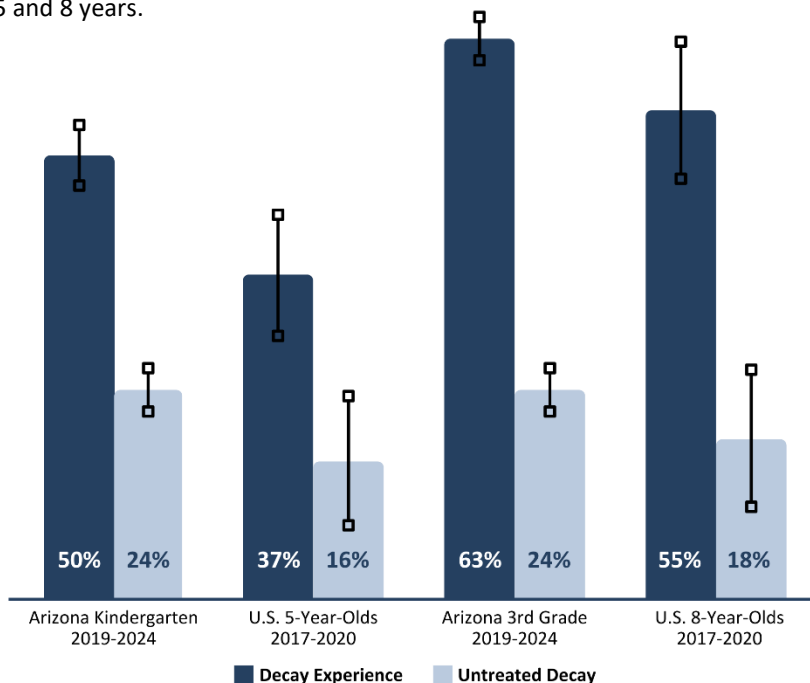
- Half of Arizona’s kindergarten children (50%) have a history of tooth decay, higher than the national estimate for 5-year-old children (37%).
- More than three of five third grade children (63%) in Arizona have a history of tooth decay, higher than the national estimate for 8-year-old children (55%).
- Almost a quarter of Arizona’s kindergarten and third grade children (24%) have untreated tooth decay; higher than the national estimate of 17%.
- About one of three third grade children (34%) in Arizona have protective dental sealants on permanent molar teeth; similar to the prevalence among 8-year-old children in the general U.S. population (32%).
- Oral health disparities exist in Arizona. Children in rural counties and those attending lower-income schools are more likely to have decay. American Indian/Alaska Native (AI/AN) and Hispanic children have the highest prevalence of decay experience and untreated tooth decay.
- Arizona has been successful in efforts to address disparities in the prevalence of dental sealants.
- Compared to 2014-2015, the percent of third grade children with protective dental sealants decreased by 23%. This may be due to the closure of school-based sealant programs along with limited access to preventive dental care during the COVID-19 pandemic.

The Oral Health of Arizona’s Kindergarten and Third Grade Children

Good oral health is crucial for a child's social, physical, and mental development. Despite being preventable, tooth decay continues to be a problem for Arizona’s children. To evaluate the current state of oral health among elementary school children in Arizona, the Arizona Department of Health Services conducted *Healthy Smiles Healthy Bodies*, a statewide oral health assessment. This assessment targeted kindergarten and third-grade children in Arizona’s public schools. During the 2019-2024 school years, dental screenings were provided to 4,737 kindergarteners and 5,010 third graders across 99 schools. This data brief highlights the prevalence of tooth decay in the primary and permanent teeth of these children and compares it to the general U.S. population screened between 2017-2020 as part of the National Health and Nutrition Examination Survey (NHANES). Additionally, it covers the prevalence of dental sealants, which are protective coatings applied to the chewing surfaces of children’s teeth to prevent decay.

Prevalence of Decay Experience and Untreated Decay

Figure 1. The percentage of children with decay experience and untreated tooth decay in the primary and permanent teeth. Arizona’s kindergarten and third grade children compared to children in the general U.S. population aged 5 and 8 years.



