

The Oral Health of Missouri's Third Grade Children Compared to the General U.S. Population

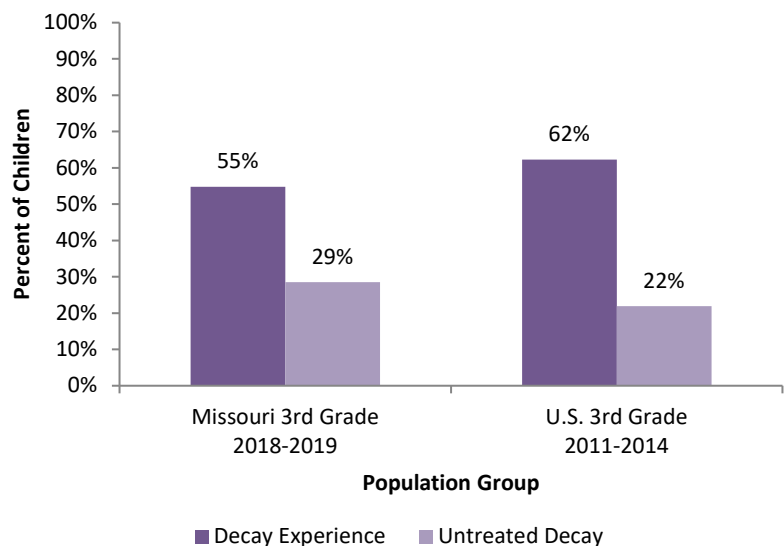
Data from the Missouri Oral Health Survey, 2018-2019

- About one-of-two third grade children in Missouri (55%) have a history of tooth decay, lower than the national average for third grade children (62%).
- More than a quarter of Missouri's third grade children (29%) have untreated tooth decay; higher than the national average of 22%.
- Only three-of-ten third grade children in Missouri (30%) have protective dental sealants on a permanent molar tooth; lower than the prevalence among the general third grade population in the United States (42%).
- Oral health disparities still exist in Missouri. Minority children, children attending low income schools and children living in rural counties have a high prevalence of decay experience and untreated tooth decay.

Good oral health is important to a child's social, physical and mental development. Even though tooth decay can be prevented, most children in Missouri still get cavities. To assess the current oral health status of Missouri's elementary school children, the Missouri Department of Health and Senior Services coordinated a statewide oral health survey of third grade children attending Missouri's public schools. A total of 2,352 third grade children received a dental screening at 53 schools during the 2018-2019 school year. This data brief presents information on the prevalence of tooth decay in the primary and permanent teeth of Missouri's third grade children compared to the general U.S. population screened between 2011-2014 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 children's teeth to prevent tooth decay.

Prevalence of decay experience and untreated decay.

Figure 1. Prevalence of decay experience and untreated tooth decay in the primary and permanent teeth of Missouri's third grade children compared to children in the general U.S. population



Sources: Missouri Oral Health Survey, 2018-2019
National Health and Nutrition Examination Survey (NHANES), 2011-2014

