

Indian Elder Caregiver

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Periodontal Health in American Indian Elders

Good oral health is more than a pretty smile; it can actually determine the health of the entire body, especially in American

Indian elders. The diagnosis and staging of gum disease can be rather complicated and involves radiographs and special instruments called periodontal probes which will be discussed later. All health care workers can be on the lookout for the early warning signs of periodontitis. Early warning signs are especially important because periodontal disease, unlike other dental problem, is usually painless until it reaches the terminal, untreatable stage.

Warning signs are:

- **Bad breath.** This can indicate the presence of anaerobic bacteria which are the cause of gum disease. These include *Porphyromonas gingivalis*, *Prevotella intermedia*, and *Bacteroides forsythus*.
- **Receding gums.** This is indicated by teeth that appear longer than normal.
- **Red gums.** These are sometimes puffed up by the inflammation.
- **Bleeding.** Gums that bleed upon gentle stimulation, such as brushing or flossing are inflamed and this may be an indicator of much more serious prob-

lems. Pus draining from beneath the gums is an even more serious sign of problems.

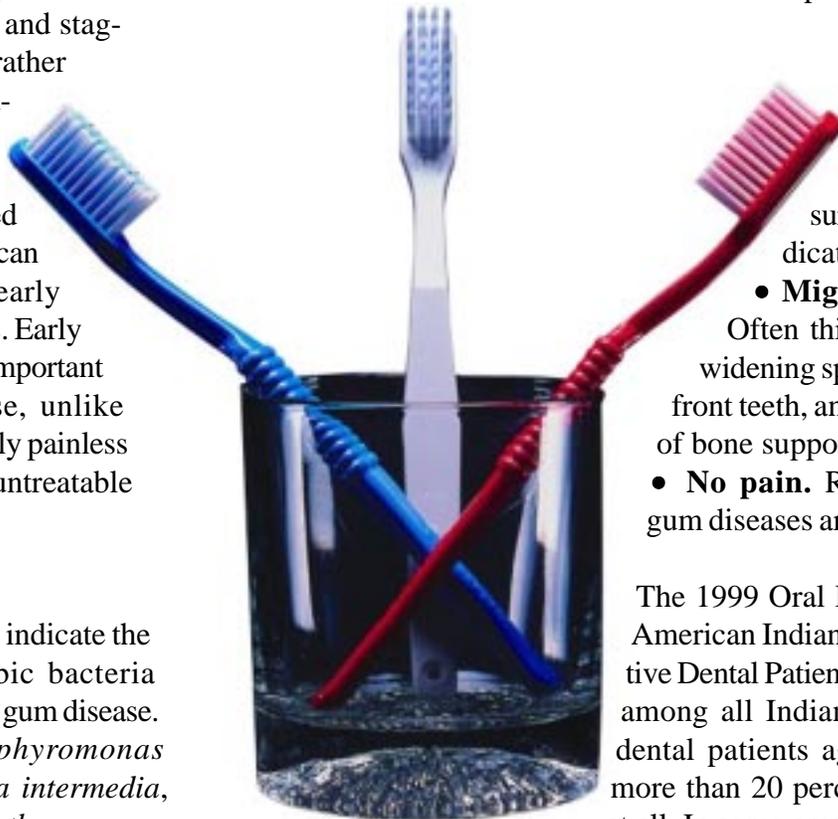
- **Loose teeth.**

If a tooth can be moved back and forth with gentle finger pressure, it may be an indication of bone loss.

- **Migration of teeth.**

Often this will present as widening spaces between the front teeth, and it indicates loss of bone support.

- **No pain.** Remember, most gum diseases are painless.



The 1999 Oral Health Survey of American Indian and Alaskan Native Dental Patients determined that among all Indian Health Service dental patients age 55 and older, more than 20 percent had no teeth at all. In some areas, the percentage

was closer to 40 percent. Lack of a healthy dentition often results in poor food choices, for example, more easily chewed carbohydrates instead of meat and vegetables. These problems can contribute to other health problems such as obesity and diabetes. These are health problems that are not easily solved, even with dentures. The only real solution is to preserve the

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natural teeth in a healthy state. Fortunately, this is often possible if diagnosis and treatment are accomplished before the problems are too far advanced.

Among young and middle age patients, teeth are most often lost to tooth decay, and it is only among the elderly patients that periodontitis becomes the major cause of tooth loss. Periodontitis is caused by bacteria. Gram-negative, anaerobic bacteria that live far beneath the gumline. We used to think that periodontitis and its associated tooth loss were an inevitable part of aging, but now we know that some people are much more susceptible than others, to the inflammatory reaction caused by these periodontal pathogens. The disease usually starts sometime after puberty and progresses very slowly. There are often few symptoms of periodontitis until it reaches its terminal stages when the teeth begin to migrate and become loose in their sockets.

