

## The Oral Health of West Virginia’s Third Grade Children Compared to the General U.S. Population

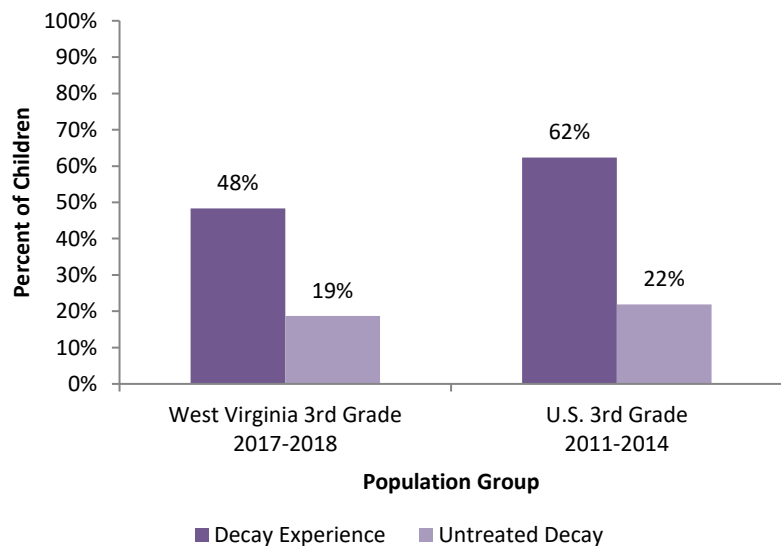
### Data from the West Virginia Oral Health Survey, 2017-2018

- About half of West Virginia’s third grade children (48%) have a history of tooth decay, lower than the national average for third grade children (62%).
- Almost one-of-five third grade children in West Virginia (19%) have untreated tooth decay; slightly lower than the national average of 22%.
- About a quarter of West Virginia’s third grade children (28%) have at least one protective dental sealant 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 West Virginia. Children attending low income schools have the highest prevalence of decay experience and untreated tooth decay and the lowest prevalence of protective dental sealants.

Good oral health is important to a child’s social, physical and mental development. Even though tooth decay can be prevented, most children in West Virginia still get cavities. To assess the current oral health status of West Virginia’s elementary school children, the West Virginia Department of Health and Human Services, in cooperation with Marshall University, coordinated a statewide oral health survey of third grade children attending West Virginia’s public schools. A total of 1,192 third grade children received a dental screening at 37 schools during the 2017-2018 school year. This data brief presents information on the prevalence of tooth decay in the primary and permanent teeth of West Virginia’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 West Virginia’s third grade children compared to children in the general U.S. population



Sources: West Virginia Oral Health Survey, 2017-2018  
National Health and Nutrition Examination Survey (NHANES), 2011-2014

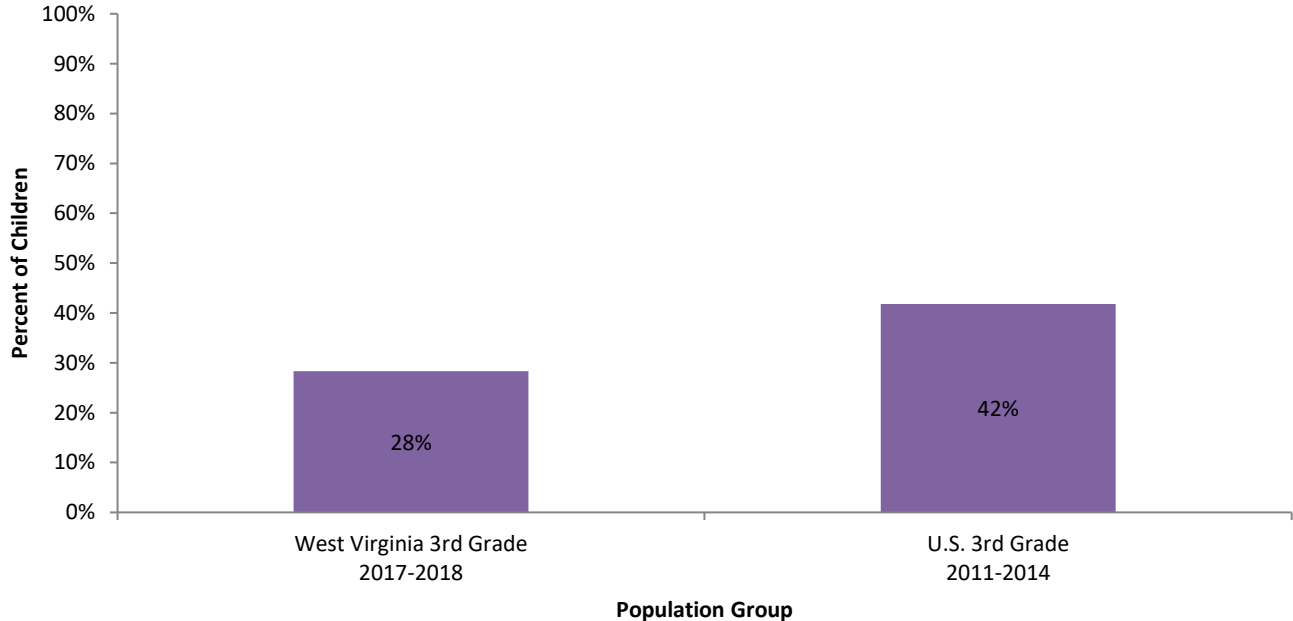
Decay experience means that a child has had tooth decay in the primary (baby) and/or permanent (adult) teeth in his or her lifetime. Decay experience can be past (fillings, crowns, or teeth that have been extracted because of decay) or present (untreated tooth decay or cavities). In 2017-2018, about one-of-two third grade children in West Virginia (48%) 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. Almost one-of-five third grade children (19%) 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 a quarter (28%) of West Virginia’s third grade children had at least one 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 West Virginia’s third grade children compared to the general U.S. population in third grade



