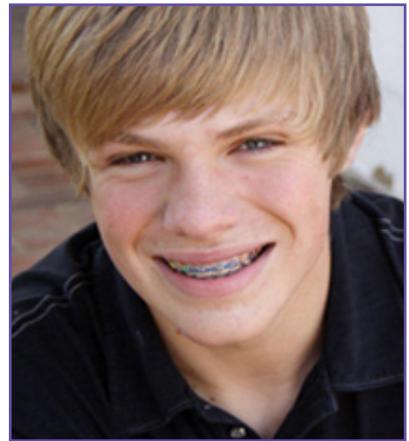


SPECIAL REPORT

When Do I Get My Braces Off?



DANTE GONZALES
DMD MSD & ASSOCIATES
Specialists in Orthodontics

www.FasterOrtho.com

About This Special Report

Dear Friend,

If you are reading this report, it is because you are interested on learning how you can speed up the process of straightening your teeth. First off, I applaud you on taking the first steps in seeking more information and finding solutions to your questions and inquiries. It is my hope that with this special report, you will gain a better understanding of how the use of different methods can accelerate your treatment time in order to achieve that perfect smile.

As an orthodontist, I get many questions regarding treatment time. Therefore, in this special report, I will be addressing some of the most common questions regarding treatment times and how to get you out of braces sooner than you think! Throughout this report, you will learn about how osteoperforation works, as well as how Propel, Wilckodontics and Aceledent can work in conjunction with your treatment to give you that ideal smile in about half the time.

Please feel free to contact my office with any questions or to schedule an exam.

Sincerely,

Dante

Dante Gonzales, DMD, MSD

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When do I get my braces off?

“When do I get my braces off?” This is the most common question I get as an orthodontist. Soon after the braces go on, most patients want to know when they are coming off. All of our patients want straight teeth and a perfect bite but most do not want to go through a lengthy treatment time. While there have been many advances in orthodontics over the years. These advances have mainly focused on the efficiency of treatment mechanics. Bracket designs, different metal alloys for the wires, and appliance-free appliances have helped decrease treatment times and made treatment much more efficient. But still, the limiting factor has still been the biology of tooth movement. The teeth can still only move as fast as the body will let it. However, in the last twenty years studying the biology of tooth movement has become an increasingly exciting area of focus.

In our increasingly informed and aware society, the need for orthodontic treatment has been growing. Today, not only children, but a large number of adults are seeking orthodontic treatment to enhance their social and personal well-being. With an increase in age of our patients, there is also an increase in the demand for faster and more efficient orthodontic treatment. Most teenagers and adults just do not want to be in orthodontic treatment for 18-26 months. While technological developments provide materials and appliances that can produce more efficient treatment, the speed of treatment is still controlled with biological response. We can still only move the teeth as fast as the body will let us. The controlling variable is still the biology of the bone and supporting structures.

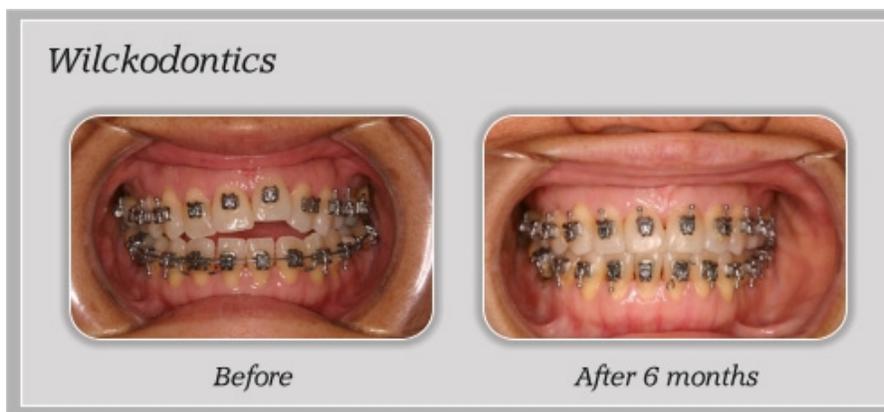
Recently though, there have been two major developments in the orthodontic world. Due to the heavy amount of research going on in bone metabolism in both dentistry and medicine, we have developed a deeper understanding of how tooth movement happens and how we can harness that biology to our advantage. The two most significant breakthroughs in moving teeth faster have come from studying the bone healing process. The first of these breakthroughs is the invention of the Propel Device which uses micro-osteoperforation to stimulate the body's own healing process to speed up the rate of tooth movement. The second breakthrough is a device called AcceleDent, which uses micropulse technology (vibrational forces) to help stimulate faster cellular turnover, healing, and thus faster movement of teeth.



What can be done to speed up the process?

Since the 1950's periodontists have been using corticotomy procedures to increase the rate of tooth movement. Corticotomy is a series of cuts into the alveolar bone around the teeth. In the 1990's, the Drs. Wilcko concluded that a temporary reduction in the mineralization of the alveolar bone was the reason for the accelerated movement. In 1995, the two doctors patented the Accelerated Osteogenic Orthodontic (AOO) technique. This technique has become known in the orthodontic world as "Wilckodontics". This surgical procedure involves a full thickness flap of the gum tissue exposing the alveolus bone. Once exposed the bone is scored and perforated along the roots of the teeth along with the surface of the bone being removed and replaced with a bone graft (slow resorbing cortical particulate). During the healing period the bone goes through a 2 month phase known as osteopenia, where the mineral content is decreased. It is during this transient state that the teeth can move very quickly, almost double the normal rate of movement. This type of surgery, although very effective, does have its downside. There is a fair amount of post-surgical discomfort and the healing time can be 10-14 days. There are usually sutures involved and sometimes those may need to be removed during follow up visits. There are also heavy pain medications and antibiotics involved in order to help minimize the pain involved and keep infections from occurring.

