

ORAL HEALTH SURVEILLANCE REPORT



Trends in Dental Caries and Sealants, Tooth Retention, and Edentulism, United States 1999–2004 to 2011–2016



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Suggested Citation

Centers for Disease Control and Prevention. *Oral Health Surveillance Report: Trends in Dental Caries and Sealants, Tooth Retention, and Edentulism, United States, 1999–2004 to 2011–2016*. Atlanta, GA: Centers for Disease Control and Prevention, US Dept of Health and Human Services; 2019.

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Tooth Retention, and Edentulism,
United States, 1999–2004 to 2011–2016



**US Department of Health and Human Services
Centers for Disease Control and Prevention**
National Center for Chronic Disease Prevention and Health Promotion
Division of Oral Health

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Introduction

Dental caries, or tooth decay, is a common chronic disease that can cause pain, suffering, and diminished quality of life throughout one's lifespan.¹ Left untreated, tooth decay can progress and lead to infection, tooth loss, and more complex and expensive treatments. Untreated tooth decay can affect essential aspects of daily living, including eating, speaking, and performing at home, school, or work.¹ Children with poor oral health miss more school and receive lower grades than those with better oral health, while adults lose more school or work hours for urgent, unplanned dental visits.^{2–4}

Untreated tooth decay can affect essential aspects of daily living, including eating, speaking, and performing at home, school, or work.

The National Health and Nutrition Examination Survey (NHANES) provides information to monitor the overall prevalence and severity of oral diseases,^{5–12} the extent of health disparities,^{13–15} and the prevalence of preventive interventions, such as dental sealants. Dental sealants are professionally applied coatings that prevent decay in the chewing surfaces of the molar teeth.¹⁶ NHANES data are used by health agencies and organizations, health care providers, and researchers to guide the development of public health policy, direct public health practice, and expand health knowledge in the United States.¹⁷

Compared with NHANES 1988–1994, findings from NHANES 1999–2004 showed that the percentage of children aged 6–11 years and adolescents aged 12–19 years with dental caries in their permanent teeth had decreased to about 20% and 60%, respectively, whereas the percentage with untreated decay remained unchanged at about 8% and 20%.^{6,10} These findings suggest a decrease in receipt of fillings (i.e., restorations). Among young children aged 2–5 years, the prevalence of caries in primary teeth increased 4 percentage points to 28%, with no change in untreated decay.^{10,18} This finding suggests an increase in restorations. The prevalence of dental sealants in permanent teeth increased by almost 10 percentage points to 30% among children aged 6–11 years and by 20



A smiling multigenerational family.

percentage points to almost 40% among adolescents aged 12–19 years. Adults and older adults were keeping more of their teeth, and the percentage who had lost all their teeth had declined.^{10,19} These findings highlight overall improvements in oral health across the US population and across the life span by 1999–2004. However, disparities continued by poverty status, education, and race or ethnicity.¹⁰

This surveillance report provides national estimates for selected measures for oral health status during 2011–2016, examines changes since 1999–2004, and highlights disparities in oral health by certain sociodemographic characteristics. Measures include the prevalence and severity of dental caries in primary and permanent teeth (for those aged 2 years or older), the prevalence of dental sealants on permanent teeth in children and adolescents (aged 6–19 years), and tooth retention and edentulism (total tooth loss) among adults (aged 20–64 years) and older adults (aged 65 years or older). This report, which provides estimates from 2011 to 2016, builds on findings of earlier data briefs or studies that also examined oral health status and disparities among specific populations in the United States.^{7,9,11,20,21}



People holding signs of various examples of treatments for teeth.

Methods

Data Sources, Study Population, and Sample Size

NHANES is a cross-sectional survey designed to monitor the health and nutritional status of the resident, civilian, noninstitutionalized US population.²² It is administered by CDC's National Center for Health Statistics. Survey participants are selected by using a complex, multistage probability design, which includes oversampling of selected population subgroups to improve reliability of the estimates. NHANES collected the data during standardized oral health examinations of participants in mobile examination centers and by interviews in participants' homes. Additional details of the surveys are available on the [NHANES website](#).

This report used NHANES data for two 6-year periods: 1999–2004 (combining 2-year cycles 1999–2000, 2001–2002, and 2003–2004) and 2011–2016 (combining 2-year cycles 2011–2012, 2013–2014, and 2015–2016). Although NHANES data are released in 2-year cycles, this report used 6 years of data to be consistent with data reporting in the last oral health surveillance report, which used 6 years of data to compare changes in oral health status between NHANES 1988–1994 and 1999–2004.¹⁰ In addition, because we reported findings for individual age groups stratified by sociodemographic characteristics, we combined cycles as recommended by NHANES guidelines to improve the statistical reliability of our estimates.²³

Our study population included participants aged 2 years or older who completed an oral health assessment. During 2011–2016, among 27,925 participants interviewed, 26,799 were selected for an oral health examination (96%), and of these, 25,566 (95.4%) completed the examination. Hispanics, non-Hispanic blacks, and Asians were oversampled. During 1999–2004, among 28,661

participants interviewed, 27,032 were selected for an oral health examination (94.3%), and of these, 25,364 (93.8%) completed the examination. Adolescents aged 12–19 years, adults 60 years or older, non-Hispanic blacks, and Mexican Americans were oversampled.²²

Oral Health Assessment

Oral health assessments in both survey periods used the same protocols, allowing comparisons of estimates for outcomes, including dental caries, dental sealants, tooth retention, and edentulism. Visual oral health assessments were conducted by previously trained dentists in a mobile examination center, and these dentists were monitored during NHANES data collection to ensure consistent assessment standards. The examinations were used to detect the presence or absence of permanent or primary teeth. In this report, all dental measures of permanent teeth are based on 28 teeth, excluding 3rd molars. Each tooth was assessed for caries and restorations. Caries assessment was based on Radike's criteria with minor modifications.^{24,25} Specific surfaces of primary and permanent molars, premolars, and upper permanent lateral incisors were assessed for dental sealants. A sealant was considered present if any portion of the surface was covered by sealant. Further descriptions of the clinical procedures for assessing dental caries and dental sealants are described elsewhere.^{6,10,17,24}

Case definitions for dental caries were based on those proposed by Klein and colleagues.²⁶ This report examines coronal caries, which is decay located on part of the crown of the tooth above the gum line. Assessment of root caries was not included because data were unavailable during 2011–2014 cycles. Prevalence of dental caries was defined as the percentage of the population having at least one tooth with untreated decay

(*d/D*) or a restoration or filling (*f/F*). (Note: In the abbreviations used for categories of teeth affected by caries in this report, lowercase letters denote primary teeth, while uppercase letters denote permanent teeth.) Prevalence of untreated tooth decay was defined as the percentage of the population with at least one tooth with untreated, cavitated carious lesions. Among children and adolescents aged 6–19 years, prevalence of caries in permanent teeth also included permanent teeth missing (*M*) from disease (i.e., caries).

In this report, caries severity is measured as the mean number of teeth affected by caries among children, adolescents, or adults younger than 65 years with caries. Caries severity is reported for all older adults aged 65 years or older because more than 95% of older adults have caries.⁷ Previous reports have measured caries severity as the mean number of affected teeth or surfaces for all children or adults.^{6,10} In this report, caries severity also is described by permanent tooth type (i.e., anterior teeth [incisors and canines], premolars, and first and second molars) for children and adolescents aged 6–19 years.

For sealants, overall prevalence of having one or more sealants on permanent teeth (including permanent molars, premolars, or upper lateral incisors) was reported for children and adolescents. The mean number of sealants—overall and on molars and premolars specifically—was reported only for those with one or more sealants.

Age categories for the study population were 2–5 and 6–8 years for primary teeth in children; 6–11 and 12–19 years for permanent teeth in children and adolescents; 20–34, 35–49, and 50–64 years for adults; and 65–74 years and 75 years or older for older adults. We adjusted all age-specific estimates to the US 2000 standard population to control for potential differences in age distribution.²⁷ Data for children and adolescents were adjusted by using single years of age. Data for adults were adjusted by using 5-year age groups, with the maximum age group set to age 80 years or older.

We used the same selected sociodemographic characteristics used in previous surveillance summary reports.^{6,10} Educational attainment was classified as less than high school, high school graduate or equivalent, and more than high school. Poverty status was reported as living in a household with income below 100% of the federal poverty level, 100% or higher but below 200% of the federal poverty level, or 200% or higher of the federal poverty level and categorized as poor, near-poor, or not-poor. Findings are also presented for poor and near-poor children combined (less than 200% of the federal poverty level) to more closely align with federal thresholds used to determine eligibility for public health insurance and free and reduced price meal programs within schools.^{28,29} Similar income

categorizations, such as 185% of the federal poverty level or less, have been used elsewhere to define low- and higher-income children for analyses of untreated tooth decay and sealant use among school-aged children in the United States.¹⁶

Information on self-reported race or ethnicity was stratified into three categories to be comparable between 1999–2004 and 2011–2016: non-Hispanic white, non-Hispanic black, and Mexican American. Although NHANES 2011–2016 oversampled the entire Hispanic population, NHANES 1999–2004 only oversampled Mexican Americans.²² Cigarette smoking status was classified into three categories: current smoker, former smoker, and never smoked. Current smokers were defined as respondents who reported having smoked at least 100 cigarettes during their lifetime and currently smoking cigarettes every day or some days. Former smokers were defined as respondents who reported having smoked at least 100 cigarettes during their lifetime but not currently smoking. Never smokers were defined as respondents who reported having smoked fewer than 100 cigarettes during their lifetime.

When comparing outcomes among different categories within the same sociodemographic characteristic, we used reference categories used in previous surveillance reports. The reference category for educational attainment was more than high school; for income, 200% of the federal poverty level or higher; for race or ethnicity, non-Hispanic white; and for smoking status, never smoked.

All statistical analyses were performed with SUDAAN software Version 11.0.0 (RTI International, Research Triangle Park, North Carolina) and SAS software Version 9.3 (SAS Institute Inc., Cary, North Carolina). Age-adjusted oral health outcomes, standard errors, and differences in oral health outcomes between 1999–2004 and 2011–2016 are presented overall and stratified by sociodemographic characteristics. Because of rounding, the differences between the two periods presented may be slightly different from what would have been obtained if we had subtracted the 2011–2016 estimates from the 1999–2004 estimates.

All reported differences are statistically significant at $P < 0.05$ (2-sided t-test) unless otherwise noted. When a range of differences for a specific outcome was reported in the current analysis, we only presented differences that were significantly different at $P < 0.05$. For the 2011–2016 data, t-tests were also performed to detect significant differences ($P < 0.05$) in oral health outcomes between categories within each sociodemographic characteristic. Estimates with relative standard error higher than 30% were considered unreliable and not displayed in the tables.³⁰

Selected Findings

Dental Caries in Primary Teeth

The prevalence of untreated tooth decay in primary teeth was 10% among children aged 2–5 years and 16% among those 6–8 years, reflecting a 10 percentage point decrease in both groups since 1999–2004. Notable decreases occurred among Mexican American, near-poor, and poor children.

Children Aged 2–5 Years

Prevalence of caries among children aged 2–5 years decreased from 28% during 1999–2004 to 23% during 2011–2016 (Table 1). Since 1999–2004, prevalence decreased by 8 percentage points to 33% among Mexican American and poor children, by 7 percentage points to 30% among poor and near-poor combined children, and by 6 percentage points to 24% and 18% among male and non-Hispanic white children, respectively.

The prevalence of untreated tooth decay was 10%, which was about a 10 percentage point decrease since 1999–2004 (21%) (Table 2). Prevalence decreased across all sociodemographic groups. Declines ranged from 7 percentage points among not-poor children (13% vs. 6%) to more than 14 percentage points among Mexican American (31% vs. 15%) and poor (31% vs. 17%) children. During 2011–2016, prevalence of caries and untreated decay was about 1–2 times higher among Mexican American, non-Hispanic black, and poor and near-poor combined children compared to non-Hispanic white and not-poor children (Tables 1 and 2).

Among children with caries, the mean number of affected teeth was 4.3, which represented no detectable change since 1999–2004 (Table 3). However, the mean of untreated decayed primary teeth (*dt*) decreased overall, from 2.6 to 1.6 teeth, across all sociodemographic characteristics except among not-poor and non-Hispanic black children. Declines in *dt* ranged from 0.8 teeth for males to 1.5 teeth for poor and near-poor combined children. Mean filled primary teeth (*ft*) increased overall, from 1.4 to 2.8 teeth, across all sociodemographic characteristics.

Specifically, the number of filled primary teeth increased by 1.9 teeth for Mexican American children, 1.8 for female children, and 1.7 for not-poor children. An overall 27 percentage point decrease was found in the mean percentage of primary teeth with caries (*dft* ≥ 1) that were untreated (% *dt/dft*) and a corresponding increase in the mean percentage that were restored (% *ft/dft*) compared to 1999–2004 (Table 4). Decreases in mean % *dt/dft* and increases in mean % *ft/dft* occurred across all sociodemographic groups.



Kids texting on their smart phones.

Children Aged 6–8 Years

The prevalence of caries among children aged 6–8 years was 52%, with no changes detected overall or across sociodemographic groups since 1999–2004 (Table 5). The prevalence of untreated tooth decay was 16% (Table 6), which was a reduction of 11 percentage points since 1999–2004. Prevalence was lower across all sociodemographic groups, with reductions ranging from 6 percentage points for not-poor children (18% vs. 11%) to 18 percentage points for Mexican American children (38% vs. 20%).

During 2011–2016, prevalence of caries and untreated decay was higher among Mexican American (caries: 73%, untreated decay: 20%), non-Hispanic black (54%, 22%), and poor and near-poor combined (62%, 22%) children compared with non-Hispanic white (44%, 13%) and not-poor (40%, 11%) children (Tables 5 and 6).

Among children with caries, the mean *dft* was 4.4, which represents little change since 1999–2004 (4.3 teeth) (Table 7). However, mean *dt* decreased overall, from 1.5 to 0.8 teeth, with decreases found across all sociodemographic characteristics. The largest decline was 1.0 tooth for non-Hispanic black, Mexican American, and poor children. Mean *ft* increased from 2.7 to 3.6 teeth overall, with increases across all sociodemographic groups. The largest increase was 1.5 teeth for Mexican American children. Consistent with these findings, an overall 18 percentage point decrease was found in the mean percentage of teeth with caries (*dft* ≥ 1) that were untreated (22%), with a corresponding increase in the mean percentage restored (78%) (Table 8). Decreases in mean % *dt/dft* and increases in mean % *ft/dft* occurred across all sociodemographic groups.

Dental Caries in Permanent Teeth of Children and Adolescents

The prevalence of untreated tooth decay in permanent teeth decreased by 3 percentage points, to 5% among children aged 6–11 years and 17% among adolescents aged 12–19 years since 1999–2004.

Children Aged 6–11 Years

Prevalence of caries among children aged 6–11 years decreased from 21% during 1999–2004 to 17% during 2011–2016 (Table 9). Decreases occurred across all sociodemographic groups, except for younger children (aged 6–8 years), non-Hispanic black children, and poor and near-poor combined children. Decreases of more than 5 percentage points were found among older children aged 9–11 years, non-Hispanic white, and Mexican American children. During 2011–2016, prevalence was higher among Mexican American and non-Hispanic black children than among non-Hispanic white children and among poor and near-poor combined than not-poor children.

The prevalence of untreated tooth decay decreased from 8% during 1999–2004 to 5% during 2011–2016 (Table 10). Prevalence declined by more than 4 percentage points among Mexican American children (13% vs. 8%), near-poor children (12% vs. 6%), and poor and near-poor combined children

(12% vs. 7%). During 2011–2016, Mexican American (8%), non-Hispanic black (7%), and poor children (8%) had higher prevalence of untreated tooth decay than non-Hispanic white (4%) and not-poor (4%) children.

Mean decayed, missing, or filled permanent teeth (*DMFT*) among children with any caries was 2.1 (Table 11). Compared to 1999–2004, this measure was higher by 0.2 teeth overall, by 0.3 teeth among non-Hispanic white children, and by 0.4 teeth among children aged 9–11 years.

Since 1999–2004, no changes were detected in mean untreated decayed permanent teeth (*DT*), while mean filled permanent teeth (*FT*) increased by 0.2 teeth overall and by 0.3–0.4 teeth among children who were aged 9–11 years, male, Mexican American, and near-poor (Table 11). Mexican American and near-poor children had the largest increase in filled permanent teeth (0.4 teeth). Among near-poor children, a decrease of more than 20 percentage points was found in the mean percentage of permanent teeth with caries that were untreated (% *DT/DMFT*), and a corresponding increase was found in the mean percentage of teeth that were filled (% *FT/DMFT*) (Table 12).

Overall, among children with caries, 2 of 4 first permanent molars were affected by caries (Table 13). The mean number of first molars affected was higher among older children aged 9–11 years than among younger children aged 6–8 years.

Adolescents Aged 12–19 Years

Prevalence of caries among adolescents aged 12–19 years was 57%, with no detectable change since 1999–2004 (59%) (Table 14). Prevalence declined by 6 percentage points among female and not-poor adolescents. During 2011–2016, prevalence was higher among Mexican American (69%) and poor and near-poor combined (65%) adolescents than among non-Hispanic white (54%) and not-poor (49%) adolescents.

The prevalence of untreated tooth decay overall decreased from 20% during 1999–2004 to 17% during 2011–2016 (Table 15). The largest decline was 8 percentage points among Mexican American adolescents, followed by 6 percentage points among near-poor children, and 5 percentage points among non-Hispanic black children. During 2011–2016, prevalence of untreated decay was higher among non-Hispanic black (20%) and Mexican American (21%) adolescents than among non-Hispanic white (16%) adolescents. It was twice as high among poor and near-poor combined (22%) adolescents than among not-poor adolescents (11%).

The mean *DMFT*, *DT*, and *FT* among adolescents with caries was 4.3, 0.7, and 3.4 teeth overall, respectively, with no detectable changes compared to 1999–2004 (Table 16). However, increases in mean *DMFT* were found among non-Hispanic black (0.6 teeth) and poor (0.5 teeth) adolescents. Similarly, increases in mean *FT* were found among non-Hispanic black (0.7 teeth), Mexican American (0.5 teeth), and near-poor (0.5 teeth) adolescents. No changes in mean *DT* were detected among any sociodemographic group. Poor and near-poor combined adolescents had higher *DMFT* and *DT* than not-poor adolescents. The mean percentage of teeth with caries that were untreated (% *DT/DMFT*) decreased by 10 percentage points for Mexican American, 9 percentage points for non-Hispanic black, and 7 percentage points for poor adolescents, with corresponding increases in the mean percentage of teeth restored (% *FT/DMFT*) (Table 17).

Among adolescents with caries, the mean number of affected first molars was 2.2. It was 1.2 for second molars, 0.6 for premolars, and 0.2 for anterior teeth, with no detectable changes since 1999–2004 (Table 18). During 2011–2016, older adolescents aged 16–19 years had almost 2 second molars affected by caries compared to 1 second molar among those aged 12–15 years.

Dental Sealants

Nearly half of children aged 6–11 years (42%) and adolescents aged 12–19 years (48%) had dental sealants on permanent teeth, reflecting more than a 10 percentage point increase since 1999–2004. The largest increases—17 percentage points or more—were found among those who were Mexican American, near-poor, and poor.

Children Aged 6–11 Years

The prevalence of sealants increased overall, from 31% during 1999–2004 to 42% during 2011–2016. Increases occurred across all sociodemographic characteristics, except for not-poor children (Table 19). Increases ranged from 7 percentage points among non-Hispanic white children to 20 percentage points among Mexican American children. Sealant prevalence increased by 17 percentage points among poor and near-poor



A girl receiving a dental sealant.

combined children, from 22% during 1999–2004 to 39% during 2011–2016. During 2011–2016, prevalence was higher among older children aged 9–11 years (51%) compared to younger children aged 6–8 years (32%), non-Hispanic white children (44%) compared to non-Hispanic black children (32%), and not-poor children (45%) compared to poor children (38%).

