

The secret to preventing posterior open bites in clear aligner cases? **Proper staging**

Ever wonder why your aligner cases don't track like the video or how posterior open bites originate? It all comes back to staging. Go behind the scenes to see how the uAsssit™ team from uLab Systems® treatment plans a case, and why proper staging is so critical to a successful final outcome.

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When Dr. Elsie Tafur, Orthodontist, started treatment planning clear aligner cases through uLab's uAssist service about two years ago, the service was piloted with the Ecuador-based orthodontist team handling cases for a select group of customers while the process was optimized. Since then, the number of cases submitted every month has grown significantly. The team maintains high efficiency with 3 out of 4 plans they propose being accepted without any modifications.

What's the draw? "Every case is treatment planned by orthodontists and dental professionals," said Dr. Tafur, who leads the uAssist concierge service. These clinicians understand it's not just about aligning teeth rather that it's critical to consider biomechanics as they work through a case. The uAssist team members have the expertise needed to create efficient treatment plans and are well aware of common mistakes that can cause treatments to veer off track.

"The most important step, after a correct diagnosis, is proper staging," Dr. Tafur said. "Proper staging helps eliminate common problems, like posterior open bites, that appear in some clear aligner cases."

"When you have good staging, you have fewer refinements. You're getting from A to B in the smoothest way possible, without losing track of the movements you want to make," she said. "With proper staging, you create space for the teeth to align, rotate and move. Understanding when and how to move the tooth or a group of teeth is the key."

Interested in learning more about staging and gaining insights into why your cases don't track like the video, or how many attachments you really need to achieve the movement you're after? Dr. Tafur takes you behind the scenes of clear aligner treatment planning, focusing on why proper staging is so important, how the uAssist team can help make your cases more streamlined and predictable, and how to optimize attachments.

74%

Of cases are accepted after the first treatment plan, while **92%** are accepted on the second pass. Other companies have a lot more back and forth because, unlike the uAssist service, the treatment plans aren't created by clinicians. uAssist team members also take the time to get to know doctors' preferences, creating a more personalized concierge service.

21 hours

The typical turnaround time for a uAssist treatment plan. Three business days is the maximum time it will take, compared to up to a week for other companies.



"uAssist has allowed me to reduce my treatment designing time to 5 minutes per patient. The team understands my clinical preferences and responds within days of our case submission. A real game changer!"

-Dr. Pedro E. Santiago, TopSmyles

Preventing posterior open bites starts with staging

A posterior open bite occurs if the surface of the molars and premolars don't interdigitate when the patient's mouth is closed. It's a frustrating problem for both patients and clinicians and is often a direct result of mid-treatment collisions—which can be avoided with proper staging, Dr. Tafur said.

"If you have good staging, you can see the mid-treatment collisions and address them before they happen," she said. "A mid-treatment collision means you didn't create sufficient space for the required movement. It can also happen if you leave a strong contact in the anterior quadrant. So, if you don't develop proper staging and address space interference, it can lead to a posterior open bite."

When clinicians don't perform interproximal reduction (IPR) correctly, that also can lead to posterior open bites. If too much tooth structure remains, the aligner will need more force to make the necessary tooth movements, causing some teeth to intrude. The teeth, effectively trapped, have nowhere to go. If the clinician is aware of IPR concerns and proper spacing is planned during staging, correct movement of the teeth can still occur.

Addressing issues during the staging process leads to "good mandibular movements (upright posterior) so you can achieve good occlusion," Dr. Tafur said. The uAssist team can ensure cases are properly staged from the beginning when they create the plan or can fix existing treatment plans that clinicians send them, reducing the number of refinements needed and leading to optimal results.



"I have been using the uAssist team for cases that would require more of my time to set up. I rarely have to make any changes to the case and the case is typically returned within 24 hours of submission. I appreciate having access to a well-educated and trained team I can trust to help when I need it."

-Dr. Bill Layman, Straighten Up Orthodontics

Treatment on your schedule

The uAssist team takes the time to learn doctor preferences, including how they like to schedule patients. Staging is correlated with when the doctor wants patients to return to the practice, instead of the treatment plan dictating when they return. To make that happen, the team asks for appointment frequency and preferences before creating the treatment plan.

