



Can Plastic Really Move Teeth?



By Dr. M. Constance Greeley

Those of us who remember the graduation party scene from “The Graduate” will recall that Mr. Maguire (Walter Brooke) escorts Ben (Dustin Hoffman) outside and says: “I want to talk to you...I just want to say one word to you...Just one word...are you listening?” Ben: “yes, Sir, I am.” Maguire: “Plastics!” Ben: “Exactly how do you mean, Sir?” Maguire: “There’s a great future in plastics.”

That was 1967. Thirty years later, plastic had a big impact on the dental specialty of Orthodontics. The revolution in tooth movement began in 1997 with the idea that teeth would respond reliably to the forces of molded polymer plastics. And we learned to simulate how it happens digitally, on a computer screen! Aligners revolutionized the way we think about tooth movement.

As technology expands, the revolution continues. Today, we are not just aligning a few

stray teeth that didn’t stay put after braces: we are also using aligners in complex cases to streamline jaw correction and to prepare patients for extensive restorative or surgical dental.

Using plastic to move teeth was actually considered as early as 1945! However, it wasn’t until 1999 that Invisalign, developed by the Align Corp., entered the market with a viable product. Pardon the pun, but they are clearly the leaders, having branded themselves synonymously with the concept and investing themselves in developing a product that works well.

In some ways, it’s like having braces, but in a lot of really appealing ways, it isn’t. Don’t misunderstand – it’s not magic. Misaligned teeth don’t just fall into place over a matter of days. It still takes time, but treatment times are getting shorter.

Most studies indicate that the rate of tooth movement using a series of plastic aligners is about 0.25 mm per aligner. This is thought to be the optimal rate of movement considering the biology of the tooth in its bony environment. Not to get too technical, but “less is definitely more” when it comes to force. Strong forces crush the supporting tissues, slowing down tooth movement, which results in a long recovery time. Moving teeth with aligners mimics the optimal rate better than other methods of moving teeth. Less force also means less tooth soreness. When aligners are properly worn,

treatment can move along predictably with more time between appointments, but with a shorter overall length of treatment, compared to traditional braces.

Removing aligners during eating, brushing, and flossing also makes life easier. No more worrying about a brace becoming loose because you bit into an apple...or even a candy apple! The ability to brush and floss more easily enhances your gingival health by reducing tissue inflammation. This helps your teeth move more efficiently.

But commercials don’t portray the whole truth about plastic aligner treatment. There are some important details to acknowledge. Plastic is a great “pusher” of teeth, but it is incapable of pulling teeth along as braces and wires can. So, the sequence of tooth movement may vary from the movement achieved with braces. Instead of braces glued to your teeth it is often necessary to use small “blebs” of tooth-colored resin bonded to your teeth to help direct the pushing and to provide a broader surface for the plastic to contact the teeth. The more the aligners hug your teeth, the better your teeth will move. Using small rubber “chewies” or a vibrational mouth piece to help seat the aligners can also help treatment move along smoothly. And yes, rubber

bands may still be necessary to achieve the correct bite.

Most patients can wear aligners one week each, but some cases require more time per aligner. Depending on your treatment goals, it can take as many as 40-80 aligners to complete your treatment. We like to say aligners come in “batches”. The first batch of 20-25 aligners is used to address the most difficult movements. Then a second or even a third batch may be necessary to address the fine tuning. With every new batch, a digital scan (photo of your teeth) eliminates the need for messy molds.

While Invisalign is the industry leader, there are probably 60 or more companies offering clear aligners designed to move teeth at various levels of complexity. New companies pop up every day. So “plastic” is certainly the future for orthodontic patients. Because this technology is developing at a fast pace, more difficult cases are now responding to treatment with plastic aligners.

One note of caution: Once your treatment is completed, as with braces, wearing retainers becomes imperative to secure your result. Usually night time wear is enough.

My team and I have over 20 years of experience producing beautiful smiles with aligners. We will be happy to help you perfect yours.

About

Dr. Connie Greeley did her undergraduate work majoring in Pharmacy at Temple University. After graduating, she remained a student on campus at the School of Dentistry where she received her Doctor of Dental Surgery degree. She was an honor student in college and dental school. She earned her certification in Pediatric Dentistry at the University of Maryland and then returned to Temple University for her certification in Orthodontics.

Dr. Greeley is board-certified by the American Board of Orthodontics. She serves on the Cleft Palate Team at A.I. DuPont Hospital for Children and is on the volunteer teaching staff at Christiana Care Wilmington Hospital Department of Dentistry. Dr. Greeley is past-president of the Delaware State Dental Society, the Middle Atlantic Society of Orthodontists, and the Greater Philadelphia Society of Orthodontics. She is a member of the American Dental Association and the American Association of Orthodontists.

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