On average, children aged 6–11 years with at least one sealed tooth had 3.6 teeth sealed—an increase of 0.2 teeth sealed since 1999–2004 (Table 20). The mean number of sealed teeth increased by 0.5 teeth among Mexican American and poor children and by 0.4 teeth among older and non-Hispanic black children. During 2011–2016, older children aged 9–11 years had more teeth sealed than younger children aged 6–8 years.

First permanent molars were the most likely teeth to be sealed. The mean number of sealed teeth was 3.3 for first permanent molars, 0.3 for premolars, and 0.5 for second molars (Table 21). Since 1999–2004, the mean number of first molars sealed increased by 0.4 teeth among poor children and by 0.3 teeth among Mexican American children. The mean number of first and second molars sealed increased by 0.2 and 0.5, respectively, among older children aged 9–11 years.

Adolescents Aged 12–19 Years

Sealant prevalence among adolescents aged 12–19 years increased from 38% during 1999–2004 to 48% during 2011–2016 (Table 22). Increases were observed across all sociodemographic characteristics except not-poor adolescents. Increases ranged from 9 percentage points among non-Hispanic white adolescents (44% vs. 53%) to 18 percentage points among Mexican American (27% vs. 45%) and near-poor (31% vs. 48%) adolescents. During 2011–2016, prevalence was

higher among younger adolescents aged 12–15 years (52%) than older adolescents aged 16–19 years (45%), non-Hispanic white children (53%) than non-Hispanic black (37%) and Mexican American (45%) children, and not-poor (51%) than poor (43%) children.

On average, among adolescents with sealants, the mean number of sealed teeth increased from 5 teeth during 1999–2004 to 6 teeth during 2011–2016 (Table 23). Increases ranged from 0.8 among female and not-poor adolescents to 1.7 teeth among non-Hispanic black adolescents. During 2011–2016, no differences were detected by sociodemographic characteristics.

First permanent molars were most likely to be sealed, with almost 3 teeth sealed on average, followed by second permanent molars with 2 teeth sealed on average, and premolars with 1 tooth sealed on average (Table 24). Overall, since 1999–2004, the mean number of first and second molars and premolars sealed increased by 0.2, 0.5, and 0.3 teeth, respectively. Increases in the mean number of sealed first molars were observed among all sociodemographic groups except poor and near-poor children. The largest increase was 0.5 first molars among non-Hispanic black children. Increases in the mean number of sealed second permanent molars were observed among all sociodemographic groups, with larger increases among non-Hispanic black adolescents (1 tooth), poor adolescents (0.7 teeth), and Mexican American and male (0.6 teeth each) adolescents.



A group of friends in a huddle.

Dental Caries Among Adults and Older Adults

Similar to 1999–2004, about 1 in 4 adults aged 20–64 years and 1 in 6 older adults aged 65 years or older had untreated tooth decay in 2011–2016.

Adults Aged 20–64 Years

The prevalence of dental caries among adults aged 20–64 years was 90%, which is a slight decrease from 92% during 1999–2004 (Table 25). Decreases of 2 to 4 percentage points were observed among adults who were younger (aged 20–34 and 35–49 years), male, non-Hispanic white, not-poor, and better educated and who had never or formerly smoked.

Overall, the prevalence of untreated tooth decay was 26% (Table 26). No changes were detected overall or across sociodemographic characteristics since 1999–2004, with the exception of current or former smokers and adults with a high school education, all of whom experienced a 5 percentage point increase. During 2011–2016, the prevalence of untreated decay was almost 40% to 50% among adults who were non-Hispanic black, Mexican American, or poor and near-poor combined; who had a high school education or lower; and who were current smokers. Prevalence among these groups was about twice that of adults who were non-Hispanic white or not-poor, who had more than a high school education, and who had never smoked. Prevalence of untreated decay was higher among younger adults aged 20–34 years (29%) than among adults aged 35–49 years (26%) or 50–64 years (22%).

Among adults with caries, mean *DFT* was 7.4, lower than the estimate of 8.2 during 1999–2004 (Table 27). Mean *DFT* and *FT* both decreased by about 1 tooth overall and among adults who were aged 35–49 or 50–64 years, male, female, non-Hispanic white, or not-poor; who had a high school education or more; and who were current, former, or never smokers. No changes were detected in mean *DT* overall or across sociodemographic characteristics, except for slight increases among adults who had a high school education or more and were former smokers.

Overall, no change was detected in the mean percentage of caries that were untreated (% *DT/DFT*), which was 16% during 2011–2016 (Table 28). However, increases in mean % *DT/DFT* of 3 to 5 percentage points were seen among current and former smokers and those with a high school education or more.

During 2011–2016, adults who were younger (aged 20–34 years), male, non-Hispanic black, Mexican American, or poor and near-poor combined; who had a high school education or less; and who were current smokers had higher *DT* (1.1–1.8) and lower *FT* (4.5–6.0) than their respective reference groups within each sociodemographic characteristic, with *DT* ranging from 0.6 to 0.9 and *FT* ranging from 6.6 to 8.3 (Table 27).

Similar comparisons showed that, for these same groups, the mean percentage of teeth with caries that were untreated (% *DT/DFT*) was higher than their respective reference groups, whereas the mean percentage that were filled (% *FT/DFT*) was lower (Table 28). The mean % *DT/DFT* of about 24% to 34% among adults who were non-Hispanic black, Mexican American, or poor and near-poor combined; who had a high school education or less; and who were current smokers was 2 to 3 times that of their respective reference groups within each sociodemographic characteristic.

Older Adults Aged 65 Years or Older

The prevalence of dental caries among adults aged 65 years or older was 96%, showing an overall increase of 3 percentage points since 1999–2004 (Table 29). For most sociodemographic groups, increases in caries prevalence ranged from 3 to 5 percentage points. No group experienced a statistically significant decrease. During 2011–2016, prevalence among older adults who were non-Hispanic white or not-poor, who had more than a high school education, and who were former smokers or never smoked ranged from 96% to 98%, which is higher than estimates of 85% to 95% for their respective counterparts within each sociodemographic characteristic. The estimates of prevalence across all sociodemographic groups were at or above 85%.

The prevalence of untreated tooth decay among adults aged 65 years or older was 16%, with no detectable change during 1999–2004 (Table 30). Except for a decrease of 4 percentage points in not-poor older adults, no differences in prevalence were detected for any other sociodemographic group between the two survey periods. During 2011–2016, however, the prevalence of untreated decay among older adults who were Mexican American, non-Hispanic black, or poor and near-poor combined; who had less than a high school education; and who were current smokers ranged from 29% to 36%, higher than the estimates of 10% to 14% for their respective reference groups within each sociodemographic characteristic.

About 30%–40% of working-age or older adults who were non-Hispanic black, Mexican American, or poor; who had less than a high school education; and who were current smokers had untreated tooth decay. This was about 2 times the prevalence among adults who were non-Hispanic white or not-poor, who had more than a high school education, and who had never smoked.

The mean *DFT* among adults aged 65 years or older was 10, an increase of 1 tooth during 1999–2004 (Table 31). Increases in *DFT* between the two survey periods were similar to increases in *FT* overall and among adults who were aged 65–74 years or 75 years or older, male, non-Hispanic white, non-Hispanic black, not-poor, and former smokers. Small decreases in mean *DT* were found overall (0.1 teeth) and among those who were aged 75 years or older (0.2), non-Hispanic black (0.4), and not-poor (0.1).

Overall, the mean percentage of teeth with caries that were untreated (% *DT/DFT*) decreased from 9% during 1999–2004 to 7% during 2011–2016 (Table 32). Decreases of 2 to 3 percentage points in mean % *DT/DFT* were found among those who were aged 65–74 years, male, female, non-Hispanic white, or not-poor and who had never smoked. Corresponding increases were found in the mean percentage of teeth that were restored (% *FT/DFT*). Non-Hispanic black older adults had the largest decrease in mean % *DT/DFT* (11 percentage points) and a corresponding increase in % *FT/DFT* between the two survey periods.

During 2011–2016, mean *DFT* and *FT* were lower and mean *DT* was higher among older adults who were non-Hispanic black, Mexican American, or poor and near-poor combined; who had less than a high school education; and who were current smokers. Among these groups, mean *DFT* ranged from 5.1 to 7.5, mean *FT* from 4.4 to 6.8, and mean *DT* from 0.7 to 1.0, compared to the reference group within each sociodemographic characteristic, which had mean *DFT* ranging from 10.4 to 11.5, mean *FT* ranging from 10.1 to 11.3, and mean *DT* ranging from 0.2 to 0.3 (Table 31). Similarly, the mean percentage of teeth with caries that were untreated (% *DT/DFT*) was higher among these groups (16%–29%) compared to their respective reference groups (3%–6%) (Table 32).

Edentulism and Tooth Retention

Adults Aged 20–64 Years

Compared to 1999–2004, the percentage of adults who were edentulous (i.e., had lost all of their natural teeth) decreased in 2011–2016 (4% vs. 2%) (Table 33). Except for Mexican American adults and current smokers, decreases were observed across all sociodemographic characteristics, with the largest decrease among adults aged 50–64 years (10% vs. 6%). During 2011–2016, edentulism was higher among adults who were poor (6%) or near-poor (4%), had a high school education (3%) or less (5%), and were current smokers (6%), compared to those who were not-poor, had more education, or had never smoked (approximately 1%).

By 2011–2016, the mean number of permanent teeth retained among dentate adults (i.e., those who have at least one permanent tooth present) was 25.5 teeth—an increase of 0.5 teeth from 1999–2004 (Table 34). Increases in the mean number of teeth retained were found across most sociodemographic groups, with the largest increases among those aged 50–64 years (1.1 teeth) and near-poor (0.9 teeth). No group had a decrease in the mean number of teeth. Since 1999–2004, no detectable differences were found in the mean number of teeth retained among adults aged 20–34 years; those who were Mexican American, poor, or current smokers; or those who had a high school education.

During 2011–2016, the mean number of teeth retained across all sociodemographic characteristics ranged from 23 to 27 teeth. Adults in the following groups retained fewer teeth than the respective reference groups in each sociodemographic characteristic: those aged 50–64 years, non-Hispanic blacks, Mexican Americans, or poor and near-poor adults combined, those with a high school education or less, and current or former smokers.

Older Adults Aged 65 Years or Older

Seventeen percent of adults aged 65 or older were edentulous, reflecting a decrease of about 10 percentage points during 1999–2004 (Table 35). Except for non-Hispanic black adults and current smokers, estimates of edentulism decreased from 1999–2004 to 2011–2016 across all sociodemographic characteristics. During 2011–2016, the prevalence of edentulism ranged from 9% among older adults with more than a high school education to 43% among current smokers. Prevalence of edentulism among older adults who were poor (34%), had less than a high school education (35%), and were current smokers (43%) was more than 3 times that of those who were not-poor (11%), had more than a high school education (9%), and had never smoked (12%).



Older man missing a front tooth.

About 1 in 6 older adults (17%) had lost all of their teeth—a decrease of 10 percentage points compared to 1999–2004. Among older adults who were current smokers, 43% had lost all of their teeth, which is more than 3 times the prevalence among those who never smoked (12%).

Dentate older adults had an average of 21 teeth, which is an increase of almost 2 teeth since 1999–2004 (Table 36). No changes were detected in the mean number of teeth among those who were non-Hispanic black, Mexican American, or poor; who had less than a high school education; and who were current smokers. During 2011–2016, the number of teeth retained among older adults across sociodemographic characteristics ranged from 16 to 22 teeth. Adults who were aged 75 years or older (20 teeth), non-Hispanic black (16 teeth), Mexican American (18 teeth), or poor and near-poor combined (18 teeth); who had a high school education (19 teeth) or less (17 teeth); and who were current smokers (16 teeth) retained fewer teeth than their respective reference groups (22 teeth).



Three elementary school girls smiling.

Summary

Dental Caries in Primary Teeth

Children Aged 2–5 Years

Overall, the prevalence of dental caries in the primary teeth of children aged 2–5 years was 23%, reflecting a decrease of 5 percentage points since 1999–2004. Significant declines occurred among Mexican American and poor children, although these groups had the highest caries prevalence (more than 30%). Untreated tooth decay prevalence declined by almost half, to 10%. All sociodemographic groups experienced a decrease. Untreated decay prevalence among poor and near-poor children decreased by more than 13 percentage points, about twice the decrease among not-poor children.

The composition of caries also changed. Among children with caries, the number of untreated decayed teeth declined (2.6 vs. 1.6), and the number of restored teeth increased. As a result, the mean percentage of carious primary teeth that were untreated decreased from over 70% during 1999–2004 to less than 50% during 2011–2016.

Children Aged 6–8 Years

Although no change was detected in the prevalence of caries in primary teeth (52% during 2011–2016), untreated decay prevalence declined overall (28% vs. 16%), and decreases occurred across all sociodemographic groups, consistent with findings among younger children. The decline among poor and near-poor children was 2 to 3 times that among

not-poor children. Like younger children, a significant decrease was found in the number of untreated decayed teeth, accompanied by increases in the number of restored teeth. Similarly, the mean percentage of carious primary teeth that were untreated decreased from 40% during 1999–2004 to 22% during 2011–2016.

Dental Caries in Permanent Teeth of Children and Adolescents

Children Aged 6–11 Years

Overall, both prevalence of caries (21% vs. 17%) and untreated decay (8% vs. 5%) decreased. The largest decreases were among older children aged 9–11 years and Mexican American children—groups with the highest prevalence during 1999–2004. Similarly, for prevalence of untreated decay, Mexican American children had the highest prevalence during 1999–2004 and the third highest prevalence during 2011–2016, but they also experienced a notable decline. The largest decrease was observed among near-poor children (12% vs. 6%).

Among children with caries, the mean number of affected teeth (0.2) increased, and this increase was attributed to a corresponding increase in filled teeth (0.2). Similarly, a significant decrease in the mean percentage of carious permanent teeth that were untreated was observed among near-poor children. Among children with caries, the first permanent molars remained the most commonly affected teeth.

Adolescents Aged 12–19 Years

Overall, untreated tooth decay prevalence decreased (20% vs. 17%), whereas dental caries prevalence had no detectable decrease (59% vs. 57%). More than half of adolescents had caries, and about 1 in 6 had untreated tooth decay. Among poor, Mexican American, and non-Hispanic black adolescents with caries, the mean percentage of permanent teeth with caries that were untreated decreased, whereas the mean percentage filled increased. Among adolescents with caries, permanent molars were most commonly affected.

Dental Sealants

Children Aged 6–11 Years

Since 1999–2004, the prevalence of sealants increased by about 40% overall (31% vs. 42%). Increases were observed across all sociodemographic characteristics, except for not-poor children. Increases of more than 16 percentage points occurred among poor, near-poor, and Mexican American children. By 2011–2016, no difference was detected between Mexican American and non-Hispanic white children or between near-poor and not-poor children. Overall, children with sealants had an average of 3 first permanent molars sealed in both survey periods. Among poor children with sealants, the mean number of first permanent molars sealed increased since 1999–2004, and no difference was detected between this group and their not-poor counterparts during 2011–2016.

Adolescents Aged 12–19 Years

The prevalence of sealants increased from 38% to 48% overall. Increases were observed across all sociodemographic groups, except for not-poor adolescents. Prevalence increased by 14 percentage points among poor children and 18 percentage points among near-poor and Mexican American children. By 2011–2016, no difference was detected between near-poor and not-poor children. Although prevalence among non-Hispanic black, Mexican American, and poor adolescents increased by about 50% or more since 1999–2004, estimates remained lower than those for non-Hispanic white and not-poor adolescents during 2011–2016.

Among those with sealants, the mean number of sealed first and second permanent molars increased overall and across most sociodemographic groups, with the largest increases among non-Hispanic black adolescents. By 2011–2016, no differences were detected in the mean number of sealed second molars by poverty status or race or ethnicity.

Dental Caries Among Adults and Older Adults

Adults Aged 20–64 Years

Between the two survey periods, the overall prevalence of caries decreased slightly, but no difference was detected in untreated decay, with 9 in 10 adults affected by caries and 1 in 4 affected by untreated tooth decay. No detectable changes in caries prevalence were observed among adults who were non-Hispanic black, Mexican American, poor and near-poor combined, less educated, and current smokers. Prevalence of untreated decay increased among adults with a high school education and current and former smokers. No declines were detected in the prevalence of untreated tooth decay for any sociodemographic group.

Disparities by race or ethnicity, poverty, education, and smoking status persisted during 2011–2016. Among adults who were non-Hispanic black, Mexican American, poor, or near-poor; who had a high school education or less; or who were current smokers, prevalence of untreated decay was about twice that among their non-Hispanic white, not-poor, more highly educated, or never smoked counterparts.

Among adults with caries, the mean number of teeth affected was lower during 2011–2016 (7.4) than during 1999–2004 (8.2). However, this change appears to be primarily associated with a decrease in the mean number of filled teeth and no detectable change in untreated decay. No decreases in the number of teeth with untreated decay or increases in filled teeth were found across sociodemographic groups between the two survey periods. Consistent with these findings, small increases in the mean percentage of teeth with caries ($DFT \geq 1$) that were untreated and corresponding decreases in the mean percentage that were filled were found among adults who had a high school education or more and who were current and former smokers.

Older Adults Aged 65 Years or Older

Among older adults, a small increase was found in the prevalence of caries, but no change was detected in the prevalence of untreated decay. More than 9 in 10 adults had experienced dental caries, and 1 in 6 had untreated tooth decay. Although the percentage with untreated decay was smaller than that found among working-age adults, relative differences for some groups defined by race or ethnicity, poverty, and smoking status were larger. Among older adults who were non-Hispanic black, Mexican American, poor, near-

poor, or current smokers, the prevalence of untreated decay was about 2 to 3 times that of those who were non-Hispanic white or not-poor or who never smoked.

Mean *DFT* increased by about 10% between the two survey periods (9.1 vs. 10.1). The increase was associated with a similar increase in the mean number of filled teeth among adults who were aged 65–74 years, non-Hispanic white, not-poor, and former smokers. For older adults who were aged 75 years or older or non-Hispanic black, the increase reflected both an increase in filled teeth and a decrease in teeth with untreated decay. Among older non-Hispanic black adults, a noticeable decrease was found in the mean percentage of teeth with caries that were untreated. A corresponding increase was found in the mean percentage that were filled.

Edentulism and Tooth Retention

Adults Aged 20–64 Years

The percentage of adults who have lost all of their teeth decreased from 4% during 1999–2004 to 2% during 2011–2016. Among younger adults aged 20–34 years, too few people were edentate to generate stable estimates, suggesting that edentulism is rare among this group. Since 1999–2004, no significant decrease in edentulism has been found among those who are Mexican American or current smokers—groups who also had no detectable increases in the number of teeth retained. The percentage who have lost all their teeth remains higher (6%) among people who are poor and current smokers, compared to about 1% among those who are not-poor or who have never smoked.

By 2011–2016, the mean number of teeth retained among working-age adults aged 20–64 years with at least 1 tooth, overall and across most sociodemographic groups, increased by less than 1 tooth to about 26 teeth. Although the mean number of retained teeth was never less than 23 for any group, some groups—those who were poor, near-poor, non-Hispanic black, or Mexican American; who had a high school education or less; and who were current and former smokers—had a lower mean number of remaining teeth than the reference group for each characteristic.

Older Adults Aged 65 Years or Older

Overall, about 1 in 6 (17%) older adults had lost all of their teeth during 2011–2016, a decrease of more than 30% compared to 1999–2004 (27%). The percentage who had lost all of their teeth declined by almost 50% among those aged 65–74 years and by 28% among those aged 75 years or older. By 2011–2016, edentulism among older adults who were poor, had less than a high school education, or were current smokers was more than 3 times that of older adults who were not-poor, had more than a high school education, or never smoked.