Arizona *Healthy Smiles Healthy Bodies* Assessment, 2019-2024
National Health and Nutrition Examination Survey (NHANES), 2017-2020

Decay experience means that a child has had tooth decay in the primary (baby) and/or permanent (adult) teeth in his or her lifetime. Decay experience can be past (fillings, crowns, or teeth that have been extracted because of decay) or present (untreated tooth decay or cavities). In 2019-2024, half of Arizona’s kindergarten children (50%) and more than three of five third grade children (63%) had decay experience; compared to 37% of five-year-olds and 55% of eight-year-olds in the general U.S. population (NHANES, 2017-2020).

Left untreated, tooth decay can have serious consequences, including needless pain and suffering, difficulty chewing (which compromises children’s nutrition and can slow their development), difficulty speaking and lost days in school. Almost a quarter of Arizona’s kindergarten and third grade children (24%) had untreated tooth decay. This compares to 16% of five-year-old and 18% of eight-year-old children in the general U.S. population (NHANES, 2017-2020).

Trends

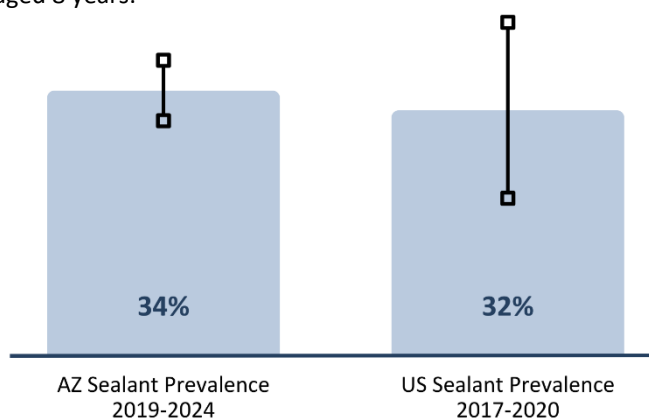
- Since 2014-2015, there has been a non-significant decrease in the percentage of children with decay experience and untreated decay.

Dental Sealants

Dental sealants are protective coatings that are applied to the grooves on the chewing surfaces of the back-adult teeth to protect them from tooth decay. Most tooth decay in children occurs on these surfaces. Sealants protect the chewing surfaces from tooth decay by keeping germs and food particles out of these grooves. About one-third of Arizona’s third grade children (34%) had at least one dental sealant; compared to 32% of eight-year-olds in the general U.S. population (NHANES, 2017-2020). Most kindergarten children do not have adult molars so this information was only collected for third grade children – permanent molars generally erupt at 6 years of age.

While the percentage of children who have at least one dental sealant mirrors national estimates, the percentage of children needing one or more sealants is 77%. This means every three out of four third grade children need at least one dental sealant.

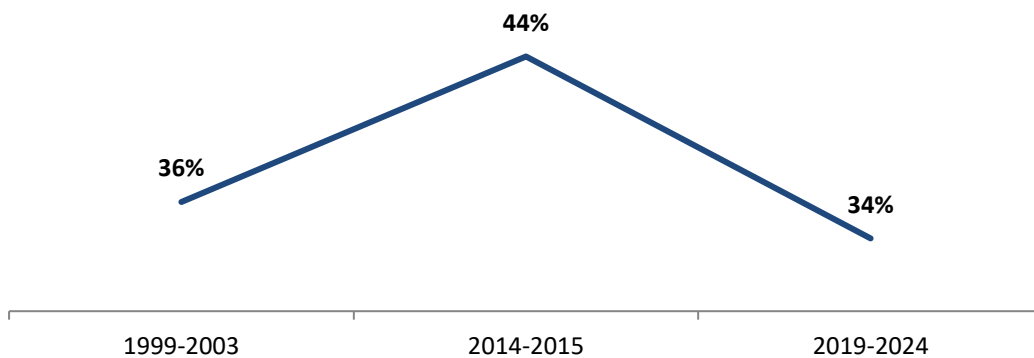
Figure 2. Percentage of Arizona’s third grade children with protective dental sealants on permanent molar teeth compared to the general U.S. population aged 8 years.



Trends

- Since 2014-2015, there has been a **significant** decrease in the percentage of third grade children with protective dental sealants. This may be partially due to the closure of school-based sealant programs along with limited access to preventive services through private and public dental clinics during the COVID-19 pandemic.

