

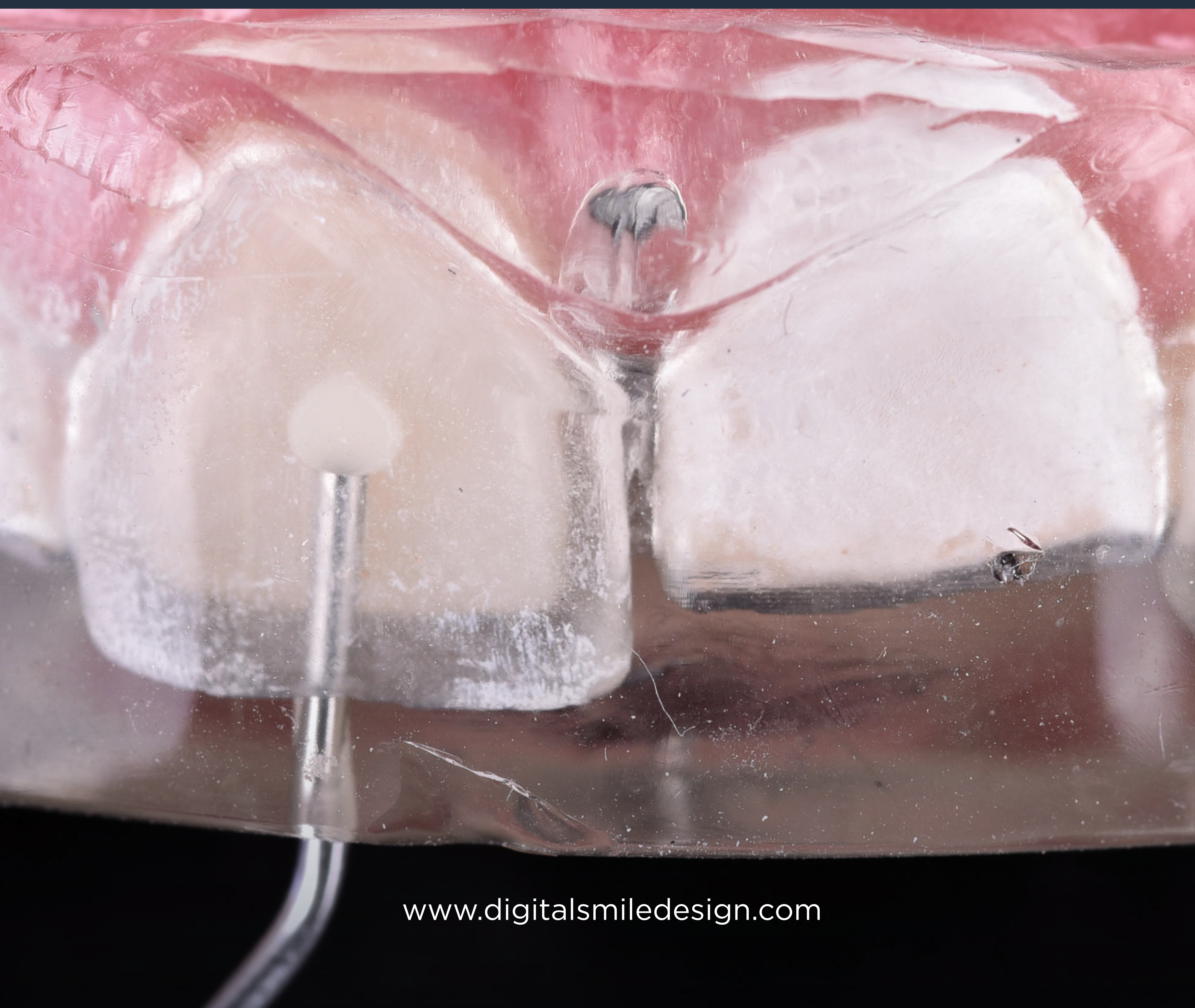


Lite Dentistry

MASTERCLASS

DSD Direct®

CLINICAL CASE WORKFLOW



www.digitalsmiledesign.com



DSD Direct®

CLINICAL CASE WORKFLOW

DSD Direct is a technique that can not only make a significant change to a patient's smile, but is quick for clinicians to execute and both affordable and minimally invasive for the patient.

It is increasingly requested and implemented by dentists around the world.



Luken de Arbeloa

DSD Education Strategy Director

DSD Direct®

CLINICAL CASE WORKFLOW

WHAT IS THE DSD DIRECT TECHNIQUE?

DSDDirect is an evolution of the injected flow composite technique.

It involves creating direct restorations by injecting flow composite through a transparent silicone index produced from a wax-up.

This evolution is based on digital planning using the Digital Smile Design concept, doing a facially guided digital waxing and producing natural tooth textures.

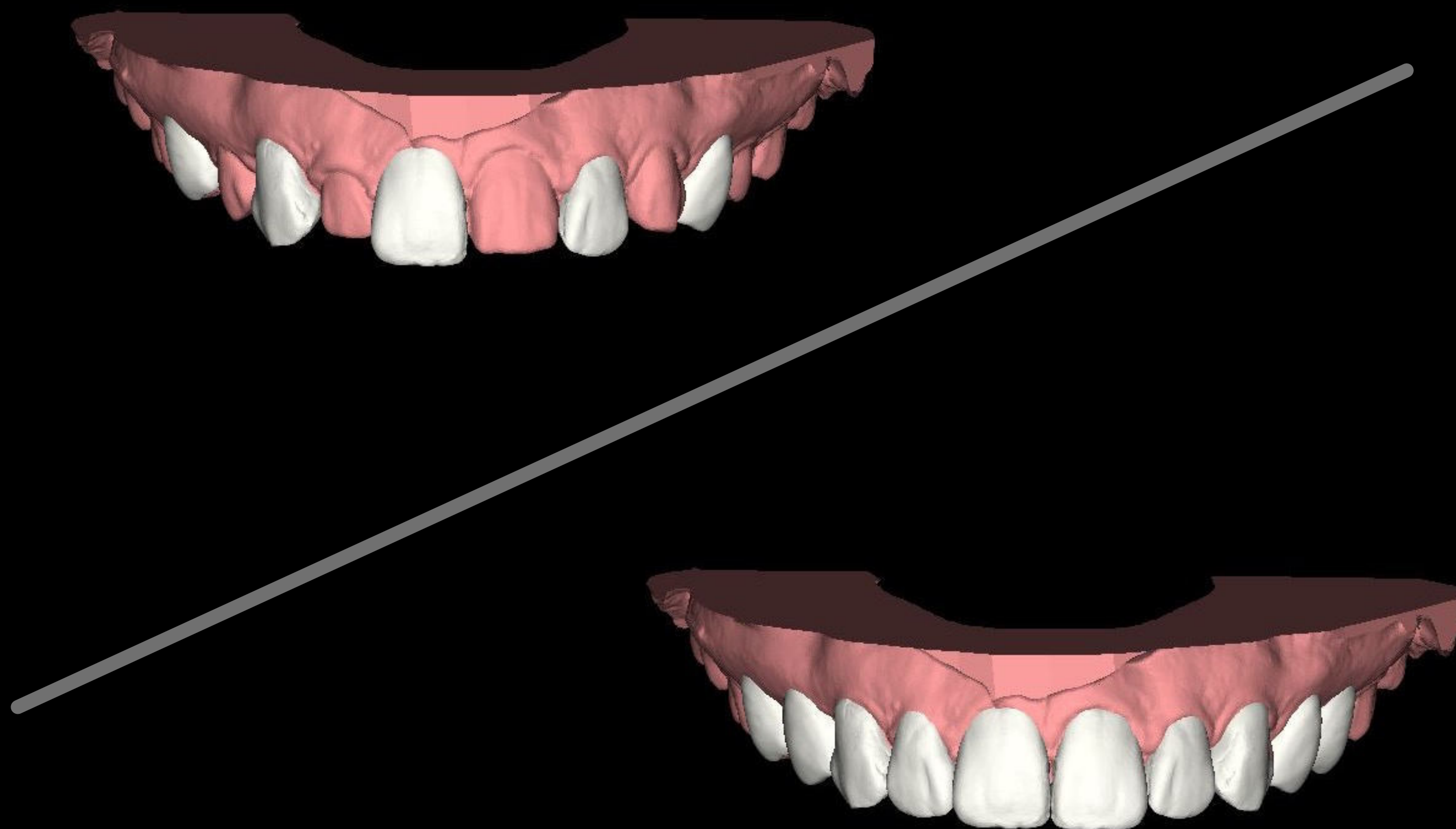
We plan the patient's new smile with specialist software and use 3D printing technology to produce an exact model of this smile that you can test in the patient's mouth. This is the 'Mock-Up'.

Once the design is approved by the patient, it is then adapted so that the new models can be produced and the transparent silicone index manufactured for the flow composite injection, maintaining the shape and texture of the design.



DSD Direct®

CLINICAL CASE WORKFLOW



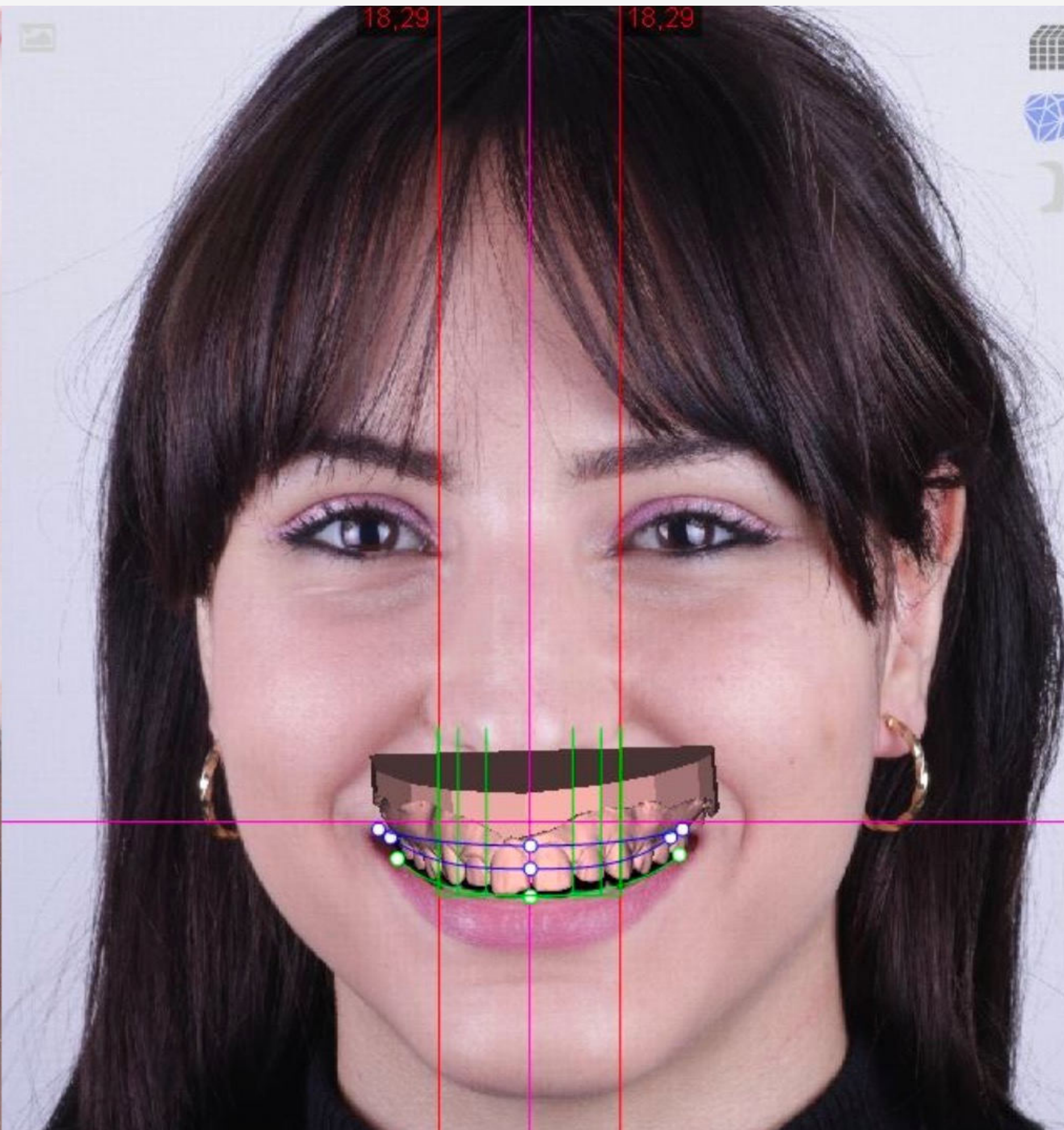
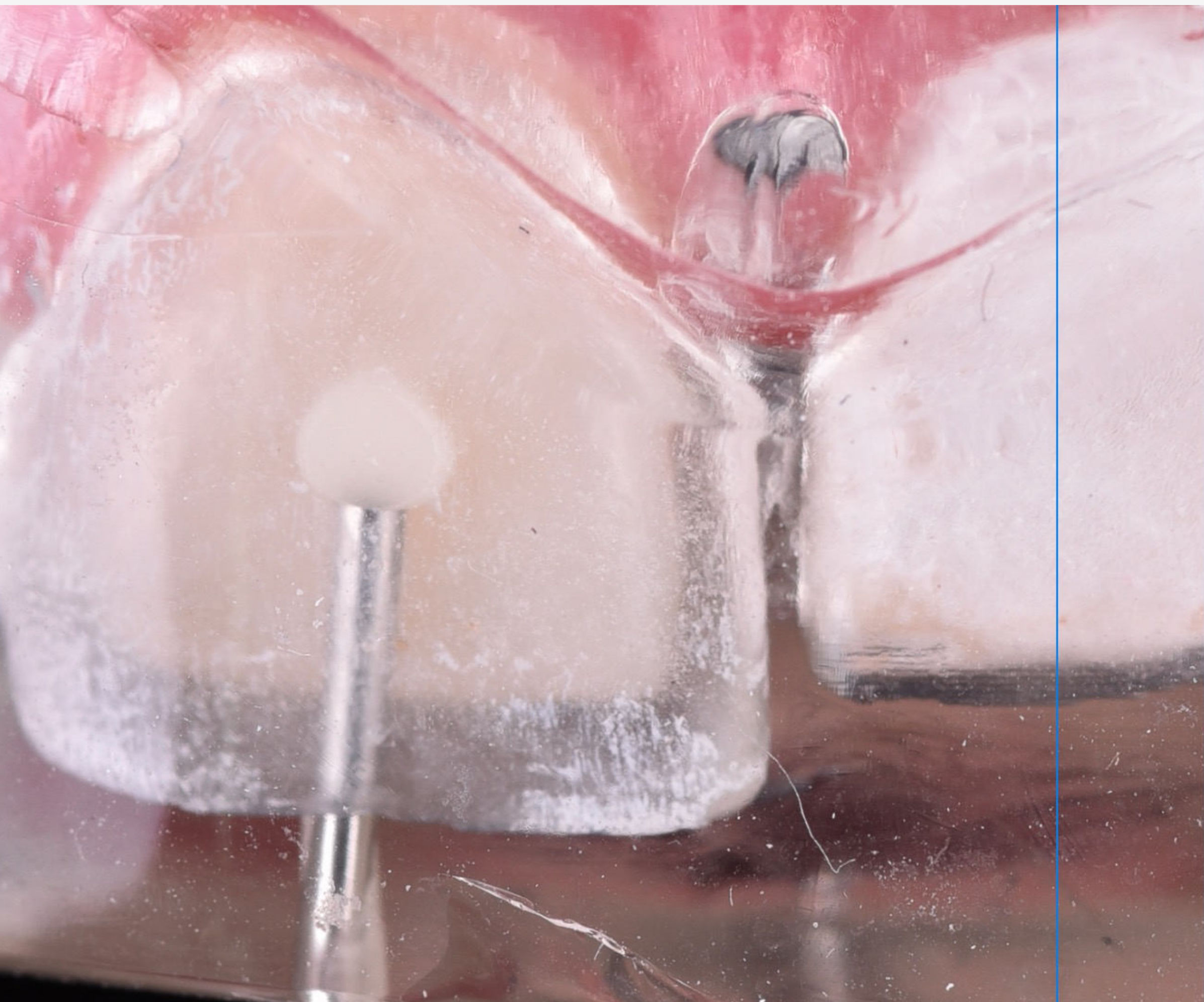
THE EVOLUTION OF THE TECHNIQUE