By 2011–2016, the mean number of teeth retained by older adults also increased by about 2 teeth, to 21.7 among those aged 65–74 years, and by 1 tooth, to 19.5 among those aged 75 years or older. No increases were detected among older adults who were non-Hispanic black, Mexican American, or poor; who had less than a high school education; or who were current smokers.



A group of friends posing for a selfie.

Conclusion and Comment

Although disparities in oral health by race or ethnicity and poverty remain, the findings in this report highlight improvements among children and adolescents since 1999–2004. These improvements include decreases in the prevalence of untreated decay in the primary teeth of children across sociodemographic groups and in the permanent teeth of near-poor and Mexican American children and adolescents and non-Hispanic black adolescents.

Sealant prevalence in the permanent teeth of children and adolescents increased overall and across all sociodemographic groups except for the not-poor. By 2011–2016, no detectable differences were found in sealant prevalence between near-poor and not-poor children and adolescents and between Mexican American and non-Hispanic white children.

In contrast, during 2011–2016, about 1 in 4 working-age adults and 1 in 6 older adults had untreated tooth decay. These proportions reflect no detectable changes since 1999–2004. Differences in the prevalence of untreated decay by race or ethnicity, poverty, education, and smoking also persisted through 2011–2016. Among working-age adults, no decreases in the mean number of teeth with untreated decay or increases in filled teeth were detected. Among older adults, the mean number of filled teeth did increase by about one tooth overall, and increases were significant for males, females, non-Hispanic whites, non-Hispanic blacks, and former smokers. By poverty level, having more filled teeth was only significant for those who were not-poor.

The mean number of teeth retained increased, and the prevalence of edentulism decreased overall for working-age and older adults. However, by poverty or smoking status, changes in the number of teeth retained among poor adults or current smokers since 1999–2004 were not statistically significant for either of these age groups.

Improvements in children's oral health status likely reflect increased access to preventive and restorative care. State Medicaid and Children's Health Insurance Programs are

major drivers of the use of dental services among poor and near-poor children and adolescents.^{31–33} A near-doubling of the percentage of children with public dental insurance from 1996 to 2015 resulted in a 15 percentage point increase to 88% in any dental coverage among all children.³⁴ The percentage of working-age adults aged 21–64 years with any dental insurance increased by 7 percentage points to 72%, also driven by increased public dental insurance coverage.

During the same period, the use of dental services in the past year increased among children by 6 percentage points to 48%, but decreased among working-age adults by 4 percentage points to 40%. Among older adults, past-year dental use increased by 7 percentage points to 47%; this increase may have been associated with a 5 percentage point increase in private dental insurance coverage.

The range of covered services among children and adults with public insurance is a key factor affecting dental care use. Public dental insurance coverage among children offers comprehensive dental benefits (e.g., diagnostic, preventive, and restorative services), whereas coverage for adults is commonly limited to emergency services only.³¹ Cost remains a major barrier to receipt of dental services across the life span and is the most common reason among working-age adults for not seeking dental care.^{35,36}

Other strategies aimed at increasing the availability and accessibility of dental services among populations who may lack access to dental care include the provision of preventive services in primary medical care,^{37,38} school, and community settings^{39,40} and the promotion of dental visits for young children at risk of early childhood caries.^{37,41} The findings in this report indicate that the improvement in children's oral health status was not experienced by working-age and older adults.

References

1. US Department of Health and Human Services. *Oral Health in America: A Report of the Surgeon General*. Rockville, MD: National Institute of Dental and Craniofacial Research, National Institutes of Health, US Dept of Health and Human Services; 2000.
2. 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(10):1900–1906.
3. Kelekar U, Naavaal S. Hours lost to planned and unplanned dental visits among US adults. *Prev Chronic Dis*. 2018;15:170225. doi: 10.5888/pcd15.170225.
4. Seirawan H, Faust S, Mulligan R. The impact of oral health on the academic performance of disadvantaged children. *Am J Public Health*. 2012;102(9):1729–1734.
5. Azofeifa A, Yeung LF, Alverson CJ, Beltran-Aguilar E. Dental caries and periodontal disease among US pregnant women and nonpregnant women of reproductive age, National Health and Nutrition Examination Survey, 1999–2004. *J Public Health Dent*. 2016;76(4):320–329.
6. Beltran-Aguilar ED, Barker LK, Canto MT, et al. Surveillance for dental caries, dental sealants, tooth retention, edentulism, and enamel fluorosis — United States, 1988–1994 and 1999–2002. *MMWR Surveill Summ*. 2005;54(3):1–43.
7. Dye B, Thornton-Evans G, Li X, Iafolla T. Dental caries and tooth loss in adults in the United States, 2011–2012. *NCHS Data Brief*. 2015;197:197.
8. Dye BA, Li X, Beltran-Aguilar ED. Selected oral health indicators in the United States, 2005–2008. *NCHS Data Brief*. 2012;96:1–8.
9. Dye BA, Mitnik GL, Iafolla TJ, Vargas CM. Trends in dental caries in children and adolescents according to poverty status in the United States from 1999 through 2004 and from 2011 through 2014. *J Am Dent Assoc*. 2017;148(8):550–565.e7.
10. Dye BA, Tan S, Smith V, et al. Trends in oral health status: United States, 1988–1994 and 1999–2004. *Vital Health Stat 11*. 2007;248:1–92.
11. Dye BA, Thornton-Evans G, Li X, Iafolla TJ. Dental caries and sealant prevalence in children and adolescents in the United States, 2011–2012. *NCHS Data Brief*. 2015;191:1–8.
12. Nowjack-Raymer RE, Sheiham A. Association of edentulism and diet and nutrition in US adults. *J Dent Res*. 2003;82(2):123–126.
13. Capurro DA, Iafolla T, Kingman A, Chattopadhyay A, Garcia I. Trends in income-related inequality in untreated caries among children in the United States: findings from NHANES I, NHANES III, and NHANES 1999–2004. *Community Dent Oral Epidemiol*. 2015;43(6):500–510.
14. Griffin SO, Jones JA, Brunson D, Griffin PM, Bailey WD. Burden of oral disease among older adults and implications for public health priorities. *Am J Public Health*. 2012;102(3):411–418.
15. Huang DL, Park M. Socioeconomic and racial/ethnic oral health disparities among US older adults: oral health quality of life and dentition. *J Public Health Dent*. 2015;75(2):85–92.
16. Griffin SO, Wei L, Gooch BF, Weno K, Espinoza L. Vital signs: dental sealant use and untreated tooth decay among US school-aged children. *MMWR Morb Mortal Wkly Rep*. 2016;65(41):1141–1145.
17. Centers for Disease Control and Prevention. About the National Health and Nutrition Examination Survey (NHANES) website. https://www.cdc.gov/nchs/nhanes/about_nhanes.htm. Accessed August 13, 2018.
18. Shenkin JD. An increase in caries rate or an increase in access to care: data show mixed results. *J Public Health Dent*. 2011;71(1):1–5.
19. Slade GD, Akinkugbe AA, Sanders AE. Projections of US edentulism prevalence following 5 decades of decline. *J Dent Res*. 2014;93(10):959–965.
20. Fleming E, Afful J. Prevalence of total and untreated dental caries among youth: United States, 2015–2016. *NCHS Data Brief*. 2018;307:1–8.
21. Slade GD, Sanders AE. Two decades of persisting income-disparities in dental caries among US children and adolescents. *J Public Health Dent*. 2018;78(3):187–191.
22. Johnson CL, Dohrmann SM, Burt VL, Mohadjer LK. National Health and Nutrition Examination Survey: sample design, 2011–2014. *Vital Health Stat 2*. 2014;162:1–33.

23. Centers for Disease Control and Prevention. *National Health and Nutrition Examination Survey: Analytic Guidelines, 2011–2014 and 2015–2016*. Atlanta, GA: Centers for Disease Control and Prevention, US Dept of Health and Human Services; 2018.
24. Centers for Disease Control and Prevention. *National Health and Nutrition Examination Survey (NHANES) Oral Health Examiners Manual*. Atlanta, GA: Centers for Disease Control and Prevention, US Dept of Health and Human Services; 2016.
25. Radike AW. Criteria for diagnosis of dental caries. In: *Proceedings of the Conference on the Clinical Testing of Cariostatic Agents*. Chicago, IL: American Dental Association; 1972:87–88.
26. Klein H, Carroll CE, Knutson JW. Studies on dental caries: I. Dental status and dental needs of elementary school children. *Public Health Rep*. 1938;53(19):751–765.
27. Klein RJ, Schoenborn CA. Age adjustment using the 2000 projected US population. *Healthy People Stat Notes*. 2001;20.
28. Centers for Medicare & Medicaid Services. Medicaid and CHIP eligibility levels website. <https://www.medicaid.gov/medicaid/program-information/medicaid-and-chip-eligibility-levels/index.html>. Accessed February 7, 2018.
29. US Department of Agriculture, Food and Nutrition Service. National School Lunch Program. Income Eligibility Guidelines website. <https://www.fns.usda.gov/school-meals/income-eligibility-guidelines>. Accessed August 14, 2018.
30. Klein RJ, Proctor SE, Boudreault MA, Turczyn KM. Healthy People 2010 criteria for data suppression. *Healthy People Stat Notes*. 2002;24.
31. Centers for Medicare & Medicaid Services. Dental Care website. <https://www.medicaid.gov/medicaid/benefits/dental/index.html>. Accessed August 21, 2018.
32. Ku L, Sharac J, Bruen B, Thomas M, Norris L. Increased use of dental services by children covered by Medicaid: 2000–2010. *Medicare Medicaid Res Rev*. 2013;3(3):E1–E13.
33. Steinmetz E, Bruen B, Ku L. *Children's Use of Dental Care in Medicaid: Federal Fiscal Years 2000–2012*. Washington, DC: Milken Institute School of Public Health, The George Washington University; 2014.
34. Manski RJ, Rohde F. *Dental Services: Use, Expenses, Source of Payment, Coverage and Procedure Type, 1996–2015. Research Findings #38*. Rockville, MD: Agency for Healthcare Research and Quality, US Dept of Health and Human Services; 2017.
35. Vujicic M, Buchmueller T, Klein R. Dental care presents the highest level of financial barriers, compared to other types of health care services. *Health Aff*. 2016;35(12):2176–2182.
36. American Dental Association. Cost Barriers to Dental Care in the U.S. https://www.ada.org/~media/ADA/Science%20and%20Research/HPI/Files/HPIgraphic_1117_4.pdf?la=en. Accessed March 15, 2019.
37. American Academy of Pediatrics. Recommendations for Preventive Pediatric Health Care. https://www.aap.org/en-us/documents/periodicity_schedule.pdf. Accessed August 13, 2018.
38. US Preventive Services Task Force. Clinical Summary website. Dental Caries in Children from Birth Through Age 5 Years: Screening. <https://www.uspreventiveservicestaskforce.org/Page/Document/ClinicalSummaryFinal/dental-caries-in-children-from-birth-through-age-5-years-screening>. Accessed August 14, 2018.
39. Community Preventive Services Task Force. Dental Caries (Cavities); School-Based Dental Sealant Delivery Programs. <https://www.thecommunityguide.org/oral/schoolsealants.html>. Accessed February 7, 2018.
40. Gooch BF, Griffin SO, Gray SK, et al. Preventing dental caries through school-based sealant programs: updated recommendations and reviews of evidence. *J Am Dent Assoc*. 2009;140(11):1356–1365.
41. American Academy of Pediatric Dentistry. Policy on dental home. *Pediatr Dent*. 2017;39(6):29–30.



TABLES 1-36

Table 1. Prevalence of dental caries in primary teeth (*dft* ≥ 1)^a among children aged 2–5 years, by selected characteristics, United States, National Health and Nutrition Examination Survey, 1999–2004 and 2011–2016

Accessible version at <https://www.cdc.gov/oralhealth/publications/OHSR-2019-table-1.html>

Characteristic	1999–2004		2011–2016		Change % ^b
	%	SE	%	SE	
Total	27.9	1.29	23.3	1.38	-4.6*
Sex					
Male ^c	30.1	2.12	24.0	1.63	-6.1*
Female	25.8	1.50	22.4	1.86	-3.4
Race and ethnicity					
White, non-Hispanic ^c	23.8	1.83	17.9	1.68	-5.9*
Black, non-Hispanic	31.6	2.24	28.0*	2.25	-3.6
Mexican American	41.3	1.99	32.9*	2.26	-8.4*
Poverty status					
<100% FPL	41.8	2.26	33.9*	1.65	-7.8*
100%–199% FPL	30.4	3.21	24.4*	2.24	-6.0
≥200% FPL ^c	17.8	1.53	15.7	1.82	-2.1
Poverty status					
<200% FPL	36.2	2.09	29.6*	1.54	-6.6*
≥200% FPL ^c	17.8	1.53	15.7	1.82	-2.1

Note: All estimates are adjusted by age (single years) to the US 2000 standard population. SE = standard error. FPL = federal poverty level; <100% FPL = poor; 100%–199% FPL = near-poor; <200% FPL = poor and near-poor combined; and ≥200% FPL = not-poor.

* $P < 0.05$ based on t-test for differences between two periods or two groups within each characteristic.

^a Defined as having one or more untreated decayed or filled primary teeth among children with at least one primary tooth.

^b Change in percentage points from 1999–2004 to 2011–2016. Positive value = increase; negative value = decrease.

^c Reference group for comparisons within each characteristic, 2011–2016.

Table 2. Prevalence of untreated tooth decay in primary teeth ($dt \geq 1$)^a among children aged 2–5 years, by selected characteristics, United States, National Health and Nutrition Examination Survey, 1999–2004 and 2011–2016

Accessible version at <https://www.cdc.gov/oralhealth/publications/OHSR-2019-table-2.html>

Characteristic	1999–2004		2011–2016		Change % ^b
	%	SE	%	SE	
Total	20.5	1.25	10.4	0.84	-10.1*
Sex					
Male ^c	21.2	1.89	11.1	1.10	-10.0*
Female	19.8	1.38	9.5	1.04	-10.3*
Race and ethnicity					
White, non-Hispanic ^c	16.9	1.62	6.7	0.90	-10.1*
Black, non-Hispanic	24.3	2.17	14.8*	1.90	-9.5*
Mexican American	30.8	1.67	15.1*	1.69	-15.7*
Poverty status					
<100% FPL	31.3	1.90	17.2*	1.67	-14.1*
100%–199% FPL	23.1	2.99	9.9*	1.32	-13.1*
≥200% FPL ^c	12.9	1.18	6.0	0.85	-6.9*
Poverty status					
<200% FPL	27.2	2.06	13.9*	1.14	-13.3*
≥200% FPL ^c	12.9	1.18	6.0	0.85	-6.9*

Note: All estimates are adjusted by age (single years) to the US 2000 standard population. SE = standard error. FPL = federal poverty level; <100% FPL = poor; 100%–199% FPL = near-poor; <200% FPL = poor and near-poor combined; and ≥200% FPL = not-poor.

* $P < 0.05$ based on t-test for differences between two periods or two groups within each characteristic.

^a Defined as having one or more untreated decayed primary teeth among children with at least one primary tooth.

^b Change in percentage points from 1999–2004 to 2011–2016. Positive value = increase; negative value = decrease.

^c Reference group for comparisons within each characteristic, 2011–2016.

Table 3. Mean number of untreated decayed (*dt*), filled (*ft*), and untreated decayed or filled (*dft*) primary teeth among children aged 2–5 years with at least one *dft*, by selected characteristics, United States, National Health and Nutrition Examination Survey, 1999–2004 and 2011–2016

Accessible version at <https://www.cdc.gov/oralhealth/publications/OHSR-2019-table-3.html>

Characteristic	1999–2004						2011–2016						Change in <i>dft</i> ^a	Change in <i>dt</i> ^a	Change in <i>ft</i> ^a
	<i>dft</i>		<i>dt</i>		<i>ft</i>		<i>dft</i>		<i>dt</i>		<i>ft</i>				
	Mean	SE	Mean	SE	Mean	SE	Mean	SE	Mean	SE	Mean	SE			
Total	4.1	0.21	2.6	0.20	1.4	0.15	4.3	0.16	1.6	0.11	2.8	0.15	0.3	-1.1*	1.3*
Sex															
Male ^b	4.1	0.27	2.4	0.25	1.7	0.21	4.3	0.19	1.6	0.14	2.7	0.18	0.2	-0.8*	1.0*
Female	4.1	0.21	2.9	0.21	1.2	0.16	4.5	0.26	1.5	0.15	3.0	0.27	0.4	-1.4*	1.8*
Race and ethnicity															
White, non-Hispanic ^b	4.1	0.36	2.6	0.31	1.5	0.26	4.7	0.42	1.7	0.25	2.9	0.39	0.6	-0.9*	1.5*
Black, non-Hispanic	3.7	0.27	2.5	0.23	1.3	0.22	4.1	0.21	1.9	0.20	2.2	0.27	0.4	-0.6	0.9*
Mexican American	3.9	0.21	2.4	0.18	1.5	0.19	4.8	0.24	1.3	0.17	3.4	0.22	0.8*	-1.1*	1.9*
Poverty status															
<100% FPL	4.9	0.29	3.0	0.25	1.8	0.24	4.4	0.21	1.5	0.15	2.9	0.23	-0.5	-1.5*	1.0*
100%–199% FPL	4.3	0.31	3.0	0.34	1.3	0.24	4.1	0.26	1.7	0.17	2.5	0.26	-0.1	-1.3*	1.2*
≥200% FPL ^b	3.1	0.30	1.8	0.28	1.2	0.20	4.4	0.52	1.5	0.28	2.9	0.46	1.3*	-0.3	1.7*
Poverty status															
<200% FPL	4.6	0.24	3.0	0.22	1.6	0.22	4.3	0.16	1.6	0.13	2.7	0.18	-0.3	-1.5*	1.1*
≥200% FPL ^b	3.1	0.30	1.8	0.28	1.2	0.20	4.4	0.52	1.5	0.28	2.9	0.46	1.3*	-0.3	1.7*

Note: All estimates are adjusted by age (single years) to the US 2000 standard population. SE = standard error. FPL = federal poverty level; <100% FPL = poor; 100%–199% FPL = near-poor; <200% FPL = poor and near-poor combined; and ≥200% FPL = not-poor.

* $P < 0.05$ based on t-test for differences between two periods or two groups within each characteristic.

^a Change from 1999–2004 to 2011–2016. Positive value = increase; negative value = decrease.

^b Reference group for comparisons within each characteristic, 2011–2016.

Table 4. Mean percentage contribution of untreated decayed (% *dt/dft*) or filled (% *ft/dft*) primary teeth among children aged 2–5 years with at least one untreated decayed or filled primary tooth (*dft* ≥ 1), by selected characteristics, United States, National Health and Nutrition Examination Survey, 1999–2004 and 2011–2016

Accessible version at <https://www.cdc.gov/oralhealth/publications/OHSR-2019-table-4.html>

Characteristic	1999–2004				2011–2016				Change in % <i>dt/dft</i> ^a	Change in % <i>ft/dft</i> ^a
	% <i>dt/dft</i>		% <i>ft/dft</i>		% <i>dt/dft</i>		% <i>ft/dft</i>			
	Mean	SE	Mean	SE	Mean	SE	Mean	SE		
Total	72.3	2.42	27.7	2.43	45.3	1.77	54.7	1.77	-26.9*	26.9*
Sex										
Male ^b	68.4	3.25	31.6	3.25	45.9	2.54	54.1	2.54	-22.5*	22.5*
Female	76.7	2.60	23.3	2.60	43.9	3.25	56.1	3.25	-32.8*	32.8*
Race and ethnicity										
White, non-Hispanic ^b	71.9	3.78	28.1	3.79	41.0	4.53	59.0	4.53	-30.8*	30.9*
Black, non-Hispanic	75.5	2.85	24.5	2.85	52.1	5.24	47.9	5.24	-23.4*	23.4*
Mexican American	70.2	3.29	29.8	3.29	43.8	3.17	56.2	3.17	-26.4*	26.4*
Poverty status										
<100% FPL	70.8	2.77	29.2	2.78	45.3	3.19	54.7	3.20	-25.5*	25.5*
100%–199% FPL	75.7	3.94	24.3	3.94	49.0	3.05	51.0	3.06	-26.7*	26.7*
≥200% FPL ^b	72.3	4.37	27.7	4.37	41.6	4.44	58.4	4.45	-30.7*	30.7*
Poverty status										
<200% FPL	72.6	2.77	27.4	2.77	46.5	2.38	53.5	2.38	-26.1*	26.1*
≥200% FPL ^b	72.3	4.37	27.7	4.37	41.6	4.44	58.4	4.45	-30.7*	30.7*

Note: All estimates are adjusted by age (single years) to the US 2000 standard population. SE = standard error. FPL = federal poverty level; <100% FPL = poor; 100%–199% FPL = near-poor; <200% FPL = poor and near-poor combined; and ≥200% FPL = not-poor.