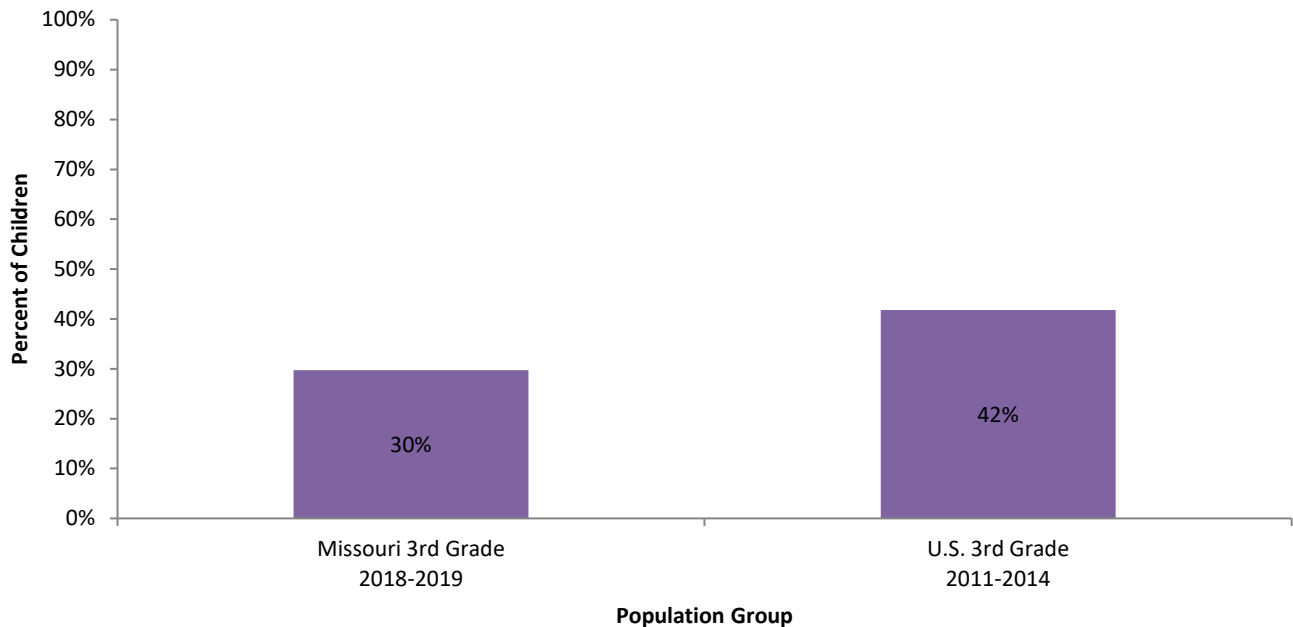
Decay experience means that a child has had tooth decay in the primary (baby) and/or permanent (adult) teeth in his or her lifetime. Decay experience can be past (fillings, crowns, or teeth that have been extracted because of decay) or present (untreated tooth decay or cavities). In 2018-2019, more than five-of-ten third grade children in Missouri (55%) had decay experience; compared to 62% of third grade children in the general U.S. population (NHANES, 2011-2014).

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. More than a quarter of Missouri’s third grade children (29%) had untreated tooth decay. This compares to 22% of third grade children in the general U.S. population (NHANES, 2011-2014).

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. Only three-of-ten (30%) third grade children in Missouri had at least one protective dental sealant; compared to 42% of the general U.S. population in third grade (NHANES, 2011-2014).

Figure 2. Prevalence of dental sealants in the permanent molar teeth of Missouri’s third grade children compared to the general U.S. population in third grade



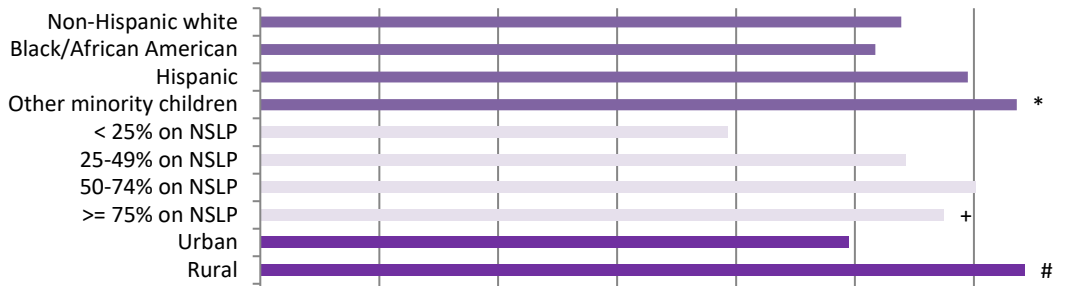
Sources: Missouri Oral Health Survey, 2018-2019
National Health and Nutrition Examination Survey (NHANES), 2011-2014

Oral health disparities.

