

reshaped in order for the overlying gum tissue to heal and later be properly maintained. After the recontouring procedure is done, the gums are sutured back into place over the bone. These more involved periodontal procedures often require one to two hours to perform, with no more than one or two quadrants (one quarter to one half) of the mouth being treated in any single visit.

The second type of osseous treatment involves *bone replacement* or "grafting." Both freeze-dried natural bone and synthetic bone substitutes such as bio-glass and other enamel-matrix derivatives are popular. This type of treatment is also often done *along with dental implants*. There are new types of grafting techniques and materials coming on the market all the time. Because of this often innovative nature, you should be sure to ask about the various material options and your dentist's experience and success rates, *prior* to starting treatment. Inquire about how the beneficial results of your treatment may be later be evaluated.

ORAL HEALTH AND THE ELDERLY—"LIVE LONG AND PROSPER":

According to the latest U.S. census, now and well into the next century, those age sixty-five and above will be more numerous than ever before. Thirty-nine million Americans will be over sixty-five by the year 2010.* There are 70,000 over-100-year-olds and counting. By 2050, the U.S. Census Bureau estimates the number of centenarians at 834,000—although the bureau's "high-end" calculation predicts that figure could climb as high as 4.2 million (also see: www.successfulaging.org.)

The possibilities for youthful aging through your 80's is often presented and even in our over-85 age group, the trend is toward more active life styles (also see: "Younger Next Year" by C. Crowley and J. S. Lodge, M.D.)

While keeping one's own natural teeth has obvious psychological and nutritional benefits, nationally, elderly oral-health-care delivery in America is in a precarious state. During a forum before the U.S. Senate Special Committee for the Aging in 2003, Oral Health America reported that in fourteen states, eighty percent of seniors had no private insurance coverage. For the elderly, this is only one alarming fact given that Medicare has never provided even routine or preventive dental services.

* More precise statistics on current and anticipated global, international, and regional longevity would be revealing. But in America, life expectancies are expected to vary only slightly between states and among America's ethnically diverse groups by the year 2050. Socioeconomic disparity predictions are not here presently postulated.

Twenty-three states provide seniors with no oral health care at all except during emergency, life-threatening situations (See: XVII. DEFEND YOUR LIFE.) As seen generally, oral disease and tooth loss in the elderly are also most prevalent along racial, ethnic and socioeconomic lines.



As discussed previously, maintaining good chewing ability and thus good nutritional absorption, as provided by one's natural teeth, are very important factors in human longevity. Chewing and ease of swallowing are essential components of proper nutrition. Currently, a majority of Americans over age sixty-five have more than twenty teeth. Due to advances in dentistry, many older Americans will have some or all of their natural teeth and will continue to require good oral hygiene and good dental care in the future (also see: XI. "BRUXISM," "ATTRITION," "EROSION," & "FUNCTION".)

Alzheimer's disease has been termed the "disease of the century."¹ Unless better treatment or a cure is found, it will strike 14 million Americans by the year 2050. Alzheimer's disease currently strikes 4 million Americans and afflicts a shocking 45% of our fastest growing (85+ years) age group. As our baby-boom population ages, the status of elderly oral health may only deteriorate and the challenges of oral health care can only become increasingly problematic. We currently become more susceptible to tooth-loss and periodontal disease as we get older and this can have life threatening consequences. Pneumonia, with a death-rate of 20% to 50%, has been linked to oral health and is currently the second most common infection in institutional settings.²

Many socially-sequestered elderly have been found to have an aversion to dental and medical care and even to routine check-ups. This circumstance can often change with the improved social interaction and the accessibility to care made possible in better-quality senior housing environments. The disparity in quality of life and potential for good health, when this dental care is inadequate, is obvious to anyone. In a 1995 survey of U.S. nursing homes, 60% had no regular dental services available to residents and in 2006, 1.75 million long-term care residents still had substantial problems accessing adequate dental care.

Despite the fact that annual nationwide long-term care, mostly in nursing homes, costs have already reached \$183 billion and as a per-person average of \$61,685, this deplorable situation will become even more precarious as the number of elderly increase.⁴ The disparity in care quality and nursing home staff-salaries must be radically and urgently addressed and unfortunately, may only be resolved through further state and federal intervention.