* $P < 0.05$ based on t-test for differences between two periods or two groups within each characteristic.

^a Change in percentage points from 1999–2004 to 2011–2016. Positive value = increase; negative value = decrease.

^b Reference group for comparisons within each characteristic, 2011–2016.

Table 5. Prevalence of dental caries in primary teeth ($dft \geq 1$)^a among children aged 6–8 years, by selected characteristics, United States, National Health and Nutrition Examination Survey, 1999–2004 and 2011–2016

Accessible version at <https://www.cdc.gov/oralhealth/publications/OHSR-2019-table-5.html>

Characteristic	1999–2004		2011–2016		Change % ^b
	%	SE	%	SE	
Total	51.5	2.44	52.1	1.85	0.6
Sex					
Male ^c	54.2	2.81	55.4	2.37	1.2
Female	48.6	3.37	48.1*	2.54	-0.5
Race and ethnicity					
White, non-Hispanic ^c	47.6	3.51	43.9	2.56	-3.7
Black, non-Hispanic	53.4	2.14	53.8*	2.25	0.4
Mexican American	65.2	2.91	72.8*	2.52	7.6
Poverty status					
<100% FPL	65.7	3.18	64.4*	2.64	-1.4
100%–199% FPL	61.1	3.55	60.1*	2.56	-1.0
≥200% FPL ^c	39.4	3.50	40.4	2.46	1.0
Poverty status					
<200% FPL	62.9	2.48	62.3*	1.90	-0.7
≥200% FPL ^c	39.4	3.50	40.4	2.46	1.0

Note: All estimates are adjusted by age (single years) to the US 2000 standard population. SE = standard error. FPL = federal poverty level; <100% FPL = poor; 100%–199% FPL = near-poor; <200% FPL = poor and near-poor combined; and ≥200% FPL = not-poor.

* $P < 0.05$ based on t-test for differences between two periods or two groups within each characteristic.

^a Defined as having one or more untreated decayed or filled primary teeth among children with at least one primary tooth.

^b Change in percentage points from 1999–2004 to 2011–2016. Positive value = increase; negative value = decrease.

^c Reference group for comparisons within each characteristic, 2011–2016.

Table 6. Prevalence of untreated tooth decay in primary teeth ($dt \geq 1$)^a among children aged 6–8 years, by selected characteristics, United States, National Health and Nutrition Examination Survey, 1999–2004 and 2011–2016

Accessible version at <https://www.cdc.gov/oralhealth/publications/OHSR-2019-table-6.html>

Characteristic	1999–2004		2011–2016		Change % ^b
	%	SE	%	SE	
Total	27.8	2.02	16.4	1.26	-11.4*
Sex					
Male ^c	29.4	2.71	17.4	1.64	-12.0*
Female	26.2	2.85	15.2	1.44	-11.1*
Race and ethnicity					
White, non-Hispanic ^c	24.2	3.24	13.2	1.84	-11.0*
Black, non-Hispanic	34.8	2.14	22.4*	2.32	-12.5*
Mexican American	37.7	2.98	20.0*	2.49	-17.7*
Poverty status					
<100% FPL	39.3	2.42	22.3*	2.26	-17.0*
100%–199% FPL	35.2	4.15	20.9*	2.56	-14.3*
≥200% FPL ^c	17.5	2.12	11.1	1.39	-6.4*
Poverty status					
<200% FPL	36.9	2.27	21.6*	1.96	-15.3*
≥200% FPL ^c	17.5	2.12	11.1	1.39	-6.4*

Note: All estimates are adjusted by age (single years) to the US 2000 standard population. SE = standard error. FPL = federal poverty level; <100% FPL = poor; 100%–199% FPL = near-poor; <200% FPL = poor and near-poor combined; and ≥200% FPL = not-poor.

* $P < 0.05$ based on t-test for differences between two periods or two groups within each characteristic.

^a Defined as having one or more untreated decayed primary teeth among those with at least one primary tooth.

^b Change in percentage points from 1999–2004 to 2011–2016. Positive value = increase; negative value = decrease.

^c Reference group for comparisons within each characteristic, 2011–2016.

Table 7. Mean number of untreated decayed (*dt*), filled (*ft*), and untreated decayed or filled (*dft*) primary teeth among children aged 6–8 years with at least one *dft*, by selected characteristics, United States, National Health and Nutrition Examination Survey, 1999–2004 and 2011–2016

Accessible version at <https://www.cdc.gov/oralhealth/publications/OHSR-2019-table-7.html>

Characteristic	1999–2004						2011–2016						Change in <i>dft</i> ^a	Change in <i>dt</i> ^a	Change in <i>ft</i> ^a
	<i>dft</i>		<i>dt</i>		<i>ft</i>		<i>dft</i>		<i>dt</i>		<i>ft</i>				
	Mean	SE	Mean	SE	Mean	SE	Mean	SE	Mean	SE	Mean	SE			
Total	4.3	0.13	1.5	0.10	2.7	0.15	4.4	0.11	0.8	0.07	3.6	0.13	0.2	-0.7*	0.9*
Sex															
Male ^b	4.2	0.17	1.5	0.15	2.7	0.18	4.3	0.14	0.8	0.09	3.5	0.16	0.1	-0.7*	0.8*
Female	4.3	0.19	1.5	0.11	2.8	0.21	4.5	0.13	0.8	0.09	3.7	0.16	0.3	-0.7*	0.9*
Race and ethnicity															
White, non-Hispanic ^b	4.2	0.22	1.4	0.17	2.8	0.25	4.2	0.16	0.8	0.14	3.4	0.17	0.0	-0.6*	0.6*
Black, non-Hispanic	3.8	0.15	2.0	0.17	1.8	0.17	4.1	0.13	1.0	0.14	3.1	0.19	0.2	-1.0*	1.3*
Mexican American	4.5	0.13	1.7	0.12	2.8	0.14	5.0*	0.25	0.7	0.11	4.3*	0.28	0.5	-1.0*	1.5*
Poverty status															
<100% FPL	5.0	0.29	1.9	0.20	3.1	0.31	4.5	0.16	0.9	0.10	3.6	0.18	-0.5	-1.0*	0.5*
100%–199% FPL	4.4	0.20	1.6	0.19	2.8	0.25	4.5	0.21	0.8	0.11	3.6	0.23	0.1	-0.8*	0.8*
≥200% FPL ^b	3.6	0.20	1.1	0.13	2.5	0.22	4.2	0.16	0.7	0.12	3.5	0.19	0.6*	-0.4*	1.0*
Poverty status															
<200% FPL	4.6	0.17	1.7	0.13	2.9	0.20	4.5	0.14	0.9	0.08	3.6	0.17	-0.1	-0.9*	0.7*
≥200% FPL ^b	3.6	0.20	1.1	0.13	2.5	0.22	4.2	0.16	0.7	0.12	3.5	0.19	0.6*	-0.4*	1.0*

Note: All estimates are adjusted by age (single years) to the US 2000 standard population. SE = standard error. FPL = federal poverty level; <100% FPL = poor; 100%–199% FPL = near-poor; <200% FPL = poor and near-poor combined; and ≥200% FPL = not-poor. 0.0 = zero due to rounding.

* $P < 0.05$ based on t-test for differences between two periods or two groups within each characteristic.

^a Change from 1999–2004 to 2011–2016. Positive value = increase; negative value = decrease.

^b Reference group for comparisons within each characteristic, 2011–2016.

Table 8. Mean percentage contribution of untreated decayed (% *dt/dft*) or filled (% *ft/dft*) primary teeth among children aged 6–8 years with at least one untreated decayed or filled primary tooth (*dft* ≥ 1), by selected characteristics, United States, National Health and Nutrition Examination Survey, 1999–2004 and 2011–2016

Accessible version at <https://www.cdc.gov/oralhealth/publications/OHSR-2019-table-8.html>

Characteristic	1999–2004				2011–2016				Change in % <i>dt/dft</i> ^a	Change in % <i>ft/dft</i> ^a
	% <i>dt/dft</i>		% <i>ft/dft</i>		% <i>dt/dft</i>		% <i>ft/dft</i>			
	Mean	SE	Mean	SE	Mean	SE	Mean	SE		
Total	39.9	2.21	60.1	2.21	21.9	1.81	78.1	1.81	-18.0*	18.0*
Sex										
Male ^b	40.6	3.35	59.5	3.35	22.1	2.33	77.9	2.33	-18.5*	18.5*
Female	39.5	2.51	60.5	2.51	21.5	2.10	78.5	2.10	-18.0*	17.9*
Race and ethnicity										
White, non-Hispanic ^b	35.9	3.61	64.1	3.61	20.6	2.92	79.4	2.91	-15.3*	15.3*
Black, non-Hispanic	52.6	3.15	47.4	3.15	29.4	3.86	70.6	3.86	-23.2*	23.2*
Mexican American	44.2	2.47	55.8	2.47	18.2	2.57	81.8	2.57	-26.0*	26.0*
Poverty status										
<100% FPL	45.2	3.03	54.8	3.04	23.2	2.65	76.8	2.65	-22.0*	22.0*
100%–199% FPL	43.4	5.12	56.6	5.12	23.3	3.65	76.7	3.65	-20.1*	20.1*
≥200% FPL ^b	31.1	3.44	69.0	3.43	19.9	2.72	80.1	2.72	-11.1*	11.1*
Poverty status										
<200% FPL	44.3	3.13	55.7	3.13	23.3	2.62	76.7	2.62	-21.0*	21.0*
≥200% FPL ^b	31.1	3.44	69.0	3.43	19.9	2.72	80.1	2.72	-11.1*	11.1*

Note: All estimates are adjusted by age (single years) to the US 2000 standard population. SE = standard error. FPL = federal poverty level; <100% FPL = poor; 100%–199% FPL = near-poor; <200% FPL = poor and near-poor combined; and ≥200% FPL = not-poor.

* $P < 0.05$ based on t-test for differences between two periods or two groups within each characteristic.

^a Change in percentage points from 1999–2004 to 2011–2016. Positive value = increase; negative value = decrease.

^b Reference group for comparisons within each characteristic, 2011–2016.

Table 9. Prevalence of dental caries in permanent teeth (*DMFT* ≥ 1)^a among children aged 6–11 years, by selected characteristics, United States, National Health and Nutrition Examination Survey, 1999–2004 and 2011–2016

Accessible version at <https://www.cdc.gov/oralhealth/publications/OHSR-2019-table-9.html>

Characteristic	1999–2004		2011–2016		Change % ^b
	%	SE	%	SE	
Total	21.2	0.93	17.4	0.94	-3.8*
Age (years)					
6–8 ^c	10.4	1.07	9.6	0.91	-0.8
9–11	31.4	1.48	24.7*	1.32	-6.7*
Sex					
Male ^c	19.5	1.23	15.6	1.16	-4.0*
Female	22.9	1.31	19.0*	1.33	-3.9*
Race and ethnicity					
White, non-Hispanic ^c	18.8	1.44	13.4	1.14	-5.4*
Black, non-Hispanic	19.1	1.52	21.6*	1.64	2.5
Mexican American	30.8	1.99	24.5*	2.44	-6.4*
Poverty status					
<100% FPL	28.4	2.28	24.6*	1.91	-3.8
100%–199% FPL	24.1	2.14	19.3*	1.67	-4.8
$\geq 200\%$ FPL ^c	16.5	1.37	12.0	1.10	-4.4*
Poverty status					
<200% FPL	25.9	1.49	22.0*	1.34	-3.9
$\geq 200\%$ FPL ^c	16.5	1.37	12.0	1.10	-4.4*

Note: All estimates are adjusted by age (single years) to the US 2000 standard population. SE = standard error. FPL = federal poverty level; <100% FPL = poor; 100%–199% FPL = near-poor; <200% FPL = poor and near-poor combined; and $\geq 200\%$ FPL = not-poor.

* $P < 0.05$ based on t-test for differences between two periods or two groups within each characteristic.

^a Defined as having one or more untreated decayed, missing, or filled permanent teeth among children with at least one permanent tooth.

^b Change in percentage points from 1999–2004 to 2011–2016. Positive value = increase; negative value = decrease.

^c Reference group for comparisons within each characteristic, 2011–2016.

Table 10. Prevalence of untreated tooth decay in permanent teeth ($DT \geq 1$)^a among children aged 6–11 years, by selected characteristics, United States, National Health and Nutrition Examination Survey, 1999–2004 and 2011–2016

Accessible version at <https://www.cdc.gov/oralhealth/publications/OHSR-2019-table-10.html>

Characteristic	1999–2004		2011–2016		Change % ^b
	%	SE	%	SE	
Total	7.7	0.85	5.2	0.44	-2.4*
Age (years)					
6–8 ^c	4.1	0.73	2.7	0.43	-1.3
9–11	11.1	1.33	7.6*	0.77	-3.5*
Sex					
Male ^c	7.5	1.02	4.9	0.53	-2.6*
Female	7.9	1.13	5.5	0.61	-2.4
Race and ethnicity					
White, non-Hispanic ^c	5.6	1.17	4.3	0.63	-1.3
Black, non-Hispanic	8.7	1.01	7.1*	0.81	-1.6
Mexican American	12.7	1.07	7.5*	1.14	-5.2*
Poverty status					
<100% FPL	11.8	1.74	8.1*	0.81	-3.6
100%–199% FPL	11.9	1.95	5.6	1.06	-6.3*
≥200% FPL ^c	3.6	0.66	3.5	0.54	0.0
Poverty status					
<200% FPL	11.9	1.38	6.9*	0.71	-5.0*
≥200% FPL ^c	3.6	0.66	3.5	0.54	0.0

Note: All estimates are adjusted by age (single years) to the US 2000 standard population. SE = standard error. FPL = federal poverty level; <100% FPL = poor; 100%–199% FPL = near-poor; <200% FPL = poor and near-poor combined; and ≥200% FPL = not-poor. 0.0 = zero due to rounding.

* $P < 0.05$ based on t-test for differences between two periods or two groups within each characteristic.

^a Defined as having one or more untreated decayed permanent teeth among children with at least one permanent tooth.

^b Change in percentage points from 1999–2004 to 2011–2016. Positive value = increase; negative value = decrease.

^c Reference group for comparisons within each characteristic, 2011–2016.

Table 11. Mean number of untreated decayed (DT), missing (MT), filled (FT), and untreated decayed, missing, or filled (DMFT) permanent teeth among children aged 6–11 years with at least one DMFT;^a by selected characteristics, United States, National Health and Nutrition Examination Survey, 1999–2004 and 2011–2016

Accessible version at <https://www.cdc.gov/oralhealth/publications/OHSR-2019-table-11.html>

Characteristic	1999–2004								2011–2016								Change in DMFT ^b	Change in DT ^b	Change in FT ^b
	DMFT		DT		MT		FT		DMFT		DT		MT		FT				
	Mean	SE	Mean	SE	Mean	SE	Mean	SE	Mean	SE	Mean	SE	Mean	SE	Mean	SE			
Total	1.9	0.05	0.6	0.07	NR	NR	1.3	0.08	2.1	0.07	0.5	0.04	NR	NR	1.6	0.07	0.2*	0.0	0.2*
Age (years)																			
6–8 ^c	1.7	0.09	0.6	0.11	NR	NR	1.1	0.11	1.7	0.08	0.4	0.06	NR	NR	1.2	0.09	0.0	-0.1	0.2
9–11	2.2	0.06	0.6	0.06	NR	NR	1.6	0.10	2.5*	0.09	0.6*	0.06	NR	NR	1.9*	0.10	0.4*	0.0	0.3*
Sex																			
Male ^c	1.9	0.09	0.6	0.09	NR	NR	1.3	0.10	2.2	0.11	0.5	0.05	NR	NR	1.6	0.10	0.2	-0.1	0.3*
Female	1.9	0.05	0.6	0.09	NR	NR	1.3	0.10	2.1	0.07	0.6	0.06	NR	NR	1.5	0.09	0.2	0.0	0.2
Race and ethnicity																			
White, non-Hispanic ^c	1.8	0.08	0.4	0.09	NR	NR	1.4	0.12	2.1	0.10	0.6	0.06	NR	NR	1.5	0.10	0.3*	0.2	0.1
Black, non-Hispanic	2.1	0.15	0.8	0.17	NR	NR	1.2	0.12	2.2	0.10	0.6	0.09	NR	NR	1.5	0.13	0.1	-0.2	0.3
Mexican American	2.0	0.05	0.7	0.07	NR	NR	1.3	0.06	2.2	0.11	0.5	0.08	NR	NR	1.7	0.13	0.2	-0.2	0.4*
Poverty status																			
<100% FPL	2.0	0.08	0.6	0.08	NR	NR	1.4	0.10	2.1	0.09	0.6	0.08	NR	NR	1.5	0.10	0.1	-0.1	0.2
100%–199% FPL	2.2	0.19	1.0	0.26	NR	NR	1.2	0.14	2.2	0.10	0.5	0.11	NR	NR	1.6	0.11	0.0	-0.5	0.4*
≥200% FPL ^c	1.8	0.09	0.3	0.06	NR	NR	1.5	0.14	2.0	0.11	0.5	0.11	NR	NR	1.5	0.14	0.2	0.1	0.0
Poverty status																			
<200% FPL	2.0	0.07	0.7	0.09	NR	NR	1.3	0.09	2.2	0.07	0.6	0.06	NR	NR	1.6	0.08	0.1	-0.2	0.3*
≥200% FPL ^c	1.8	0.09	0.3	0.06	NR	NR	1.5	0.14	2.0	0.11	0.5	0.11	NR	NR	1.5	0.14	0.2	0.1	0.0

Note: All estimates are adjusted by age (single years) to the US 2000 standard population. SE = standard error. FPL = federal poverty level; <100% FPL = poor; 100%–199% FPL = near-poor; <200% FPL = poor and near-poor combined; and ≥200% FPL = not-poor. NR = not reported because the standard error is greater than 30% the value of the point estimate. 0.0 = zero due to rounding.

* $P < 0.05$ based on t-test for differences between two periods or two groups within each characteristic.

^a Includes children with at least one permanent tooth present.

^b Change from 1999–2004 to 2011–2016. Positive value = increase; negative value = decrease.

^c Reference group for comparisons within each characteristic, 2011–2016.