Figure 3. Percentage of Arizona’s third grade children with protective dental sealants on permanent molar teeth by assessment year, 1999-2003, 2014-2015, vs. 2019-2024

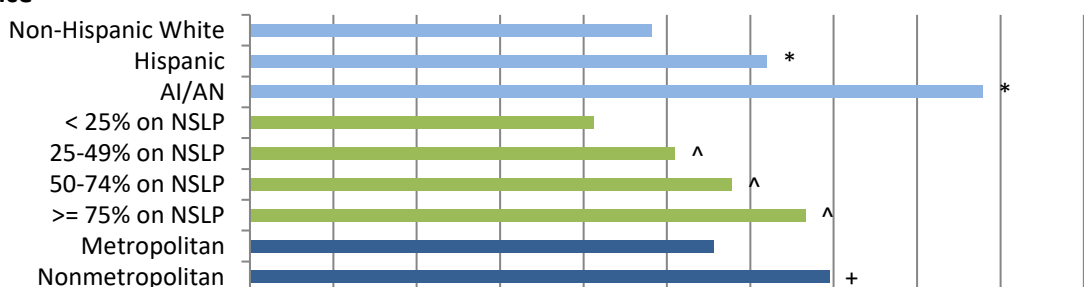


Oral Health Disparities

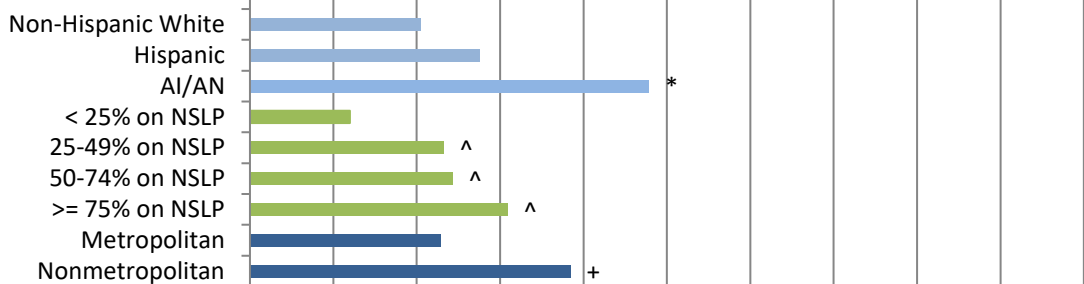
Influential sociodemographic indicators for oral health disparities in the United States include poverty status, race and ethnicity, and urbanicity. In Arizona, lower income schools, schools with a high percentage of the students eligible for the National School Lunch Program (NSLP)¹, have a significantly higher prevalence of decay experience and untreated decay compared to higher income schools with a low percentage of students eligible for NSLP. American Indian/Alaska Native (AI/AN) children have a higher prevalence of decay experience and untreated decay compared to non-Hispanic White children while Hispanic children have a higher prevalence of decay experience (Figure 4). There are no differences in the prevalence of dental sealants among racial/ethnic groups or by urbanicity but children attending schools with 50-74% eligible for NSLP are significantly less likely to have dental sealants compared to children attending high income schools (Refer to Table 4).

Figure 4. Prevalence of decay experience, untreated tooth decay, and dental sealants among Arizona’s kindergarten and third grade children by race/ethnicity, percent of children in a school eligible for the National School Lunch Program (NSLP), and urbanicity, 2019-2024.

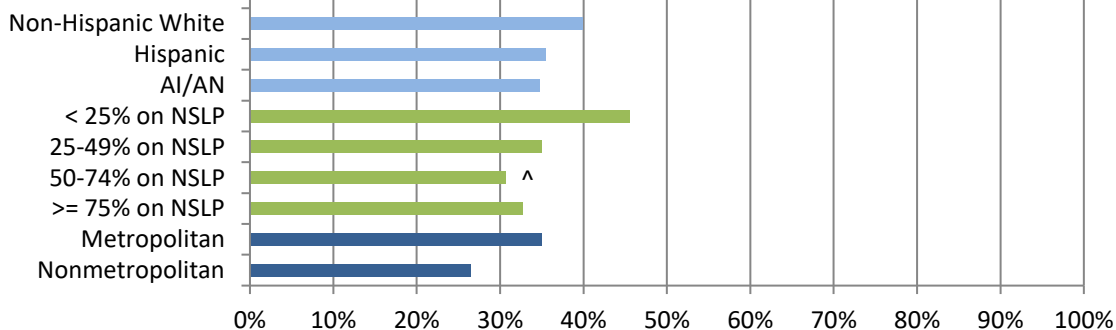
Decay experience



Untreated decay



Dental sealants (3rd grade only)



