Simpli5: the next generation in invisible orthodontic therapy

By Neal D. Kravitz, DMD, MS

A n increasing number of late adolescent and adult patients are seeking invisible orthodontic care to correct mild to moderate anterior malocclusions. Since 2000, Invisalign has been the treatment alternative for patients seeking invisible orthodontics for minor tooth correction. Recently, there has been growing interest by orthodontists in alternative methods of invisible orthodontics.

Simpli5® is a series of five sequential orthodontic aligners for correction of minor to moderate anterior malocclusions. Introduced in 2006, Simpli5 was an elaboration of AOA Orthodontic Laboratory’s previously available three-aligner system, Red & White & Blue®. The additional two aligners allow for greater case complexity and improved finishing.

The DuraClear aligners are made of 0.050 inch polyurethane vacuum-formed over a stone model setup. Each aligner programs up to 0.5 mm of tooth movement, allowing for up to 2.5 mm of movement per arch.

Clinical indications for Simpli5

The ideal candidates for Simpli5 treatment are non-growing patients with Class I malocclusion with minor or moderate anterior crowding or spacing, or who have experienced minor orthodontic relapse. Simpli5 is appropriate for the following conditions:

- crowding or spacing of 2.5 mm or less;
- midline correction of 2 mm or less; and
- rotations of 10 degrees or less.

Clinical studies have shown that the least predictable tooth movements with removable aligners are incisor extrusion, canine/premolar rotation and root uprighting. Therefore, even a Class I malocclusion that requires extrusion of the maxillary lateral incisors, canine rotation or bodily tooth movement to close a large diastema may be less suitable for removable orthodontic aligners and more appropriate for anterior lingual braces.

Getting started

- Call AOA Orthodontic Laboratory to ask for a Simpli5 starter kit, which includes case selection examples and patient education pamphlets, prepaid mail packaging and prescription forms.
- Take upper and lower polyvinyl siloxane (PVS) impressions with bite registration. I prefer to use an Aquasil Easy Mix Putty base lined with Aquasil Ultra XLV (extra low viscosity) Fast-Set liner (DENTSPLY International, York, Pa.).
- Fill out the Simpli5 prescription form, which also is available online at www.aoalab.com. Select which teeth to reset, which teeth to reproximate or whether to leave space for future restorations. Due to the limited number of aligners, clinicians should be conservative with reproximation. For more difficult cases or for highly demanding patients, clinicians also can choose to receive a final diagnostic setup via express service to review with the patient.

Similar to Invisalign, football-shaped tooth attachments, or Dura-Clasps — invisible clasping insets — can be selected for greater tray retention. I do not recommend placing attachments on upper incisors as many patients find attachments bulky and unsightly. For malrotated canines, the clinician may consider placing both buccal and lingual attachments or request for slight overcorrection.

Lastly, I do not recommend placing attachments if the patient intends on bleaching during treatment (by using the aligner as a bleaching tray) as the composite buttons result in unbleached circles around the tooth.

Treatment with Simpli5

Included in the Simpli5 package are the five aligners sealed in individualized plastic bags and separated according to arch, along with the reproximation form.

When seating the first aligner, I encourage patients to bite edge-to-edge to ensure full seating. Attachments should be placed at the first appointment using aligner one. There is no separate aligner for placement. Finally, I choose to perform all reproximation at the second aligner visit and never at the first appointment, which should be an enjoyable experience for the patient.

Sequencing treatment

Each aligner is worn 22 hours a day for one to three weeks, resulting in treatment duration of 10 to 20 weeks. AOA Laboratory literature suggests that check-up evaluations may be as infrequent as six to eight weeks, with the patient given the option to perform all reproximation at the second aligner visit and never at the first appointment, which should be an enjoyable experience for the patient.