Table 12. Mean percentage contribution of untreated decayed (% *DT/DMFT*) or filled (% *FT/DMFT*) permanent teeth among children aged 6–11 years with at least one untreated decayed, missing, or filled permanent tooth (*DMFT* ≥ 1),^a by selected characteristics, United States, National Health and Nutrition Examination Survey, 1999–2004 and 2011–2016

Accessible version at <https://www.cdc.gov/oralhealth/publications/OHSR-2019-table-12.html>

Characteristic	1999–2004				2011–2016				Change in % <i>DT/DMFT</i> ^b	Change in % <i>FT/DMFT</i> ^b
	% <i>DT/DMFT</i>		% <i>FT/DMFT</i>		% <i>DT/DMFT</i>		% <i>FT/DMFT</i>			
	Mean	SE	Mean	SE	Mean	SE	Mean	SE		
Total	33.1	4.06	65.7	4.08	27.9	2.74	70.9	2.74	-5.3	5.1
Age (years)										
6–8 ^c	36.4	6.52	61.9	6.57	29.8	4.82	68.3	4.86	-6.6	6.3
9–11	30.0	3.25	69.2	3.25	26.0	2.29	73.3	2.29	-4.0	4.0
Sex										
Male ^c	37.0	5.45	61.9	5.45	25.6	3.19	73.0	3.18	-11.4	11.1
Female	29.8	4.57	68.9	4.59	30.5	3.44	68.3	3.41	0.7	-0.8
Race and ethnicity										
White, non-Hispanic ^c	26.8	6.15	71.4	6.24	26.1	3.07	72.8	2.88	-0.7	1.2
Black, non-Hispanic	42.5	5.68	56.1	5.84	33.5	4.05	64.9	4.19	-9.0	9.1
Mexican American	39.4	3.83	60.1	3.85	29.3	4.63	70.5	4.63	-10.1	10.2
Poverty status										
<100% FPL	36.9	4.79	62.0	4.76	31.1	3.77	67.0	3.96	-5.7	4.9
100%–199% FPL	45.7	8.35	53.6	8.26	21.7	3.63	76.5	3.45	-24.0*	23.0*
≥200% FPL ^c	20.1	3.81	78.1	3.89	26.5	5.70	73.2	5.82	6.4	-5.3
Poverty status										
<200% FPL	41.4	4.45	57.7	4.47	29.3	3.36	69.0	3.32	-12.2*	11.3*
≥200% FPL ^c	20.1	3.81	78.1	3.89	26.5	5.70	73.2	5.82	6.4	-5.3

Note: All estimates are adjusted by age (single years) to the US 2000 standard population. SE = standard error. FPL = federal poverty level; <100% FPL = poor; 100%–199% FPL = near-poor; <200% FPL = poor and near-poor combined; and ≥200% FPL = not-poor.

* $P < 0.05$ based on t-test for differences between two periods or two groups within each characteristic.

^a Includes children with at least one permanent tooth present.

^b Change in percentage points from 1999–2004 to 2011–2016. Positive value = increase; negative value = decrease.

^c Reference group for comparisons within each characteristic, 2011–2016.

Table 13. Mean number of untreated decayed, missing, or filled (*DMFT*) permanent teeth by tooth type among children aged 6–11 years with at least one *DMFT*,^a by selected characteristics, United States, National Health and Nutrition Examination Survey, 1999–2004 and 2011–2016

Accessible version at <https://www.cdc.gov/oralhealth/publications/OHSR-2019-table-13.html>

Characteristic	1999–2004										2011–2016										Premolar Change ^b	First Molar Change ^b	Second Molar Change ^b	All Molar Change ^b
	Anteriors		Premolars		First Molars		Second Molars		All Molars		Anteriors		Premolars		First Molars		Second Molars		All Molars					
	Mean	SE	Mean	SE	Mean	SE	Mean	SE	Mean	SE	Mean	SE	Mean	SE	Mean	SE	Mean	SE	Mean	SE				
Total	NR	NR	NR	NR	1.8	0.06	0.0	0.01	1.9	0.06	0.1	0.02	0.1	0.01	1.9	0.08	0.0	0.01	1.9	0.08	NR	0.0	0.0	0.0
Age (years)																								
6–8 ^c	NR	NR	NR	NR	1.6	0.10	NR	NR	1.6	0.10	NR	NR	NR	NR	1.5	0.08	NR	NR	1.5	0.08	NR	-0.1	NR	-0.1
9–11	NR	NR	0.1	0.01	2.0	0.06	0.1	0.02	2.1	0.06	0.1	0.03	0.1	0.02	2.2*	0.11	0.1	0.02	2.3*	0.12	0.0	0.2	0.0	0.2
Sex																								
Male ^c	NR	NR	0.0	0.01	1.8	0.09	NR	NR	1.8	0.09	NR	NR	0.0	0.01	1.8	0.10	0.0	0.01	1.9	0.1	0.0	0.0	NR	0.0
Female	NR	NR	NR	NR	1.8	0.06	NR	NR	1.9	0.06	NR	NR	0.1	0.02	1.9	0.09	NR	NR	1.9	0.09	NR	0.0	NR	0.1
Race and ethnicity																								
White, non-Hispanic ^c	NR	NR	NR	NR	1.7	0.09	NR	NR	1.8	0.09	NR	NR	NR	NR	1.8	0.13	NR	NR	1.9	0.13	NR	0.1	NR	0.1
Black, non-Hispanic	NR	NR	0.1	0.02	1.9	0.15	NR	NR	1.9	0.16	NR	NR	NR	NR	2.0	0.11	NR	NR	2.1	0.11	NR	0.2	NR	0.1
Mexican American	NR	NR	0.0	0.01	1.9	0.05	NR	NR	1.9	0.05	NR	NR	NR	NR	2.0	0.09	NR	NR	2.1	0.1	NR	0.1	NR	0.1
Poverty status																								
<100% FPL	NR	NR	NR	NR	1.9	0.08	NR	NR	2.0	0.08	NR	NR	0.1	0.02	1.9	0.09	NR	NR	1.9	0.09	NR	0.0	NR	0.0
100%–199% FPL	NR	NR	NR	NR	2.1	0.19	NR	NR	2.1	0.19	NR	NR	NR	NR	1.9	0.10	NR	NR	2.0	0.11	NR	-0.2	NR	-0.2
≥200% FPL ^c	NR	NR	NR	NR	1.7	0.10	NR	NR	1.8	0.10	NR	NR	NR	NR	1.8	0.14	NR	NR	1.8	0.14	NR	0.0	NR	0.0
Poverty status																								
<200% FPL	NR	NR	0.0	0.01	1.9	0.07	0.0	0.01	2.0	0.07	0.0	0.01	0.1	0.02	1.9	0.08	0.0	0.01	1.9	0.08	0.0	0.0	0.0	0.0
≥200% FPL ^c	NR	NR	NR	NR	1.7	0.10	NR	NR	1.8	0.10	NR	NR	NR	NR	1.8	0.14	NR	NR	1.8	0.14	NR	0.0	NR	0.0

Note: All estimates are adjusted by age (single years) to the US 2000 standard population. SE = standard error. FPL = federal poverty level; <100% FPL = poor; 100%–199% FPL = near-poor; <200% FPL = poor and near-poor combined; and ≥200% FPL = not-poor. NR = not reported because the standard error is greater than 30% the value of the point estimate. 0.0 = zero due to rounding.

* $P < 0.05$ based on t-test for differences between two periods or two groups within each characteristic.

^a Includes children with at least one permanent tooth present.

^b Change from 1999–2004 to 2011–2016. Positive value = increase; negative value = decrease.

^c Reference group for comparisons within each characteristic, 2011–2016.

Table 14. Prevalence of dental caries in permanent teeth (*DMFT* ≥ 1)^a among adolescents aged 12–19 years, by selected characteristics, United States, National Health and Nutrition Examination Survey, 1999–2004 and 2011–2016

Accessible version at <https://www.cdc.gov/oralhealth/publications/OHSR-2019-table-14.html>

Characteristic	1999–2004		2011–2016		Change % ^b
	%	SE	%	SE	
Total	59.4	0.95	56.8	1.18	-2.6
Age (years)					
12–15 ^c	50.9	1.17	47.6	1.67	-3.3
16–19	67.9	1.37	65.9*	1.45	-1.9
Sex					
Male ^c	55.9	1.24	55.9	1.48	0.0
Female	63.1	1.26	57.7	1.51	-5.5*
Race and ethnicity					
White, non-Hispanic ^c	57.9	1.57	54.3	1.63	-3.6
Black, non-Hispanic	55.0	1.65	57.1	2.01	2.1
Mexican American	65.0	1.44	68.9*	2.55	3.9
Poverty status					
<100% FPL	65.8	1.38	64.9*	2.13	-1.0
100%–199% FPL	64.9	1.50	65.3*	1.93	0.4
$\geq 200\%$ FPL ^c	54.2	1.49	48.7	1.72	-5.5*
Poverty status					
<200% FPL	65.2	0.96	65.0*	1.38	-0.2
$\geq 200\%$ FPL ^c	54.2	1.49	48.7	1.72	-5.5*

Note: All estimates are adjusted by age (single years) to the US 2000 standard population. SE = standard error. FPL = federal poverty level; <100% FPL = poor; 100%–199% FPL = near-poor; <200% FPL = poor and near-poor combined; and $\geq 200\%$ FPL = not-poor. 0.0 = zero due to rounding.

* $P < 0.05$ based on t-test for differences between two periods or two groups within each characteristic.

^a Defined as having one or more untreated decayed, missing, or filled permanent teeth among adolescents with at least one permanent tooth.

^b Change in percentage points from 1999–2004 to 2011–2016. Positive value = increase; negative value = decrease.

^c Reference group for comparisons within each characteristic, 2011–2016.

Table 15. Prevalence of untreated tooth decay in permanent teeth ($DT \geq 1$)^a among adolescents aged 12–19 years, by selected characteristics, United States, National Health and Nutrition Examination Survey, 1999–2004 and 2011–2016

Accessible version at <https://www.cdc.gov/oralhealth/publications/OHSR-2019-table-15.html>

Characteristic	1999–2004		2011–2016		Change % ^b
	%	SE	%	SE	
Total	19.6	1.05	16.6	0.99	-3.0*
Age (years)					
12–15 ^c	16.9	0.98	12.7	0.93	-4.2*
16–19	22.2	1.45	20.4*	1.43	-1.8
Sex					
Male ^c	19.9	1.22	17.7	1.25	-2.2
Female	19.3	1.30	15.4	1.37	-3.9*
Race and ethnicity					
White, non-Hispanic ^c	15.9	1.46	15.6	1.45	-0.3
Black, non-Hispanic	25.7	1.41	20.4*	1.88	-5.3*
Mexican American	28.6	1.54	20.8*	1.85	-7.8*
Poverty status					
<100% FPL	27.2	1.99	22.7*	1.55	-4.5
100%–199% FPL	27.0	1.82	20.9*	1.76	-6.2*
≥200% FPL ^c	12.9	1.33	11.1	1.30	-1.7
Poverty status					
<200% FPL	26.9	1.52	21.6*	1.19	-5.3*
≥200% FPL ^c	12.9	1.33	11.1	1.30	-1.7

Note: All estimates are adjusted by age (single years) to the US 2000 standard population. SE = standard error. FPL = federal poverty level; <100% FPL = poor; 100%–199% FPL = near-poor; <200% FPL = poor and near-poor combined; and ≥200% FPL = not-poor.

* $P < 0.05$ based on t-test for differences between two periods or two groups within each characteristic.

^a Defined as having one or more untreated decayed permanent teeth among adolescents with at least one permanent tooth.

^b Change in percentage points from 1999–2004 to 2011–2016. Positive value = increase; negative value = decrease.

^c Reference group for comparisons within each characteristic, 2011–2016.

Table 16. Mean number of untreated decayed (*DT*), missing (*MT*), filled (*FT*), and untreated decayed, missing, or filled (*DMFT*) permanent teeth among adolescents aged 12–19 years with at least one *DMFT*,^a by selected characteristics, United States, National Health and Nutrition Examination Survey, 1999–2004 and 2011–2016

Accessible version at <https://www.cdc.gov/oralhealth/publications/OHSR-2019-table-16.html>

Characteristic	1999–2004								2011–2016								Change in DMFT ^b	Change in DT ^b	Change in FT ^b
	DMFT		DT		MT		FT		DMFT		DT		MT		FT				
	Mean	SE	Mean	SE	Mean	SE	Mean	SE	Mean	SE	Mean	SE	Mean	SE	Mean	SE			
Total	4.1	0.08	0.8	0.06	0.1	0.01	3.3	0.10	4.3	0.10	0.7	0.05	0.1	0.02	3.4	0.11	0.1	-0.1	0.2
Age (years)																			
12–15 ^c	3.4	0.11	0.7	0.06	0.1	0.01	2.7	0.14	3.6	0.12	0.6	0.06	0.1	0.02	2.9	0.13	0.1	-0.1	0.2
16–19	4.8	0.11	0.8	0.08	0.1	0.02	3.9	0.11	4.9*	0.14	0.8*	0.06	0.1	0.02	4.0*	0.14	0.1	0.0	0.1
Sex																			
Male ^c	4.0	0.11	0.9	0.09	0.1	0.02	3.0	0.10	4.1	0.11	0.8	0.08	0.1	0.02	3.2	0.13	0.1	-0.1	0.2
Female	4.3	0.10	0.7	0.06	0.1	0.01	3.5	0.13	4.4	0.15	0.6	0.06	0.1	0.02	3.7*	0.14	0.1	0.0	0.2
Race and ethnicity																			
White, non-Hispanic ^c	4.2	0.12	0.7	0.10	0.1	0.02	3.4	0.14	4.1	0.14	0.7	0.08	0.1	0.03	3.3	0.15	-0.1	0.0	-0.1
Black, non-Hispanic	3.9	0.10	1.0	0.08	0.2	0.02	2.8	0.14	4.5	0.19	0.9	0.13	0.1	0.02	3.5	0.20	0.6*	-0.1	0.7*
Mexican American	4.3	0.13	1.0	0.07	0.1	0.01	3.2	0.15	4.6*	0.15	0.8	0.08	0.0*	0.01	3.7	0.16	0.3	-0.2	0.5*
Poverty status																			
<100% FPL	4.3	0.17	1.0	0.10	0.1	0.02	3.2	0.21	4.8*	0.18	1.0*	0.09	0.2	0.04	3.7	0.16	0.5*	0.0	0.4
100%–199% FPL	4.2	0.15	1.1	0.13	0.1	0.02	3.0	0.13	4.4*	0.15	0.8*	0.08	0.1	0.01	3.5	0.15	0.2	-0.3	0.5*
≥200% FPL ^c	4.0	0.13	0.5	0.07	0.1	0.01	3.4	0.12	3.9	0.17	0.5	0.08	0.1	0.02	3.4	0.18	0.0	0.0	-0.1
Poverty status																			
<200% FPL	4.3	0.12	1.0	0.09	0.1	0.02	3.1	0.13	4.6*	0.12	0.9*	0.05	0.1	0.02	3.6	0.11	0.3	-0.1	0.4*
≥200% FPL ^c	4.0	0.13	0.5	0.07	0.1	0.01	3.4	0.12	3.9	0.17	0.5	0.08	0.1	0.02	3.4	0.18	0.0	0.0	-0.1

Note: All estimates are adjusted by age (single years) to the US 2000 standard population. SE = standard error. FPL = federal poverty level; <100% FPL = poor; 100%–199% FPL = near-poor; <200% FPL = poor and near-poor combined; and ≥200% FPL = not-poor. 0.0 = zero due to rounding.

* $P < 0.05$ based on t-test for differences between two periods or two groups within each characteristic.

^a Includes adolescents with at least one permanent tooth present.

^b Change from 1999–2004 to 2011–2016. Positive value = increase; negative value = decrease.

^c Reference group for comparisons within each characteristic, 2011–2016.

Table 17. Mean percentage contribution of untreated decayed (% *DT/DMFT*) or filled (% *FT/DMFT*) permanent teeth among adolescents aged 12–19 years with at least one untreated decayed, missing, or filled permanent tooth (*DMFT* ≥ 1),^a by selected characteristics, United States, National Health and Nutrition Examination Survey, 1999–2004 and 2011–2016

Accessible version at <https://www.cdc.gov/oralhealth/publications/OHSR-2019-table-17.html>

Characteristic	1999–2004				2011–2016				Change in % <i>DT/DMFT</i> ^b	Change in % <i>FT/DMFT</i> ^b
	% <i>DT/DMFT</i>		% <i>FT/DMFT</i>		% <i>DT/DMFT</i>		% <i>FT/DMFT</i>			
	Mean	SE	Mean	SE	Mean	SE	Mean	SE		
Total	22.1	1.29	75.6	1.44	19.3	1.16	78.1	1.20	-2.8	2.6
Age (years)										
12–15 ^c	24.2	1.76	74.0	1.94	19.6	1.44	77.6	1.46	-4.6*	3.6
16–19	20.0	1.36	77.1	1.45	18.9	1.39	78.7	1.45	-1.0	1.6
Sex										
Male ^c	24.6	1.47	73.2	1.58	21.5	1.44	76.0	1.61	-3.1	2.8
Female	19.9	1.51	77.7	1.70	17.0*	1.56	80.4*	1.55	-2.8	2.6
Race and ethnicity										
White, non-Hispanic ^c	17.6	1.96	80.6	2.20	18.5	1.59	78.5	1.67	0.8	-2.1
Black, non-Hispanic	32.1	1.82	64.0	2.07	23.5	2.96	73.3	3.05	-8.6*	9.3*
Mexican American	30.2	2.06	67.3	2.06	20.5	1.84	78.3	1.87	-9.7*	11.0*
Poverty status										
<100% FPL	29.8	2.18	67.4	2.18	22.4*	1.87	74.5*	1.73	-7.4*	7.1*
100%–199% FPL	27.4	2.22	69.6	2.48	21.9*	2.00	76.2*	2.07	-5.5	6.6*
≥200% FPL ^c	15.1	1.54	83.5	1.66	14.9	1.87	82.3	1.99	-0.2	-1.2
Poverty status										
<200% FPL	28.6	1.68	68.5	1.76	22.1*	1.24	75.4*	1.22	-6.4*	6.9*
≥200% FPL ^c	15.1	1.54	83.5	1.66	14.9	1.87	82.3	1.99	-0.2	-1.2

Note: All estimates are adjusted by age (single years) to the US 2000 standard population. SE = standard error. FPL = federal poverty level; <100% FPL = poor; 100%–199% FPL = near-poor; <200% FPL = poor and near-poor combined; and ≥200% FPL = not-poor.

* $P < 0.05$ based on t-test for differences between two periods or two groups within each characteristic.

^a Includes adolescents with at least one permanent tooth present.

^b Change in percentage points from 1999–2004 to 2011–2016. Positive value = increase; negative value = decrease.

^c Reference group for comparisons within each characteristic, 2011–2016.