The key to successful prevention and treatment is early diagnosis. In the Indian Health Service we use a special probe to measure the amount of separation of the tooth and the gums. This is based on the *Community Periodontal Index of Treatment Needs* (CPITN), which was developed by the World Health Organization in the 1980's. This is a five-point scale in which a score of CPITN=0 means healthy gums, CPITN=1 is gingivitis. A score of CPITN=4 means deep pocket formation between the teeth and gums, i.e. advanced periodontal disease. Once a patient gets to the 4 stage, treatment is difficult, time consuming, and sometimes impossible. The key is to diagnose patients when they are still in the early stages of the disease.

Health Problems related to Periodontitis

Besides tooth loss, there are many other consequences to poor periodontal health. The bacteria from pockets around the teeth can occasionally enter the bloodstream in high numbers, causing a bacteremia. These bacteremias can lead to infections in the heart valves

causing a subacute bacterial endocarditis in a patient with a pre-existing heart valve defect. Periodontal bacteria have also been found in carotid plaques of patients who have suffered a stroke, leading to a possible etiology or co-factor.



For many years we have known that diabetics seem to have more periodontal problems than people without diabetes. Recent studies have shown that high blood sugars can form chemical complexes called Advanced Glycation End products (AGE) that lodge in the capillaries of the gingiva. This leads to increased amounts of inflammation. In a diabetic with perfect control of blood sugar, this is not a problem, but it becomes increasingly severe as the diabetes gets out of control. This initiates an inflammatory cascade that results in a severe reaction in the gingiva, causing breakdown. Although this happens in all populations, it is particularly dramatic in American Indian populations. The 1999 Oral Health Survey of American Indian and Alaska Native Dental Patients showed that patients with well-controlled blood sugar levels had significantly less advanced periodontal disease (18%) than poorly controlled diabetic patients (30%).

We now also know that the relationship between diabetes and periodontitis is a two-way street. Patients with severe periodontal infections will develop insulin resistance and may have a more difficult time controlling their blood sugars. Studies on American Indian populations have shown a small but significant increase in blood sugar control following periodontal therapy. Traditional periodontal therapy may not be able to achieve these results, but certain advanced protocols seem to be effective. These are aimed at decreasing the levels of pathogenic the

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Grand Rounds

February 6 - Gait and Balance Assessment by James "bone" Dexter

February 20 - Motivational Interviewing: Prepare people for change by Carolina Yahne

April 3 - Elder Healthcare Policy by Paul Nathanson

April 12 - Department of Psychiatry/NMGEC - Historical Trauma and Alcoholism

June 5 - Pap Test for Elder Women or Not by Carla Herman

Grand Rounds sessions are held at the Family Practice Lecture Room 340 from 12:00 - 1 p.m. every 1st and 3rd Thursday of the month. If you would like to receive announcements, please give us a call. All Grand Rounds are videotaped and available for viewing on our website at <http://hsc.unm.edu/som/fcm/gec>.

Upcoming Events:

March, 2003

Train the Trainer Caregiver Education Workshop. Call the NMGEC for an application and more information on this 3-day workshop.

*****April 7 - 9, 2003*****

Geriatric Dentistry and Oral Health for Non-Dentists Workshop.

Call for more information.

June 19-21, 2003

Summer Geriatric Institute: "Aging Minds, Aging Spirits: Dementia, Depression and Delirium in the Elderly."

Note: Tuition waivers will be available for IHS and Tribal Providers.

Oops! We goofed!

Due to technical difficulties, some punctuation and formatting was incorrect in our last newsletter. We apologize, especially to the authors, for any confusion that may have resulted from the mistakes last quarter.





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periodontal microorganisms, such as *Porphyromonas gingivalis* and also altering the host response to bacterial challenge by decreasing the production of collagenase.

Treatment of periodontal diseases

The first stage in the treatment of these diseases is the control of the anaerobic bacteria which are living in the mouth. Obvi- lowest possible levels. We can do this by first reducing the amount of plaque on the teeth. The oral cavity is a complex ecosystem and the bacteria living on the surface have a definite affect on those living far below the gum line. By teaching our patients the importance of self-performed oral hygiene, we can decrease the bacterial load on the gingiva. The next stage of treatment involves removal of hard deposits, or calculus, from the tooth surfaces. This can often be performed without surgery, if the disease is diagnosed early enough. Sometimes this is supplemented with antibiotic therapy to prevent recolonization of bacteria. The last stage is periodontal maintenance, which involves returning for cleaning of the teeth on a regular basis.

Special Problems of the Elderly

American Indian elders are disproportionately affected by several problems related to periodontal health. The first of these is root caries. This is caused by cavities forming in the soft roots

of the teeth right next to the gums. These cavities are often difficult to fill, and most often require extraction of the teeth. There are two conditions which increase the susceptibility of older patients to root caries. These are recession leading to exposure of the soft dentin of the root, and increased plaque retention. Another factor is xerostomia, or dryness of the mouth. This can be a natural part of aging, a result of salivary gland dysfunction, or a result of many types of drugs that are prescribed for older patients, such as high blood pressure medication. Patients should be carefully observed for dry mouth and treated appropriately as it occurs.