*Substantially different from non-Hispanic White, ^significantly different from < 25% NSLP, +significantly different from metropolitan

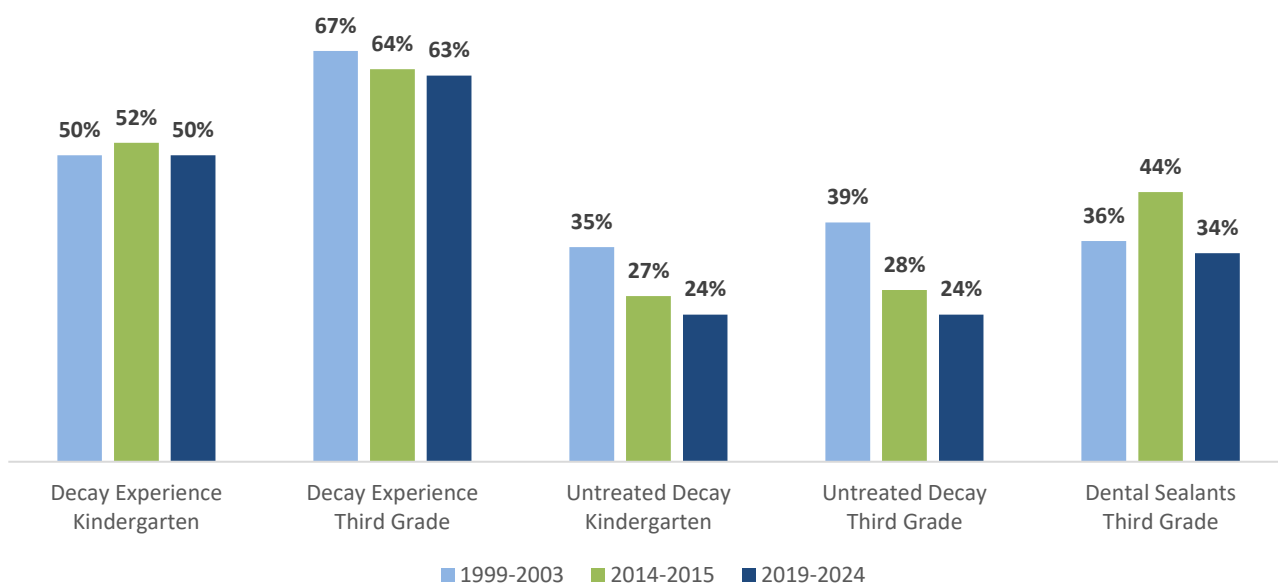
¹ To be eligible for the NSLP, the child must be from a household whose income is below 185% of the federal poverty level.

Overall Trends

The Arizona *Healthy Smiles Healthy Bodies* assessment is conducted every five years in order to monitor trends in oral health status. Figure 5 displays data findings from 1999-2003, 2014-2015, and 2019-2024.

- Since 2014-2015, there has been a non-significant decrease in the percentage of children with decay experience and untreated decay.
- Since 2014-2015, there has been a **significant** decrease in the percentage of third grade children with protective dental sealants. This may be partially due to the closure of school-based sealant programs along with limited access to preventive services through private and public dental clinics during the COVID-19 pandemic.

Figure 5. Percentage of children with decay experience, untreated tooth decay, and dental sealants by grade and assessment year, 1999-2003, 2014-2015, vs. 2019-2024.



Data Source and Methods

This data brief is based on data from Arizona’s *Healthy Smiles Healthy Bodies* assessment which was conducted during the 2019-2024 school years. *Healthy Smiles Healthy Bodies* screened children in kindergarten and third grade from a representative sample of public elementary schools throughout Arizona. The sampling frame consisted of all public and charter schools not on Tribal lands with 20 or more children in kindergarten and/or third grade. The sampling frame was stratified by county and percent of the school’s students eligible for the National School Lunch Program (NSLP). A systematic probability proportional to size sampling scheme was used to select 111 schools of which 99 agreed to participate.

