

March 2001

**Aging Trends**  
No. 3

The Aging Trends series was developed with support from the National Institute on Aging.

# The Oral Health of Older Americans



By **Clemencia M. Vargas, D.D.S., Ph.D.**  
**Ellen A. Kramarow, Ph.D.**  
**Janet A. Yellowitz, D.M.D., M.P.H.**

## Highlights

- **More older people are keeping their natural teeth than ever before. However, there are sharp differences by race and socioeconomic status.**
- **Nearly one-third of persons 65 years of age and older have untreated dental caries.**
- **Oral cancer increases with age. Mortality rates from oral cancer are higher among black men than among black women or white persons.**
- **Slightly more than one-half of noninstitutionalized persons 65 years of age and older in 1997 had a dental visit in the past year. The percent of persons with dental visits varied by race, education, and whether they had their natural teeth.**
- **Only 22 percent of older persons were covered by private dental insurance in 1995; most elderly dental expenses were paid out of pocket.**

## Overview

Oral health is an important and often overlooked component of an older person's general health and well-being. In the words of former Surgeon General C. Everett Koop: "You are not healthy without good oral health."<sup>1</sup> Oral health can affect general health in very direct ways. Oral health problems can cause pain and suffering as well as difficulty in speaking, chewing, and swallowing. These problems can also be a complication of certain medications used to treat systemic diseases. In addition, the treatment of systemic diseases can be complicated by oral bacterial infections.<sup>2</sup>

There are also associations between oral health and general health and well-being. For example, the loss of self-esteem is associated with loss of teeth<sup>3</sup> and untreated disease (caries and periodontal diseases) as well as the economic burden of dental care due to the paucity of dental insurance programs for the elderly. Although oral health problems are not usually associated with death, oral cancers result in nearly 8,000 deaths each year, and more than half of these deaths occur among persons 65 years of age and older.

This report focuses on the oral health needs of older adults. Using data from several national surveys, this report describes the current status of oral health among the elderly, how these older Americans use dental health services, and what the future holds for the oral health of older Americans. Some of the findings reported are from newly tabulated data, and some are from published data.

*continued*

<sup>1</sup> Koop CE. Oral Health 2000. Second National Consortium Advance Program, 2, 1993.

<sup>2</sup> U.S. Department of Health and Human Services. Oral Health in America: A report of the Surgeon General. Rockville, MD: U.S. Department of Health and Human Services, National Institute of Dental and Craniofacial Research, National Institutes of Health, 2000.

<sup>3</sup> Davis DM, Fiske J, Scott B, and Radford DR. The emotional effects of tooth loss: a preliminary quantitative study. *British Dental Journal*. 188(9):503-506, May 13, 2000.

<sup>4</sup> Vargas CM, Macek MD, Marcus SE. Sociodemographic correlates of tooth pain among adults: United States, 1989. *Pain*. 85:87-92, 2000.

## This new series of reports features information to help monitor the health of our aging population

Older Americans can expect to live longer than ever before. Under existing conditions, women who live to age 65 can expect to live about 19 years longer, men about 16 years longer. Whether the added years at the end of the life cycle are healthy, enjoyable, and productive depends, in part, upon preventing and controlling a number of chronic diseases and conditions.

This report is one in a series undertaken by the National Center for Health Statistics, with support from the National Institute on Aging, to help meet the challenge of extending and improving life. By monitoring the health of the elderly, using information compiled from a variety of sources, we hope to help focus research on the most effective ways to use resources and craft health policy.

## What is the state of oral health among older Americans?

Answering this question requires examining how oral health affects an older person’s quality of life, as well as looking at the diseases that are related to oral health.

### ■ How oral health affects quality of life

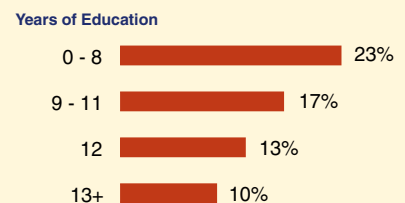
Oral health problems can hinder a person’s ability to be free of pain and discomfort, to maintain a satisfying and nutritious diet, and to enjoy interpersonal relationships and a positive self-image. Overall, oral health problems are more frequently found in an older adult population for whom other health problems are often a priority.