The flow composite injection technique was described by Dr Douglas Terry. In this technique, he did a manual waxing on a stone model and then copied this waxing with a translucent silicone index before injecting it with flow composite.

This procedure was carried out by isolating the teeth surrounding the one to be injected, using the preferred adhesive technique to inject the composite and repeating this step for each of the teeth to be restored. The result produced in the mouth was very similar to the manual waxing.

The next evolution involved performing a manual waxing, like the technique used by Dr Terry, but this time guided by a 2D facial design (old fashioned DSD). This provided measurements and references to do the waxing and therefore achieve a result that was more in harmony with the patient's face, reducing the corrections required in the mouth. The execution of the injection technique is exactly the same as the original technique - injecting one tooth at a time.

The latest evolution is what we call DSD Direct. In this, manual waxing is replaced by digital waxing on an STL model of the patient's mouth following the principles of Digital Smile Design.



The main benefits of the digital waxing are:

- 1 The use of real tooth textures
- 2 The creation of two designs: a complete ideal design and a partial design alternating between the real teeth and the ideal design.

This evolution provides more precision in results as the entire process of injecting an arch is carried out in two steps. First, we use the silicone index product from the model with the interleaved design and second, the silicone index from the full design model to inject the remaining teeth. This shortens our working time, achieves a better fit of the guide in the mouth and uses less material since it flows to the teeth continuously. We also achieve more predictable results - that are more in harmony with the patient's face - with almost no adjustments needed in the mouth except the final polishing.

WHY IS THIS EVOLUTION SPECIAL?

Thanks to digital technology, clinical procedures have evolved and enable us to perform treatments in a guided way. This guarantees the results we can deliver for our patients and allows us to do so with greater precision and speed, as well as achieve more aesthetic results which are in harmony with faces.

One of the great advances of this technique is that reproducing the texture of each tooth does not depend on the artistic skill of a dental technician. Thanks to current technology, we have at our disposal galleries featuring textures of real teeth and 'Smile Donator' patients (the Natural Restorations concept). This means that we are able to maintain every detail of a real tooth; the perfect imperfections that make them look natural.

Another advantage of this evolution is that a complete arch can be performed in two steps. In the previous techniques, it was necessary to inject the teeth one by one. This not only meant increased working time, but also added inaccuracies each time we injected a tooth. In this way, the guide would obtain a result that was not entirely faithful to the waxing project, forcing us to make corrections in the mouth, modify the original design and the texture, and increase our working time.



1

The patient
deserves
a better smile

DSD DIRECT WORKFLOW



1st Appointment

Regardless of the dentist’s particular specialty, in the first appointment we identify the need to improve the patient’s smile. The patient is classified as a ‘Smile Design’ patient, no matter which treatments and procedures will be necessary to achieve the smile transformation.

Instead of jumping straight to the conclusions, we suggest informing the patient that a facially driven project and comprehensive, modern treatment plan will be developed.

A full clinical exam is also performed and full digital documentation compiled.



Interview your patient:

This is a very important step in which we must ask the appropriate questions to understand the patient’s profile, their expectations and their previous experiences, etc. This is also when we explain what the Smile Test Drive is and how it works.

Digitalize your patient

Scan your patient:

To begin the design process, we need an upper and a lower scan in an STL file. You can do this using an intraoral scanner, or by taking a traditional impression and having your lab transform it into an STL file using a lab scanner.



Photograph and record your patient:



The basic protocol is five photos and one video (**frontal in maximum smile, frontal at rest, right lateral maximum smile, right lateral at rest and 12 o'clock**).

To learn more about the DSD photo protocol, we recommend watching our 1st and 2nd Appointment Master Class.

DSD DIRECT WORKFLOW

After the 1st Appointment

DSD is all about designing the smile, planning the treatment and presenting it to the patient. DSD Direct is only ordered after these first three steps.

Before ordering a DSD Direct, you need to know: where you want to be at the end; what type of smile matches the patient's face and will make them happy; and which procedures are needed to make the dream smile a reality. And, of course, you have to convince the patient to go forward with the treatment.



2

Design the smile
and identify
the need for
DSD Direct

Order from the DSD Planning Center



**Visit the
website:**

www.digitalsmiledesign.com

From the main products, select 'DSD UPPER', 'DSD UPPER AND LOWER' or 'DSD INTERDISCIPLINARY'.

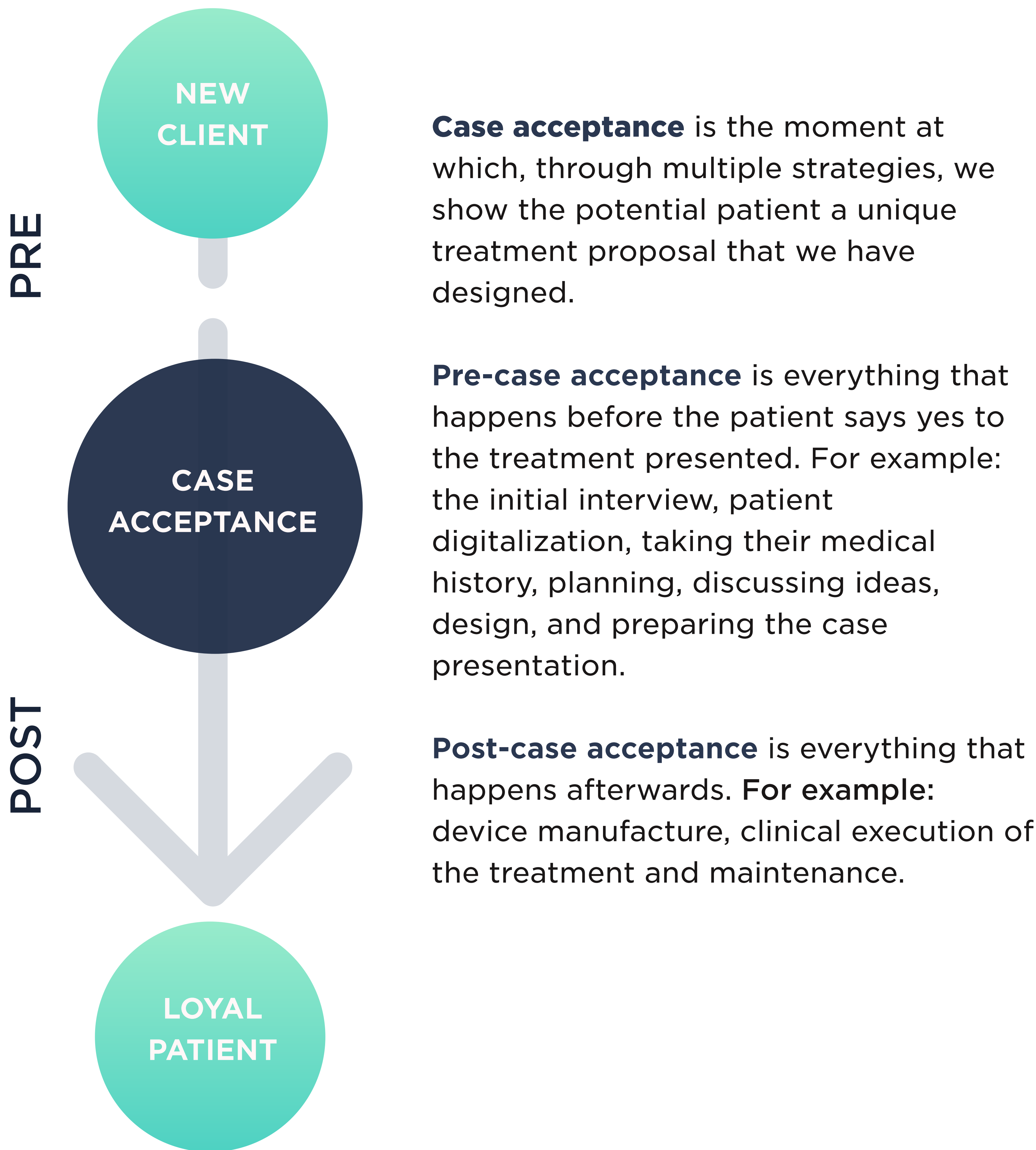
If you would like to learn more about how to order your first case, [click HERE.](#)

Every time you request one of these options (except the DSD Mock-Up), the Planning Center will create the ideal design pre-treatment, the ideal post-treatment and the motivational design (Mock-Up).



You will receive a presentation containing screenshots of the different stages of the design. We will explain all this in detail in the following slide.

When we talk about the Mock-Up, we have to situate ourselves in the different stages of dental treatment to clearly understand the different types of designs and their variants. These differ according to the objective and the phase we are at. For this reason, we divide the patient’s dental treatment into two main stages: pre-case acceptance and post-case acceptance.