Trained dental professionals completed the screenings at the participating schools. The following information was collected for each child: grade, presence of untreated decay in the primary (baby) or permanent (adult) teeth, presence of treated decay in the primary or permanent teeth, presence of dental sealants in the permanent first

molar teeth, and urgency of need for dental care. Because most kindergarten children do not have permanent first molars, information on dental sealants is limited to children in third grade.

Parents were asked to provide information on a child's race and ethnicity via an optional questionnaire. Self-reported race/ethnicity is available for 41% of the children screened. We used the *Basic Screening Survey* clinical indicator definitions and data collection protocols.²

Statistical analyses for the outcome variables stratified by NSLP, urbanicity, and county were performed using the complex survey procedures within SAS (Version 9.4; SAS Institute Inc., Cary, NC). Sample weights were used to produce population estimates based on selection probabilities. For sub-group comparisons, 95% confidence intervals were used to identify statistically significant differences. If the confidence intervals did not overlap, differences were identified as being statistically significant. Confidence interval overlap is a conservative approach for identifying significant differences between groups. Because of the low return rate for the parent questionnaire, analyses for the outcome variables stratified by race/ethnicity were not weighted and 95% confidence limits were not generated.

Definitions.

Untreated decay: Describes dental cavities or tooth decay that have not received appropriate treatment.

Decay experience: Refers to having untreated decay or a dental filling, crown, or other type of restorative dental material. Also includes teeth that were extracted because of tooth decay.

Dental sealants: Describes plastic-like coatings applied to the chewing surfaces of back teeth. The applied sealant resin bonds into the grooves of teeth to form a protective physical barrier.

Lower-income schools: Schools that have a high percentage of students eligible for the National School Lunch Program (NLSP).

² Association of State and Territorial Dental Directors. Basic screening surveys: an approach to monitoring community oral health. <http://www.astdd.org/basic-screening-survey-tool>.

Data Tables

Table 1. Number and percentage of participating children by sex, school level participation in the National School Lunch Program (NSLP), county urbanicity, county, and race/ethnicity, 2019-2024.

Characteristic	Kindergarten (n=4,737)		Third Grade (n=5,010)		Both Grades (n=9,747)	
	Unweighted Frequency	Percent*	Unweighted Frequency	Percent*	Unweighted Frequency	Percent*
Child's sex						
Male	2,417	50.1	2,583	51.2	5,000	50.6
Female	2,313	49.7	2,415	48.6	4,728	49.2
Unknown/Missing	7	0.2	12	0.2	19	0.2
Percent eligible for NSLP						
Does not participate	175	2.2	108	2.2	283	2.2
< 25% eligible	407	17.9	452	17.9	859	17.9
25-49% eligible	904	13.8	997	14.0	1,901	13.9
50-74% eligible	1,799	32.5	1,909	32.3	3,708	32.4
>= 75% eligible	1,452	33.5	1,544	33.5	2,996	33.5
Urbanicity of county						
Metropolitan	3,380	92.2	3,499	92.3	6,879	92.2
Nonmetropolitan	1,357	7.8	1,511	7.7	2,868	7.8
County						
Apache	161	1.6	156	1.6	317	1.6
Cochise	206	1.8	213	1.8	419	1.8
Coconino	280	1.5	341	1.5	621	1.5
Gila	251	2.9	294	2.3	545	2.6
Graham	331	0.6	303	0.6	634	0.6
Greenlee	144	0.3	103	0.3	247	0.3
La Paz	70	0.8	59	0.8	129	0.8
Maricopa	1,494	65.8	1,598	65.9	3,092	65.8
Mohave	359	2.2	277	2.2	636	2.2
Navajo	215	0.7	375	1.1	590	0.9
Pima	420	12.2	471	12.2	891	12.2
Pinal	182	4.6	184	4.6	366	4.6
Santa Cruz	185	0.9	221	0.9	406	0.9
Yavapai	55	0.5	84	0.5	139	0.5
Yuma	384	3.6	331	3.6	715	3.6
Child's race/ethnicity						
American Indian	108	2.3%	147	2.9%	255	2.6%
Asian	24	0.5%	28	0.6%	52	0.5%
Black	48	1.0%	51	1.0%	99	1.0%
Hispanic	996	21.0%	917	18.3%	1,913	19.6%
White	814	17.2%	674	13.5%	1,488	15.3%
Multiracial/Other	91	1.9%	85	1.7%	176	1.8%
Unknown/Missing	2,656	56.1%	3,108	62.0%	5,764	59.1%

* Weighted percentage for child's sex, NSLP, county urbanicity, and county. Unweighted percentage for child's race/ethnicity.