Table 18. Mean number of untreated decayed, missing, or filled permanent teeth (DMFT) by tooth type among adolescents aged 12–19 years with at least one DMFT,^a by selected characteristics, United States, National Health and Nutrition Examination Survey, 1999–2004 and 2011–2016

Accessible version at <https://www.cdc.gov/oralhealth/publications/OHSR-2019-table-18.html>

Characteristic	1999–2004										2011–2016										Anterior Change ^b	Premolar Change ^b	First Molar Change ^b	Second Molar Change ^b	All Molar Change ^b
	Anteriors		Premolars		First Molars		Second Molars		All Molars		Anteriors		Premolars		First Molars		Second Molars		All Molars						
	Mean	SE	Mean	SE	Mean	SE	Mean	SE	Mean	SE	Mean	SE	Mean	SE	Mean	SE	Mean	SE	Mean	SE					
Total	0.2	0.02	0.5	0.04	2.2	0.04	1.2	0.03	3.4	0.05	0.2	0.03	0.6	0.05	2.2	0.07	1.2	0.04	3.4	0.10	0.0	0.1	-0.1	0.0	0.0
Age (years)																									
12–15 ^c	0.2	0.02	0.3	0.06	2.2	0.05	0.8	0.03	2.9	0.07	0.1	0.03	0.4	0.06	2.1	0.09	0.8	0.07	2.9	0.13	0.0	0.1	-0.1	0.0	0.0
16–19	0.3	0.03	0.7	0.04	2.3	0.04	1.6	0.04	3.9	0.08	0.3*	0.03	0.8*	0.08	2.3	0.07	1.6*	0.06	3.8*	0.10	0.0	0.1	-0.1	0.0	0.0
Sex																									
Male ^c	0.3	0.03	0.5	0.05	2.2	0.04	1.1	0.04	3.3	0.07	0.2	0.04	0.6	0.06	2.1	0.08	1.2	0.04	3.3	0.10	0.0	0.1	-0.1	0.1	0.0
Female	0.2	0.02	0.6	0.05	2.3	0.04	1.2	0.04	3.5	0.07	0.1*	0.03	0.7	0.08	2.3*	0.08	1.3	0.08	3.5	0.14	0.0	0.1	0.0	0.0	0.0
Race and ethnicity																									
White, non-Hispanic ^c	0.2	0.03	0.5	0.05	2.2	0.05	1.2	0.04	3.4	0.08	0.2	0.04	0.5	0.07	2.1	0.09	1.2	0.06	3.3	0.13	0.0	0.0	-0.2	0.0	-0.1
Black, non-Hispanic	0.1	0.01	0.5	0.05	2.2	0.05	1.0	0.04	3.3	0.07	NR	NR	0.8*	0.10	2.4*	0.09	1.1	0.06	3.5	0.12	0.0	0.2*	0.1	0.0	0.2
Mexican American	0.2	0.02	0.5	0.05	2.4	0.05	1.1	0.04	3.5	0.08	0.2	0.04	0.8*	0.10	2.3*	0.09	1.2	0.08	3.5	0.15	0.0	0.2*	-0.1	0.1	0.0
Poverty status																									
<100% FPL	0.2	0.03	0.6	0.10	2.3	0.06	1.1	0.04	3.5	0.08	0.3	0.06	0.9*	0.09	2.4*	0.09	1.3	0.07	3.7*	0.13	0.0	0.2	0.1	0.2*	0.3
100%–199% FPL	0.3	0.05	0.5	0.05	2.4	0.05	1.1	0.07	3.5	0.10	0.2	0.05	0.5	0.07	2.2	0.09	1.3	0.06	3.5	0.13	0.0	0.0	-0.2	0.2	0.0
≥200% FPL ^c	0.2	0.02	0.5	0.04	2.1	0.06	1.2	0.05	3.3	0.10	0.1	0.04	0.5	0.09	2.1	0.10	1.2	0.08	3.3	0.16	0.0	0.1	0.0	0.0	-0.1
Poverty status																									
<200% FPL	0.2	0.03	0.6	0.06	2.3	0.04	1.1	0.04	3.5	0.07	0.2	0.04	0.7	0.06	2.3	0.06	1.3	0.04	3.6	0.08	0.0	0.1	-0.1	0.2*	0.1
≥200% FPL ^c	0.2	0.02	0.5	0.04	2.1	0.06	1.2	0.05	3.3	0.10	0.1	0.04	0.5	0.09	2.1	0.10	1.2	0.08	3.3	0.16	0.0	0.1	0.0	0.0	-0.1

Note: All estimates are adjusted by age (single years) to the US 2000 standard population. SE = standard error. FPL = federal poverty level; <100% FPL = poor; 100%–199% FPL = near-poor; <200% FPL = poor and near-poor combined; and ≥200% FPL = not-poor. NR = not reported because the standard error is greater than 30% the value of the point estimate. 0.0 = zero due to rounding.

* $P < 0.05$ based on t-test for differences between two periods or two groups within each characteristic.

^a Includes adolescents with at least one permanent tooth present.

^b Change from 1999–2004 to 2011–2016. Positive value = increase; negative value = decrease.

^c Reference group for comparisons within each characteristic, 2011–2016.

Table 19. Prevalence of dental sealants on permanent teeth^a among children aged 6–11 years, by selected characteristics, United States, National Health and Nutrition Examination Survey, 1999–2004 and 2011–2016

Accessible version at <https://www.cdc.gov/oralhealth/publications/OHSR-2019-table-19.html>

Characteristic	1999–2004		2011–2016		Change % ^b
	%	SE	%	SE	
Total	30.5	1.71	41.7	1.38	11.2*
Age (years)					
6–8 ^c	20.3	1.66	32.1	1.55	11.9*
9–11	40.1	2.27	50.7*	1.96	10.6*
Sex					
Male ^c	28.8	2.10	40.4	1.68	11.6*
Female	32.4	1.86	42.9	1.68	10.5*
Race and ethnicity					
White, non-Hispanic ^c	36.4	2.35	43.6	1.82	7.2*
Black, non-Hispanic	21.1	1.88	31.7*	2.62	10.5*
Mexican American	24.2	2.27	44.4	2.47	20.2*
Poverty status					
<100% FPL	20.9	2.84	37.8*	2.02	16.8*
100%–199% FPL	23.4	2.28	40.0	2.48	16.6*
≥200% FPL ^c	40.1	2.24	44.9	1.99	4.9
Poverty status					
<200% FPL	22.2	1.97	38.9*	1.78	16.7*
≥200% FPL ^c	40.1	2.24	44.9	1.99	4.9

Note: All estimates are adjusted by age (single years) to the US 2000 standard population. SE = standard error. FPL = federal poverty level; <100% FPL = poor; 100%–199% FPL = near-poor; <200% FPL = poor and near-poor combined; and ≥200% FPL = not-poor.

* $P < 0.05$ based on t-test for differences between two periods or two groups within each characteristic.

^a Defined as having one or more permanent teeth with pit and fissure sealants among children with at least one permanent tooth present and eligible for sealants, including permanent molars, premolars, or upper lateral incisors.

^b Change in percentage points from 1999–2004 to 2011–2016. Positive value = increase; negative value = decrease.

^c Reference group for comparisons within each characteristic, 2011–2016.

Table 20. Mean number of permanent teeth with dental sealants among children aged 6–11 years with at least one sealed tooth,^a by selected characteristics, United States, National Health and Nutrition Examination Survey, 1999–2004 and 2011–2016

Accessible version at <https://www.cdc.gov/oralhealth/publications/OHSR-2019-table-20.html>

Characteristic	1999–2004		2011–2016		Change ^b
	Mean	SE	Mean	SE	
Total	3.4	0.07	3.6	0.07	0.2*
Age (years)					
6–8 ^c	3.4	0.08	3.4	0.06	0.0
9–11	3.4	0.09	3.8*	0.10	0.4*
Sex					
Male ^c	3.3	0.08	3.6	0.08	0.2*
Female	3.4	0.09	3.6	0.08	0.2
Race and ethnicity					
White, non-Hispanic ^c	3.4	0.09	3.6	0.09	0.2
Black, non-Hispanic	3.3	0.10	3.7	0.14	0.4*
Mexican American	3.1	0.10	3.6	0.14	0.5*
Poverty status					
<100% FPL	3.1	0.11	3.6	0.10	0.5*
100%–199% FPL	3.3	0.14	3.5	0.11	0.2
≥200% FPL ^c	3.5	0.09	3.6	0.09	0.2
Poverty status					
<200% FPL	3.2	0.11	3.6	0.08	0.4*
≥200% FPL ^c	3.5	0.09	3.6	0.09	0.2

Note: All estimates are adjusted by age (single years) to the US 2000 standard population. SE = standard error. FPL = federal poverty level; <100% FPL = poor; 100%–199% FPL = near-poor; <200% FPL = poor and near-poor combined; and ≥200% FPL = not-poor. 0.0 = zero due to rounding.

* $P < 0.05$ based on t-test for differences between two periods or two groups within each characteristic.

^a Including permanent molars, premolars, or upper lateral incisors.

^b Change from 1999–2004 to 2011–2016. Positive value = increase; negative value = decrease.

^c Reference group for comparisons within each characteristic, 2011–2016.

Table 21. Mean number of permanent teeth sealed by tooth type among children aged 6–11 years with at least one sealed tooth,^a by selected characteristics, United States, National Health and Nutrition Examination Survey, 1999–2004 and 2011–2016

Accessible version at <https://www.cdc.gov/oralhealth/publications/OHSR-2019-table-21.html>

Characteristic	1999–2004						2011–2016						Change in Premolar ^b	Change in First Molar ^b	Change in Second Molar ^b
	Premolar		First Molar		Second Molar		Premolar		First Molar		Second Molar				
	Mean	SE	Mean	SE	Mean	SE	Mean	SE	Mean	SE	Mean	SE			
Total	0.2	0.05	3.2	0.06	0.1	0.03	0.3	0.05	3.3	0.05	0.5	0.08	0.1	0.1	0.4*
Age (years)															
6–8 ^c	NR	NR	3.4	0.08	NR	NR	NR	NR	3.4	0.06	NR	NR	NR	0.0	NR
9–11	0.3	0.08	3.1	0.07	0.1	0.04	0.4	0.08	3.3	0.06	0.7	0.10	0.1	0.2*	0.5*
Sex															
Male ^c	NR	NR	3.2	0.07	NR	NR	0.3	0.08	3.3	0.06	0.6	0.12	NR	0.1	NR
Female	NR	NR	3.3	0.06	NR	NR	0.2	0.04	3.4	0.07	0.5	0.10	NR	0.1	NR
Race and ethnicity															
White, non-Hispanic ^c	NR	NR	3.3	0.08	NR	NR	NR	NR	3.5	0.07	0.5	0.12	NR	0.2	NR
Black, non-Hispanic	NR	NR	3.1	0.07	NR	NR	0.4	0.11	3.2*	0.09	0.8	0.16	NR	0.2	NR
Mexican American	0.3	0.08	2.9	0.10	NR	NR	0.5	0.12	3.2*	0.09	0.8	0.14	0.2	0.3*	NR
Poverty status															
<100% FPL	0.3	0.07	2.9	0.11	NR	NR	0.4	0.08	3.3	0.07	0.7	0.14	0.1	0.4*	NR
100%–199% FPL	NR	NR	3.1	0.11	NR	NR	0.3	0.09	3.2*	0.08	0.8	0.19	NR	0.1	NR
≥200% FPL ^c	NR	NR	3.3	0.07	NR	NR	NR	NR	3.5	0.07	0.5	0.12	NR	0.1	NR
Poverty status															
<200% FPL	NR	NR	3.0	0.09	NR	NR	0.4	0.07	3.2*	0.05	0.7	0.12	NR	0.2*	NR
≥200% FPL ^c	NR	NR	3.3	0.07	NR	NR	NR	NR	3.5	0.07	0.5	0.12	NR	0.1	NR

Note: All estimates are adjusted by age (single years) to the US 2000 standard population. SE = standard error. FPL = federal poverty level; <100% FPL = poor; 100%–199% FPL = near-poor; <200% FPL = poor and near-poor combined; and ≥200% FPL = not-poor. NR = not reported because the point estimate of mean is zero or the standard error is greater than 30% the value of the point estimate. 0.0 = zero due to rounding.

* $P < 0.05$ based on t-test for differences between two periods or two groups within each characteristic.

^a Including permanent molars, premolars, or upper lateral incisors.

^b Change from 1999–2004 to 2011–2016. Positive value = increase; negative value = decrease.

^c Reference group for comparisons within each characteristic, 2011–2016.

Table 22. Prevalence of dental sealants on permanent teeth^a among adolescents aged 12–19 years, by selected characteristics, United States, National Health and Nutrition Examination Survey, 1999–2004 and 2011–2016

Accessible version at <https://www.cdc.gov/oralhealth/publications/OHSR-2019-table-22.html>

Characteristic	1999–2004		2011–2016		Change % ^b
	%	SE	%	SE	
Total	37.6	1.47	48.1	1.61	10.4*
Age (years)					
12–15 ^c	41.0	1.83	51.7	1.91	10.6*
16–19	34.3	1.70	44.5*	1.92	10.2*
Sex					
Male ^c	36.4	1.65	46.8	1.93	10.4*
Female	38.9	1.51	49.1	2.12	10.2*
Race and ethnicity					
White, non-Hispanic ^c	44.3	1.77	53.2	2.17	8.9*
Black, non-Hispanic	25.1	1.99	37.2*	2.62	12.1*
Mexican American	27.2	2.34	45.0*	2.80	17.8*
Poverty status					
<100% FPL	28.8	2.37	42.7*	2.11	13.9*
100%–199% FPL	30.6	2.04	48.4	2.50	17.8*
≥200% FPL ^c	45.4	1.84	51.1	2.35	5.7
Poverty status					
<200% FPL	29.8	1.86	45.6	1.80	15.8*
≥200% FPL ^c	45.4	1.84	51.1	2.35	5.7

Note: All estimates are adjusted by age (single years) to the US 2000 standard population. SE = standard error. FPL = federal poverty level; <100% FPL = poor; 100%–199% FPL = near-poor; <200% FPL = poor and near-poor combined; and ≥200% FPL = not-poor.

* $P < 0.05$ based on t-test for differences between two periods or two groups within each characteristic.

^a Defined as having one or more permanent teeth with pit and fissure sealants among adolescents with at least one permanent tooth present and eligible for sealants, including permanent molars, premolars, or upper lateral incisors.

^b Change in percentage points from 1999–2004 to 2011–2016. Positive value = increase; negative value = decrease.

^c Reference group for comparisons within each characteristic, 2011–2016.

Table 23. Mean number of permanent teeth with dental sealants among adolescents aged 12–19 years with at least one sealed tooth,^a by selected characteristics, United States, National Health and Nutrition Examination Survey, 1999–2004 and 2011–2016

Accessible version at <https://www.cdc.gov/oralhealth/publications/OHSR-2019-table-23.html>

Characteristic	1999–2004		2011–2016		Change ^b
	Mean	SE	Mean	SE	
Total	5.1	0.13	6.0	0.20	0.9*
Age (years)					
12–15 ^c	4.9	0.14	5.8	0.20	1.0*
16–19	5.3	0.20	6.2	0.25	0.9*
Sex					
Male ^c	5.0	0.15	6.0	0.24	1.1*
Female	5.2	0.16	6.0	0.23	0.8*
Race and ethnicity					
White, non-Hispanic ^c	5.1	0.16	5.9	0.26	0.8
Black, non-Hispanic	4.6	0.24	6.3	0.32	1.7*
Mexican American	5.0	0.24	6.0	0.32	1.1*
Poverty status					
<100% FPL	5.0	0.23	6.2	0.26	1.2*
100%–199% FPL	5.2	0.37	6.2	0.26	1.0*
≥200% FPL ^c	5.1	0.15	5.9	0.26	0.8*
Poverty status					
<200% FPL	5.1	0.22	6.2	0.23	1.1*
≥200% FPL ^c	5.1	0.15	5.9	0.26	0.8*

Note: All estimates are adjusted by age (single years) to the US 2000 standard population. SE = standard error. FPL = federal poverty level; <100% FPL = poor; 100%–199% FPL = near-poor; <200% FPL = poor and near-poor combined; and ≥200% FPL = not-poor.

* $P < 0.05$ based on t-test for differences between two periods or two groups within each characteristic.

^a Including permanent molars, premolars, or upper lateral incisors.

^b Change from 1999–2004 to 2011–2016. Positive value = increase; negative value = decrease.

^c Reference group for comparisons within each characteristic, 2011–2016.

Table 24. Mean number of permanent teeth sealed by tooth type among adolescents aged 12–19 years with at least one sealed tooth,^a by selected characteristics, United States, National Health and Nutrition Examination Survey, 1999–2004 and 2011–2016

Accessible version at <https://www.cdc.gov/oralhealth/publications/OHSR-2019-table-24.html>

Characteristic	1999–2004						2011–2016						Change in Premolar ^b	Change in First Molar ^b	Change in Second Molar ^b
	Premolar		First Molar		Second Molar		Premolar		First Molar		Second Molar				
	Mean	SE	Mean	SE	Mean	SE	Mean	SE	Mean	SE	Mean	SE			
Total	0.9	0.10	2.5	0.05	1.6	0.06	1.3	0.11	2.8	0.07	2.1	0.09	0.3*	0.2*	0.5*
Age (years)															
12–15 ^c	0.7	0.09	2.8	0.07	1.4	0.08	1.1	0.11	3.0	0.08	1.9	0.10	0.4*	0.2*	0.5*
16–19	1.1	0.14	2.3	0.06	1.8	0.08	1.4*	0.16	2.5*	0.08	2.3*	0.11	0.3	0.2*	0.5*
Sex															
Male ^c	0.8	0.09	2.6	0.06	1.6	0.08	1.2	0.13	2.9	0.08	2.1	0.11	0.4*	0.2*	0.6*
Female	1.1	0.13	2.4	0.06	1.7	0.08	1.3	0.15	2.7	0.10	2.1	0.09	0.3	0.2*	0.4*
Race and ethnicity															
White, non-Hispanic ^c	0.8	0.12	2.6	0.06	1.7	0.06	1.0	0.14	2.9	0.08	2.1	0.11	0.3	0.3*	0.3*
Black, non-Hispanic	1.2	0.22	2.2	0.09	1.2	0.08	1.7*	0.23	2.7*	0.09	2.2	0.17	0.5	0.5*	1.0*
Mexican American	1.2	0.17	2.3	0.07	1.5	0.09	1.6	0.25	2.5*	0.08	2.1	0.11	0.3	0.2*	0.6*
Poverty status															
<100% FPL	1.2	0.16	2.3	0.12	1.5	0.10	1.7*	0.19	2.5*	0.11	2.2	0.10	0.5	0.2	0.7*
100%–199% FPL	1.2	0.26	2.4	0.09	1.6	0.12	1.7*	0.17	2.6*	0.10	2.1	0.15	0.5	0.2	0.5*
≥200% FPL ^c	0.7	0.07	2.6	0.06	1.7	0.07	1.0	0.16	2.9	0.07	2.1	0.11	0.3	0.3*	0.4*
Poverty status															
<200% FPL	1.2	0.19	2.4	0.07	1.6	0.06	1.7*	0.14	2.5*	0.09	2.1	0.10	0.4	0.2	0.6*
≥200% FPL ^c	0.7	0.07	2.6	0.06	1.7	0.07	1.0	0.16	2.9	0.07	2.1	0.11	0.3	0.3*	0.4*

Note: All estimates are adjusted by age (single years) to the US 2000 standard population. SE = standard error. FPL = federal poverty level; <100% FPL = poor; 100%–199% FPL = near-poor; <200% FPL = poor and near-poor combined; and ≥200% FPL = not-poor.

* $P < 0.05$ based on t-test for differences between two periods or two groups within each characteristic.

^a Including permanent molars, premolars, and upper lateral incisors.

^b Change from 1999–2004 to 2011–2016. Positive value = increase; negative value = decrease.

^c Reference group for comparisons within each characteristic, 2011–2016.

Table 25. Prevalence of dental caries in permanent teeth (*DFT* ≥1)^a among dentate adults aged 20–64 years, by selected characteristics, United States, National Health and Nutrition Examination Survey, 1999–2004 and 2011–2016

Accessible version at <https://www.cdc.gov/oralhealth/publications/OHSR-2019-table-25.html>

Characteristic	1999–2004		2011–2016		Change % ^b
	%	SE	%	SE	
Total	91.6	0.39	89.9	0.43	-1.8*
Age (years)					
20–34 ^c	85.7	0.81	82.0	0.79	-3.7*
35–49	94.2	0.52	92.5*	0.66	-1.8*
50–64	95.6	0.38	96.4*	0.35	0.8
Sex					
Male ^c	90.6	0.60	88.2	0.55	-2.4*
Female	92.6	0.48	91.5*	0.48	-1.2
Race and ethnicity					
White, non-Hispanic ^c	93.4	0.39	91.5	0.49	-1.9*
Black, non-Hispanic	87.6	0.75	86.1*	0.93	-1.5
Mexican American	83.2	1.52	86.6*	1.11	3.4
Poverty status					
<100% FPL	89.2	1.09	88.0*	0.70	-1.1
100%–199% FPL	88.9	0.96	89.3	1.03	0.4
≥200% FPL ^c	92.7	0.51	90.2	0.54	-2.5*
Poverty status					
<200% FPL	89.0	0.84	88.8	0.71	-0.2
≥200% FPL ^c	92.7	0.51	90.2	0.54	-2.5*
Education					
<High school	85.9	0.90	87.2*	1.03	1.3
High school	92.5	0.80	91.4*	0.55	-1.1
>High school ^c	92.8	0.43	89.9	0.45	-2.9*
Cigarette smoking history					
Current smoker	91.5	0.67	91.3*	0.65	-0.2
Former smoker	92.4	0.85	90.0	0.86	-2.5*
Never smoked ^c	91.2	0.47	89.2	0.46	-2.0*

Note: All estimates are adjusted by age (5-year groups) to the US 2000 standard population. SE = standard error. FPL = federal poverty level; <100% FPL = poor; 100%–199% FPL = near-poor; <200% FPL = poor and near-poor combined; and ≥200% FPL = not-poor.

