



Disrupting Clear Aligner Therapy

By Dr. Eric Wu

The orthodontic space is rapidly changing and with a practice based in the heart of Silicon Valley, I'm fortunate to have a front row seat to the latest innovations and technology. The uDesign digital treatment planning software from uLab Systems specifically caught my eye and over the last 12 months, I have been using the prototype software in my practice for clear aligner therapy. With uLab, I finally have full control over the entire clear aligner fabrication process. In addition, uLab has helped me reduce my overall aligner expenses!

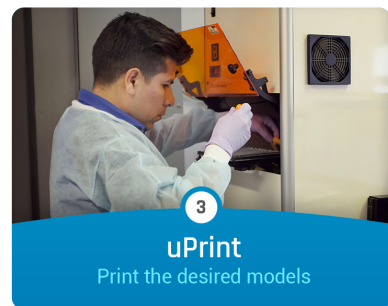
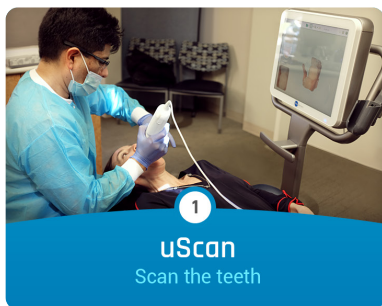
So you are probably asking, what exactly is uLab Systems? uLab is an FDA cleared treatment planning software designed to empower orthodontists to plan clear aligner cases right in their office in as little as 10 mins. uLab is also currently partnered with 3M Oral Care, to offer a full range of options for aligner manufacturing. Personally, I have opted to print my aligners in-house which has

provided my practice with the following benefits:

- ◆ As a doctor, I finally have full control of the aligner process. I no longer have to deal with the back and forth with a technician in another country to finalize the treatment plans for my patients. Instead, I can design the treatment plan based on my own preferences on my timeline. Not only does this improve the efficiency of my workflow, it also allows me to reduce the total amount of time I'm spending on my aligner cases.
- ◆ From a patient perspective, they are wowed by same-day aligner starts. My patients no longer have to wait for weeks while the aligner plan is created and the stages manufactured. Additionally, since uLab makes combination treatment with fixed appliances easy and cost-effective, my patients are thrilled to get out of braces sooner and have their cases finished with clear aligners.

◆ Lastly, from the practice perspective, uLab has helped me reduce my lab expenses for aligner therapy by 60%. The idea of printing your own aligners in-house might seem a little bit daunting at first, but with the advances in technology and equipment prices coming down, in-house aligner printing is a logical next step. To put it in perspective, you can purchase most of the needed aligner equipment for less than you might spend in a month or two with your current aligner provider. Like many new things, the first step is the hardest and once you try it you'll wonder why you didn't do it sooner. We all know direct printing of clear aligners will soon be available and I certainly want to be ready to quickly adopt it.

In my practice, uLab Systems makes in-house printing simple. Below are the 6 steps that my practice follows to create aligners with uLab. Let's talk through each of these steps in a bit more detail.



uSCAN

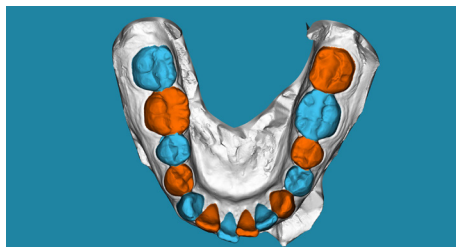
The first step is scanning the teeth. uLab software is compatible with any scanner on the market, so you will be able to use the scanner you are already using in your office. I currently use the iTero scanner. After I have the scan completed, the unedited raw STL file is easily uploaded into uLab's uDesign software.

uDESIGN

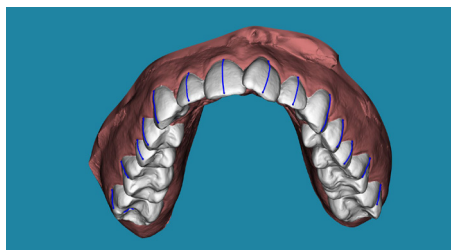
This is where the movement planning takes place. uDesign is fully customizable and allows you to set your own preferences. This includes setting your desired amount of movement per aligner, types of attachments, when you stage your IPR and quite a few other factors. uDesign also allows you to choose the type of set-up that you would like to perform: full setup, 3x3 setup, minor correction, or retainer. In all four of these, uLab simplifies the process by performing an initial set-up in just minutes. Once this is complete you can easily customize to your preferences. What I really like about uLab is the AI technology, the more cases I complete using uLab the more it learns and applies my unique preferences.

HERE YOU CAN SEE A QUICK OVERVIEW OF HOW uLAB WORKS IN FIVE SIMPLE STEPS:

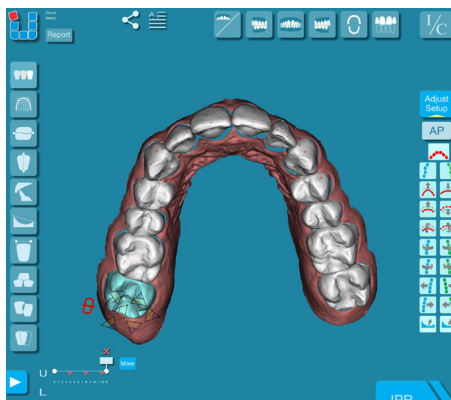
1. First, you'll start with automatic segmentation of the teeth - this includes orienting, segmenting and also properly identifying all teeth. With uDesign, this is completed in about 2 to 4 mins for both the maxillary and mandibular arches. This is a huge time saver versus manual segmentation using other software options.