Table 2. Percentage of Arizona’s *kindergarten* children with decay experience and untreated tooth decay by selected characteristics, 2019-2024.

Characteristic	Decay Experience			Untreated Decay		
	Percent	Lower CL	Upper CL	Percent	Lower CL	Upper CL
All kindergarten children (n=4,737)	49.9%	45.9%	53.8%	24.2%	21.5%	26.9%
Percent eligible for NSLP						
< 25% eligible (n=407)	30.5%	23.0%	38.0%	10.6%	7.0%	14.1%
25-49% eligible (n=904)	44.0%	37.3%	50.8%	23.8%	19.0%	28.6%
50-74% eligible (n=1,799)	51.0%	46.3%	55.7%	24.1%	20.0%	28.2%
≥ 75% eligible (n=1,452)	62.1%	58.4%	65.8%	32.0%	28.9%	35.2%
Urbanicity of county						
Metropolitan (n=3,380)	48.6%	44.4%	52.9%	22.8%	20.0%	25.7%
Nonmetropolitan (n=1,357)	64.6%	58.3%	70.8%	39.7%	31.2%	48.2%
County						
Apache (n=161)	70.9%	57.1%	84.7%	49.6%	33.8%	65.4%
Cochise (n=206)	46.5%	40.0%	53.1%	28.8%	19.3%	38.4%
Coconino (n=280)	NR	NR	NR	39.3%	27.2%	51.5%
Gila (n=251)	64.3%	52.3%	76.2%	NR	NR	NR
Graham (n=331)	53.9%	45.5%	62.2%	31.4%	24.4%	38.5%
Greenlee (n=144)	NR	NR	NR	55.6%	45.2%	66.1%
La Paz (n=70)	NR	NR	NR	NR	NR	NR
Maricopa (n=1,494)	47.4%	41.7%	53.1%	22.2%	18.6%	25.9%
Mohave (n=359)	52.8%	44.3%	61.2%	16.0%	9.7%	22.3%
Navajo (n=215)	60.7%	48.7%	72.7%	36.1%	26.5%	45.7%
Pima (n=420)	50.3%	41.7%	58.9%	22.6%	14.7%	30.6%
Pinal (n=182)	40.2%	29.0%	51.5%	17.5%	16.0%	19.0%
Santa Cruz (n=185)	66.0%	54.7%	77.3%	43.6%	30.3%	56.9%
Yavapai (n=55)	NR	NR	NR	NR	NR	NR
Yuma (n=384)	64.9%	57.9%	71.9%	35.3%	26.4%	44.2%
Race/ethnicity*						
American Indian (n=108)	86.1%	--	--	49.1%	--	--
Hispanic (n=996)	55.9%	--	--	28.8%	--	--
White non-Hispanic (n=814)	40.8%	--	--	21.3%	--	--

* Information on race/ethnicity was only available for 41% of the children screened. Because of this, estimates stratified by race/ethnicity were not weighted and confidence limits were not generated.

NR: Not reported. Unstable estimate, relative standard error ≥ 25%.

NSLP: National School Lunch Program; Lower CL: Lower 95% confidence limit; Upper CL: Upper 95% confidence limit

Table 3. Percentage of Arizona’s **third grade** children with decay experience, untreated tooth, and dental sealants on permanent molars by selected characteristics, 2019-2024.