**Oral pain** Oral pain is a sign of an advanced problem in a tooth or in the gingival (gum) tissues. Although pain may dissipate with time, professional attention is needed to effectively manage the affected tooth or tissue.

National data indicate that 7 percent of adults 65 years and older reported having tooth pain at least twice during the past 6 months. Older adults who belonged to racial/ethnic minorities or who had a low level of education were more likely to report dental pain than older adults who were white or better educated. Older men and older women showed no difference in their likelihood of reporting tooth pain.<sup>4</sup>

**Difficulty eating** Oral health problems, whether from missing teeth, ill-fitting dentures, cavities, gum disease, or infection, can cause difficulty eating and can force people to adjust the quality, consistency, and balance of their diet. For example, edentulous people (those with no natural teeth)

**Percent of persons 70 years of age and older who have trouble biting or chewing by educational level, 1995**



Source: National Health Interview Survey, Second Supplement on Aging.

<sup>5</sup> Krall E, Hayes C, Garcia R. How dentition status and masticator function affect nutrient intake. *JADA*. 129:1261-1269, 1998.

<sup>6</sup> Kramarow E, Lentzner H, Rooks R, Weeks J, Saydah S. Health and aging chartbook. Health United States, 1999. Hyattsville, MD: National Center for Health Statistics. 1999.

<sup>7</sup> Centers for Disease Control and Prevention. Total tooth loss among persons aged greater than or equal to 65 years -- selected states, 1995-1997. *MMWR*. 48(10): 206-210, 1999.

tend to eat fewer raw vegetables, salads, and fresh fruits than people who have their own natural teeth. To date, however, available data do not show that these changes result in a diet of poor nutritional quality.<sup>5</sup>

**Edentulism (total tooth loss)** Edentulism can have obvious negative esthetic and functional (speech, chewing/eating) consequences. In 1993 one-third of noninstitutionalized adults 65 years of age and older reported having lost all their natural teeth.

Although there was no difference in the proportion of men and women who had lost all of their teeth, there were large differences in the prevalence of edentulism by socioeconomic status. Persons with family incomes below the poverty line were almost twice as likely to be edentulous as persons with family incomes at or above the poverty line. Similarly, edentulism was higher among black persons than among white persons.<sup>6</sup> In 1995-97, 52 percent of nursing home residents 75 years of age and older were edentulous.

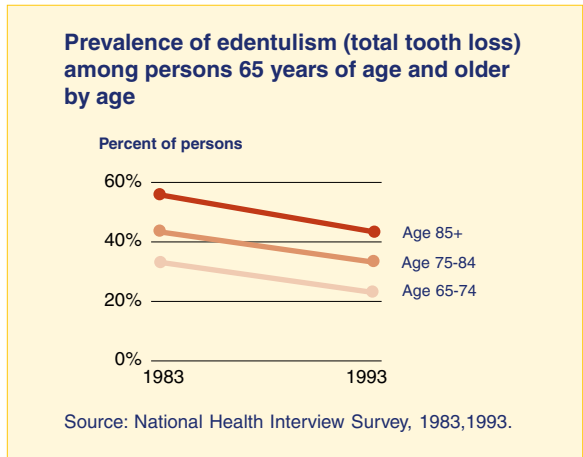
The prevalence of total tooth loss also varied by State, ranging from 14 percent in Hawaii and 16 percent in Oregon and California to 48 percent in West Virginia and 44 percent in Kentucky.<sup>7</sup>

As a result of a more preventive approach toward oral health from the community and the dental profession, the proportion of older adults who have lost all of their teeth has declined.

**Use of dental prostheses** Quality dental prostheses (dentures) can help persons who have lost some or all of their natural teeth improve their quality of life by restoring lost function and esthetics. Overall in 1988-94, 92 percent of the edentulous noninstitutionalized adults 65 years of age and older had both an upper and a lower denture. However, in this group, 24 percent of black persons and 19 percent of Hispanic persons did not usually use their denture(s). Among elderly nursing home residents in 1995-97, 80 percent of those who had lost all of their natural teeth had both dentures; however, 18 percent did not usually use them.