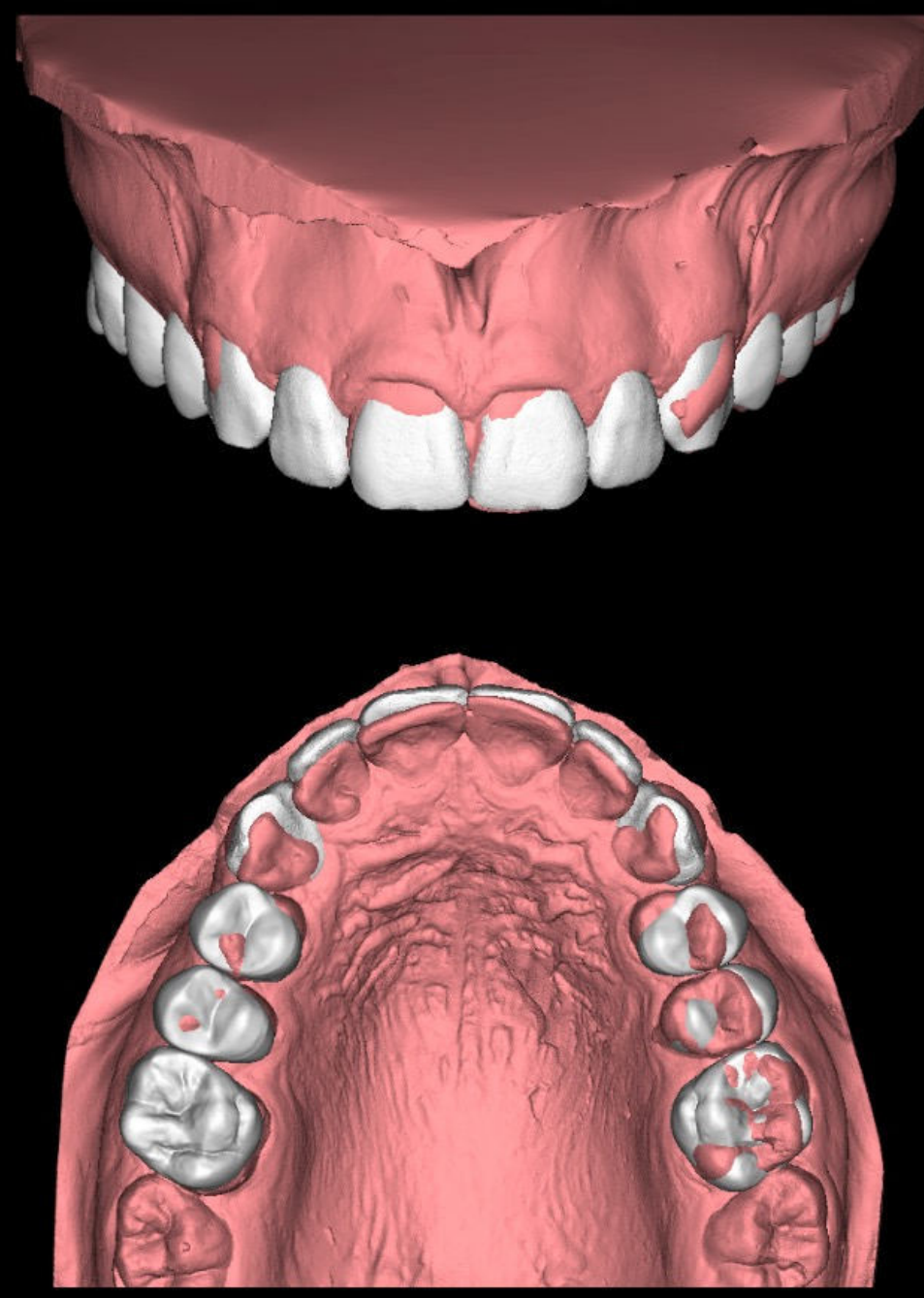


Once the DSD Planning Center receives the patient files (1st & 2nd Appointment Master Class) the facial analysis and design process begins. Every case follows the same steps: **Ideal pre-treatment design, Ideal post-treatment design and Motivational Mock Up.** The result will be two designs and three models.

3D Pre op Original STL



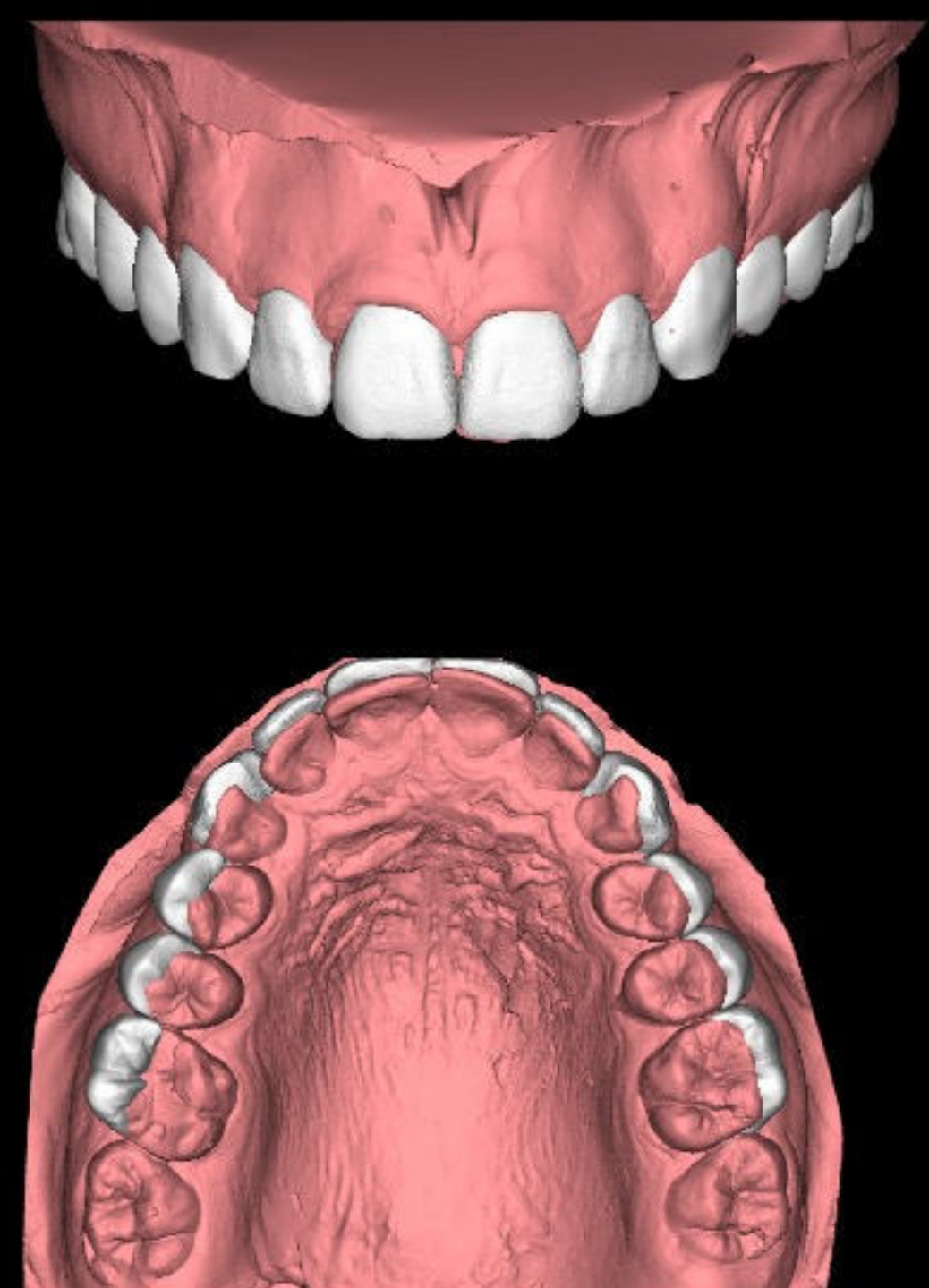
3D Ideal Pre-Treatment Ideal Design & Original STL



3D Ideal Post-Treatment Ideal design and virtually modified model



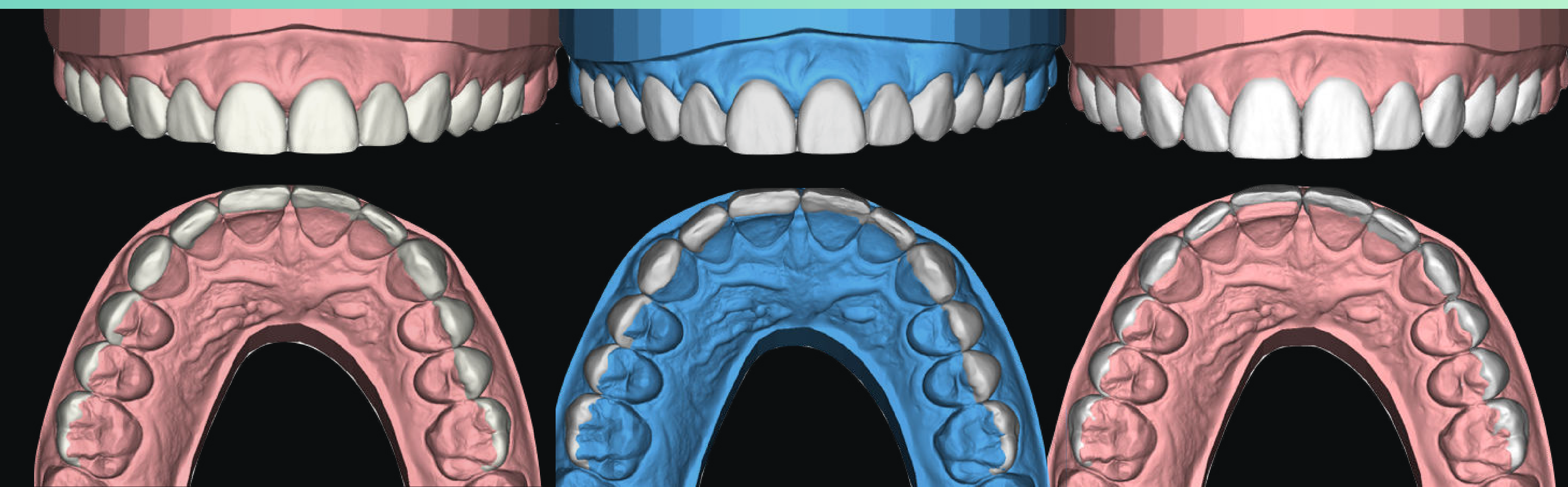
3D Motivational (Mock-Up) Adapted Design Original STL



On the following slide, we will explain the recommended use of each model at the different phases of the treatment.

Use of the designs

PRE-CASE ACCEPTANCE



IDEAL Pre-Treatment

This is the ideal design (white) on the original model of the patient (the pink model in the DSD Planning Center presentation).

This model is used for treatment planning because it allows us to see the current situation of the patient's teeth (pink) and the final outcome we want to reach (white) both in the same image.

This is the file that we share with our interdisciplinary team to define the ideal treatment plan for the patient.

IDEAL Post-Treatment

This is the Ideal design over the original model that is trimmed (virtually reduced) on subtractive areas (teeth and/or gingiva).

It is the blue model in the presentation.

This is also used for treatment planning. As you can see, the design of the Ideal Pre-Treatment and Ideal Post-Treatment is the same (white teeth). The change will be on the initial model to allow us to see the final result clearly.

MOCK-UP Motivational

The Ideal design is adapted to a more buccal position over the original untouched model (the pink model in the presentation). This file should only be used for the Motivational Mock Up.

In the pre-case acceptance phase, it should be the only model we 3D print to make the silicone index, place Bis-acryl resin and transfer the design to the patient's mouth. Once the case is accepted, this model has NO other function.

DSD | P L A N N I N G
C E N T E R

Planning Center Presentation

With each of these products, you will receive different presentations. However, the information relating to the motivational design will always be the same.

Below is an example of the presentation you would receive when ordering a DSD Upper.

(If you want to know more about the rest of the products, [click HERE](#)).



Intro

This presentation is divided into three main parts:

A cover, an index and some introductory slides. The introductory slides will remind you of some details such as the different types of files; the system for tooth numbering so that we are speaking the same language; and the part of the workflow you are currently at.



1 PATIENT DOCUMENTATION

Current situation records

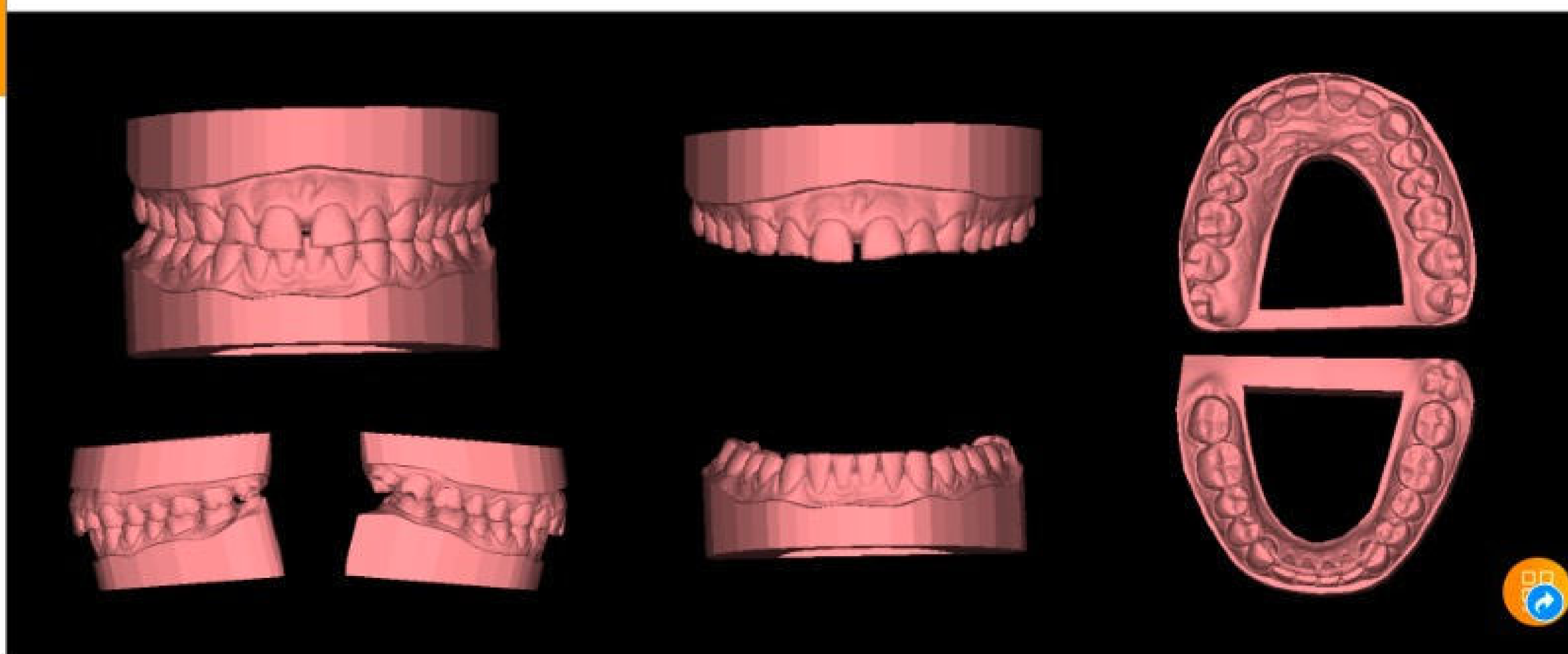


In this section, you will find your patient's initial records, screenshots of **STL files**, initial photos, and any extra information that may have been included.

