

# The Diabetes Connection

## Combating a Growing Epidemic of Our Modern Lifestyle

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**T**he diet of the average American is cause for great concern in the medical and dental communities. We are eating excessive amounts of fats, starches, and sugars (diets high in trans-fats and simple and complex sugars). Diabetes is developing at an unprecedented rate in our country and millions of people are not aware of their condition. Living with undiagnosed and untreated diabetes can have a very rapid detrimental effect on a person's health.



### The Prevalence of Diabetes

According to the American Diabetes Association about 20% of Americans are affected by Diabetes:

- 13 million people or 4.3% of the population have diagnosed diabetes.
- 5.2 million people, another 2% of the population have undiagnosed diabetes
- 41 million people or 14% of the population are pre-diabetics
- The rate is 1.5 times higher in Latinos and 24% of Mexican Americans have diabetes
- About 10% are type 1, insulin dependent diabetics while the remaining 90% are type 2, who do not process sugar properly

### The Rate of Periodontal Disease in Diabetics

Periodontal disease in the normal population is rare before age 20 and increases steadily to 60% in the 45-54 age group. However, thirty percent of 20-year-old diabetics have periodontal disease, reaching 50% by age 35 and 80+% in the 45-54 group. In general, the rate of periodontal disease among diabetics is double the normal population. According to the American Academy of Periodontology, the rate of periodontal disease in diabetics is double the rate in the non-diabetic population.



### The Risk of Periodontal Disease for Diabetics

We have discussed the anaerobic bacteria that live in the deep crevices and periodontal pockets. When these bacteria get into the blood system they make it more difficult for a diabetic to control their blood sugar. Additionally, the loss of teeth is a real problem for diabetics since their support for a denture erodes away more rapidly than in the non-diabetic person. Diet and nutrition are usually compromised with an undesirable

increased intake of refined carbohydrates. Periodontal disease increases the rate of C-Reactive Protein, which also causes problems for diabetics and combines with elevations in blood sugar (also noted in higher HbA1c levels) to greatly increase the rate of heart attacks (26).

The result is that periodontal disease greatly increases the mortality rate in diabetics, possibly up to a factor of 7.5 (5)! The National Institute of Diabetes and Digestive and Kidney Disease, monitored 628 type II diabetics for an average of 11 years. 204 subjects died during the study. The age adjusted death rates were 3.7% for mild or no periodontal disease, 19.6% for moderate periodontal disease and 28.4% for severe periodontal disease. The primary causes of death associated with periodontal disease were ischemic heart disease (heart attacks) and diabetic nephropathy (kidney disease).

### Diabetes Prevention

As we have seen, the periodontal bacteria living in the gum pockets increase blood sugar, which would lead one to suspect that people with periodontal disease would be more likely to develop diabetes. A study from Japan called the Hisayama study (3) reviewed the records on 961 persons for ten years. Subjects with normal glucose tolerance, but deeper periodontal pockets at the beginning of the study developed more diabetes 10 years later. Therefore, it was concluded that treatment of periodontal disease may reduce the development of diabetes.

### Glycated Hemoglobin—HbA1c

When you have uncontrolled diabetes you have too much sugar in your bloodstream. This extra glucose enters your red blood cells and links up (or glyicates) with molecules of hemoglobin. The more excess glucose in your blood, the more hemoglobin gets glycated. It is possible to measure the percentage of A1C in the blood. The result is an overview of your average blood glucose control for the past few months. Research indicates that certain periodontal bacteria increase HbA1c. The good news is that success fully treating the periodontal disease, including use of anti-microbial treatment, can significantly reduce HbA1C (4).



Because of the strong connection between periodontal disease and diabetes, we test all periodontal patients for HbA1c. If your level is found to be high, we will collaborate with your physician to, hopefully, reduce the risk of associated diseases such as cardiovascular and kidney disease.