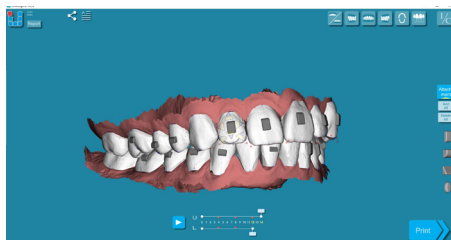
2. Next, you'll verify the FACC (Facial Axis of the Clinical Crown) and mesial distal lines. uDesign will place these for you, so it simply requires a quick check. Then you can select the type of set-up you prefer. uDesign offers all the diagnostic tools you need including Bolton Analysis, Occlusagram, Space Check (which details collisions and spacing), and others.



3. Now you can customize your case and the options are endless. You can modify the archforms, move individual teeth, move grouped teeth, check the bite, adjust IPR, stage movements, and a great deal more.



4. After you have your customization set, then it's time to move onto placing attachments. uDesign will automatically place the attachments for you and you can modify them (size, shape, position, remove, add, etc.) as you desire.



5. Lastly, you are set to send the case to the 3D printer. You can choose which stages you want to print and uDesign will automatically export each of your models as one STL file and will prepare your 3D printer tray (uTray) in the most efficient manner. It will also automatically label the models based on the preferences you have set.

uPRINT

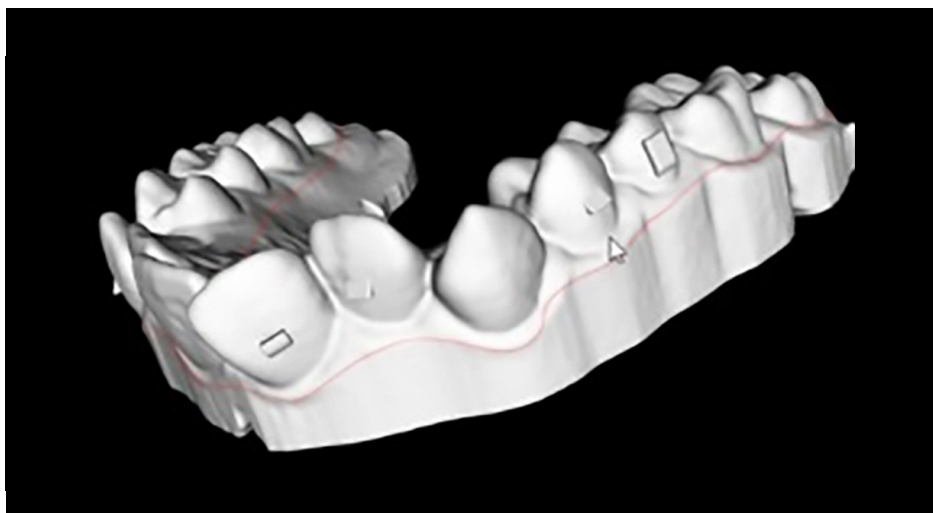
Now that you are done creating the case with uDesign, you are set to print the desired models. We use a Juell 2 3D printer in our office and build plate of models typically takes about 45 minutes to print. After they come out of the printer, we typically place them in a brief alcohol bath before a final post print light cure.

uFORM

After the models are created you are set to begin the thermoforming. I use the Biostar thermoformer, but again uLab is compatible with any major thermoforming machine on the market. You can use any type of clear aligner plastic that you want. I currently prefer the 0.30 Zendura material for retainers, due to its longevity and durability, and 0.30 Trutain material for aligners for its cost effectiveness.

uCONTOUR

The uContour machine automatically trims aligners in under a minute. uContour is another exclusive product designed by uLab to simplify the process. I currently have a prototype in my office and I have to say it's a pretty impressive machine. You choose whether you want a straight or beveled cut, then simply place the aligner in the machine and the uDesign software determines the cut line and the uContour machine will execute shown by the red line in the picture.



uBRAND

Last, but not least, it's incredibly rewarding to present aligners to my patients with my brand on the packaging, not the manufacturers. In my office, we have created custom packaging ranging from individual aligner bags to larger bags that contain several stages along with my customized directions.

A few steps and I am printing aligners right in my office. I really enjoy the

control that uLab has given me. I am able to save time, money and create aligner plans to my standards on my own schedule. My patients love the option of combination treatments and same day aligners. For me, uLab has been a win on all fronts.

If you're considering aligner printing in house, then do the quick math to determine how many aligners and

retainers you would need to break even – the answer will likely surprise you. Then start out slow with a few retainers, move up to simple aligner cases, try some combination cases. At some point, you may even try more complex cases. If you need support or have questions, there are plenty of study groups out there that offer great information and support. I hope to see you soon in one of the study groups! 🎲

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