

"The terms oral health and general health should not be interpreted as separate entities," (Donna E. Shalala, former Secretary of Health and Human Services). Oral health is integral to general health and is essential to the overall health and wellbeing of all individuals. The early identification of oral disease may contribute to the early diagnosis and treatment for a number of systemic diseases.

Oral health means more than healthy teeth. The word "oral" refers to the mouth which includes not only the teeth, gums and supporting tissue, but also the hard and soft palate, the mucosal lining of the mouth and throat, the tongue, the lips, the salivary glands, the chewing muscles and the jaw. The salivary glands are a model of other exocrine glands, and an analysis of saliva can provide clues of overall health or disease. A thorough oral examination can detect signs of nutritional deficiencies as well as a number of systemic diseases, including infections, immune disorders, injuries and some cancers.

Periodontal diseases have been linked to a variety of conditions with systemic implications. Likewise, systemic diseases can have an impact on oral health. Studies have demonstrated an association between periodontal diseases and cardiovascular disease, stroke, respiratory infections, diabetes, osteoporosis, HIV, and adverse pregnancy outcomes.

**Cardiovascular Disease and Stroke:** Bone loss in the portion of the jaw containing tooth sockets (a measure of periodontal disease) is a significant predictor of chronic heart disease. Bacteria found in periodontal disease can also lead to blood clots, increasing the risk for heart attacks or stroke. According to the National Institute of Dental and Craniofacial Research, people with periodontal disease may be more likely to develop cardiovascular disease.

**Respiratory Infections:** As the infectious agents that cause respiratory diseases are found in significantly higher concentrations in people with periodontal disease, respiratory diseases, such as pneumonia, chronic bronchitis and chronic obstructive pulmonary disease can be adversely affected by periodontal disease. The elderly and patients with compromised immune function are particularly susceptible.

**Diabetes:** Diabetes manifests orally and is recognized by the U.S. Centers for Disease Control and Prevention (CDC) as a leading cause of death in America. The association between diabetes and periodontal disease is well documented. As diabetic patients have a compromised ability to respond to infections, they are at greater risk for periodontal disease. What's more, periodontal disease appears to make it more difficult for diabetics to stabilize their blood glucose levels. For these reasons, good daily oral hygiene and early detection of gum disease are essential for the diabetic patient.

**Osteoporosis:** Signs of osteoporosis, a condition affecting more than 20 million people in the United States, can also be detected through oral examinations and dental x-rays. There is a strong relationship between bone metabolism and oral health. Routine dental x-rays could be used to screen for bone loss.

**HIV/AIDS:** A disease which often manifests itself first in the mouth is HIV/AIDS. Inflammation of the gums and lesions are often present. Spontaneous bleeding is a frequent finding in the HIV positive patient, as is Candidiasis, an infection associated with impaired immune function.

**Pregnancy:** Periodontal disease has been linked to premature births and under-weight babies. While cause and effect have not been clearly established, research raises concerns with the effects of chronic inflammation during pregnancy. Additionally, elevated levels of hormones in expectant mothers may cause the gums to react differently to the bacteria found in plaque, increasing susceptibility to gum inflammation and disease during pregnancy.

The World Health Organization expanded the definition of health to mean "a complete state of physical, mental, and social well-being, and not just the absence of infirmity." It follows that oral health is essential to that wellbeing. Craniofacial tissues, whose function we often take for granted represent the very essence of our humanity. They allow us to speak and smile; sigh and kiss; smell, taste, touch, chew and swallow; and convey a world of feelings and emotions through facial expressions.