Characteristic	Decay Experience			Untreated Decay		
	Percent	Lower CL	Upper CL	Percent	Lower CL	Upper CL
All 3 rd grade children (n=5,010)	63.4%	60.8%	65.9%	23.9%	21.7%	26.1%
Percent eligible for NSLP						
< 25% eligible (n=452)	51.9%	47.1%	56.7%	13.4%	10.1%	16.7%
25-49% eligible (n=997)	57.8%	52.1%	63.4%	22.7%	18.1%	27.3%
50-74% eligible (n=1,909)	64.6%	60.2%	69.0%	24.6%	21.1%	28.1%
≥ 75% eligible (n=1,544)	71.1%	67.3%	74.8%	29.8%	26.7%	32.8%
Urbanicity of county						
Metropolitan (n=3,499)	62.4%	59.7%	65.2%	22.8%	20.5%	25.2%
Nonmetropolitan (n=1,511)	74.4%	68.9%	80.0%	37.2%	31.5%	42.9%
County						
Apache (n=156)	NR	NR	NR	NR	NR	NR
Cochise (n=213)	43.4%	28.4%	58.4%	22.1%	7.9%	36.3%
Coconino (n=341)	NR	NR	NR	NR	NR	NR
Gila (n=294)	73.7%	60.8%	86.6%	30.3%	24.4%	36.1%
Graham (n=303)	NR	NR	NR	NR	NR	NR
Greenlee (n=103)	NR	NR	NR	NR	NR	NR
La Paz (n=59)	NR	NR	NR	NR	NR	NR
Maricopa (n=1,598)	62.7%	59.4%	66.0%	22.5%	19.7%	25.3%
Mohave (n=277)	63.5%	60.1%	66.8%	17.2%	11.1%	23.3%
Navajo (n=375)	77.2%	74.5%	79.9%	39.9%	31.1%	48.8%
Pima (n=471)	60.3%	50.2%	70.3%	21.3%	13.4%	29.2%
Pinal (n=184)	49.3%	38.8%	59.9%	17.7%	12.6%	22.7%
Santa Cruz (n=221)	72.9%	69.5%	76.4%	27.8%	19.6%	35.9%
Yavapai (n=84)	NR	NR	NR	NR	NR	NR
Yuma (n=331)	81.0%	72.5%	89.4%	38.3%	25.5%	51.1%
Race/ethnicity*						
American Indian (n=147)	89.1%	--	--	46.9%	--	--
Hispanic (n=917)	68.6%	--	--	26.1%	--	--
White non-Hispanic (n=674)	57.0%	--	--	19.4%	--	--

* Information on race/ethnicity was only available for 41% of the children screened. Because of this, estimates stratified by race/ethnicity were not weighted and confidence limits were not generated.

NR: Not reported. Unstable estimate, relative standard error ≥ 25%.

NSLP: National school lunch program; Lower CL: Lower 95% confidence limit; Upper CL: Upper 95% confidence limit

Table 4. Percentage of Arizona’s **third grade** children with dental sealants and needing dental sealants on permanent molars by selected characteristics, 2019-2024.

Characteristic	Dental Sealants Present			Need Dental Sealants		
	Percent	Lower CL	Upper CL	Percent	Lower CL	Upper CL
All 3 rd grade children (n=5,010)	34.3%	30.6%	38.0%	77.3%	74.5%	80.1%
Percent eligible for NSLP						
< 25% eligible (n=452)	45.5%	38.9%	52.2%	72.0%	67.4%	76.6%
25-49% eligible (n=997)	34.9%	23.3%	46.6%	76.2%	67.6%	84.8%
50-74% eligible (n=1,909)	30.6%	25.2%	36.0%	80.4%	75.7%	85.2%
≥ 75% eligible (n=1,544)	32.7%	25.5%	39.9%	77.8%	71.7%	83.9%
Urbanicity of county						
Metropolitan (n=3,499)	35.0%	31.0%	39.0%	77.2%	74.2%	80.1%
Nonmetropolitan (n=1,511)	26.4%	21.3%	31.6%	79.2%	73.4%	85.0%
County						
Apache (n=156)	NR	NR	NR	73.9%	62.7%	85.0%
Cochise (n=213)	42.4%	33.6%	51.2%	65.2%	58.4%	72.0%
Coconino (n=341)	52.0%	43.6%	60.4%	54.0%	47.6%	60.5%
Gila (n=294)	24.5%	13.0%	36.0%	NR	NR	NR
Graham (n=303)	65.1%	57.0%	73.2%	75.6%	69.7%	81.6%
Greenlee (n=103)	NR	NR	NR	66.8%	57.6%	76.0%
La Paz (n=59)	NR	NR	NR	NR	NR	NR
Maricopa (n=1,598)	36.4%	31.2%	41.5%	75.9%	72.0%	79.8%
Mohave (n=277)	NR	NR	NR	79.4%	70.7%	88.1%
Navajo (n=375)	22.2%	19.1%	25.3%	76.4%	69.6%	83.2%
Pima (n=471)	36.9%	26.6%	47.2%	82.0%	75.5%	88.5%
Pinal (n=184)	NR	NR	NR	NR	NR	NR
Santa Cruz (n=221)	NR	NR	NR	82.8%	78.2%	87.4%
Yavapai (n=84)	NR	NR	NR	NR	NR	NR
Yuma (n=331)	26.3%	19.0%	33.5%	NR	NR	NR
Race/ethnicity*						
American Indian (n=147)	34.7%	--	--	66.7%	--	--
Hispanic (n=917)	35.4%	--	--	76.2%	--	--
White non-Hispanic (n=674)	39.9%	--	--	74.2%	--	--