1 | PATIENT DOCUMENTATION

ACTUAL SITUATION

DSD | PLANNING CENTER

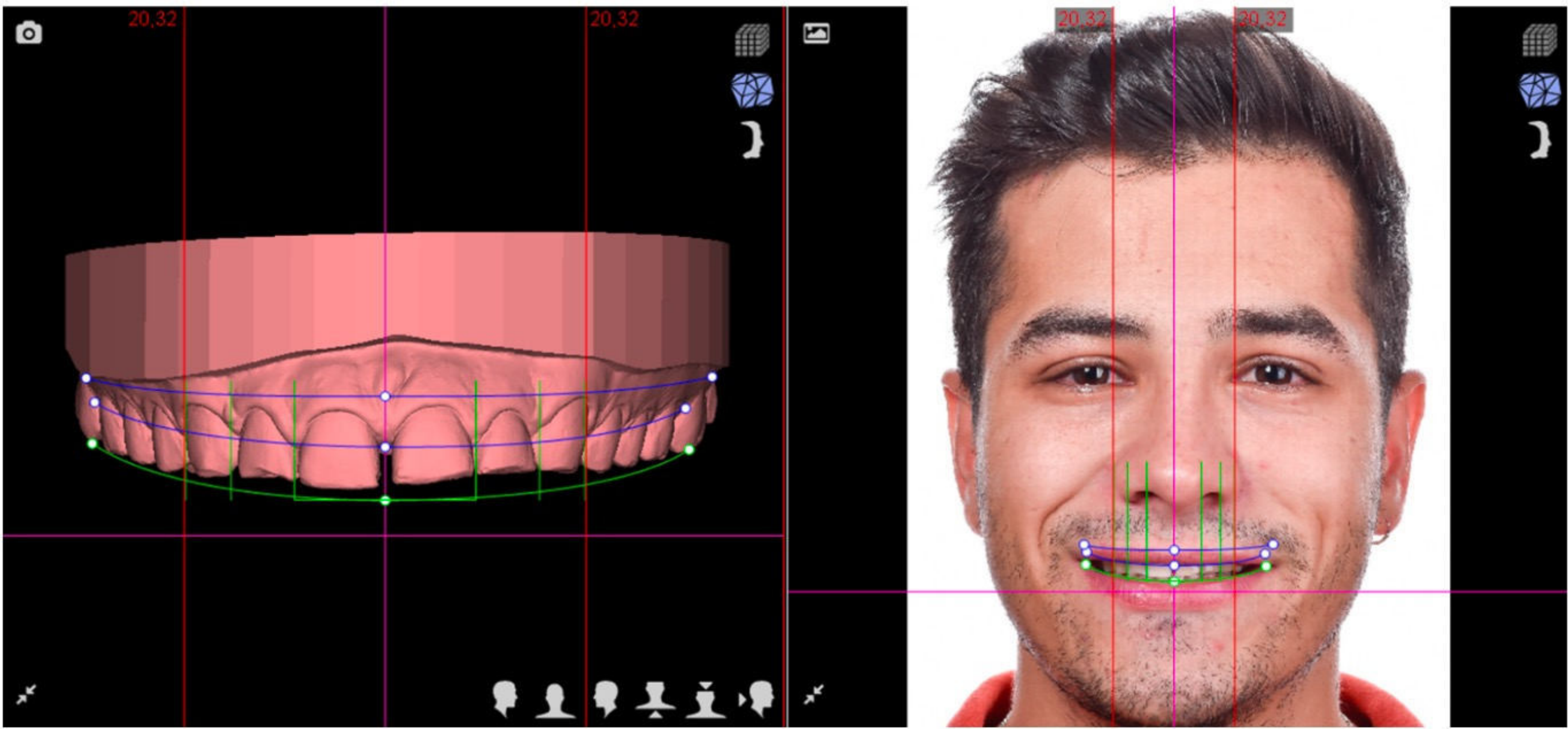


*This is one of the Slides that we recommend to use for the emotional presentation

IDEAL DESIGN

This section will consist of multiple screenshots of the design process: the DSD Frame, the Ideal Pre-treatment Design, the Ideal Post-treatment Design and finally the Mock Up. These will be images of the design on the patient's face from different angles and on the model, with different designs and transparencies for better viewing.

DSD IDEAL PRE-TREATMENT



Actual situation of the Patient with the Smile Frame



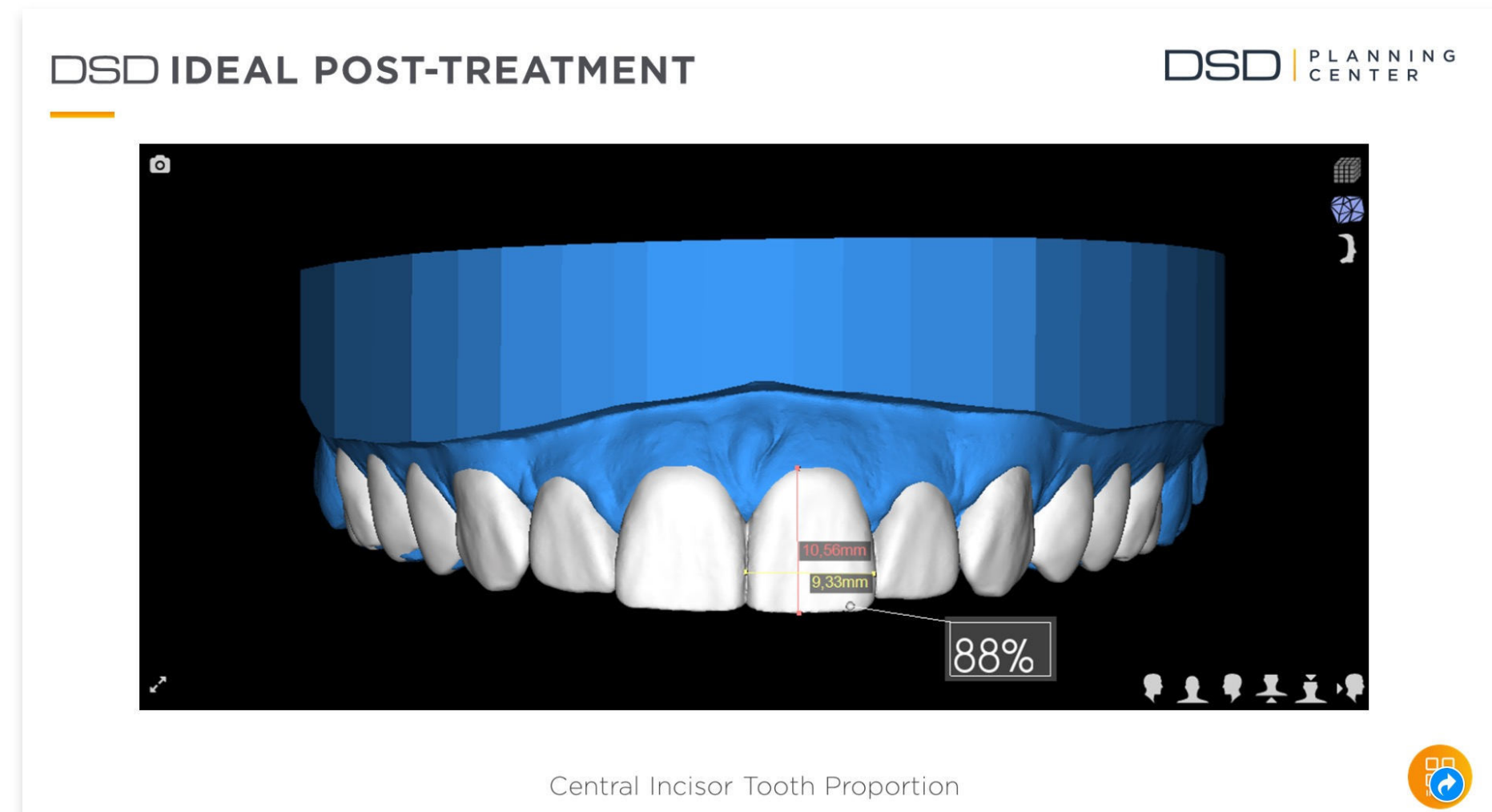
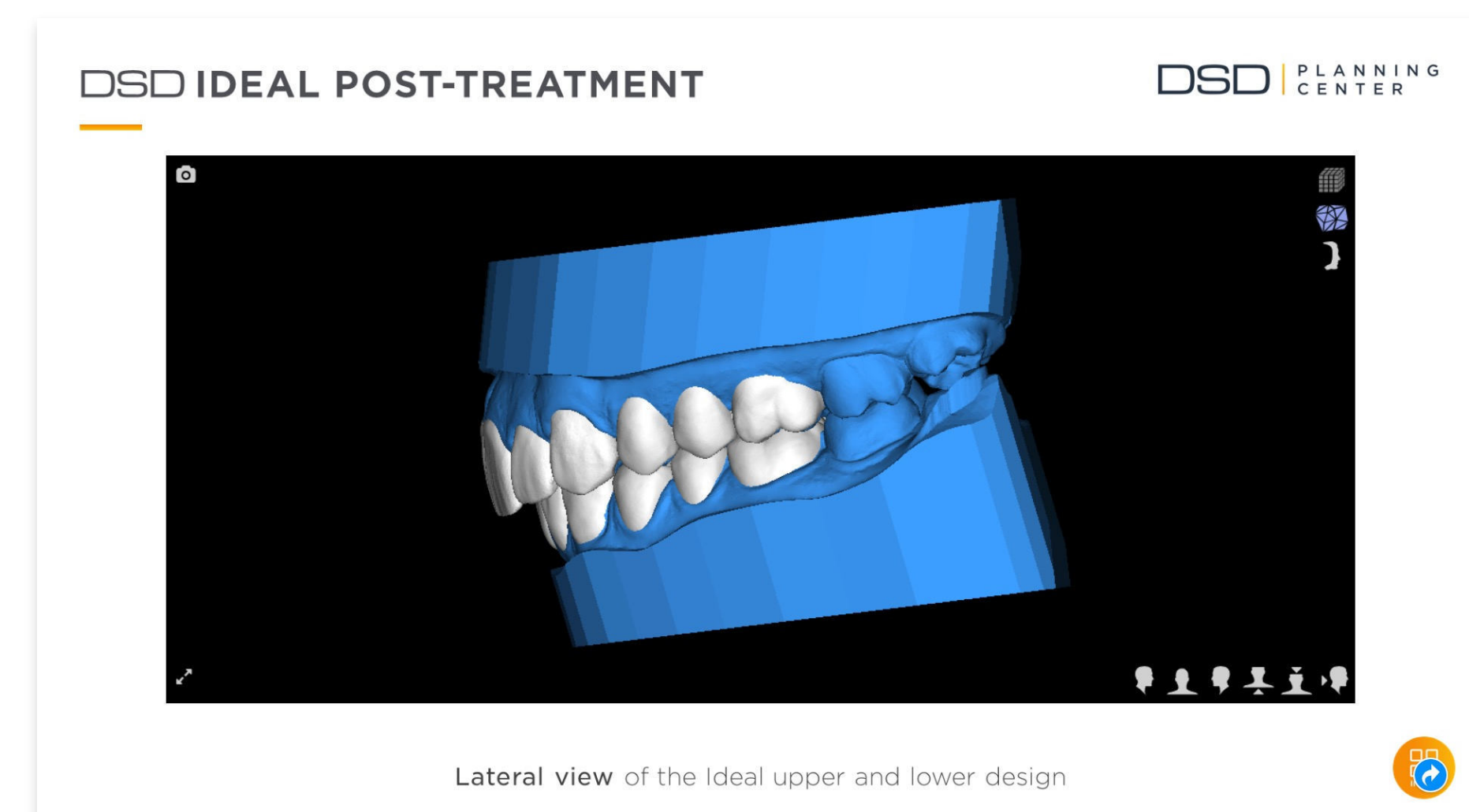
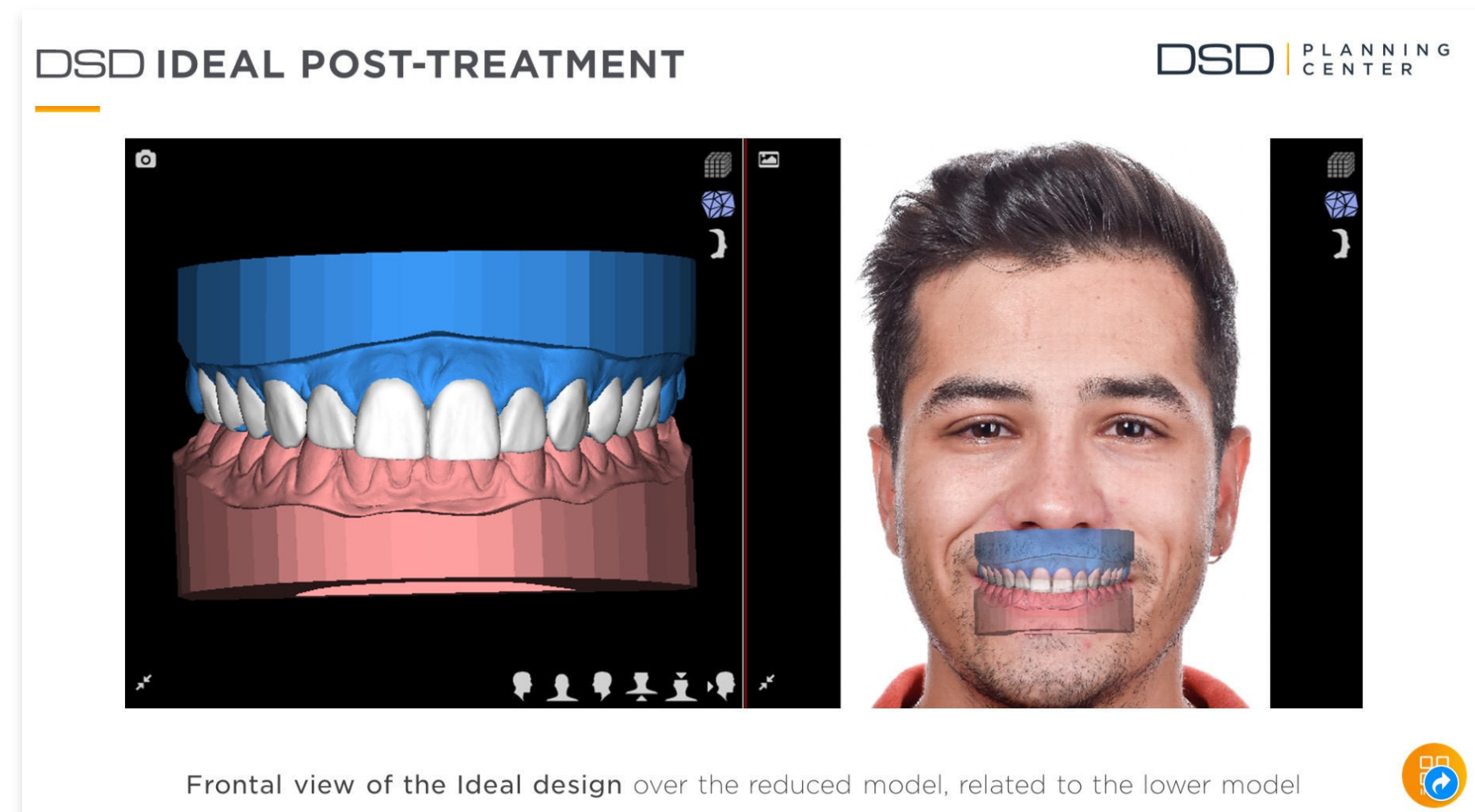
Having photos taken properly is key to be able to make the design as correct as possible. In addition, you can take advantage of them for visual impact on the patient when presenting the treatment.