**Multiple medications** Because chronic diseases are so prevalent among older adults, many take multiple prescriptions and over-the-counter medications. It is not unusual for at least one of these medications to have a side effect that is detrimental to their oral health.

For example, antihistamines, diuretics, antipsychotics, and antidepressants can reduce salivary flow. This can result in dry mouth, one of the most common side effects of both prescription and over-the-counter medications. Having a dry mouth can cause difficulty chewing, speaking, and swallowing. It also increases the risk of developing cavities and soft tissue problems. Dry mouth may also decrease the ability to wear dentures.



<sup>8</sup> Brown L, Brunelle JA, Kingman A. Periodontal status in the United States, 1988-91: prevalence, extent, and demographic variation. *Journal of Dental Research*. 75 (Spec Is):672-683, 1996.

<sup>9</sup> Page RC. Periodontal diseases in the elderly: a critical evaluation of current information. *Gerodontology*. 1:63-70, 1984.

<sup>10</sup> U.S. Department of Health and Human Services. *Oral Health in America: A report of the Surgeon General - Executive summary*. Rockville, MD: U.S. Department of Health and Human Services, National Institute of Dental and Craniofacial Research, National Institutes of Health, 2000.

<sup>11</sup> Ries LAG, Eisner MP, Kosary CL, Hankey BF, Miller BA, Clegg L, Edwards BK (eds). *SEER Cancer Statistics Review, 1973-1997*, National Cancer Institute. Bethesda, MD, 2000.

## ■ Diseases related to the mouth

**Dental caries** Dental cavities (caries), an infection of the teeth, represent another physiological burden, especially important for those whose systems are already weakened by diseases and aging. In 1988-94 nearly one-third of adults 65 years of age and older with natural teeth had untreated dental cavities in either the crown or the root of their teeth.

Decay untreated by a dentist usually gets worse, resulting in pain and the potential loss of teeth. Dental caries is one of the main causes of tooth loss for both young and old adults.

Although the prevalence of dental caries has declined in the U.S. overall, declines have not occurred among the most socially disadvantaged groups of older adults. The percent of older black persons and poor persons with untreated caries increased between 1971-74 and 1988-94.

**Percent of persons with untreated dental caries among persons 65-74 years of age by race and poverty status**

	1971-74	1988-94
<b>White</b>	<b>28%</b>	<b>23%</b>
Poor	33	39
Nonpoor	28	23
<b>Black</b>	<b>42%</b>	<b>47%</b>
Poor	40	50
Nonpoor	41	44

Source: First and Third National Health and Nutrition Examination Surveys.

**Periodontal diseases** Periodontal diseases (gum diseases) are infections of the supporting structures of the teeth. When not treated, periodontal diseases can result in the loss of teeth. The prevalence of periodontal diseases increases with age, from 6 percent among persons 25-34 years to 41 percent among those 65 years and older.<sup>8</sup>

This increase is not necessarily due to older persons being more susceptible to periodontal diseases, but rather to the consequences of these diseases (i.e., bone loss and gingival recession), which accumulate over time and are thus more evident in the elderly.<sup>9</sup> Preventing periodontal diseases is particularly relevant because recent studies have shown a possible association between these diseases and diabetes and cardiovascular diseases, which are major causes of death among the elderly population.<sup>10</sup>

**Oral cancer** Oral cancer, which includes lip, oral cavity, and pharynx cancer, is of particular concern for persons 65 years of age and older because they are 7 times more likely to be diagnosed with oral cancer than persons under 65 years of age.<sup>11</sup> In 1997, 4,775 people 65 years and older died as a result of oral cancer. More older adults died from oral cancer than from skin cancer (3,978).

Although the occurrence of new cases (incidence) of oral cancer is slightly higher among white adults than among

**Oral cancer incidence and death rates among persons 65 years of age and older by sex and race, 1993-97 (rate per 100,000 persons)**

	Incidence Rate		
	Total	Male	Female
All races	44	68	27
White	45	69	28
Black	40	65	21
	Death Rate		
	Total	Male	Female
All races	14	21	9
White	14	20	9
Black	17	30	9

Note: Rates are age adjusted to the 1970 U.S. standard population.  
Source: Ries LAG, Eisner MP, Kosary CL, et al. 2000.