* *P* < 0.05 based on t-test for differences between two periods or two groups within each characteristic.

^a Defined as having one or more untreated decayed or filled permanent teeth among adults with at least one permanent tooth.

^b Change in percentage points from 1999–2004 to 2011–2016. Positive value = increase; negative value = decrease.

^c Reference group for comparisons within each characteristic, 2011–2016.

Table 26. Prevalence of untreated tooth decay in permanent teeth ($DT \geq 1$)^a among dentate adults aged 20–64 years, by selected characteristics, United States, National Health and Nutrition Examination Survey, 1999–2004 and 2011–2016

Accessible version at <https://www.cdc.gov/oralhealth/publications/OHSR-2019-table-26.html>

Characteristic	1999–2004		2011–2016		Change % ^b
	%	SE	%	SE	
Total	25.3	1.01	26.1	1.08	0.8
Age (years)					
20–34 ^c	27.8	1.41	29.3	1.27	1.4
35–49	25.4	1.24	26.4*	1.40	1.0
50–64	21.9	1.29	21.5*	1.47	-0.4
Sex					
Male ^c	28.0	1.29	28.0	1.22	0.0
Female	22.8	0.91	24.3*	1.24	1.5
Race and ethnicity					
White, non-Hispanic ^c	20.6	1.41	22.2	1.29	1.6
Black, non-Hispanic	40.8	1.81	40.2*	2.03	-0.6
Mexican American	38.2	2.51	37.1*	1.88	-1.2
Poverty status					
<100% FPL	44.3	1.96	45.3*	1.34	1.1
100%–199% FPL	39.2	1.56	37.0*	1.44	-2.2
≥200% FPL ^c	18.1	0.89	17.7	1.00	-0.4
Poverty status					
<200% FPL	41.1	1.46	40.6*	1.24	-0.5
≥200% FPL ^c	18.1	0.89	17.7	1.00	-0.4
Education					
<High school	44.6	1.90	46.4*	1.44	1.7
High school	32.9	1.59	37.7*	1.63	4.8*
>High school ^c	16.4	0.75	18.4	0.96	2.0
Cigarette smoking history					
Current smoker	38.7	1.62	43.9*	1.75	5.2*
Former smoker	20.2	1.62	25.0*	1.41	4.8*
Never smoked ^c	20.4	0.89	20.1	1.14	-0.3

Note: All estimates are adjusted by age (5-year groups) to the US 2000 standard population. SE = standard error. FPL = federal poverty level; <100% FPL = poor; 100%–199% FPL = near-poor; <200% FPL = poor and near-poor combined; and ≥200% FPL = not-poor. 0.0 = zero due to rounding.

* $P < 0.05$ based on t-test for differences between two periods or two groups within each characteristic.

^a Defined as having one or more untreated decayed permanent teeth among adults with at least one permanent tooth.

^b Change in percentage points from 1999–2004 to 2011–2016. Positive value = increase; negative value = decrease.

^c Reference group for comparisons within each characteristic, 2011–2016.

Table 27. Mean number of untreated decayed (*DT*), missing (*MT*), filled (*FT*), untreated decayed or filled (*DFT*), and untreated decayed, missing, or filled (*DMFT*) permanent teeth among dentate adults aged 20–64 years with at least one *DMFT*,^a by selected characteristics, United States, National Health and Nutrition Examination Survey, 1999–2004 and 2011–2016

Accessible version at <https://www.cdc.gov/oralhealth/publications/OHSR-2019-table-27.html>

Characteristic	1999–2004										2011–2016										Change in DMFT ^b	Change in DFT ^b	Change in DT ^b	Change in FT ^b
	DMFT		DFT		DT		MT		FT		DMFT		DFT		DT		MT		FT					
	Mean	SE	Mean	SE	Mean	SE	Mean	SE	Mean	SE	Mean	SE	Mean	SE	Mean	SE	Mean	SE	Mean	SE				
Total	10.8	0.12	8.2	0.09	0.8	0.05	2.6	0.09	7.4	0.11	9.3	0.09	7.4	0.09	0.9	0.05	1.9	0.07	6.5	0.11	-1.5*	-0.8*	0.1	-1.0*
Age (years)																								
20–34 ^c	7.1	0.14	6.4	0.12	1.1	0.09	0.7	0.06	5.3	0.13	6.7	0.12	6.1	0.11	1.2	0.07	0.6	0.05	4.9	0.12	-0.4	-0.3	0.2	-0.4*
35–49	11.3	0.13	8.8	0.12	0.8	0.06	2.5	0.10	8.0	0.14	9.4*	0.15	7.5*	0.12	0.9*	0.06	1.8*	0.10	6.6*	0.14	-1.9*	-1.3*	0.1	-1.4*
50–64	15.3	0.21	9.8	0.17	0.5	0.04	5.4	0.22	9.3	0.19	12.7*	0.13	8.9*	0.16	0.6*	0.05	3.9*	0.16	8.3*	0.18	-2.5*	-1.0*	0.0	-1.0*
Sex																								
Male ^c	10.5	0.15	7.9	0.11	1.0	0.07	2.6	0.13	7.0	0.12	9.0	0.12	7.1	0.11	1.1	0.06	1.9	0.08	6.0	0.13	-1.6*	-0.9*	0.1	-1.0*
Female	11.1	0.12	8.5	0.11	0.7	0.05	2.6	0.08	7.8	0.13	9.6*	0.11	7.7*	0.11	0.8*	0.05	1.9	0.08	6.9*	0.12	-1.5*	-0.8*	0.1	-0.9*
Race and ethnicity																								
White, non-Hispanic ^c	11.1	0.15	8.8	0.11	0.7	0.08	2.2	0.12	8.1	0.15	9.4	0.13	7.9	0.11	0.9	0.06	1.6	0.09	7.0	0.13	-1.6*	-1.0*	0.1	-1.1*
Black, non-Hispanic	10.3	0.16	6.0	0.15	1.2	0.08	4.3	0.13	4.8	0.16	9.1	0.17	5.8*	0.14	1.3*	0.09	3.3*	0.12	4.5*	0.14	-1.3*	-0.2	0.1	-0.3
Mexican American	9.0	0.15	6.4	0.17	1.1	0.12	2.7	0.08	5.2	0.22	8.7*	0.20	6.6*	0.17	1.2*	0.10	2.1*	0.09	5.4*	0.20	0.3	0.2	0.1	0.1
Poverty status																								
<100% FPL	10.9	0.23	6.4	0.18	1.6	0.11	4.5	0.20	4.9	0.19	10.0*	0.17	6.4*	0.14	1.7*	0.09	3.6*	0.15	4.6*	0.15	-0.9*	-0.1	0.1	-0.2
100%–199% FPL	11.2	0.24	7.0	0.16	1.3	0.11	4.2	0.19	5.7	0.17	9.9*	0.15	7.0*	0.16	1.4*	0.08	2.9*	0.11	5.6*	0.18	-1.3*	0.0	0.0	0.0
≥200% FPL ^c	10.7	0.13	8.7	0.12	0.5	0.04	2.0	0.08	8.2	0.13	9.0	0.11	7.7	0.10	0.6	0.04	1.3	0.06	7.1	0.11	-1.7*	-1.0*	0.0	-1.0*
Poverty status																								
<200% FPL	11.1	0.20	6.8	0.13	1.4	0.09	4.3	0.16	5.3	0.14	9.9*	0.14	6.7*	0.13	1.5*	0.07	3.2	0.10	5.2*	0.15	-1.2*	0.0	0.1	-0.1
≥200% FPL ^c	10.7	0.13	8.7	0.12	0.5	0.04	2.0	0.08	8.2	0.13	9.0	0.11	7.7	0.10	0.6	0.04	1.3*	0.06	7.1	0.11	-1.7*	-1.0*	0.0	-1.0*
Education																								
<High school	11.1	0.19	6.2	0.15	1.7	0.12	4.9	0.17	4.5	0.19	9.9*	0.22	6.3*	0.19	1.8*	0.10	3.6*	0.16	4.5*	0.18	-1.2*	0.1	0.1	0.0
High school	11.3	0.23	7.9	0.19	1.1	0.09	3.3	0.15	6.9	0.19	10.0*	0.17	7.2*	0.14	1.4*	0.09	2.8*	0.11	5.8*	0.16	-1.3*	-0.8*	0.3*	-1.1*
>High school ^c	10.6	0.10	8.9	0.10	0.4	0.03	1.7	0.08	8.4	0.11	9.0	0.10	7.7	0.10	0.6	0.03	1.3	0.06	7.1	0.11	-1.6*	-1.2*	0.2*	-1.4*
Cigarette smoking history																								
Current smoker	12.0	0.19	7.6	0.13	1.5	0.12	4.3	0.14	6.2	0.15	10.7*	0.20	7.1	0.15	1.8*	0.11	3.6*	0.16	5.3*	0.14	-1.3*	-0.6*	0.3	-0.9*
Former smoker	10.9	0.18	8.5	0.16	0.6	0.08	2.3	0.13	8.0	0.15	9.6*	0.15	7.7*	0.16	0.8	0.06	1.9*	0.09	6.9	0.16	-1.3*	-0.9*	0.2*	-1.1*
Never smoked ^c	10.2	0.12	8.3	0.11	0.6	0.03	1.9	0.09	7.7	0.13	8.7	0.10	7.4	0.11	0.7	0.05	1.3	0.07	6.7	0.12	-1.5*	-0.9*	0.1	-1.0*

Note: All estimates are adjusted by age (5-year groups) to the US 2000 standard population. SE = standard error. FPL = federal poverty level; <100% FPL = poor; 100%–199% FPL = near-poor; <200% FPL = poor and near-poor combined; and ≥200% FPL = not-poor. 0.0 = zero due to rounding.

* $P < 0.05$ based on t-test for differences between two periods or two groups within each characteristic.

^a Includes adults with at least one permanent tooth present. Missing teeth include teeth “missing due to disease” (dental caries or periodontal diseases).

^b Change from 1999–2004 to 2011–2016. Positive value = increase; negative value = decrease.

^c Reference group for comparisons within each characteristic, 2011–2016.

Table 28. Mean percentage contribution of untreated decayed (% DT/DFT) or filled (% FT/DFT) permanent teeth among dentate adults aged 20–64 years with at least one untreated decayed or filled permanent tooth ($DFT \geq 1$), by selected characteristics, United States, National Health and Nutrition Examination Survey, 1999–2004 and 2011–2016

Accessible version at <https://www.cdc.gov/oralhealth/publications/OHSR-2019-table-28.html>

Characteristic	1999–2004				2011–2016				Change in % DT/DFT ^a	Change in % FT/DFT ^a
	% DT/DFT		% FT/DFT		% DT/DFT		% FT/DFT			
	Mean	SE	Mean	SE	Mean	SE	Mean	SE		
Total	14.1	0.68	85.9	0.68	15.8	0.74	84.2	0.74	1.7	-1.7
Age (years)										
20–34 ^b	18.7	0.98	81.3	0.98	21.2	1.06	78.8	1.06	2.6	-2.6
35–49	12.7	0.81	87.4	0.81	14.4*	0.93	85.6*	0.93	1.8	-1.8
50–64	10.1	0.79	89.9	0.79	10.5*	0.85	89.5*	0.84	0.4	-0.4
Sex										
Male ^b	16.4	0.88	83.6	0.88	18.7	0.90	81.3	0.90	2.3	-2.3
Female	11.9	0.61	88.1	0.61	13.1*	0.73	86.9*	0.73	1.1	-1.1
Race and ethnicity										
White, non-Hispanic ^b	10.3	0.96	89.7	0.96	12.4	0.82	87.6	0.82	2.2	-2.2
Black, non-Hispanic	27.9	1.61	72.1	1.61	28.2*	1.75	71.8*	1.75	0.3	-0.3
Mexican American	28.4	2.30	71.6	2.30	25.3*	1.69	74.7*	1.69	-3.1	3.1
Poverty status										
<100% FPL	30.3	1.54	69.7	1.54	31.2*	1.16	68.8*	1.16	0.9	-0.9
100%–199% FPL	23.7	1.31	76.3	1.31	24.0*	1.28	76.0*	1.28	0.3	-0.3
≥200% FPL ^b	8.4	0.49	91.6	0.49	9.0	0.57	91.0	0.57	0.7	-0.7
Poverty status										
<200% FPL	26.4	1.21	73.6	1.21	27.1*	1.04	73.0*	1.04	0.6	-0.6
≥200% FPL ^b	8.4	0.49	91.6	0.49	9.0	0.57	91.0	0.57	0.7	-0.7
Education										
<High school	33.6	1.68	66.5	1.68	33.8*	1.35	66.2*	1.35	0.3	-0.3
High school	18.2	0.98	81.8	0.98	23.5*	1.23	76.5*	1.23	5.3*	-5.3*
>High school ^b	6.9	0.45	93.1	0.45	9.7	0.53	90.3	0.53	2.8*	-2.8*
Cigarette smoking history										
Current smoker	23.3	1.31	76.7	1.31	28.1*	1.35	72.0*	1.35	4.8*	-4.8*
Former smoker	9.9	0.94	90.1	0.94	14.1*	0.92	86.0*	0.91	4.2*	-4.2*
Never smoked ^b	11.2	0.58	88.9	0.58	11.8	0.78	88.2	0.78	0.7	-0.7

Notes: All estimates are adjusted by age (5-year groups) to the US 2000 standard population. SE = standard error. FPL = federal poverty level; <100% FPL = poor; 100%–199% FPL = near-poor; <200% FPL = poor and near-poor combined; and ≥200% FPL = not-poor.

* $P < 0.05$ based on t-test for differences between two periods or two groups within each characteristic.

^a Change in percentage points from 1999–2004 to 2011–2016. Positive value = increase; negative value = decrease.

^b Reference group for comparisons within each characteristic, 2011–2016.

Table 29. Prevalence of dental caries in permanent teeth ($DFT \geq 1$)^a among dentate adults aged 65 years or older, by selected characteristics, United States, National Health and Nutrition Examination Survey, 1999–2004 and 2011–2016

Accessible version at <https://www.cdc.gov/oralhealth/publications/OHSR-2019-table-29.html>

Characteristic	1999–2004		2011–2016		Change % ^b
	%	SE	%	SE	
Total	93.0	0.64	96.2	0.51	3.2*
Age (years)					
65–74 ^c	93.2	0.80	96.4	0.65	3.2*
≥75	92.7	0.90	96.0	0.65	3.3*
Sex					
Male ^c	93.6	0.90	96.1	0.67	2.5*
Female	92.5	0.82	96.3	0.62	3.9*
Race and ethnicity					
White, non-Hispanic ^c	94.8	0.72	98.2	0.44	3.4*
Black, non-Hispanic	79.8	2.98	85.7*	1.93	5.9
Mexican American	84.1	1.83	85.3*	2.86	1.2
Poverty status					
<100% FPL	83.7	2.49	88.1*	2.17	4.4
100%–199% FPL	90.9	1.38	94.0*	0.99	3.1
≥200% FPL ^c	95.5	0.70	98.2	0.43	2.7*
Poverty status					
<200% FPL	89.1	1.13	92.4*	1.10	3.3*
≥200% FPL ^c	95.5	0.70	98.2	0.43	2.7*
Education					
<High school	83.8	1.60	89.1*	1.52	5.3*
High school	94.3	1.24	95.3*	1.09	1.1
>High school ^c	97.2	0.63	98.3	0.33	1.1
Cigarette smoking history					
Current smoker	89.6	2.46	89.8*	2.66	0.1
Former smoker	93.5	0.95	96.2	0.79	2.8*
Never smoked ^c	93.0	0.90	96.8	0.57	3.8*

Note: All estimates are adjusted by age (5-year groups; maximum age group is ≥80) to the US 2000 standard population. SE = standard error. FPL = federal poverty level; <100% FPL = poor; 100%–199% FPL = near-poor; <200% FPL = poor and near-poor combined; and ≥200% FPL = not-poor.

* $P < 0.05$ based on t-test for differences between two periods or two groups within each characteristic.

^a Defined as having one or more untreated decayed or filled permanent teeth among adults with at least one permanent tooth.

^b Change in percentage points from 1999–2004 to 2011–2016. Positive value = increase; negative value = decrease.

^c Reference group for comparisons within each characteristic, 2011–2016.

Table 30. Prevalence of untreated tooth decay in permanent teeth ($DT \geq 1$)^a among dentate adults aged 65 years or older, by selected characteristics, United States, National Health and Nutrition Examination Survey, 1999–2004 and 2011–2016

Accessible version at <https://www.cdc.gov/oralhealth/publications/OHSR-2019-table-30.html>

Characteristic	1999–2004		2011–2016		Change % ^b
	%	SE	%	SE	
Total	18.1	1.01	15.9	1.20	-2.2
Age (years)					
65–74 ^c	17.0	1.37	15.4	1.55	-1.6
≥75	19.5	1.28	16.5	1.40	-3.0
Sex					
Male ^c	20.4	1.34	18.0	1.53	-2.4
Female	16.4	1.18	14.2*	1.25	-2.3
Race and ethnicity					
White, non-Hispanic ^c	15.8	1.24	13.4	1.25	-2.4
Black, non-Hispanic	37.1	3.48	29.1*	2.49	-8.0
Mexican American	42.1	3.07	35.9*	3.24	-6.2
Poverty status					
<100% FPL	33.4	3.42	33.1*	3.18	-0.3
100%–199% FPL	23.8	1.75	26.9*	2.64	3.1
≥200% FPL ^c	14.2	1.20	9.9	1.27	-4.3*
Poverty status					
<200% FPL	26.2	1.75	28.6*	2.30	2.4
≥200% FPL ^c	14.2	1.20	9.9	1.27	-4.3*
Education					
<High school	26.2	2.33	30.8*	2.76	4.7
High school	17.7	1.39	18.8*	2.22	1.1
>High school ^c	14.2	1.27	11.7	1.35	-2.5
Cigarette smoking history					
Current smoker	27.6	3.66	33.9*	5.10	6.3
Former smoker	18.6	1.31	15.3	1.67	-3.3
Never smoked ^d	16.5	1.30	14.2	1.37	-2.4

Note: All estimates are adjusted by age (5-year groups; maximum age group is ≥80) to the US 2000 standard population. SE = standard error. FPL = federal poverty level; <100% FPL = poor; 100%–199% FPL = near-poor; <200% FPL = poor and near-poor combined; and ≥200% FPL = not-poor.

* $P < 0.05$ based on t-test for differences between two periods or two groups within each characteristic.

^a Defined as having one or more untreated decayed permanent teeth among adults with at least one permanent tooth.

^b Change in percentage points from 1999–2004 to 2011–2016. Positive value = increase; negative value = decrease.

^c Reference group for comparisons within each characteristic, 2011–2016.

