

Quick Facts

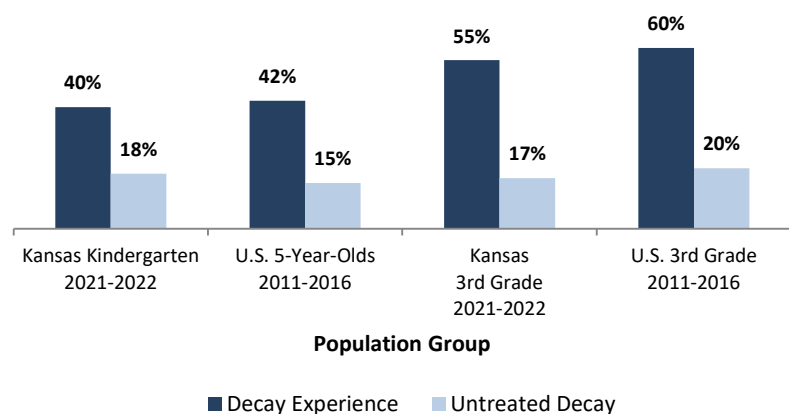
- Decay experience:
 - 40% of Kansas' kindergarten children have at least one tooth with decay experience, lower than the national average of 42%.
 - 55% of Kansas' third grade children have at least one tooth with decay experience, lower than the national average of 60%.
- Untreated tooth decay
 - 18% of Kansas' kindergarten children have untreated tooth decay, slightly higher than the national average of 15%.
 - 17% of Kansas' third grade children have untreated tooth decay, slightly lower than the national average of 20%.
- Protective dental sealants
 - 42% of Kansas' third grade children have protective dental sealants, the same as the national average of 42%.
- Oral health disparities
 - There are significant socioeconomic disparities. Children in Kansas' lower income schools have a significantly higher prevalence of both decay experience and untreated decay compared to children in higher income schools.

The Oral Health of Kansas' Kindergarten and Third Grade Children

Tooth decay is a serious public health problem that can affect a child's overall health and well-being. It can lead to pain and disfigurement, low self-esteem, nutritional problems, and lost school days. Children with oral health problems are three times more likely to miss school due to dental pain and absences caused by pain are associated with poorer school performance.¹ Even though tooth decay can be prevented, many children in Kansas still get cavities. To assess the current oral health status of Kansas' elementary school children, the Kansas Department of Health and Environment coordinated a statewide oral health survey of kindergarten and third grade children attending Kansas' public schools. A total of 2,756 kindergarten and 2,843 third grade children received a dental screening at 69 schools during the 2021-2022 school year. This data brief presents information on the prevalence of tooth decay in the primary and permanent teeth of Kansas' kindergarten and third grade children compared to the general U.S. population screened between 2011-2016 as part of the National Health and Nutrition Examination Survey (NHANES). It also describes the prevalence of dental sealants, a plastic-like coating applied to the chewing surfaces of teeth to prevent tooth decay.

Prevalence of decay experience and untreated decay.

Figure 1. Percentage of Kansas's kindergarten and third grade children with decay experience and untreated tooth decay compared to children in the general U.S. population



Sources: Kansas Oral Health Survey, 2021-2022
National Health and Nutrition Examination Survey (NHANES), 2011-2016