This is one of the slides we recommend using for the Emotional Presentation.



On this slide, you will see a before and after comparison showing the smile we have designed on your patient's face.

This is an image that we do not recommend showing the patient before they see the Mock-Up on their face; seeing the blue gums and such white teeth can have a negative impact. The objective of this image is communication between the Dr and the Planning Center.



3

DSD
MOCK-UP

Motivational design
3D Motivational STL file



DSD DIRECT WORKFLOW

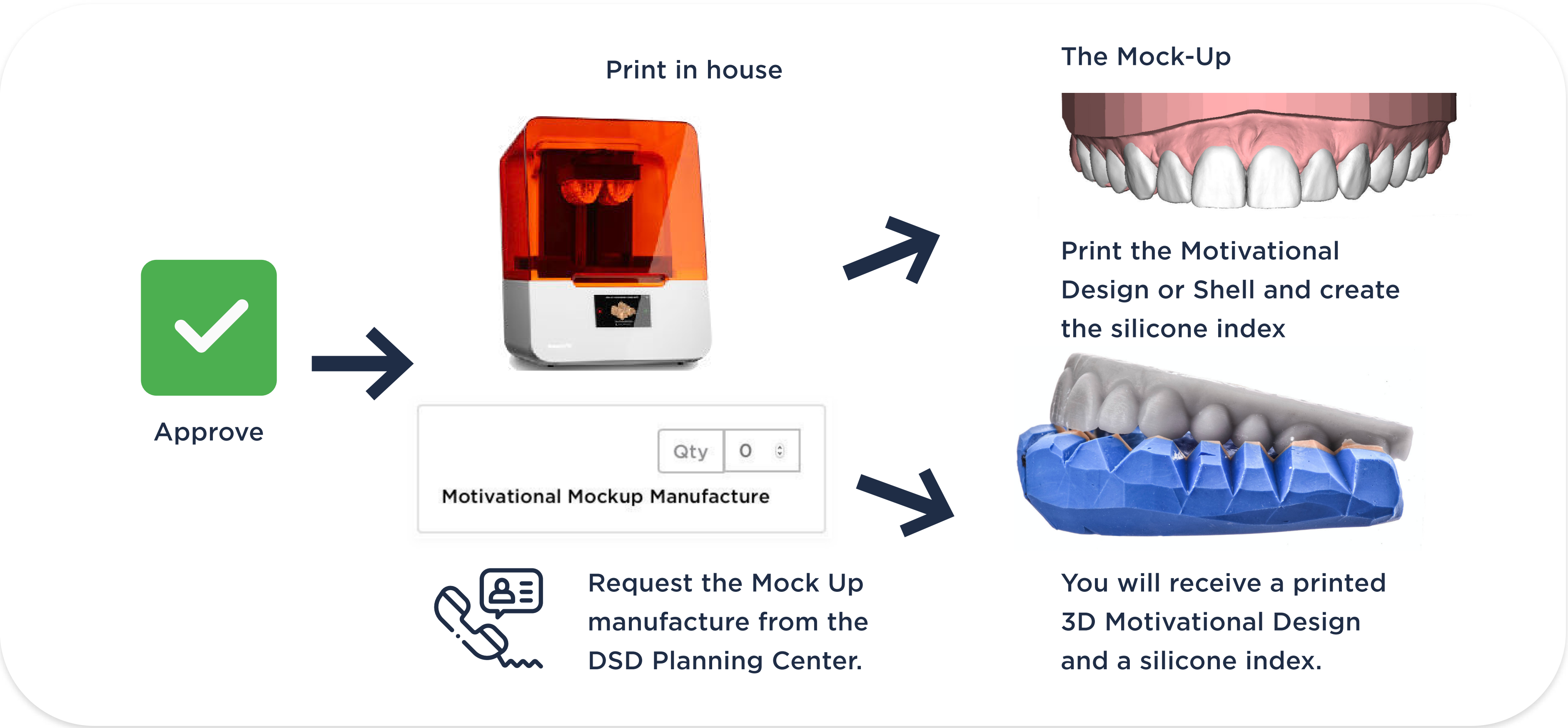
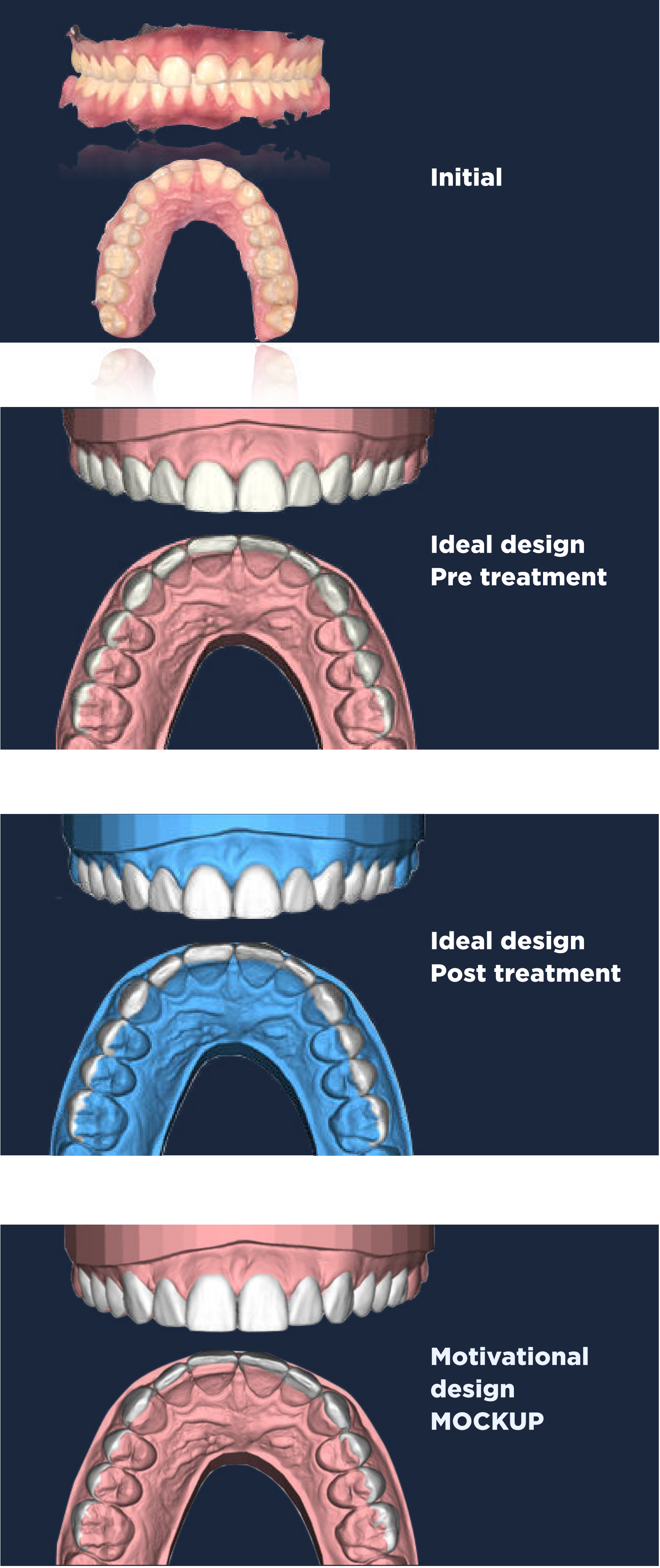
Before the 2nd Appointment

Once the presentation is reviewed and approved, you must define your treatment plan and prepare your Emotional Presentation with all the information you have available.

The only thing you will need in order to complete the presentation will be the photos and videos that you take during the 2nd appointment: the patient on arrival and after placing the Mock Up.

To place the Mock Up, you will need to have everything prepared: the printed model, the silicone index made or the DSD Shell along with all the materials needed for placement.

(If you want more information about these steps, we invite you to watch “The WOW effect - Smile Test Drive & Emotional Presentation Master Class, in which we explain each of these steps in detail).





DSD DIRECT WORKFLOW

Before the 2nd Appointment

If you have a 3D printer, remember that the model you should print is the Motivational Model.

If you do not have a 3D printer, don't worry. You can ask us to print it for you and send it to your clinic.



(If you want to know more about how to print, **watch our Master Class:** 3D Printing Technology in the Dental Environment)

Shell Mock-up

The Shell is an evolution of the traditional Mock-Up.

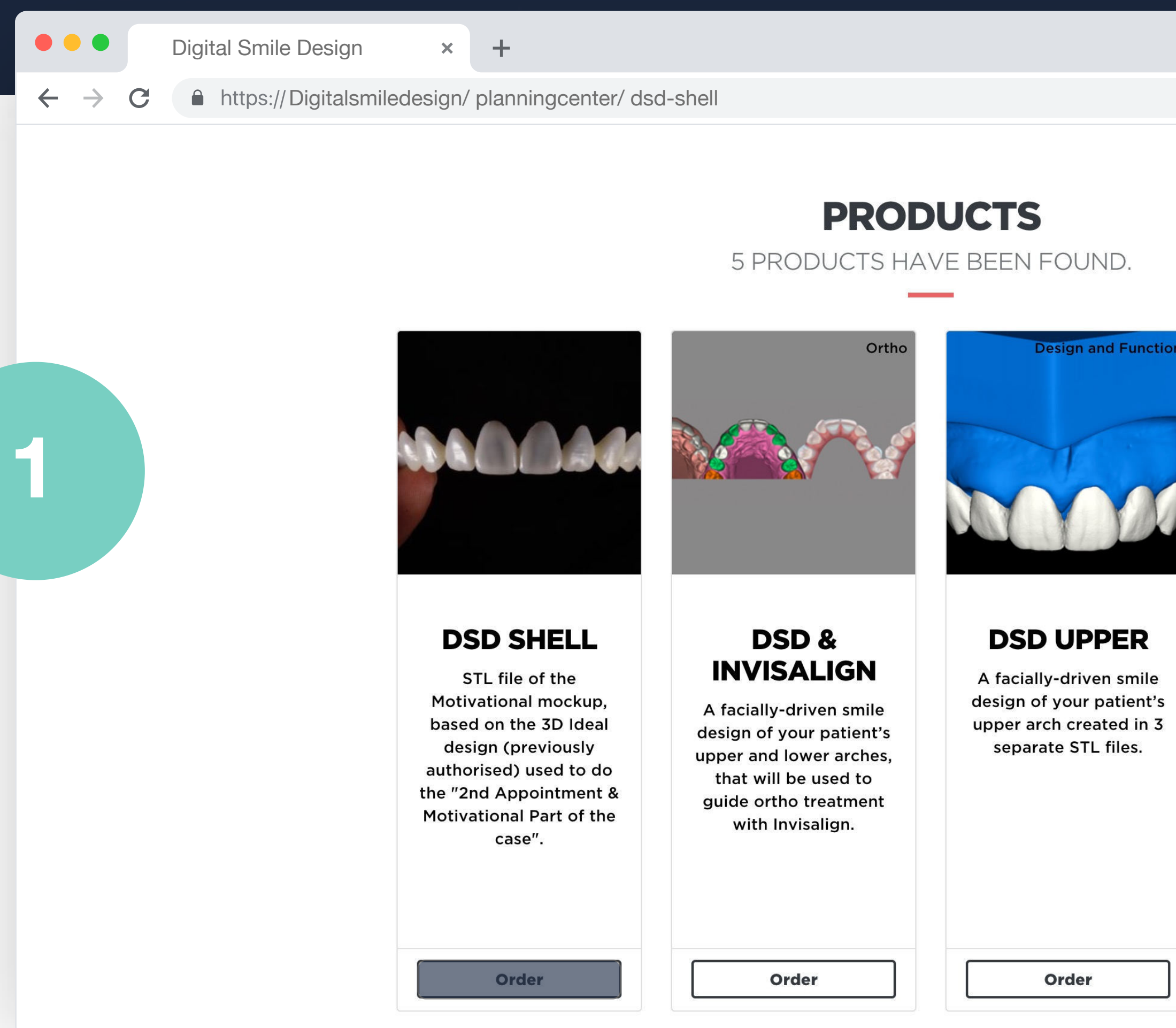
The process to order it is the same, the only difference will be that you must specify when ordering that it is a DSD Shell design. There is an extra cost to create this precise, slim shell.