<sup>12</sup> Yellowitz JA. The Oral Cancer Examination, Chapter 3 of Oral Cancer, The Dentist's Role in Diagnosis, Management Rehabilitation, and Prevention. Quintessence Books, Quintessence Publishing Company, Inc. Illinois. 2000.

black adults, mortality from oral cancer is substantially higher among black men than among white men.

As with other cancers, survival improves when the cancer is diagnosed at an early stage rather than at a later, more advanced stage. Because patients with an early stage of oral cancer rarely have pain or other symptoms, detecting an early oral cancer is primarily dependent upon the clinician providing a comprehensive oral cancer examination.<sup>12</sup> One possible explanation of the higher mortality from oral cancers among older black men is that they are less likely than older white men to use dental and medical services.

### How do older people use dental care services?

Visiting a dentist is the most basic use of dental care services. Whether elderly persons get needed dental care is closely related to whether they have dental insurance.

**Dental visits** A visit to the dentist allows for a comprehensive evaluation of teeth, gums, and soft tissues, and for prevention, early detection, and treatment of oral health problems. It is also an opportunity for the dental professional to review home care practices. A visit in the previous year is considered the standard measure of appropriate utilization of dental care, independent of the presence or absence of teeth.

For edentulous persons, a dental visit will include a comprehensive evaluation of soft tissues as well as an evaluation and possible adjustment of prostheses. In 1997, edentulous persons were much less likely to report having visited the dentist in the previous year than were dentate persons (persons with their natural teeth). When asked how often they went to the dentist, 75 percent of edentulous persons selected “when needed,” compared with 37 percent of dentate persons.

In general, socioeconomic characteristics played a significant role in who received dental care. Overall, persons with more than a high school education were twice as likely to have visited the dentist in the past year than were persons with less than a high school education. Non-Hispanic whites were also much more likely to have visited a dentist than were racial/ethnic minorities.

**Percent of persons 65 years of age and older who had a dental visit in the past year by race and educational level, 1997**

	Dentate	Edentulous	All Persons
Total	70%	18%	54%
<b>Race/ethnicity</b>			
Non-Hispanic White	74	18	57
Non-Hispanic Black	46	17	38
Hispanic	58	22	45
<b>Education</b>			
Less than 12 years	52	16	39
12 years	75	18	57
More than 12 years	82	29	76

Note: Dentate persons have at least one natural tooth. Edentulous persons have lost all their natural teeth.

Source: National Health Interview Survey.

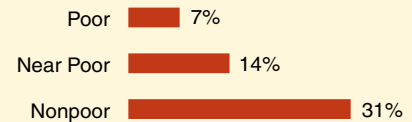
<sup>13</sup> Isman R, Isman B. Oral Health America white paper: Access to oral health services in the United States 1997 and beyond. Chicago, IL: Oral Health America. 1997.

<sup>14</sup> Manski RJ, Moeller JF, Maas WR. Dental services: use, expenditures, and sources of payment, 1987. *Journal of the American Dental Association*. 130:500-508, 1999.

**Dental Insurance** Dental insurance is an important predictor of dental care utilization.<sup>13</sup> Because dental insurance is usually acquired as part of a job benefit package, most persons lose their dental insurance coverage when they retire. In some states, Medicaid provides limited coverage for routine dental care for low income and disabled elderly persons. Medicare, on the other hand, does not cover routine dental care for older adults, but provides a few, very limited services considered to be “medically necessary.”

With only 22 percent of the adults 65 years and older covered by private dental insurance in 1995, most dental care expenses for the elderly were paid out of pocket. Only 10 percent of dental expenditures were paid by private insurance, and 79 percent were paid out of pocket.<sup>14</sup>

**Percent of persons 65 years of age and older with private dental insurance by poverty status, 1995**



Source: National Health Interview Survey.

## What does the future hold for the oral health of older Americans?

The trend in improved oral health status among persons 65 years of age and older is expected to continue as the new cohorts of older persons continue to be better educated, more affluent, and more likely to keep their natural teeth. This positive change in oral health status shows that oral diseases and tooth loss are not inevitable with aging, and that teeth can be expected to last in good condition for all of a person’s life.