Regardless of environment or memory status, many seniors may clearly need to be assisted with brushing. The advantages of using a soft toothbrush under light pressure with the modified Bass method have been previously described. It will even provide a regular opportunity for mild, yet very beneficial, mental and physical effort. Tartar-control toothpastes and rinses can help seniors prevent calcified bacterial (calculus) formation and tooth stains.

Many toothbrushes have easy-grip handles to facilitate their use. Electric and battery toothbrushes usually have enlarged handles and require minimum arm or wrist movement for use. These power brushes range in price from as little as \$5–\$10 to as much as \$100–\$130. On-the-go baby boomers might consider them personal timesavers or as gifts for many of their elderly parents. Electric and battery-powered toothbrushes may not always improve hygiene for some older adults, with very limited manual dexterity or neurological shortcomings. Several newer toothbrushes combine manual and battery-powered bristles for cost-effective trial use. OralB Corp uses one ordinary AA alkaline battery, and a powered round bristle-head paired with “crisscross” manual bristles; Crest and Colgate have comparable products.

In addition to health care and possible tooth loss, lack of interest in food arising from decreased skill in its preparation will often affect both the quantity and quality of diet. Elderly widowers living alone can be particularly susceptible to such dietary-originated nutritional deficiencies. Secluded, homebound or economically compromised elderly may suffer similar problems. When this occurs, like with full-denture wearers, using a food processor and juicer in meal preparation can be very beneficial.

As previously mentioned, the digestion process itself begins with chewing and with the special enzymes found in saliva. The production of saliva often diminishes with age or as a result of certain treatments and commonly used geriatric drugs. Insufficient saliva hampers proper

mastication and can make swallowing many foods difficult, thus reducing nutrient absorption. The resulting more restricted eating habits can further lead to poorer nutrition. Use of medications to increase salivation may thus become necessary in the more “salivary-compromised” individuals. We have also discussed how nutritional supplements can offer additional benefits and not just for the elderly.** Quality multiple vitamins, in tablet, capsule, lozenge or liquid form, may be more practical for the elderly than taking many different supplements individually.

The best approach to elderly hygiene and nutrition is one specifically designed for the individual’s living situation, physical and mental abilities, general health and dental status. Along with age, these patients often present with serious medical conditions and require a prior medical consultation. Prior to and during most dental treatment, these elderly patients usually also require very thorough scrutiny and careful observation with proper availability of a variety of important additional safety measures. (See: XIV. FINDING A GOOD DENTIST).

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2. Mojon P. Oral health and respiratory infection. J Can Dent Assoc. 68: pp340-345,2002.
3. Giff H C, Cherry-Peppers G, Oldakowski R.J. Oral health care in US nursing homes/1995. Spec Care Dent. 18: pp226-233,1998.
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INFANT FEEDING PRACTICES:

Improper infant feeding practices are another source of caries (tooth decay). In young children especially, “cariogenic” (decay-induced) damage is seen in the “maxillary incisors” (upper front teeth) due to early childhood caries (ECC) or baby-bottle tooth decay (BBTD). ECC was first attributed to prolonged pooling of liquids around the front baby teeth in infants who regularly fall asleep sucking the nipple of a baby bottle containing an acidic or cariogenic beverage (fruit juice, soda, and formula). However, a singular association between infant feeding practices and early childhood caries may be more involved.

As a contagious condition, severe early childhood caries (S-ECC), now appears to have several causes. Controlling other dietary factors as well

** Please refer to other sources for specific benefits and some potential risks of using the better-documented medications. Such supplements include Calcium, Folic Acid, B12, Vitamin C, Vitamin E, Omega 3 & 6, Vitamin D, Beta Carotene, Echinacea, Green Tea, Grape Seed, CoQ10, Black Pepper, Copper, Iron and Zinc, just to name a few. With good teeth and normal saliva, chewable or lozenge vitamins may be more easily absorbed than many swallowed capsules or tablets.