You can either receive the file to print in your clinic or request that we print it and send it to you.

The difference between the Shell Mock Up and the traditional Mock-Up is that with the Shell, the result is already printed and you will simply have to adjust it in the mouth without having to make a silicone index or use Bis-acryl.

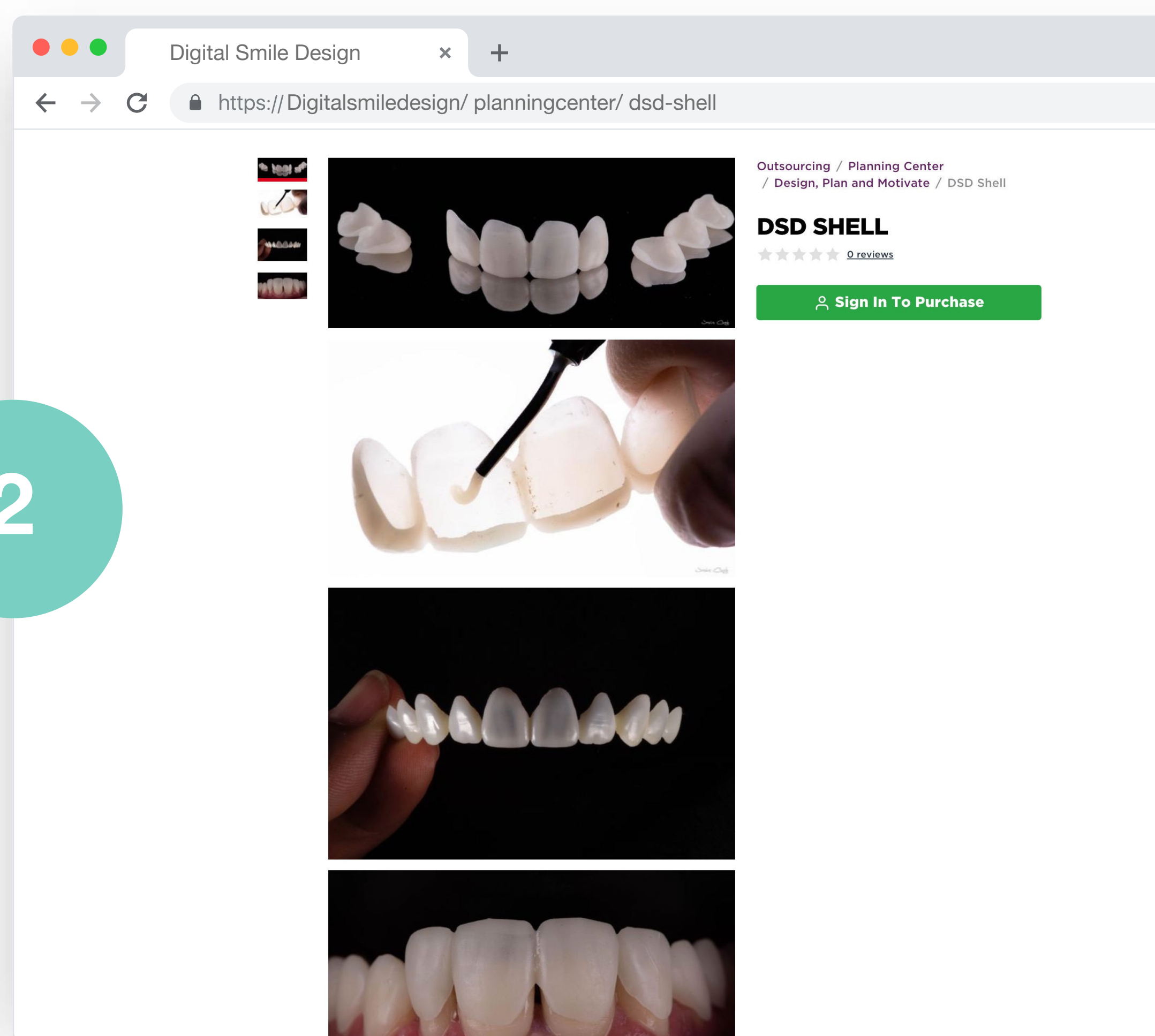
To learn more about the Mock-Up, we recommend watching “The WOW Effect - Smile Test Drive and Emotional Presentation Masterclass, in which we explain each of these steps in detail.

1



Order

2



2nd Appointment

To increase case acceptance, the first step is to create an emotional link between the patient and the possible treatment. This is part of the DSD Emotional Dentistry approach.

The process starts with the DSD Smile experience: the Mock-Up.

The DSD Mock-Up is a very powerful way to increase case acceptance.

After the emotional Mock-Up experience, the DSD workflow continues with the patient presentation. This contains all the issues found and the treatment plan suggestions, and we communicate with the patient using storytelling techniques and visual 3D communication.

Case acceptance will hopefully take place at the end of this 2nd appointment.

4

Create motivation
and rapport

Photo taken at the first consultation



Mock-Up placement

Before your patient arrives, you should have:

- The treatment plan defined.
- The presentation ready, with only the patient's Mock-Up photos missing.
- The silicone index for the Mock-Up or the Shell Mock up.
- All the materials for the Mock-Up placement.
- The budget for the treatment plan.
- The DSD Room ready to use.

Once your patient arrives, the first thing you should do is to take some initial photos and an initial video (before you fit the Mock-Up).

This way, you will be able to show a before and after comparison in which the only change in the patient in relation to the first consultation is the smile – there are no other factors that could attract attention such as a change of hairstyle, clothing, etc.

5

Present the Treatment Plan

Once you have taken these photos, you will be ready to place the Mock-Up.

(The process will be explained step by step later).

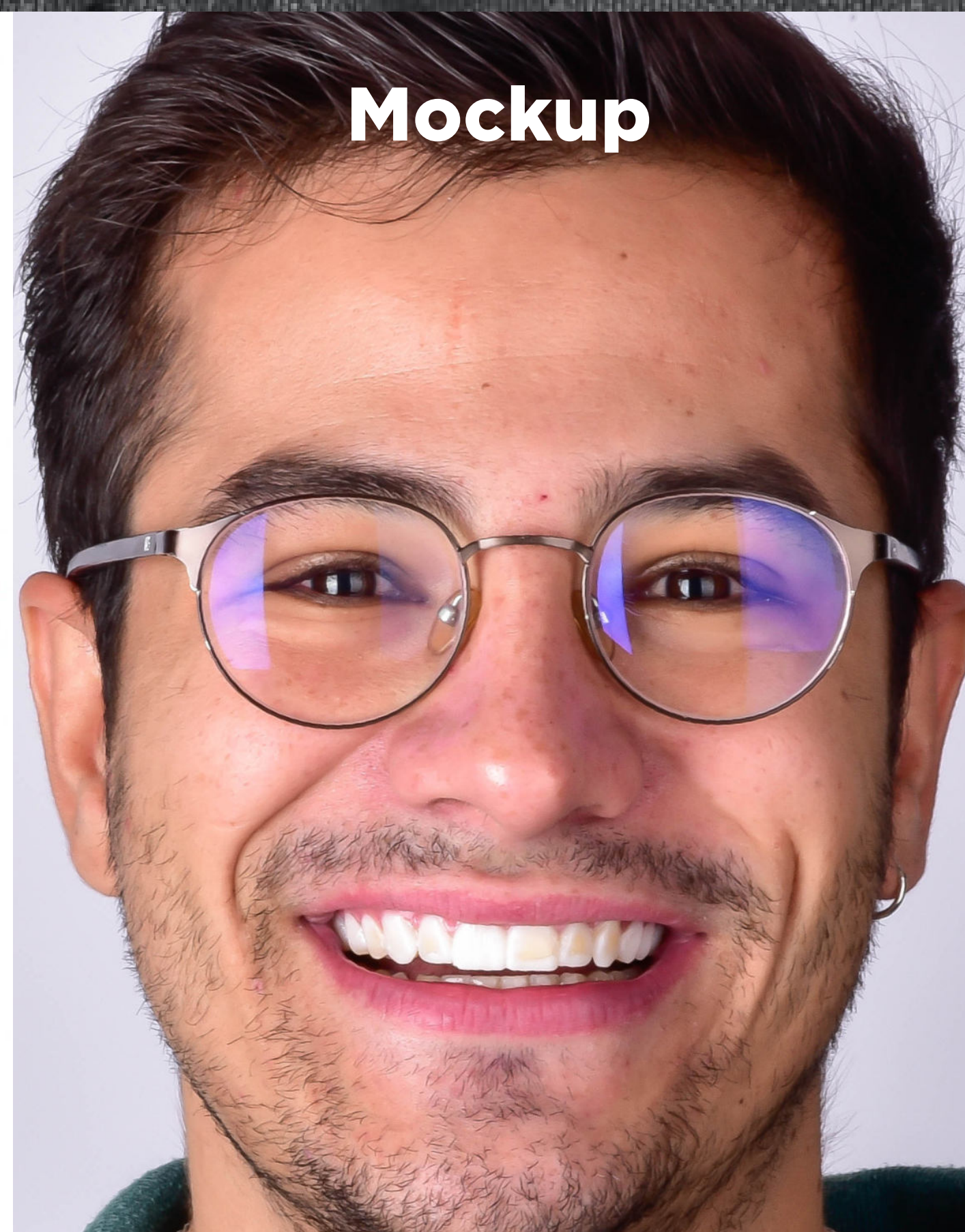
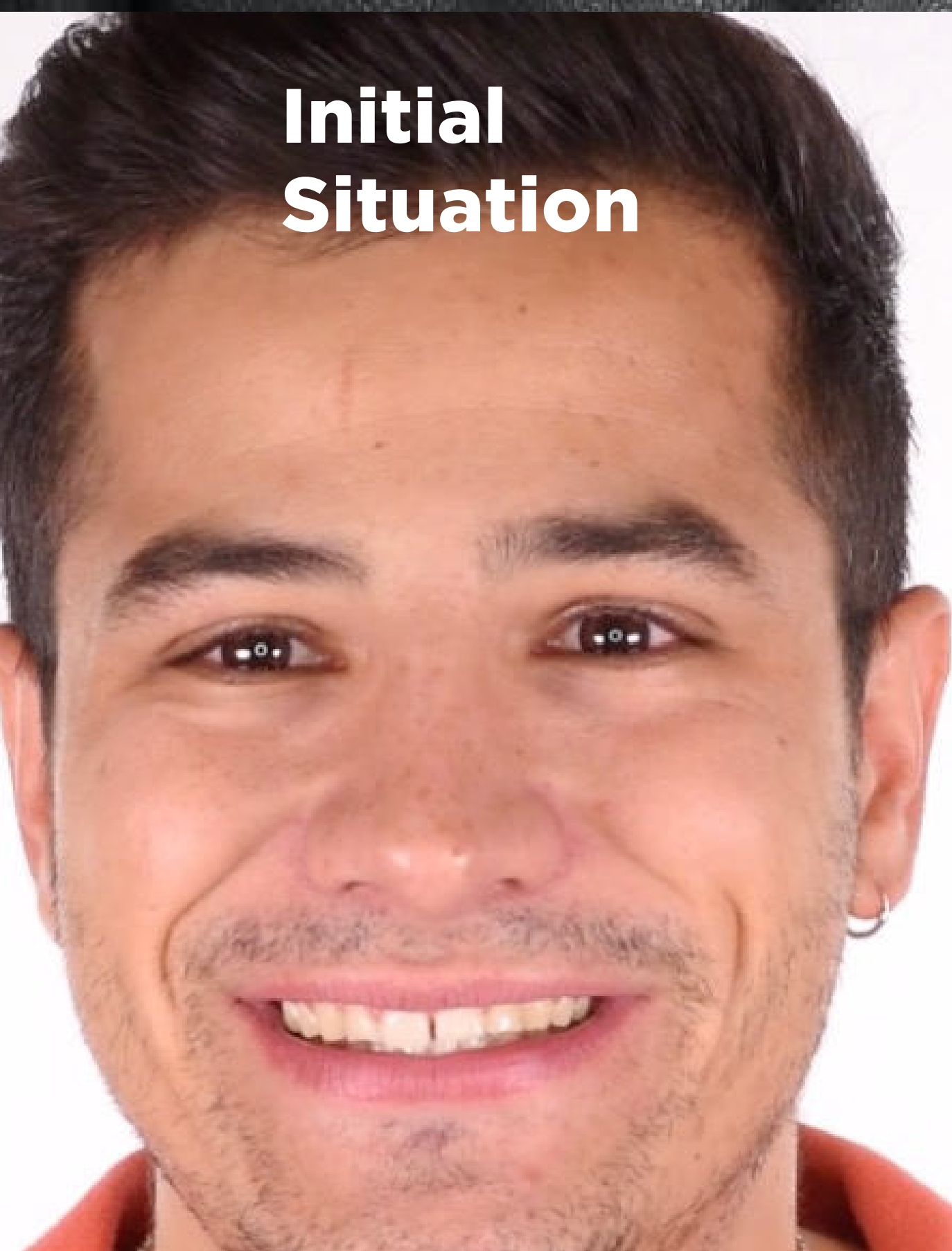
Photo taken just before the Mock-Up
Photo with the Mock-Up