* Information on race/ethnicity was only available for 41% of the children screened. Because of this, estimates stratified by race/ethnicity were not weighted and confidence limits were not generated.

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NSLP: National school lunch program; Lower CL: Lower 95% confidence limit; Upper CL: Upper 95% confidence limit

Table 5. Percentage of Arizona’s *kindergarten and third grade* children with decay experience and untreated tooth decay by selected characteristics, 2019-2024.

Characteristic	Decay Experience			Untreated Decay		
	Percent	Lower CL	Upper CL	Percent	Lower CL	Upper CL
All kindergarten and 3 rd grade children (n=9,747)	56.6%	53.7%	59.6%	24.0%	21.8%	26.3%
Percent eligible for NSLP						
< 25% eligible (n=859)	41.2%	36.1%	46.3%	12.0%	9.3%	14.7%
25-49% eligible (n=1,901)	51.0%	47.6%	54.3%	23.2%	20.2%	26.3%
50-74% eligible (n=3,708)	57.8%	53.7%	61.8%	24.3%	20.9%	27.8%
≥ 75% eligible (n=2,996)	66.6%	63.4%	69.7%	30.9%	28.1%	33.7%
Urbanicity of county						
Metropolitan (n=6,879)	55.5%	52.4%	58.7%	22.8%	20.5%	25.2%
Nonmetropolitan (n=2,868)	69.5%	64.0%	74.9%	38.5%	31.9%	45.0%
County						
Apache (n=317)	NR	NR	NR	47.3%	30.5%	64.1%
Cochise (n=419)	45.0%	34.6%	55.4%	25.5%	13.7%	37.2%
Coconino (n=621)	NR	NR	NR	37.8%	27.5%	48.1%
Gila (n=545)	68.5%	57.1%	79.9%	32.8%	19.3%	46.4%
Graham (n=634)	56.9%	42.4%	71.5%	28.6%	18.0%	39.3%
Greenlee (n=247)	77.9%	76.1%	79.7%	46.9%	42.6%	51.1%
La Paz (n=129)	NR	NR	NR	NR	NR	NR
Maricopa (n=3,092)	55.1%	51.1%	59.0%	22.4%	19.5%	25.3%
Mohave (n=636)	58.1%	52.9%	63.3%	16.6%	11.9%	21.2%
Navajo (n=590)	71.0%	66.1%	75.9%	38.5%	33.2%	43.8%
Pima (n=891)	55.3%	46.2%	64.3%	22.0%	14.4%	29.6%
Pinal (n=366)	44.8%	34.4%	55.2%	17.6%	15.3%	19.9%
Santa Cruz (n=406)	69.4%	63.0%	75.9%	35.7%	26.7%	44.6%
Yavapai (n=139)	NR	NR	NR	NR	NR	NR
Yuma (n=715)	72.9%	65.5%	80.4%	36.8%	26.6%	47.0%
Race/ethnicity*						
American Indian (n=255)	87.8%	--	--	47.8%	--	--
Hispanic (n=1,913)	62.0%	--	--	27.5%	--	--
White non-Hispanic (n=1,488)	48.1%	--	--	20.4%	--	--

* Information on race/ethnicity was only available for 41% of the children screened. Because of this, estimates stratified by race/ethnicity were not weighted and confidence limits were not generated.

NR: Not reported. Unstable estimate, relative standard error ≥ 25%.

NSLP: National School Lunch Program; Lower CL: Lower 95% confidence limit; Upper CL: Upper 95% confidence limit