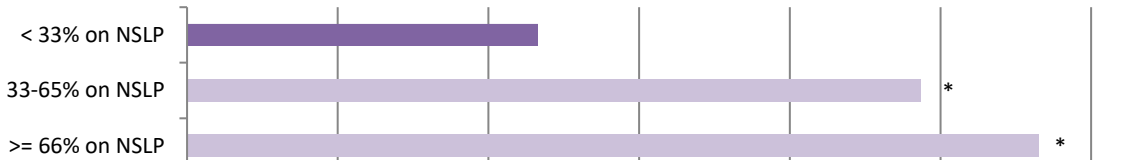
Sources: West Virginia Oral Health Survey, 2017-2018  
National Health and Nutrition Examination Survey (NHANES), 2011-2014

**Oral health disparities.**

Influential sociodemographic indicators for oral health disparities in the United States include poverty status and race and ethnicity. In West Virginia, low income schools (schools with a high percentage of the students eligible for the national school lunch program)<sup>1</sup> have a significantly higher prevalence of decay experience and untreated decay compared to higher income schools with a low percent of students eligible for the national school lunch program. Compared to children attending higher income schools, children attending schools with 33-66% eligible for the national school lunch program have a significantly lower prevalence of protective dental sealants.

Figure 3. Prevalence of decay experience, untreated tooth decay and dental sealants among West Virginia’s third grade children by percent of children in a school eligible for the national school lunch program (NSLP), 2017-2018

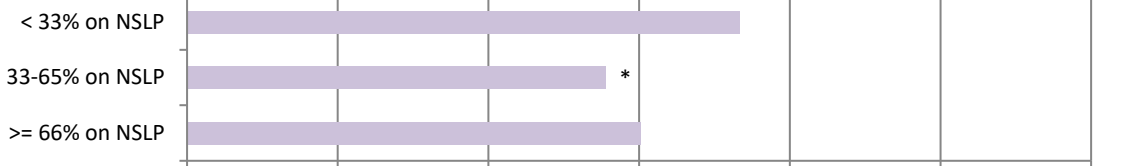
**Decay experience**



**Untreated decay**



**Dental sealants**



\* Significantly different than < 33% on NSLP (p<0.05)

**Data source and methods.**

This data brief is based on data from the West Virginia Oral Health Survey which was conducted during the 2017-2018 school year. The West Virginia survey screened children in third grade from a representative sample of public elementary schools in West Virginia. The sampling frame consisted of all public schools with 15 or more children in third grade. The sampling frame was stratified by health region then a systematic probability proportional to size sampling scheme was used to select 37 schools of which 37 participated. Of the 1,340 children invited to participate, a total of 1,192 received a dental screening for a response rate of 89%.

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

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, decay experience 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.<sup>2</sup>

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.

**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 West Virginia’s third grade children by selected characteristics, 2017-2018

Characteristic	Decay Experience			Untreated Decay			Dental Sealants		
	Percent	Lower CL	Upper CL	Percent	Lower CL	Upper CL	Percent	Lower CL	Upper CL
All 3 <sup>rd</sup> grade children (n=1,192)	48.3	43.1	53.5	18.7	15.1	22.2	28.3	22.9	33.8
Race/ethnicity									
White non-Hispanic (n=1,158)	48.0	42.6	53.5	18.4	14.8	22.0	28.7	23.4	34.0
Minority (n=34)	56.1	41.0	71.1	26.4	8.7	44.2	18.5	0.0	38.0
Percent eligible for NSLP									
< 33% eligible (n=60)*	23.3	--	--	8.3	--	--	36.7	--	--
33-65% eligible (n=980)	48.7	43.1	54.3	19.1	15.3	22.9	27.8	22.0	33.6
≥ 66% eligible (n152)	56.5	42.2	70.8	18.8	8.9	28.8	30.1	9.0	51.2

\*There was only one school with less than 33% FRL so lower/upper confidence limits equal the point estimate

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

<sup>2</sup> 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>.