

Edentulism and Comorbid Factors

(Adapted from a paper by Dr. David Felton, April 2010 Texas Dental Journal)

The condition of being edentulous (having lost all teeth) brings with it an inherent inability to chew properly and therefore nourish oneself adequately. According to World Health Organization criteria, edentulous people are considered physically impaired. Edentulous people could also be considered disabled, due to their inability to eat and speak effectively, which are two of the essential tasks of life; they could be considered handicapped, as they tend to avoid eating and speaking in public.

Having a functioning masticatory (chewing) system is critical for a person to be able to replace the body's nutrients and maintain optimal overall health. Various studies have shown that edentulous patients have a poorer diet than their dentate (having teeth) counterparts. One such study of about 3800 people of which 36% were completely edentulous found that the edentulous component of the study were generally older, female, African-American, of lower socioeconomic status, smokers and were found to not take daily vitamins or dietary supplements, when compared to their dentate counterparts. In a follow-up study of about 7000 patients, it was found that those with less than a full complement of teeth had a reduced intake of carrots, salads and dietary fiber than did fully dentate patients, with reductions in serum levels of beta carotenes, folic acid and vitamin C. Another study showed denture wearers in general to be at a nutritional disadvantage and consumed far fewer carrots and salads. In yet another investigation, having difficulty chewing foods, experienced by the edentulous group, resulted in reduced intake of Vitamin B6 and carbohydrates.

The Healthy Eating Index (HEI) has been used as a measure of the overall quality of an individual's diet. The HEI score is a measure of ten components, with a maximum combined score of 100; a score of less than 51 is deemed a poor diet, a score of 52 to 80 is categorized as "needs improvement", and one above 80 is considered a good diet. In a study of nutritional status of patients with and without opposing pairs of back teeth, those with fewer than four pairs of opposing teeth were at risk for poor nutrition. Another study, one concerned with body mass index (BMI), suggests a strong correlation with the number of remaining teeth and maintenance of a normal BMI. This study found that patients with fewer than 21 natural teeth were three times more likely to be obese than those with 21 to 32 teeth, and those patients who were completely edentulous had the same likelihood of being obese as those with 21 or fewer teeth.

So what? Well, it appears as this research is being extended that edentulous people have a strong propensity towards obesity, which leads to myriad health problems. In addition, a large amount of research data is showing that edentulous people develop other comorbid (a health issue existing simultaneously with another medical condition) conditions, including diabetes, cardiovascular diseases, dementia, cancer, asthma, and others. However, additional research is needed to fully determine whether these comorbid conditions are casual or causal.