Reviewing your case

uAssist's team of orthodontists and dental professionals will use the information you provide and your saved preferences to create a detailed treatment plan in 3 business days or less. Once you review and make sure everything is as you like it, you can accept the case as is or make small modifications in your practice (you'll be trained on the uDesign® tools needed to do so). You also can send the case back to the uAssist team to make the requested modifications, and they'll get the treatment plan back to you quickly.

Knowing how to stage movements is critical

How can staging be done effectively? You start at the proposed end of the plan, Dr. Tafur said.

“It’s visualizing the teeth at the end of the treatment plan, and then planning and creating enough room for the movement to play out during treatment,” she said. “For example, leaving spaces for rotation, coordinating arches properly, and thinking about slight overcorrection when there’s intrusion.”

Let’s say you’re trying to correct a deep bite and intrusion is a concern. The movements you program won’t always play out exactly as they do in your treatment video due to the biological differences between patients. So, the final tooth movement might look slightly out of alignment, but that can be predicted and compensated for during staging.

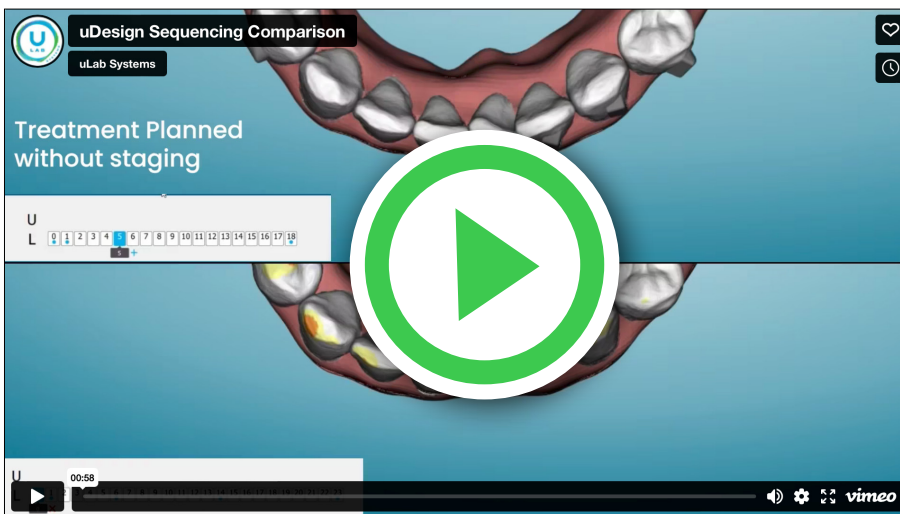
One of these movements, Dr. Tafur said, might be buccal root torque during expansion, which adds more layering to the posterior—and that requires another adjustment. The buccal roots need to be uprighted, a step that’s often forgotten. Dr. Tafur and her team achieve this by planning a combination movement.

“Common mistakes are not adding spaces for rotation or not adding buccal root torque for expansion,” Dr. Tafur said. “We believe proper sequential movements, or moving different groups of teeth together leads to predictable outcomes. That happens during staging.”

Really thinking cases through during staging also helps keep refinements to a minimum—and that’s a benefit for both you and your patients. You avoid the mid-treatment collisions that can lead to extra time in aligners, and the dreaded posterior open bite.

Two Treatment Plans, Very Different Results

This video illustrates two treatment plans—one inadequately staged and executed, and the other strategically staged for a more predictable outcome.



Upper screen

(this option will not lead to a successful outcome as the teeth cannot move through each other)

Without compensatory IPR, a collision of .4 mm will develop between LL1 and LL2. This prevents tooth movement from proceeding correctly and the programmed final tooth position will not be achieved.

Lower screen

(this option will lead to a successful result)

Two Keyframes were added to achieve a more predictable outcome. Proclination was used to add space in stages 1 to 5. A hinge rotation of LL1 was used in stages 6 to 15, aligning first the mesial side, and then the distal side. This properly sequenced treatment effectively eliminates interferences.