Photo taken just before the mockup



Photo after the mockup

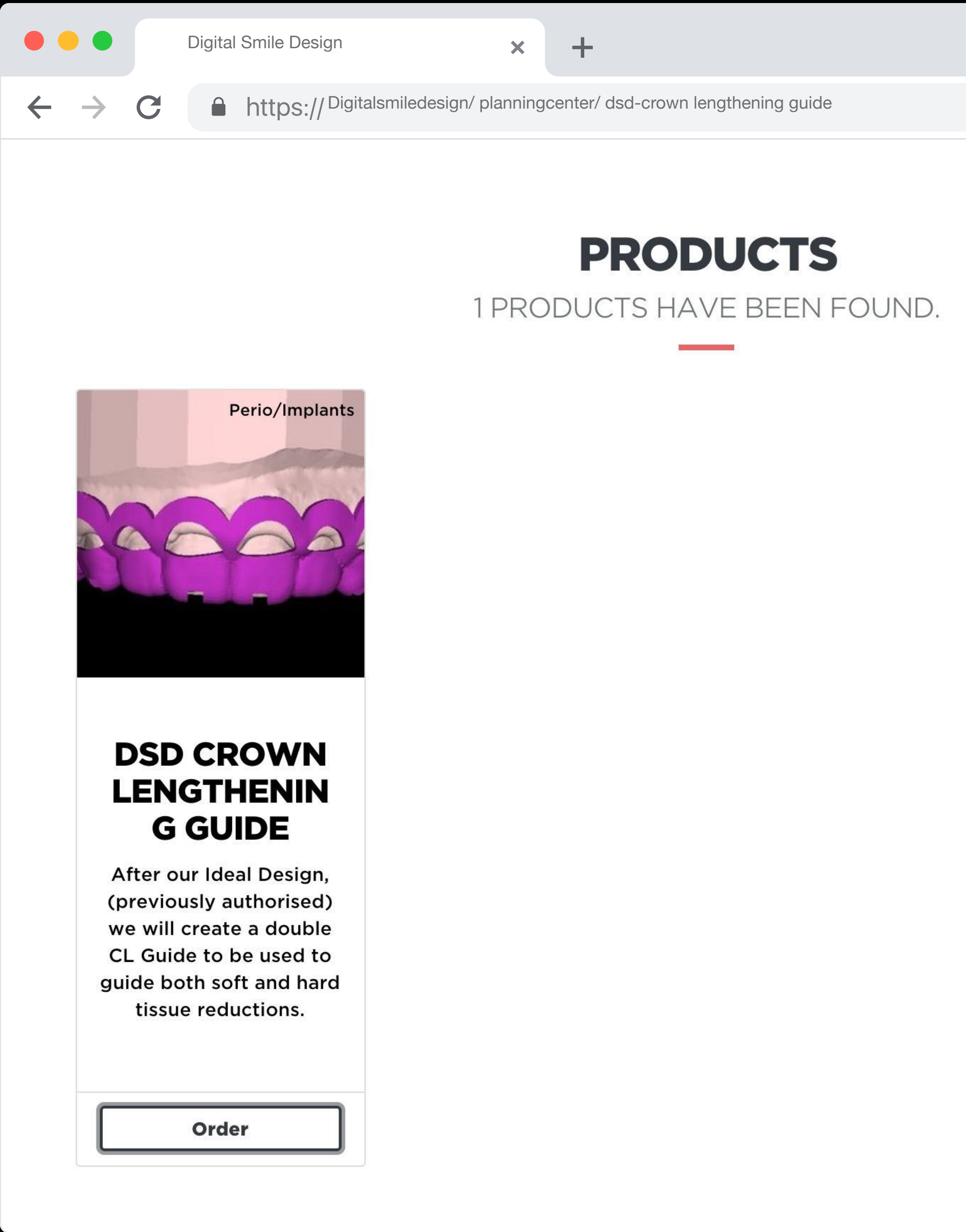
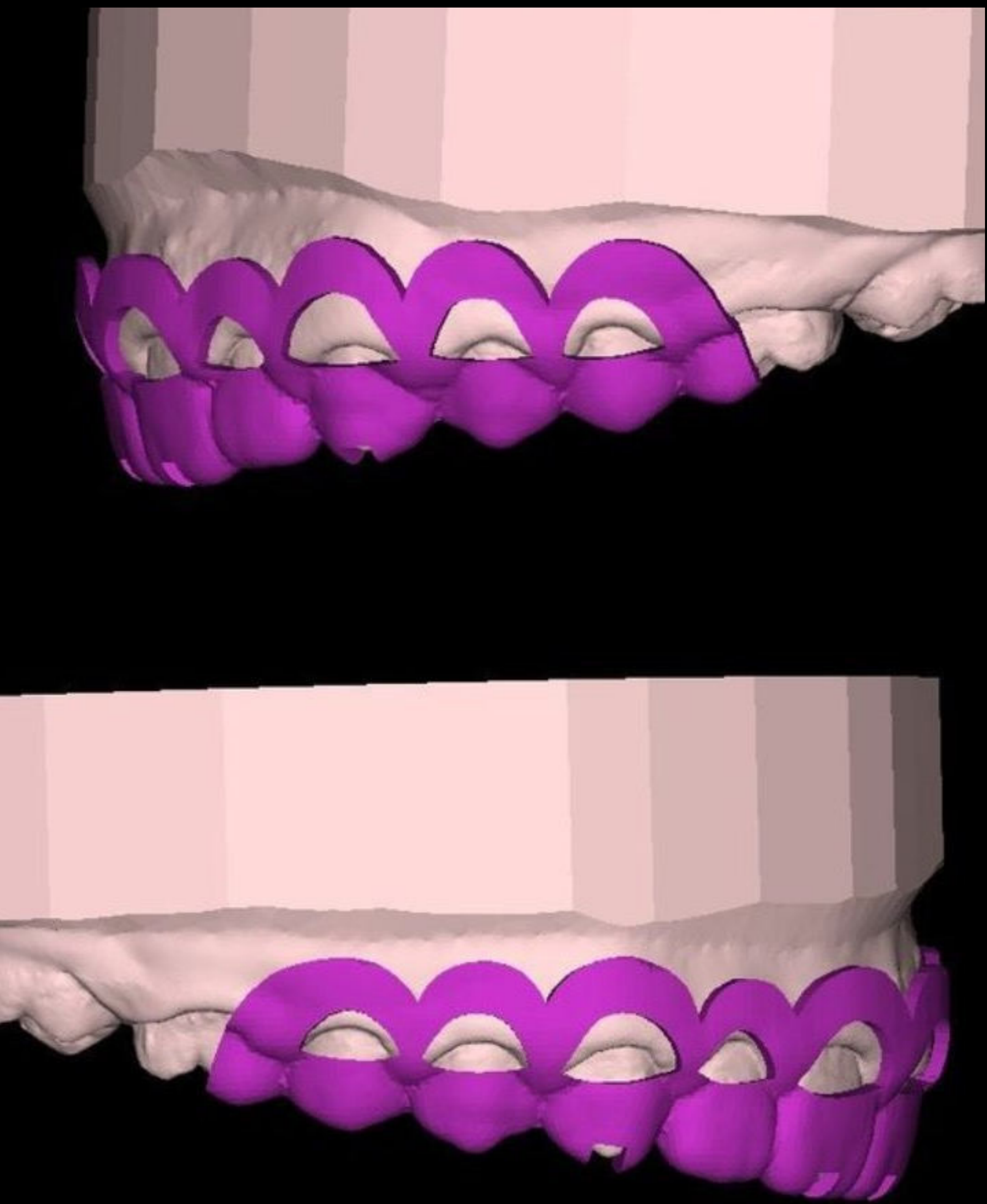


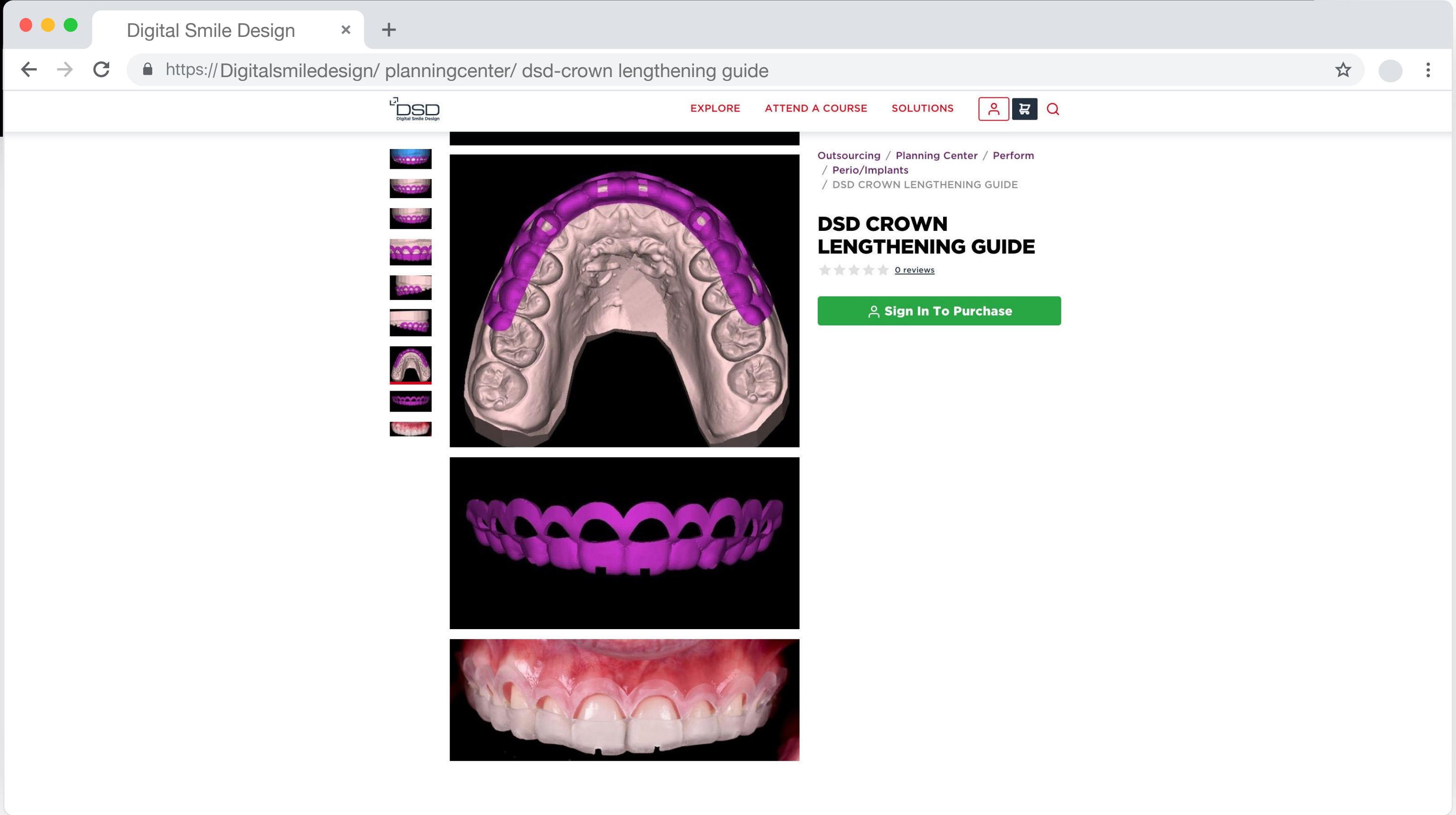
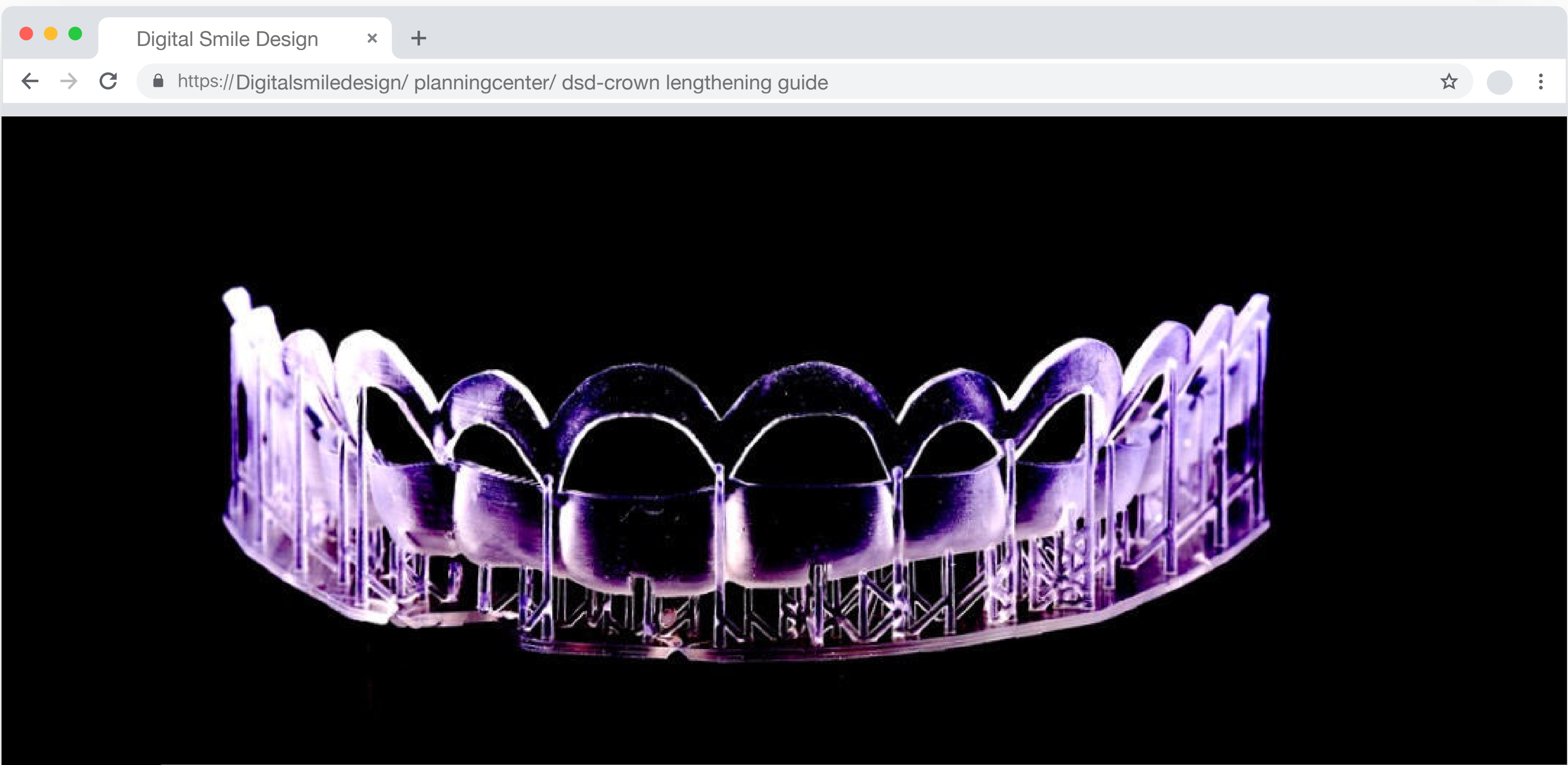