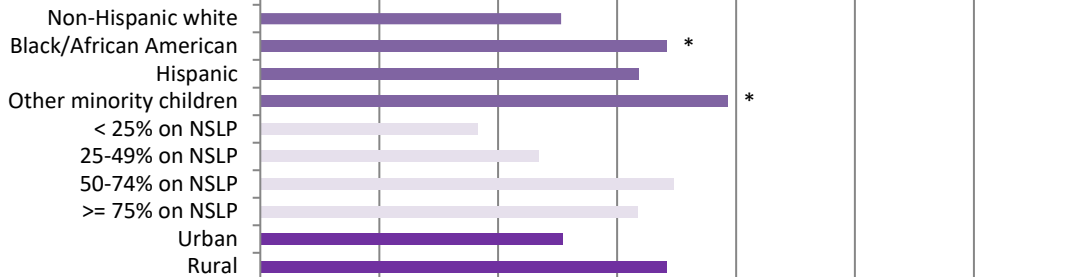
Influential sociodemographic indicators for oral health disparities in the United States include poverty status and race and ethnicity. In Missouri, low income schools (schools with a high percentage of the students eligible for the national school lunch program)¹ have a significantly higher prevalence of decay experience compared to higher income schools with a low percent of students eligible for the national school lunch program. African-American and “other minority” children have a significantly higher prevalence of untreated decay compared to non-Hispanic white children while “other minority” children have a significantly higher prevalence of decay experience. Children living in rural counties, have a significantly higher prevalence of decay experience compared to children living in urban counties.

Figure 3. Prevalence of decay experience, untreated tooth decay and dental sealants among Missouri’s third grade children by race/ethnicity, percent of children in a school eligible for the national school lunch program (NSLP) and urbanicity, 2018-2019

Decay experience



Untreated decay



Dental sealants



* Significantly different than non-Hispanic whites (p<0.05), + significantly different than < 25% on NSLP (p<0.05), # significantly different than urban (p<0.05)

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

Data source and methods.

This data brief is based on data from the Missouri Oral Health Survey which was conducted during the 2018-2019 school year. The survey screened children in third grade from a representative sample of public elementary schools in Missouri. The sampling frame consisted of all public non-virtual schools with 20 or more children in third grade. The sampling frame was stratified by rural/urban status of the county where the school is located and percent of the school's students eligible for the national school lunch program. A systematic probability proportional to size sampling scheme was used to select 53 schools. If a school refused to participate, a replacement school from the same sampling interval was selected. Data are available for all 53 sampling intervals. Of the 4,149 third grade children enrolled in the participating schools, based on 2016-2017 enrollment data, a total of 2,352 were screened for a response rate of 57%.

Trained dental professionals completed the screenings at the participating schools. The following information was collected for each child: age, gender, race/ethnicity, presence of untreated decay in the primary (baby) or permanent (adult) teeth, presence of treated decay in the primary or permanent teeth, urgency of need for dental care, and presence of dental sealants in the permanent first molar teeth. We used the Association of State and Territorial Dental Director's *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 third grade children is from 2011-2014.

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.

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

Data table.

Table 1. Prevalence of decay experience and untreated tooth decay in the primary and permanent teeth and prevalence of dental sealants on permanent molar teeth among Missouri's third grade children by selected characteristics, 2018-2019

Characteristic	Decay Experience			Untreated Decay			Dental Sealants		
	Percent	Lower CL	Upper CL	Percent	Lower CL	Upper CL	Percent	Lower CL	Upper CL
All 3 rd grade children (n=2,352)	54.8	50.2	59.4	28.5	23.3	33.7	29.7	25.3	34.1
Race/ethnicity									
White non-Hispanic (n=1,653)	53.9	48.7	59.0	25.3	19.6	30.9	32.8	27.3	38.4
Black/African American (n=349)	51.7	42.3	61.2	34.2	26.4	42.0	22.8	15.0	30.6
Hispanic (n=121)	59.5	48.4	70.7	31.8	20.4	43.3	26.7	18.2	35.1
Other minority (n=212)	63.6	52.8	74.5	39.3	25.9	52.7	20.1	13.4	26.8
Percent eligible for NSLP									
< 25% eligible (n=346)	39.3	26.4	52.3	18.3	6.2	30.4	26.0	20.0	32.0
25-49% eligible (n=620)	54.3	46.6	62.0	23.4	13.5	33.3	30.2	19.6	40.9
50-74% eligible (n=851)	60.2	50.4	69.9	34.8	24.3	45.2	36.3	29.5	43.0
≥ 75% eligible (n=535)	57.5	52.0	63.1	31.7	25.8	37.6	22.2	14.7	29.6
Urbanicity of county									
Rural (n=782)	64.3	57.4	71.2	34.2	24.2	44.2	35.8	28.5	43.1
Urban (n=1,570)	49.5	43.5	55.5	25.4	19.6	31.1	26.3	20.9	31.6

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