Conclusion

Old age does not have to be synonymous with dentures. The health of the mouth can affect the health of the entire body so it is incumbent upon all health care workers to watch for the early signs of gum disease, and help our patients get the care they need. With careful attention to periodontal care, our patients can enjoy their own natural teeth for a lifetime.

Dr. William Stenberg, Commander, US Public Health Service, Oklahomacan
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By Charles D. Tatlock, DDS

Oral Health Considerations for our Geriatric Population

The National Oral Health Objectives for the Year 2010 stated in the Healthy People 2010 have only one objective that specifically addresses older adults. This objective is to reduce the proportion of older adults aged 65-74 years who have had all their natural teeth extracted to 20 percent. At first glance, this objective may not seem overly lofty or ambitious, but after a closer examination, it may be one worthy of achieving.

Let us first examine some relevant statistics in the general U.S. population. Currently, over 30% of community-dwelling older adults are edentulous (that is, they are missing all their natural teeth). The highest likelihood of being edentulous exists among elders aged 85 or older.

Next, let us examine some statistics that reflect oral health conditions evidenced by our American Indian and Alaskan Native elders. This data was reported in the 1999 document, *An Oral Health Survey of American Indian and Alaska Native Patients: Findings, Regional Differences and National Comparisons*, published by the U.S. Department of Health and Human Services, Indian Health Service, Division of Dental Services. For this survey, the I.H.S. collected data from 12,881 dental patients ranging from 2 to 96 years. More than 150 dentists and dental hygienists participated as examiners for this survey.¹

A subset of this study included an oral health

survey for elders 55 years or older. A total of 2,065 adults age 55+ were examined. Of these elders, 21 percent were edentulous. While this figure does not appear to be too far off the mark from the Healthy People 2010 objective stated above (20%), it might very well be underestimated. The reason given by the surveyors is that it is well documented that people who have lost all of their teeth seek dental care less often than those with teeth.¹ One may conclude, therefore, that a significant number of elder patients may not have been present in the I.H.S. clinics when the surveys were being conducted, and hence the under representation in the survey sampling process. This is a plausible assumption.

In fact, according to this publication, only one in every four (25%) of AI/AN elders aged 55 or older were able to access I.H.S. dental clinics in FY2000. Furthermore, elders 65+ received less than five percent (5%) of all services provided in I.H.S. clinics in FY2000.¹

Of the elders with teeth, approximately 98 percent of those examined had gingivitis (bleeding gums), 34 percent had signs of early periodontal disease (resulting in loss of supporting structures to teeth) and 27 percent had signs of advanced periodontal disease (very likely to lose some or all teeth, if untreated). When both untreated dental decay and periodontal disease are taken into consideration, only 17% of the elders examined had

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“good” oral health—with “good” defined as no untreated dental decay and no periodontal disease. Forty percent (40%) of the adults examined had both untreated dental decay and periodontal disease.¹

Another complicating factor consisted of the fact that of the elders with teeth, approximately 33 percent (33%) had diabetes. Diabetics age 55 years or older are 24 percent (24%) more likely to have advanced periodontal disease compared to those without diabetes.¹ Diabetics with uncontrolled periodontal disease are at high risk of losing all their remaining teeth.

Tooth loss for elders was found to be a major oral health problem, and tooth loss increased dramatically with age. The average number of remaining teeth for individuals at age 55 was 17 (out of a possible 32). However, by age 70, an average of only 11 teeth remained. Of the elders without natural teeth (n=487), 20 percent had no dentures at all and an additional four percent were missing either an upper or lower denture.¹ Partial edentulism (having some or few teeth) may have just as serious deleterious effects on elders as edentulism. These effects may include impaired nutrition and social stigmatization, particularly if missing teeth are not replaced.

The I.H.S. user population of elders 55 years and older is estimated at over 1.3 million individuals (11.8% of the I.H.S. user population).¹ This is not an insignificant proportion of the population. It is estimated that by the year 2020 in the general U.S. population, people 60 years of age or older will represent nearly 25% of the population base (American Association of Retired persons). Oral health needs for this segment of the population must not be minimized or overlooked.

It would be prudent and wise to encourage elders with and without teeth to visit the dental clinic each year to have their oral health status evaluated. Further recommendations include improving access to dental treatment through health center-based referral programs and community education. Included in the “big picture” should be advocacy efforts to educate tribal leaders about the oral health needs of American Indian and Alaskan Native elders and encourage their advocacy efforts with Congress and other organizations and agencies.

Our elders deserve the best health care we can provide. It is incumbent upon us as healthcare providers and advocates to nurture and encourage every effort, program, and initiative that seeks to restore and promote the oral health of those who are vulnerable to serious dental disabilities and are often underserved.

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Dr. Tatlock is a member of the New Mexico Geriatric Education Center's Executive Committee

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