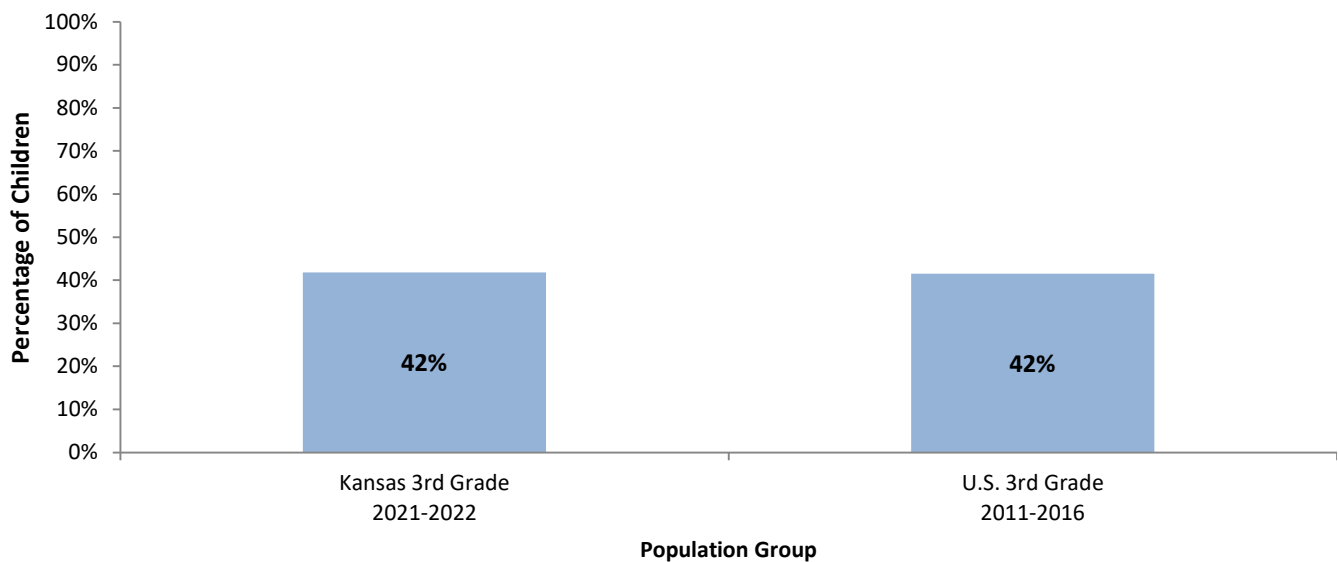
Decay experience means that a child has had tooth decay in the primary (baby) and/or permanent (adult) teeth in his or her lifetime. Decay experience can be past (fillings, crowns, or teeth that have been extracted because of decay) or present (untreated tooth decay or cavities). In 2021-2022, four-of-ten kindergarten children (40%) and more than five-of-ten third grade children (55%) in Kansas had decay experience; compared to 42% of 5-year-olds and 60% of third grade children in the general U.S. population (NHANES, 2011-2016). Refer to Figure 1 and Tables 1-2.

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. About 18% of Kansas’ kindergarten and 17% of Kansas’ third grade children had untreated tooth decay; similar to the national averages of 15% and 20% for 5-year-old and third grade children in the general U.S. population respectively (NHANES, 2011-2016). Refer to Figure 1 and Tables 1-2.

Prevalence of dental sealants.

Dental sealants are thin plastic 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 42% of Kansas’ third grade children had at least one protective dental sealant; the same as the prevalence among the general U.S. population in third grade (NHANES, 2011-2016). Most kindergarten children do not have adult molars, so this information is only presented for third grade children – permanent molars generally appear in the mouth at 6 years of age. Refer to Figure 2 and Table 3.

Figure 2. Percentage of Kansas’ third grade children with dental sealants on the permanent molar teeth compared to the general U.S. population in third grade



Sources: Kansas Oral Health Survey, 2021-2022
National Health and Nutrition Examination Survey (NHANES), 2011-2016

Oral health disparities.

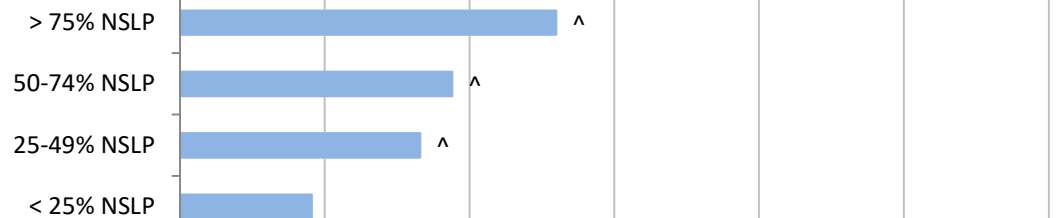
Influential sociodemographic indicators for oral health disparities in the United States include poverty status and race and ethnicity. This survey collected information on school level eligibility for the national school lunch program (NSLP), a surrogate measure for poverty status, but did not collect information on race or ethnicity. In Kansas, children attending the lower income schools (schools with 50% or more of children eligible for the national school lunch program) have a significantly higher prevalence of both decay experience and untreated tooth decay compared to children attending the highest income schools (schools with less than 25% of children eligible for the national school lunch program). Among third grade children, there are no significant differences in the prevalence of dental sealants by socioeconomic status. Refer to Figure 3 and Tables 3-4.

