



Advanced Prosthetics Institute
CENTER FOR EDUCATION OF COMPLEX DENTAL ISSUES

Q: Over time, I've noticed my gums are receding, the exposed roots of my teeth seem to be developing notches and are thinning. I spend a lot of time taking care of my teeth as my dental health is a priority for me. During regular visits with my dentist for check-ups, I receive good reports. Although I have good hygiene habits, why am I developing these problems with my teeth and gums?

A: Our ability to speak and chew is the end result of the collective effort of our amazing **biomechanical systems**, including our jaws, teeth, nerves, muscles and tendons. The primary focuses of dentistry today are the: prevention and treatment of oral disease; the avoidance of tooth loss; the replacement of missing teeth.

In general, the education of dentists and oral health care providers who can then educate the general public is the key to success in fighting these problems. Specifically answering your question requires an understanding of the previously mentioned **biomechanical systems and the causative factors that contribute to oral disease and tooth loss**. Breaking it down in a simple way: some causative factors promote tooth problems, others promote gum problems and still other causative factors promote both tooth and gum problems, simultaneously.

Gum problems: Gum disease is usually typified by one of two things. **Gingivitis** is the inflammation of the gums due to the presence of bacteria. **Periodontitis** is the result of bone loss around teeth caused by inflammation inducing bacteria. When **gums are receding** away from the crowns of teeth, periodontal disease is usually a prime suspect. If you have been told during examination by your dentist or hygienist that you have **deep pockets** in your gums and between your teeth or bone loss patterns around your roots then you are considered a victim of the periodontal disease process.

Orthodontics: periodontal gum problems are not the only things that can cause receding gums and exposed roots. Sometimes during the process of tooth movement during orthodontic treatment roots can be moved out of bone while correctively aligning teeth.

Bite force dynamics. For someone like yourself who's teeth and gums are in good standing, yet are still having receding gum lines and notching of teeth, your bite force dynamics may be the key cause of your oral health issues. Unfortunately, many people fall into this category and it often goes unrecognized, and in many instances, is mistaken for gum disease - even in the absence of bone loss patterns which are typical of periodontal disease.



Advanced Prosthetics Institute

CENTER FOR EDUCATION OF COMPLEX DENTAL ISSUES

To better understand bite force dynamics, consider your chewing process and the extreme amount of force used to mulch and grind food by your jaw muscles. Nature has created a way to disperse the remaining energy throughout the chewing system. The energy generated by the muscles is dispersed in many ways, including:

- a portion is transferred to the object being chewed
- a portion is transferred to and absorbed into the spongy cartilage at the head of the temporal mandibular joint
- a portion is transferred to the 32 individualized teeth suspended in the jaw bone by a periodontal ligament. The suspending ligament acts like a shock absorption system
- from the ligament into the bone of the jaw to disperse the force generated by chewing muscles

In a properly aligned, efficient, chewing system, teeth have the ability to last lifetime. Unfortunately, **many factors can contribute to an inefficient chewing system, for example:**

1. **Uneven force distribution from one tooth to another.** If teeth are aligned in such a way that some teeth are more heavily impacted than others, the force being generated could cause the tooth to flex. As teeth flex, additional pressure on the bone near the root results in all of the following: bone loss at the root, receding gums; notching of the root where the tooth is flexing.
2. **Pathologic clenching and grinding of teeth can generate excessive horizontal or flexural force on the teeth.** This pathologic problem is called **bruxism**. Usually forces generated during nighttime grinding far exceed the force generated during chewing. A person may notice wear patterns in the teeth in conjunction with the notching of the root and the receding of the gum.
3. **Jaw joint versus bite misalignment.** When the optimal position of the joint seating against the base of the skull does not match the optimal position for teeth to fit together The end result is an inappropriate distribution of force that can result with problems of the temporal mandibular joint, inflammation and pain of jaw muscles, mechanical wear, tear and degradation of teeth and the potential for frequent or **migraine headaches**.



Advanced Prosthetics Institute

CENTER FOR EDUCATION OF COMPLEX DENTAL ISSUES

In the situation you have described, a proper diagnosis is essential to generate a proper care plan, as well as, to avoid unnecessary dental work and expense. Today, thanks to improved understanding and technology, biomechanical dental issues can be controlled and corrected to minimize and/or stop the unnecessary biomechanical wear and tear of teeth, bone and gums.

In our office, home of both the **Advanced Prosthetics Institute (API)**, as well as, **Jason C. Campbell Cosmetic and Family Dentistry**, digital technology and specialized sensors are used to aid in the diagnosis process to analyze how forces are being generated and dispersed. Technology also assists us in locating and correcting various problems, such as, **TMJD, bruxism, and migraine headaches**. Our ultimate goal is to stop pathological and biomechanical breakdown of teeth, and related problems, potential loss of teeth and their supporting tissues. Learn more at _____. **To schedule a consultation, call our office at 928.776.0239.**

One of our practice's goals is to empower our patients and the community with preventive dental care education so they can achieve optimal oral health. In February, Dr. Campbell is participating in the Senior Connection Speakers Bureau, offering **FREE** educational opportunities. Details include:

TOPIC: Options for Replacing Missing Teeth – If you are missing a tooth or you're tired of partial or full dentures, join us to learn what tooth replacement options are right for you.

WHEN: February 18th at noon-1pm

WHERE:

RSVPs Appreciated: Call 776-0239 or email _____. Special offer for eligible attendees.