There are other procedures similar to Wilckodontics like Piezoincisions and normal bone grafting done by a periodontist or oral surgeon. Both are similar surgical procedures and will also produce an increase in the rate of tooth movement, upwards of 60-70%.



How can Propel help you?

Researchers from the Consortium for Translational Orthodontic Research (CTOR) at New York University College of Dentistry, were able to develop a technique to increase the rate of tooth movement, applying the same biological principles activated during fracture healing. In response to injury our bone activates a repair mechanism that removes the injured bone and builds a new bone. During this process, osteoclasts (cells that resorb bone) are activated and for a short period of time bone density decreases around the area of the fracture site. The osteoclast response is followed by activation of osteoblasts (cells that lay down new bone) that will create new bone with normal density. Taking advantage of this bone repair mechanism, NYU researchers developed a methodology, called osteoperforation to accelerate tooth movement. During osteoperforation, small holes are created in the alveolar bone adjacent to the teeth that need to be moved, under local anesthesia, and without the need for any tissue flap (lifting the gums off of the bone to gain access). This method moves teeth at least twice as fast as the normal rate, both in animals and human studies were able to increase the rate of tooth movement from 50-75%.

Micro-Osteoperforation stimulates and accelerates bone remodeling. The Propel device was developed from research out of the NYU Department of Orthodontics and has been commercially available since the fall of 2012. The research shows that the increased inflammatory response returns to normal levels in about 8 weeks, but can last as long as 12-16 weeks. During this time, the increase in inflammatory response leads to faster bone remodeling which in turn allows for the teeth to be moved into their proper position at a faster rate. What the Propel system is doing is basically augmenting the patients' own biology increase the rate of tooth movement.

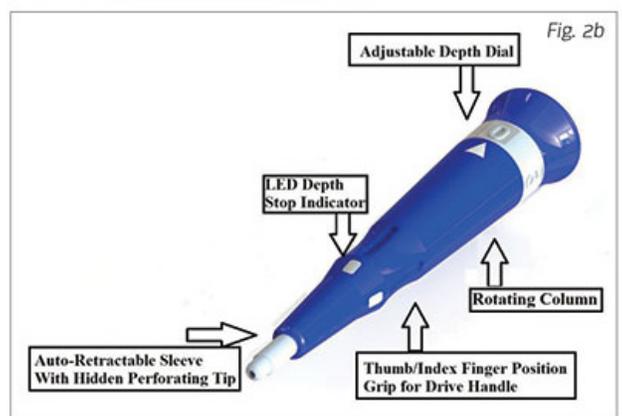
The Propel system has several tangible advantages:

1. It has been FDA approved
2. It can be used with braces, Invisalign, or any other orthodontic appliance
3. The procedure can be done by your orthodontist and it doesn't need to be referred out to another specialist.
4. Unlike surgery, there is no need to lay a flap of gum tissue to get to the bone. Thus, there is almost no recovery time. Most patients report some slight soreness in the gums for about 24 hours. Most of this soreness can be dealt with by taking some Tylenol.
5. Propel can be applied in a targeted, doctor-controlled fashion, to areas of the mouth where difficult tooth movements need to be made. While you can treat the entire mouth and use this for all of the teeth. In orthodontics there are usually certain areas where the majority of the movement is needed, and other areas where movement is not wanted.

For Propel, the procedure is outlined below:

1. Numbing the gums with a local infiltrate of anesthetic. (No need to go very deep with the needle)
2. Rinsing the mouth with Peridex (Chlorehexidine) which lowers the bacteria in the mouth.
3. Perforate the alveolar bone 3-6mm deep with the Propel appliance as needed.
4. Post-op instructions involve taking Tylenol for any soreness or pain.

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How Does Aceledent work?

Aceledent is a removable device that is placed into the mouth by the patient for 20 minutes per day. The device creates pulsating low magnitude forces (cyclic forces) to the dentition and surrounding bone as a means of accelerating orthodontic tooth movement through enhanced bone remodeling. Aceledent creates these cyclic forces as the patient bites into a rubber bite wafer that vibrates and sends out these micropulses. The advantage of this is that there is nothing invasive, no needles, or perforation into the bones. The only downside is the cost (about \$1300) and the lack of localization that you can get from Propel (micro-osteoperforation). In addition, the patient must be very religious about doing this everyday for at least 20 minutes.

For Aceledent the procedure is outlined below:

Hold the device in your mouth for 20 minutes per day while gently biting down of the plastic wafer. The device can be used at any time, but does need to be done once every 24 hours.

After reviewing the different methods of increasing the rate of tooth movement, Propel and Aceledent seem to stand out as the two most cost-effective, yet minimally invasive procedure currently out there. Our office is excited to offer both of these procedures that will significantly shorten a patient's treatment time. This may make the difference for many patients contemplating getting the orthodontic treatment that could significantly improve their oral health and their personal satisfaction with their smile. Accelerating the tooth movement will decrease treatment times almost in half and will also decrease the risks associated with orthodontic treatment: susceptibility to cavities , increased root resorption, gingivitis and periodontitis (gum disease).



4532 Dublin Boulevard
Dublin, CA 94568
Phone: (925) 230-2372