However, the fact that the coming generations of elderly are maintaining their teeth poses a challenge for satisfying their dental care needs. As more people keep their teeth, more will be at risk for dental diseases and will need more preventive, restorative, and periodontal services.

Unfortunately, financing dental care for older persons is particularly difficult compared with other age groups, in part, because there are no Federal or State dental insurance programs that cover routine dental services, and only 22 percent of older persons are covered by private dental insurance. Consequently, dental care is unreachable for many older persons living on a fixed income. Yet adequate oral health care is important for all older adults, as it is for other age groups.

Another challenge arises in providing dental care for older persons because their care is often more complex than dental care for younger adults. This complexity comes from the many changes associated with aging. Considering that caries and periodontal diseases, the most common oral health problems, are cumulative, older persons often endure the consequences of their oral health experience from earlier years, such as missing teeth, large fillings, and the loss of tooth support. These problems can be complicated by their decreased ability to care for their oral health. The elderly may also have multiple physical and psychological ailments that affect their treatment and require the dentist to have good medical knowledge and management skills.

<sup>15</sup> Cohen RA, Bloom B, Simpson G, and Parsons PE. Access to health care. Part 3: Older adults. National Center for Health Statistics. Vital Health Stat. 10(198), 1997.

<sup>16</sup> National Center for Health Statistics, Health, United States, 2000 with Adolescent Health Chartbook, Hyattsville, Maryland. Table 81, 2000.

<sup>17</sup> U.S. Department of Health and Human Services. Oral Health in America: A report of the Surgeon General. Rockville, MD: U.S. Department of Health and Human Services, National Institute of Dental and Craniofacial Research, National Institutes of Health, 2000.

<sup>18</sup> Ibid.

Furthermore, there is noticeable social inequality in the oral health of older adults. Older persons who live below the poverty line were almost 3 times as likely to report unmet dental needs as those who live at or above the poverty line (11 and 4 percent, respectively).<sup>15</sup> Persons from lower socioeconomic groups are also more likely to report having untreated cavities.<sup>16</sup> The greater need for dental care among older persons at low socioeconomic levels is coupled with their lower level of private insurance coverage, which leaves this group at a significant disadvantage compared with those at a higher socioeconomic level.

One additional challenge to caring for older persons is that the actual number of practicing dentists and the proportion of dentists relative to the population are expected to decline.<sup>17</sup> The decline in the dentist-to-population ratio will particularly affect the elderly because they are the fastest growing segment of the population and because their special needs will require specialized dental skills. Optimally, the elderly should receive care from specialists in geriatric dentistry or general dentists with a good understanding of the medical, pharmacologic, and cognitive changes associated with the older adult population.

### Conclusion

During the past 50 years, the oral health and use of dental services among older adults have improved.<sup>18</sup> Although this trend is expected to continue as the population of older adults grows and increasingly maintains their natural teeth, continued improvement will also be dependent on access to appropriate dental care.

### About the Data

Some of the information in this report comes from surveys conducted by the National Center for Health Statistics. These are the National Health Interview Survey, the Second Supplement on Aging (a survey of respondents 70 years and older), the First and Third National Health and Nutrition Examination Surveys, and the National Nursing Home Survey.

The National Health Interview Survey and the Supplement on Aging are household interview surveys, while the National Health and Nutrition Examination Survey is an examination survey. They are surveys of the noninstitutionalized population. The National Nursing Home Survey collects data on patients from knowledgeable staff of the nursing home and from patient records.

A limitation of this report is that most surveys do not cover the institutionalized population. Therefore, nationally representative data on the oral health status and dental care utilization of the entire population 65 years and older are rare. Although only 5 percent of the overall population 65 years of age and older are institutionalized, these persons are more likely than noninstitutionalized elderly persons to have serious oral health problems and the complications associated with systemic diseases. In addition, long-term care residents are less likely to have access to comprehensive dental care. The National Nursing Home Survey, conducted by NCHS, collects some oral health data. However, this survey does not include examination data or information on dental care utilization.

#### Suggested Citation

Vargas CM, Kramarow EA, Yellowitz JA. The Oral Health of Older Americans. Aging Trends; No.3. Hyattsville, Maryland: National Center for Health Statistics. 2001.