Figure 3. Prevalence of decay experience, untreated tooth decay and dental sealants among Kansas' kindergarten and third grade children by percentage of students eligible for the national school lunch program (NSLP), 2021-2022

Decay experience



Untreated decay



Dental sealants (3rd grade only)



^ Significantly higher than children attending schools with < 25% eligible for NSLP ($p < 0.05$)

Data source and methods.

This data brief is based on data from the Kansas oral health survey which was conducted during the 2021-2022 school year. The Kansas oral health survey screened children in kindergarten and third grade from a representative sample of Kansas' non-virtual public schools. The sampling frame consisted of all non-virtual public schools with 10 or more children in third grade. Some communities have kindergarten and third grade in different schools. If both the kindergarten and third grade schools are included in the sampling frame, children from those communities would have a higher probability of being selected.

To assure representation by geographic region and socioeconomic status, the sampling frame was ordered by population density of the county (frontier, rural, densely populated rural, semi-urban, and urban) then by percent of students eligible for the National School Lunch Program (NSLP). If a school with only third grade was selected, the appropriate kindergarten feeder school was added to the sample. A systematic probability proportional to size sampling scheme was used to select a sample of 65 third grade schools. Four of the selected third grade schools did not have kindergarten students, so the appropriate kindergarten feeder schools were added to the sample for a total of 69 schools representing 65 sampling intervals. If a school refused to participate, a replacement school from the same sampling interval was randomly selected. Data is available for all sampling intervals. Of the 7,990 kindergarten and third grade children enrolled in the 69 participating schools, 5,599 were screened for an overall response rate of 70%.

The following information was collected for each child: grade, age, sex, presence of untreated decay, presence of treated decay, presence of dental sealants in the permanent first molar teeth, urgency of need for dental care, and need for dental sealants. We used the *Basic Screening Survey* clinical indicator definitions and data collection protocols.²

All statistical analyses 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. It should be noted that the National Health and Nutrition Examination Survey (NHANES) data for 5-year-old and third grade children is from 2011-2016 which, as of July 2022, is the most current data available.

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.

Data tables.

Table 1. Prevalence of decay experience and untreated tooth decay in the primary and permanent teeth among Kansas' **kindergarten** children by selected characteristics, 2021-2022

Characteristic	Decay Experience				Untreated Decay			
	# with Data	Percent Yes	Lower CL	Upper CL	# with Data	Percent Yes	Lower CL	Upper CL
All kindergarten children	2,756	40.0	36.4	43.6	2,756	18.1	15.0	21.2
NSLP Eligibility of School								
< 25% NSLP	700	26.7	21.4	32.0	700	8.7	5.7	11.6
25%-49% NSLP	846	38.5	32.3	44.6	846	18.4	13.3	23.6
50%-74% NSLP	679	43.3	36.4	50.2	679	19.1	13.4	24.8
≥ 75% NSLP	531	52.8	47.8	57.8	531	26.9	19.1	34.8
Population Density								
Frontier*	40	67.5	52.5	82.5	40	7.5	2.5	12.5
Rural	166	37.8	31.2	44.4	166	12.3	9.5	15.1
Dense Rural	280	43.4	31.0	55.9	280	22.4	13.1	31.8
Semi-Urban	461	38.1	30.8	45.4	461	20.0	15.4	24.6
Urban	1,809	38.5	33.6	43.3	1,809	17.9	13.2	22.5

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

*Results should be viewed with caution. In frontier counties, only 40 kindergarten children were screened at 2 schools.