Optimizing attachments

While attachments help achieve the required movement, the aligner is the most important tool for helping patients finally get the smile they're after. The key to effective movement is for the plastic surface of the aligner to contact the teeth. Proper sizing of the attachments is important; huge attachments aren't required to reach the desired results, and with uSmile™ aligners we only place those that are necessary (and that's something patients will thank you for).

uAssist features different attachment protocols in the software, including deep bite, open bite and verticals, Dr. Tafur said. The retentive attachments have better contact with the teeth, so the aligner doesn't pop off. Aligners have good anchoring with this attachment. Attachments planned to assist with movement feature an active surface that helps achieve a better expression of the movement.

The high-quality plastic used for uSmile aligners helps both attachment types perform their jobs better. The plastic provides consistent, continual force over time, resulting in reliable tooth movement throughout the prescribed treatment plan. Basically, the plastic is flexible and doesn't deform as significantly over time. There are also a variety of trimlines to choose from, which can increase aligner coverage of the teeth.

"The trimline is customized for each patient," Dr. Tafur said. "And the more coverage you have on the tooth, the better it's going to move."

Because the software captures and uses actual tissue data, the straight trim line meets the gingival margin. Some other systems estimate gingival tissue, so they use a scalloped trim line to accommodate any inaccuracies. However, aligners with a straight trim line at the gingival margin or slightly beyond provide better aligner retention than aligners with a scalloped edge.¹



The standard scalloped trimline provides less retention than a straight trimline

Print in-office

Once your treatment plan is ready, you can print the first three aligners in your office so patients can get started on treatment right away. uLab can handle the rest. You also can send all cases to uLab for printing and just handle your finishing and combo cases in-office, whichever you prefer.

"The case set-ups that I receive through uAssist are hands-down the most comprehensive and thought out of any digital lab I have used. The techs know orthodontics and work to understand my preferences."

*—Dr. Paul Dever,
Smiling Wide
Orthodontics*

1. Cowley, D., Mah, J., and O'Toole, B. "The Effect of Gingival-Margin Design on the Retention of Thermoformed Aligners." JCO; 2012:702.

A flexible service to meet your needs

uLab's uDesign software is user-friendly; orthodontists who want to treatment plan their own cases can do so. But, if they're struggling with a case, are new to clear aligners or just prefer to have the assistance of an experienced orthodontist, that's where the uAssist concierge service comes in.

The process is simple. Just upload the case and submit it to uAssist. Once the model is prepared, an orthodontist, trained by uLab, will create a recommended treatment plan based on your directions and saved preferences. The highly trained clinicians handle the setup, alignment and staging, and send the plan to you within 3 business days, though the average turnaround time is 21 hours (actual turn around times may vary and are not guaranteed). Once you get the treatment plan, you can send it back for any required changes, though most don't (three out of four cases do not need further modification from the uAssist team). The uLab Systems training team trains you on the available tooth movement tools in the uDesign software, so it's easy to make small modifications in-house rather than sending them back to the uAssist team. This saves valuable time.

The uAssist team will also review the treatment plans you create and make any necessary modifications to the tooth movement or staging to ensure proper treatment planning which in turn, typically decreases the number of necessary refinements. In short, they are there for whatever you need.

The team takes the time to really get to know your preferences, also eliminating some of the back and forth experienced with other clear aligner companies. It's a more personalized approach, much like a concierge service, streamlining the process for clinicians and making the experience more pleasant for patients.

"We focus on staging from the start to show us the best way for the case to play out," Dr. Tafur said. "We figure out the biomechanics. When we get an existing treatment plan from a customer, we look at how we can make it better and make it work. We offer a clinician's perspective and I think that's why the uAssist service is growing so fast."

The benefits of working with uLab and uAssist:

- The uAssist team is made up of orthodontists and dental professionals who know what pitfalls to avoid during treatment planning and are experienced at staging.
- You'll receive your treatment plan back from uAssist usually within 3 business days or less, usually closer to 21 hours (actual turn around times may vary and are not guaranteed).
- Because the orthodontist should always be in control, you can send uAssist clinicians a case to create a treatment plan or have them look at and modify a treatment plan you've already created.
- Because the team is experienced and takes the time to get to know your preferences, you'll find you accept most cases without any modifications.
- You have the flexibility to make modifications in-house or to send them back to the team.
- uSmile aligners are made of flexible plastic that exhibits sustained force, allowing for precise movements and optimal outcomes.
- uSmile aligners feature customizable trimlines—at or beyond the gingival margin and scalloped or straight.

