

Roman S. Melnyk, D.D.S., M.S.

Establishing a Healthy Foundation

Treating periodontal disease is what we do, all we do and we do it very well

Periodontal Disease: How it Works

Is it important to know how periodontal disease happens? Of course it is. There are many misconceptions about dental and gum diseases and as a result of acting on these wrong assumptions, people lose teeth. Probably the worst misconception is that teeth are lost due to aging. Although over time teeth do suffer from some "wear and tear," tooth loss is not generally a result of the aging process. Tooth loss is the result of a *disease accumulation process*. The longer you live, the greater the opportunity for damage from disease to accumulate and result in tooth loss. That also means that throughout life we have the opportunity to stop the accumulation of new disease, provided we have good information and acquire the skills necessary to prevent new disease from occurring.

Periodontal disease is a type of infection, caused by bacteria and their waste products in the form of dental plaque. This plaque begins to re-form almost immediately after brushing/flossing or a professional cleaning and will be visible within twelve to twenty-four hours. If left on the teeth, this soft, easily removable, biofilm begins to calcify and becomes a difficult to remove calculus or "tartar." Once formed, tartar should be professionally removed using sharpened metal hand instruments or with powered scalars (Don't try this at home! Because tartar is hard and firmly attached, using the metal "picks" one may find in a store, will at best lead to incomplete removal, or at worst, gum lacerations).

If plaque and tartar remain on the teeth, they will soon spread and grow into the space between the teeth and gums. Once under the gum line, plaque and tartar release toxins, which inflame the gums or "gingiva." This marks the beginning of "**gingivitis**," the earliest form of periodontal disease. It is characterized by gums that begin to get a bit puffy and red, (but could range from a slight redness to bluish-red in more severe cases). Pus can form and gingivitis can result in bad breath. Unfortunately, in most cases **pain is NOT a feature** and it is common for dental professionals to discover gum inflammation in patients who are unaware of its presence!

For decades, many dental professionals dismissed gingivitis as "no big deal" because it didn't hurt and could be easily eliminated with a good cleaning, followed by the patient performing "effective home care." But what does "effective" mean? It means that the individual moves the bristles of the toothbrush and the fibers of the dental floss in such a way that when done, her/she has removed **all** of the plaque from **every** surface of **every** tooth in the mouth. The dental profession's common misconception has been that our patients know how to do this properly and effectively because surely someone in the past has taught them how. Our patients just need to be "*motivated*" to do it, and in some cases, this is true. For the majority of patients we see in our periodontal practice, this is simply not the case. Most of the patients we see indeed are trying to take care of their teeth as best as they know how. They are simply not "effective" and despite their efforts, plaque is left behind and inflammation/disease persists.

So should you be worried?

Recent scientific evidence is showing links between chronic inflammation in the gums and a whole host of medical conditions, including negative pregnancy outcomes (including premature labor; low birth weight; and pre-eclampsia). Chronic gum inflammation is linked to interference with diabetic control and gingival inflammation may also be a risk factor for developing adult onset (type 2 diabetes). Furthermore, scientific research appears to be showing links between gingival inflammation and cardiovascular disease, such as heart attacks and stroke. In addition, gum inflammation may be markers for other serious diseases. Recently, studies linking chronic gum inflammation and higher incidence of pancreatic and breast cancers have been reported. So clearly, tolerating gum inflammation may have serious health implications.

The inflammation, if not resolved, eventually spreads deeper and damages the gum's attachment to the tooth and then damages the jawbone supporting the tooth.

There is a genetic component to this spreading of inflammation, as well as a connection to the health and strength of the immune system. If one's resistance is weakened by stress, other chronic diseases (such as diabetes), certain medications, viruses (HIV, possibly others) or smoking (a MAJOR factor), the inflammation spreads, damaging the gum attachment and supporting jaw bone. This results in the formation of a periodontal *pocket* and now the patient has a more serious problem.

The pocket is typically too deep for the patient to reach and effectively clean out themselves and now *bone loss* has occurred, which is essentially irreversible (in some cases, some bone can be re-grown. See "Bone Regeneration" under "Periodontal Therapy."). ***Gingivitis*** has now become ***chronic periodontitis, periodontal disease*** or what was commonly referred to in the past as ***pyorrhea***.

It is not possible to properly treat chronic periodontitis without the help of a dental professional. Ours is a practice that specializes in the diagnosis and treatment of all periodontal gum diseases.

If not treated and brought under control, periodontitis is a progressive disease. It is similar to other chronic diseases (like diabetes), in that once you have it, you have it. It does not go away. Because of this, we do not see periodontitis something we can *cure*, however, there is copious evidence and it is has been our experience, that it can be successfully *controlled*.

If brought under control with appropriate treatment (See "Periodontal Therapy"), the destruction is stopped where it was found. If not, it gets worse, sometimes slowly, sometime quickly, but always unpredictably. Eventually, too much supporting jawbone is lost, teeth get loose and eventually, *simply fall out*. Amazingly, all of this can happen without a single abscess and without a single episode of significant pain! Unfortunately, many times there are gum abscesses and pain toward the end and patients are forced to have these bad teeth extracted.

Some might say: "OK, so I lose a tooth. So what?"

Losing a tooth is usually not an independent event and has consequences. If you have ever looked at your teeth in the mirror, you may have noticed that the top teeth look different than the bottom teeth and the front teeth look different than the back teeth (although there is a great deal of symmetry between a tooth on the left side of the dental arch and its counterpart on the right side). They have different sizes and different

shapes. That is because each tooth is designed to a job and to absorb so much force generated by the powerful jaw-muscles. The teeth function as a “system” and the loss of a single tooth has an effect on that system (Think of what happens when one cylinder in a car engine stops firing. The engine still works, but not very well.) You might not notice it, especially at first, and after the initial pain following the loss of the tooth has subsided, but things usually start to change. Adjacent teeth, especially those behind the lost tooth, begin to tip forward. The tooth or teeth above the missing tooth start to drop down or erupt up into the space created by the lost tooth. This in turn can result in the teeth bumping into each other or rubbing harder against each other while chewing. The loss of a tooth also means there are less teeth available to absorb and distribute the chewing forces. These increased forces can result in these teeth loosening, wearing, chipping and/or breaking in the future.

The advanced bone loss caused by periodontitis can also result in difficulties and compromises when dentistry is done to try to replace the lost tooth. If the patient desires to replace the missing tooth with an implant, there may not be enough bone left to hold an implant, forcing the patient to undergo bone grafting as part of the implant treatment plan. Although bone grafting can be done predictably, it adds time, discomfort and expense to treatment.

If the patient desires to replace the missing tooth with a cemented bridge, the previous bone loss results in a false tooth that is longer and a bridge that is more likely to trap food and one that is harder to keep clean. Bone or gum grafting can be done beforehand, but again, it adds time, discomfort and expense to treatment.

If the patient settles for a removable partial denture, partial dentures often rely on the underlying gums and jawbone for support. If the bone was lost due to untreated periodontal disease, the resulting defect could result in a partial denture that is uncomfortable, unstable and difficult to wear and use.

The more teeth that are lost, the greater these problems become and the harder (and more expensive) it becomes to restore health function and comfort.

Bottom Line

Stay healthy, if you are healthy; restore health if you have lost it; and the sooner you make the commitment to restore health, the easier it is in terms of time, comfort and expense!