Table 31. Mean number of untreated decayed (DT), missing (MT), filled (FT), untreated decayed or filled (DFT), and untreated decayed, missing, or filled (DMFT) permanent teeth^a among dentate adults aged 65 years or older, by selected characteristics, United States, National Health and Nutrition Examination Survey, 1999–2004 and 2011–2016

Accessible version at <https://www.cdc.gov/oralhealth/publications/OHSR-2019-table-31.html>

Characteristic	1999–2004										2011–2016										Change in DMFT ^b	Change in DFT ^b	Change in DT ^b	Change in FT ^b
	DMFT		DFT		DT		MT		FT		DMFT		DFT		DT		MT		FT					
	Mean	SE	Mean	SE	Mean	SE	Mean	SE	Mean	SE	Mean	SE	Mean	SE	Mean	SE	Mean	SE	Mean	SE				
Total	18.0	0.23	9.1	0.21	0.4	0.04	8.8	0.23	8.7	0.23	16.7	0.14	10.1	0.20	0.3	0.03	6.6	0.21	9.8	0.21	-1.2*	0.9*	-0.1*	1.0*
Age (years)																								
65–74 ^c	17.7	0.25	9.3	0.24	0.4	0.05	8.3	0.28	9.0	0.26	15.9	0.21	10.2	0.23	0.3	0.03	5.6	0.23	9.9	0.24	-1.8*	0.9*	-0.1	1.0*
≥75	18.3	0.29	8.9	0.26	0.5	0.05	9.4	0.30	8.4	0.28	17.8*	0.21	9.9	0.27	0.3	0.03	7.9*	0.30	9.6	0.28	-0.5	1.0*	-0.2*	1.1*
Sex																								
Male ^c	17.6	0.27	8.9	0.22	0.5	0.05	8.7	0.29	8.3	0.25	16.6	0.22	10.1	0.26	0.4	0.04	6.5	0.28	9.7	0.27	-1.0*	1.2*	-0.1	1.4*
Female	18.3	0.25	9.3	0.27	0.4	0.04	9.0	0.28	9.0	0.29	16.9	0.17	10.0	0.22	0.3*	0.03	6.8	0.25	9.8	0.23	-1.5*	0.7	-0.1	0.8*
Race and ethnicity																								
White, non-Hispanic ^c	18.2	0.24	9.9	0.22	0.4	0.04	8.3	0.25	9.6	0.24	16.8	0.17	11.1	0.19	0.3	0.03	5.8	0.22	10.8	0.19	-1.4*	1.1*	-0.1	1.2*
Black, non-Hispanic	16.9	0.40	4.2	0.31	1.1	0.15	12.7	0.49	3.2	0.30	16.2	0.40	5.1*	0.27	0.7*	0.08	11.2*	0.43	4.4*	0.29	-0.7	0.9*	-0.4*	1.3*
Mexican American	15.3	0.42	5.4	0.45	1.2	0.09	9.9	0.36	4.2	0.48	14.6*	0.60	5.7*	0.53	1.0*	0.15	8.8*	0.45	4.8*	0.53	-0.7	0.4	-0.2	0.6
Poverty status																								
<100% FPL	17.3	0.51	5.1	0.38	1.0	0.15	12.2	0.73	4.1	0.35	16.5	0.42	5.7*	0.43	0.9*	0.10	10.8*	0.54	4.8*	0.45	-0.8	0.6	-0.2	0.7
100%–199% FPL	18.2	0.48	7.4	0.39	0.6	0.07	10.8	0.52	6.9	0.42	17.0	0.29	8.2*	0.28	0.6*	0.07	8.8*	0.39	7.6*	0.29	-1.2*	0.8	0.0	0.7
≥200% FPL ^c	18.1	0.21	10.5	0.16	0.3	0.04	7.6	0.22	10.2	0.17	16.8	0.19	11.5	0.21	0.2	0.03	5.3	0.21	11.3	0.21	-1.4*	1.0*	-0.1*	1.1*
Poverty status																								
<200% FPL	18.0	0.46	6.8	0.31	0.7	0.08	11.1	0.47	6.2	0.34	16.8	0.25	7.5*	0.28	0.7*	0.07	9.3*	0.34	6.8*	0.30	-1.1*	0.7	0.0	0.7
≥200% FPL ^c	18.1	0.21	10.5	0.16	0.3	0.04	7.6	0.22	10.2	0.17	16.8	0.19	11.5	0.21	0.2	0.03	5.3	0.21	11.3	0.21	-1.4*	1.0*	-0.1*	1.1*
Education																								
<High school	17.7	0.37	5.7	0.30	0.8	0.11	12.0	0.39	4.9	0.36	16.5	0.38	6.1*	0.27	0.7*	0.08	10.3*	0.37	5.4*	0.28	-1.2*	0.5	0.0	0.5
High school	18.4	0.34	8.8	0.29	0.4	0.06	9.6	0.36	8.4	0.30	17.1	0.32	8.9*	0.40	0.4*	0.05	8.1*	0.34	8.5*	0.41	-1.3*	0.2	0.0	0.1
>High school ^c	17.9	0.23	11.2	0.21	0.3	0.04	6.7	0.25	10.9	0.22	16.7	0.20	11.4	0.20	0.2	0.03	5.2	0.22	11.2	0.21	-1.2*	0.2	-0.1	0.3
Cigarette smoking history																								
Current smoker	19.0	0.49	6.5	0.59	0.8	0.14	12.5	0.73	5.7	0.61	18.0*	0.57	7.2*	0.69	0.8*	0.15	10.8*	0.77	6.4*	0.74	-1.0	0.7	0.0	0.7
Former smoker	18.4	0.24	8.8	0.22	0.4	0.05	9.6	0.29	8.4	0.24	17.2*	0.24	10.0	0.26	0.3	0.04	7.2*	0.30	9.7	0.27	-1.2*	1.2*	-0.1	1.3*
Never smoked ^c	17.5	0.31	9.7	0.29	0.4	0.05	7.8	0.33	9.3	0.32	16.1	0.19	10.4	0.26	0.3	0.03	5.7	0.26	10.1	0.27	-1.4*	0.7	-0.1	0.8

Note: All estimates are adjusted by age (5-year groups; maximum age group is ≥80) to the US 2000 standard population. SE = standard error. FPL = federal poverty level; <100% FPL = poor; 100%–199% FPL = near-poor; <200% FPL = poor and near-poor combined; and ≥200% FPL = not-poor. 0.0 = zero due to rounding.

* $P < 0.05$ based on t-test for differences between two periods or two groups within each characteristic.

^a Includes older adults with at least one permanent tooth present. Missing teeth include teeth "missing due to disease" (dental caries or periodontal diseases).

^b Change from 1999–2004 to 2011–2016. Positive value = increase; negative value = decrease.

^c Reference group for comparisons within each characteristic, 2011–2016.

Table 32. Mean percentage contribution of untreated decayed (% *DT/DFT*) or filled (% *FT/DFT*) permanent teeth among dentate adults aged 65 years or older with at least one untreated decayed or filled permanent tooth (*DFT* ≥ 1), by selected characteristics, United States, National Health and Nutrition Examination Survey, 1999–2004 and 2011–2016

Accessible version at <https://www.cdc.gov/oralhealth/publications/OHSR-2019-table-32.html>

Characteristic	1999–2004				2011–2016				Change in % DT/DFT ^a	Change in % FT/DFT ^a
	% DT/DFT		% FT/DFT		% DT/DFT		% FT/DFT			
	Mean	SE	Mean	SE	Mean	SE	Mean	SE		
Total	8.8	0.68	91.2	0.68	6.7	0.55	93.3	0.55	-2.1*	2.1*
Age (years)										
65–74 ^b	8.4	0.82	91.6	0.82	6.3	0.63	93.7	0.63	-2.2*	2.2*
≥75	9.2	0.85	90.8	0.85	7.3	0.85	92.7	0.85	-1.9	1.9
Sex										
Male ^b	10.8	0.88	89.2	0.88	8.3	0.78	91.7	0.78	-2.5*	2.5*
Female	7.3	0.75	92.7	0.75	5.4*	0.56	94.6*	0.56	-1.9*	1.9*
Race and ethnicity										
White, non-Hispanic ^b	6.5	0.78	93.5	0.78	4.4	0.40	95.6	0.40	-2.1*	2.1*
Black, non-Hispanic	32.0	3.80	68.0	3.80	21.0*	2.30	79.0*	2.29	-11.0*	11.0*
Mexican American	31.8	3.22	68.3	3.23	28.5*	3.83	71.5*	3.83	-3.3	3.3
Poverty status										
<100% FPL	25.9	3.13	74.1	3.13	24.1*	2.60	75.9*	2.60	-1.8	1.8
100%–199% FPL	13.1	1.29	86.9	1.29	12.6*	1.36	87.4*	1.36	-0.5	0.5
≥200% FPL ^b	4.9	0.51	95.2	0.51	2.8	0.35	97.2	0.34	-2.1*	2.1*
Poverty status										
<200% FPL	16.2	1.51	83.8	1.51	15.7*	1.43	84.3*	1.43	-0.4	0.4
≥200% FPL ^b	4.9	0.51	95.2	0.51	2.8	0.35	97.2	0.34	-2.1*	2.1*
Education										
<High school	19.4	2.17	80.6	2.17	19.9*	1.77	80.1*	1.77	0.6	-0.6
High school	7.4	0.84	92.6	0.84	8.1*	1.17	91.9*	1.17	0.6	-0.6
>High school ^b	4.8	0.59	95.2	0.59	3.5	0.44	96.5	0.44	-1.3	1.3
Cigarette smoking history										
Current smoker	17.5	2.91	82.5	2.91	21.4*	3.51	78.6*	3.51	3.9	-3.9
Former smoker	8.5	0.87	91.5	0.87	6.5	0.81	93.5	0.81	-2.0	2.0
Never smoked ^b	8.0	0.80	92.0	0.80	5.5	0.55	94.5	0.55	-2.5*	2.5*

Note: All estimates are adjusted by age (5-year groups; maximum age group is ≥80) to the US 2000 standard population. SE = standard error. FPL = federal poverty level; <100% FPL = poor; 100%–199% FPL = near-poor; <200% FPL = poor and near-poor combined; and ≥200% FPL = not-poor.

* $P < 0.05$ based on t-test for differences between two periods or two groups within each characteristic.

^a Change in percentage points from 1999–2004 to 2011–2016. Positive value = increase; negative value = decrease.

^b Reference group for comparisons within each characteristic, 2011–2016.

Table 33. Percentage of adults aged 20–64 years who have lost all their natural teeth, by selected characteristics, United States, National Health and Nutrition Examination Survey, 1999–2004 and 2011–2016

Accessible version at <https://www.cdc.gov/oralhealth/publications/OHSR-2019-table-33.html>

Characteristic	1999–2004		2011–2016		Change % ^a
	%	SE	%	SE	
Total	3.8	0.33	2.2	0.28	-1.6*
Age (years)					
20–34	NR	NR	NR	NR	NR
35–49	2.7	0.38	1.6	0.32	-1.1*
50–64	10.3	0.85	5.6	0.67	-4.6*
Sex					
Male ^b	3.9	0.43	2.2	0.35	-1.7*
Female	3.7	0.40	2.1	0.28	-1.6*
Race and ethnicity					
White, non-Hispanic ^b	4.0	0.42	2.4	0.41	-1.6*
Black, non-Hispanic	4.3	0.52	2.3	0.27	-2.0*
Mexican American	1.5	0.39	0.7*	0.2	-0.8
Poverty status					
<100% FPL	9.7	1.18	6.1*	0.91	-3.6*
100%–199% FPL	6.5	0.80	3.7*	0.46	-2.8*
≥200% FPL ^b	2.4	0.20	1.1	0.19	-1.4*
Poverty status					
<200% FPL	7.9	0.75	4.7*	0.56	-3.1*
≥200% FPL ^b	2.4	0.20	1.1	0.19	-1.4*
Education					
<High school	8.1	0.85	5.4*	0.95	-2.7*
High school	5.4	0.45	3.2*	0.48	-2.2*
>High school ^b	1.7	0.20	1.1	0.15	-0.6*
Cigarette smoking history					
Current smoker	8.2	0.66	6.2*	0.83	-2.1
Former smoker	3.4	0.48	1.8*	0.29	-1.6*
Never smoked ^b	1.6	0.26	0.8	0.15	-0.8*

Note: All estimates are adjusted by age (5-year groups) to the US 2000 standard population. SE = standard error. FPL = federal poverty level; <100% FPL = poor; 100%–199% FPL = near-poor; <200% FPL = poor and near-poor combined; and ≥200% FPL = not-poor. NR = not reported because the standard error is greater than 30% the value of the point estimate.

* $P < 0.05$ based on t-test for differences between two periods or two groups within each characteristic.

^a Change in percentage points from 1999–2004 to 2011–2016. Positive value = increase; negative value = decrease.

^b Reference group for comparisons within each characteristic, 2011–2016.

Table 34. Mean number of permanent teeth among dentate adults aged 20–64 years, by selected characteristics, United States, National Health and Nutrition Examination Survey, 1999–2004 and 2011–2016

Accessible version at <https://www.cdc.gov/oralhealth/publications/OHSR-2019-table-34.html>

Characteristic	1999–2004		2011–2016		Change ^a
	Mean	SE	Mean	SE	
Total	24.9	0.09	25.5	0.07	0.5*
Age (years)					
20–34 ^b	26.9	0.05	27.0	0.05	0.1
35–49	25.0	0.10	25.5*	0.10	0.5*
50–64	22.2	0.22	23.4*	0.17	1.1*
Sex					
Male ^b	25.0	0.13	25.5	0.09	0.5*
Female	24.9	0.08	25.5	0.08	0.6*
Race and ethnicity					
White, non-Hispanic ^b	25.2	0.12	25.7	0.10	0.5*
Black, non-Hispanic	23.6	0.13	24.2*	0.14	0.6*
Mexican American	25.2	0.07	25.4*	0.11	0.2
Poverty status					
<100% FPL	23.3	0.17	23.6*	0.18	0.2
100%–199% FPL	23.5	0.18	24.4*	0.11	0.9*
≥200% FPL ^b	25.5	0.08	26.1	0.06	0.7*
Poverty status					
<200% FPL	23.4	0.15	24.1*	0.12	0.6*
≥200% FPL ^b	25.5	0.08	26.1	0.06	0.7*
Education					
<High school	23.0	0.17	23.8*	0.17	0.8*
High school	24.3	0.16	24.5*	0.13	0.2
>High school ^b	25.7	0.07	26.1	0.07	0.4*
Cigarette smoking history					
Current smoker	23.3	0.16	23.5*	0.18	0.2
Former smoker	25.1	0.12	25.5*	0.10	0.4*
Never smoked ^b	25.6	0.08	26.1	0.06	0.5*

Note: All estimates are adjusted by age (5-year groups) to the US 2000 standard population. SE = standard error. FPL = federal poverty level; <100% FPL = poor; 100%–199% FPL = near-poor; <200% FPL = poor and near-poor combined; and ≥200% FPL = not-poor.

* $P < 0.05$ based on t-test for differences between two periods or two groups within each characteristic.

^a Change from 1999–2004 to 2011–2016. Positive value = increase; negative value = decrease.

^b Reference group for comparisons within each characteristic, 2011–2016.

Table 35. Percentage of adults aged 65 years or older who have lost all their natural teeth, by selected characteristics, United States, National Health and Nutrition Examination Survey, 1999–2004 and 2011–2016

Accessible version at <https://www.cdc.gov/oralhealth/publications/OHSR-2019-table-35.html>

Characteristic	1999–2004		2011–2016		Change % ^a
	%	SE	%	SE	
Total	27.2	1.44	17.3	1.31	-9.9*
Age (years)					
65–74 ^b	24.0	1.53	13.0	1.30	-11.0*
≥75	31.2	1.83	22.5*	1.63	-8.7*
Sex					
Male ^b	24.5	1.58	17.7	1.51	-6.8*
Female	29.2	1.61	16.9	1.31	-12.3*
Race and ethnicity					
White, non-Hispanic ^b	25.9	1.66	15.2	1.66	-10.7*
Black, non-Hispanic	33.7	2.47	30.7*	2.09	-3.0
Mexican American	24.4	2.56	16.7	1.89	-7.6*
Poverty status					
<100% FPL	43.8	3.71	34.1*	2.99	-9.7*
100%–199% FPL	36.1	2.14	26.1*	2.27	-10.0*
≥200% FPL ^b	17.3	1.27	10.7	1.30	-6.6*
Poverty status					
<200% FPL	38.4	1.91	28.6*	1.95	-9.7*
≥200% FPL ^b	17.3	1.27	10.7	1.30	-6.6*
Education					
<High school	43.0	2.61	34.8*	2.12	-8.2*
High school	28.3	2.36	21.3*	2.19	-6.9*
>High school ^b	13.6	1.09	9.3	1.06	-4.3*
Cigarette smoking history					
Current smoker	49.7	3.20	42.8*	3.12	-6.9
Former smoker	28.8	1.96	18.5*	1.31	-10.2*
Never smoked ^b	21.5	1.69	12.1	1.14	-9.4*

Note: All estimates are adjusted by age (5-year groups; maximum age group is ≥80) to the US 2000 standard population. SE = standard error. FPL = federal poverty level; <100% FPL = poor; 100%–199% FPL = near-poor; <200% FPL = poor and near-poor combined; and ≥200% FPL = not-poor.

* $P < 0.05$ based on t-test for differences between two periods or two groups within each characteristic.

^a Change in percentage points from 1999–2004 to 2011–2016. Positive value = increase; negative value = decrease.

^b Reference group for comparisons within each characteristic, 2011–2016.

Table 36. Mean number of permanent teeth among dentate adults 65 years or older, by selected characteristics, United States, National Health and Nutrition Examination Survey, 1999–2004 and 2011–2016

Accessible version at <https://www.cdc.gov/oralhealth/publications/OHSR-2019-table-36.html>

Characteristic	1999–2004		2011–2016		Change ^a
	Mean	SE	Mean	SE	
Total	18.9	0.22	20.7	0.22	1.8*
Age (years)					
65–74 ^b	19.3	0.27	21.7	0.24	2.4*
≥75	18.4	0.30	19.5*	0.31	1.1*
Sex					
Male ^b	19.0	0.29	20.8	0.29	1.8*
Female	18.8	0.27	20.6	0.26	1.8*
Race and ethnicity					
White, non-Hispanic ^b	19.4	0.24	21.6	0.24	2.2*
Black, non-Hispanic	15.1	0.49	16.0*	0.46	0.9
Mexican American	18.0	0.37	17.9*	0.49	-0.1
Poverty status					
<100% FPL	15.6	0.77	16.0*	0.51	0.4
100%–199% FPL	17.0	0.50	18.3*	0.38	1.3*
≥200% FPL ^b	20.1	0.21	22.2	0.22	2.1*
Poverty status					
<200% FPL	16.6	0.46	17.6*	0.33	1.0
≥200% FPL ^b	20.1	0.21	22.2	0.22	2.1*
Education					
<High school	15.9	0.39	16.9*	0.35	1.0
High school	18.1	0.34	19.2*	0.34	1.1*
>High school ^b	21.0	0.25	22.1	0.23	1.2*
Cigarette smoking history					
Current smoker	15.3	0.75	15.8*	0.75	0.5
Former smoker	18.1	0.29	20.2*	0.32	2.1*
Never smoked ^b	19.9	0.33	21.6	0.26	1.7*

Note: All estimates are adjusted by age (5-year groups; maximum age group is ≥80) to the US 2000 standard population. SE = standard error. FPL = federal poverty level; <100% FPL = poor; 100%–199% FPL = near-poor; <200% FPL = poor and near-poor combined; and ≥200% FPL = not-poor.

* $P < 0.05$ based on t-test for differences between two periods or two groups within each characteristic.

^a Change from 1999–2004 to 2011–2016. Positive value = increase; negative value = decrease.

^b Reference group for comparisons within each characteristic, 2011–2016.





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