Table 2. Prevalence of decay experience and untreated tooth decay in the primary and permanent teeth among Kansas' **third grade** children by selected characteristics, 2021-2022

Characteristic	Decay Experience				Untreated Decay			
	# with Data	Percent Yes	Lower CL	Upper CL	# with Data	Percent Yes	Lower CL	Upper CL
All 3rd grade children	2,834	55.4	51.7	59.2	2,834	16.6	13.6	19.6
NSLP Eligibility of School								
< 25% NSLP	754	48.2	37.9	58.5	754	9.6	6.1	13.0
25%-49% NSLP	828	50.5	46.4	54.5	828	14.8	10.2	19.5
50%-74% NSLP	738	60.9	55.6	66.2	738	18.5	12.9	24.0
≥ 75% NSLP	514	62.8	56.4	69.2	514	24.9	16.4	33.5
Population Density								
Frontier*	42	59.3	50.7	68.0	42	2.5	-2.5	7.5
Rural	142	53.1	42.8	63.4	142	15.9	6.6	25.3
Dense Rural	281	56.0	43.5	68.6	281	18.5	9.7	27.3
Semi-Urban	485	55.8	50.5	61.2	485	20.5	13.8	27.1
Urban	1,884	55.3	50.1	60.5	1,884	15.9	11.8	20.0

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

*Results should be viewed with caution. In frontier counties, only 42 3rd grade children were screened at 2 schools.

Table 3. Prevalence of dental sealants on permanent molar teeth among Kansas' *third grade* children by selected characteristics, 2021-2022

Characteristic	Dental Sealants on Permanent Molars			
	# with Data	Percent Yes	Lower CL	Upper CL
All 3rd grade children	2,834	41.8	36.8	46.8
NSLP Eligibility of School				
< 25% NSLP	754	48.9	38.6	59.1
25%-49% NSLP	828	35.8	27.1	44.4
50%-74% NSLP	738	39.1	29.9	48.3
≥ 75% NSLP	514	46.7	34.4	58.9
Population Density				
Frontier*	42	13.6	-13.6	40.9
Rural	142	38.7	14.2	63.3
Dense Rural	281	37.2	27.5	46.8
Semi-Urban	485	38.9	34.9	42.8
Urban	1,884	45.9	38.8	53.1

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

*Results should be viewed with caution. In frontier counties, only 42 3rd grade children were screened at 2 schools.

Table 4. Prevalence of decay experience and untreated tooth decay in the primary and permanent teeth among Kansas' *kindergarten and third grade* children combined by selected characteristics, 2021-2022

Characteristic	Decay Experience				Untreated Decay			
	# with Data	Percent Yes	Lower CL	Upper CL	# with Data	Percent Yes	Lower CL	Upper CL
All children	5,990	47.7	44.4	51.0	5,990	17.3	14.7	19.9
NSLP Eligibility of School								
< 25% NSLP	1,454	37.5	30.1	44.8	1,454	9.1	6.2	12.0
25%-49% NSLP	1,674	44.5	40.3	48.6	1,674	16.6	12.2	21.0
50%-74% NSLP	1,417	52.3	46.7	57.9	1,417	18.8	14.8	22.7
≥ 75% NSLP	1,045	57.6	53.0	62.2	1,045	26.0	19.0	32.9
Population Density								
Frontier*	82	63.4	51.6	75.2	82	5.0	5.0	5.0
Rural	308	45.4	37.7	53.1	308	14.1	8.4	19.8
Dense Rural	561	49.7	38.5	61.0	561	20.5	14.7	26.3
Semi-Urban	946	47.0	41.6	52.3	946	20.2	14.9	25.6
Urban	3,693	46.9	42.4	51.4	3,693	16.9	13.0	20.8

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

*Results should be viewed with caution. In frontier counties, only 40 kindergarten and 42 3rd grade children were screened at 2 schools.

References.

1. Jackson SL, Vann WF Jr, Kotch JB, Pahel BT, Lee JY. Impact of poor oral health on children's school attendance and performance. Am J Public Health 2011;101:1900-6.
2. Association of State and Territorial Dental Directors. Basic screening surveys: an approach to monitoring community oral health. Available at: <http://www.astdd.org/basic-screening-survey-tool>.