



# Diabetes & Dentistry YOU

## Fat, Insulin and Periodontal Disease What's there Secret Connection?

*Diabetes is on the rise. An estimated 20.8 to 24 million Americans have been diagnosed with the disease to date. Another 57 million are at risk of developing it.*

Why?

There is not, of course, just one answer for all 81 million diagnosed and potential cases of diabetes. However, it is well documented that many cases of type 2 diabetes can be linked to excessive fat gain (increases in adipose tissue).

In fact, the average person reads about or hears about the dangers of gaining too much weight so many times by middle age, the annual warning from their doctor has become a lot like the theme song to Gilligan's Island. If you're over forty, you know every word by heart, but you can never quite figure out why the Minnow was lost or what the secret connection is between gaining a few pounds and contracting a life threatening disease.

In truth, "a few pounds" is not the danger; excessive weight fat gain is. This short article will attempt to lift the blanket of secrecy surrounding obesity – AND to shed light on how that secret applies to oral health factors associated with diabetes.

**Diabetics are 2.8 – 3.4 times more likely to contract periodontal disease than are non-diabetics.**

### The Not-so-Secret Secret

The not-so-secret secret is insulin resistance. Insulin is a hormone that is key to regulating metabolism – including blood sugar, triglyceride levels, helping blood vessels and arteries function properly, and so on. When all is well with insulin, blood sugar is absorbed and stored in muscles, fat and liver at the right time and in the proper amount.

When something goes wrong with insulin levels, glucose in the blood can shoot out of safe ranges and

wreak havoc on the body's metabolism, draining energy levels, driving up blood pressure, increasing triglyceride count, and so on. In essence, it is a perfect place for diabetes to flourish.

### Fat and Insulin Resistance

When you pack on too much visceral fat (that is fat around the middle of their body where it readily interacts and inhibits the function of metabolic systems), the pancreas (which is the organ responsible for insulin production) must produce more and more insulin to support the increase in adipose tissue. When it reaches a point where it cannot produce enough, as described above, blood sugar levels, blood pressure, etc. are affected. If this goes on long enough without treatment, the person may become insulin resistant, which is the precursor to diabetes.

### Inflammation and Insulin Resistance

As the body becomes more insulin resistant (aka less able to produce

### Did you know?

Recent studies have indicated that measurement of waist circumference or waist-hip ratio may be a better disease risk predictor than BMI, and there is still intensive research ongoing as to whether BMI, waist circumference, or both should be used to assess disease risk. — [Wang et al., 2005](#); [Yusuf et al., 2005](#)

the increased amounts of insulin demanded by the large amount of adipose tissue), it also creates a breeding ground for “inflammatory diseases” like atherosclerosis and periodontal disease. These in turn trigger worsening levels of insulin resistance. Bacteria generated from periodontal disease, for example, can create an ongoing cycle of infection and inflammation that may trigger something called hepatic dyslipidemia (or fatty liver disease) that piles large vacuoles of triglyceride fat into the cells of the liver – further stressing the pancreas and adding momentum to

the downward spiral of insulin resistance.

But there is good news in all of this. Insulin resistance, atherosclerosis, periodontal disease, diabetes and all the complications of diabetes are manageable and in many, many cases preventable.

You may already know the role diet and exercise can play in preventing diabetes or helping manage metabolism when diabetes has already been diagnosed. But there is one more thing you can do to help manage metabolism and reduce insulin resistance – visit

your dentist! Researchers have found that the rigorous and thorough treatment against periodontal disease helps regulate insulin by reducing “TNF-alpha”, which are the nasty little lipoproteins that cause inflammation to spread, infections to grow and insulin resistance to take hold.

### More Information

To learn more about the connection between diabetes, insulin resistance and oral health, visit the American Diabetes Association web site [www.diabetes.org](http://www.diabetes.org) or the DentistryForDiabetes site [www.dentistryfordiabetics.com](http://www.dentistryfordiabetics.com).



All dentists have been trained to diagnose and treat periodontal disease because, frankly speaking, it is an oral health disease that affects a large portion of the US population. Up to 30 percent will have periodontal disease at some point in their lives. **Dentists trained in the multifaceted care of**

## How Treatment for Periodontal Disease Helps Balance Metabolism

### diabetics also know:

1. Diabetics are 2.8–3.4 times more likely to get periodontal disease than non-diabetics
2. Periodontal disease can have devastating effects on metabolic control for diabetics
3. Treatment must address metabolic control while still addressing the immediate effects of periodontal disease with both short and long-term treatment.

In general, when treating periodontal disease, the dentist will cut away dead or damaged gum tissue in order to give the remaining healthy tissue a chance to repair and restore itself. He may also apply a topical

antimicrobial to aid in fighting local infection.

The dentist, whose goal it is to reduce system wide inflammation and help fight against insulin resistance will also prescribe systemic antibiotic, examine and treat the diabetic patient up to four times a year and will test blood sugar levels before every treatment.

Research has shown that when all the above treatments were combined, metabolic control improved for as many as three months after the initial treatment.

### Net Result

In the hands of an experienced dentist, these treatments give the patient and the treating physician an additional tool to help manage metabolism of type 2 diabetics in their fight against insulin resistance.

## Oral Health & Treatment:

According to the Standards of Medical from the American Diabetes Association 2007, only **7.3 percent** of the diabetic subjects **achieve all three treatment goals at once** (A1C, blood pressure, cholesterol).