Post acceptance of case

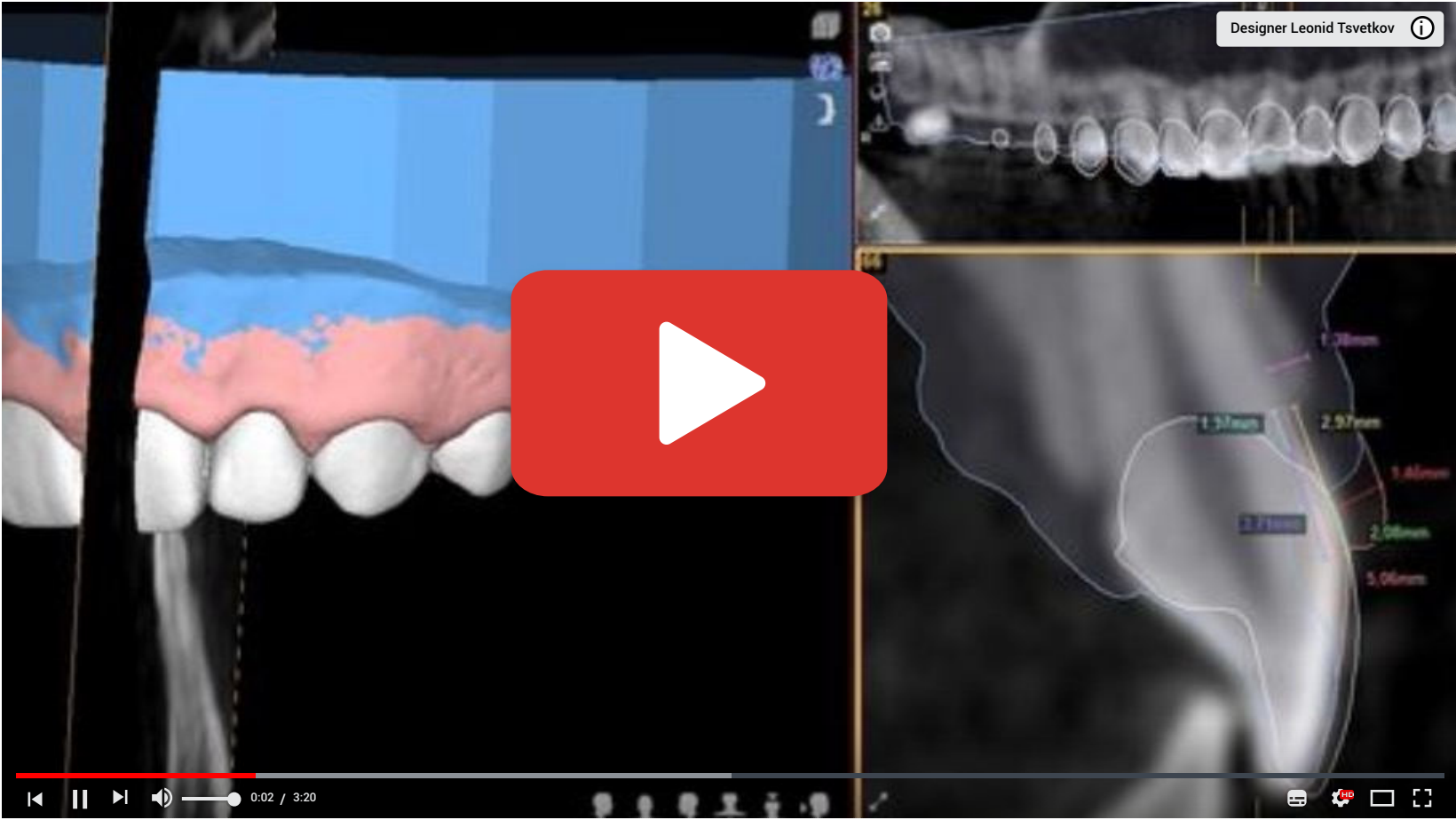
Post-case acceptance takes place once the treatment plan has been accepted by the patient. In this case, the proposed treatment was crown lengthening bleaching and DSD Direct.

It will be at this point that we visit the Planning Center account again. Go to Patient Management to update the case and request the next planning in order to continue the treatment. For this particular case, we started with crown lengthening.





(If you want to know more about this procedure, watch the DSD and Perio Master Class.)



Initial
situation



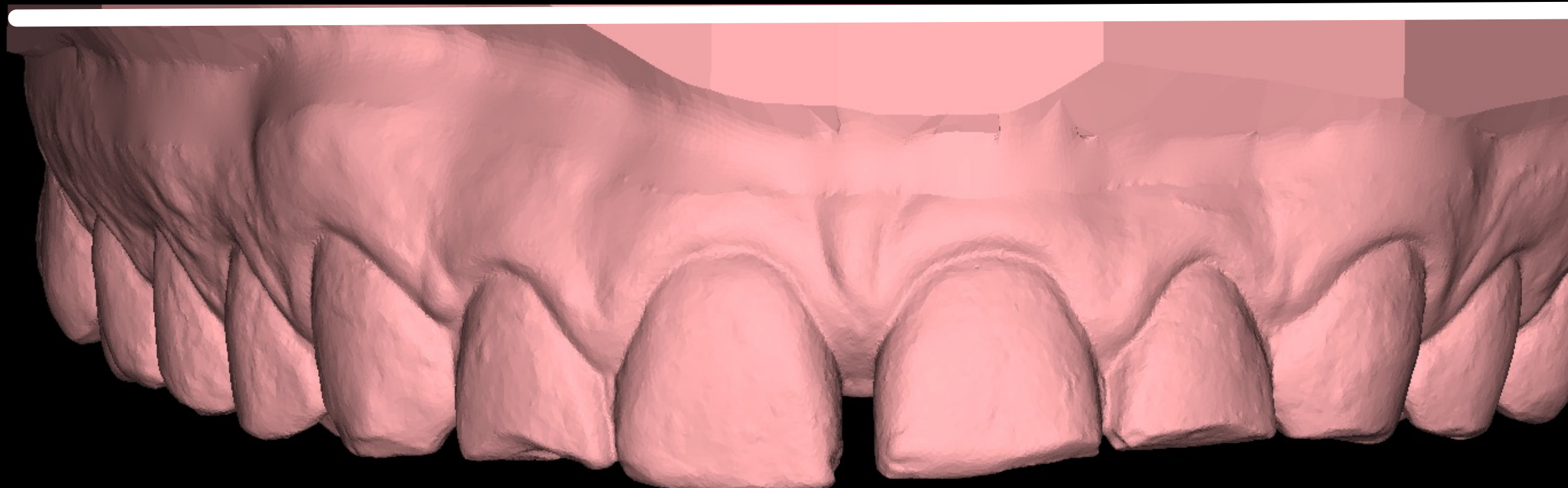
Initial situation
and the double
crown
lengthening
guide



After perio
treatment and
healing



New scan after
perio treatment
and healing

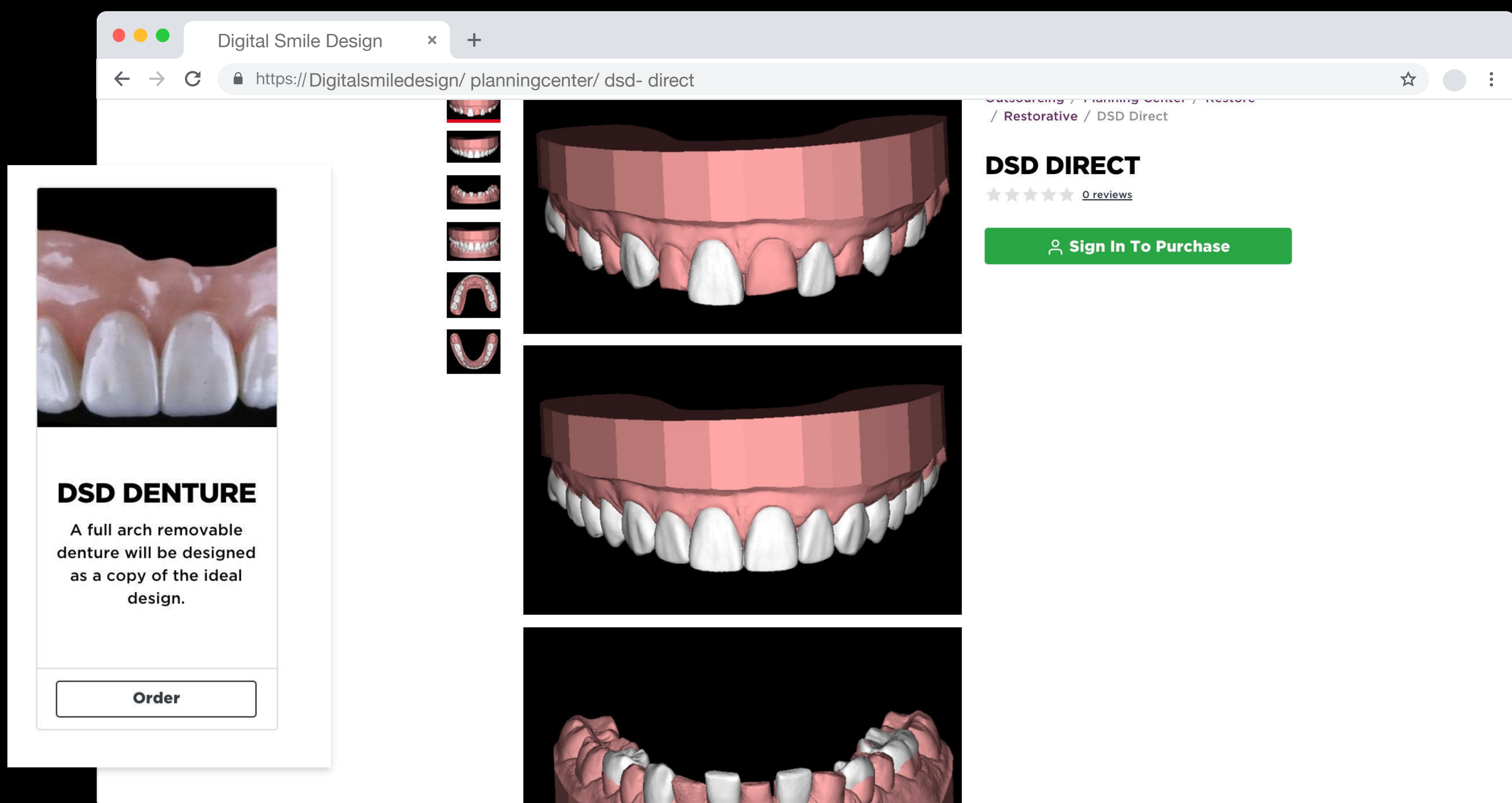
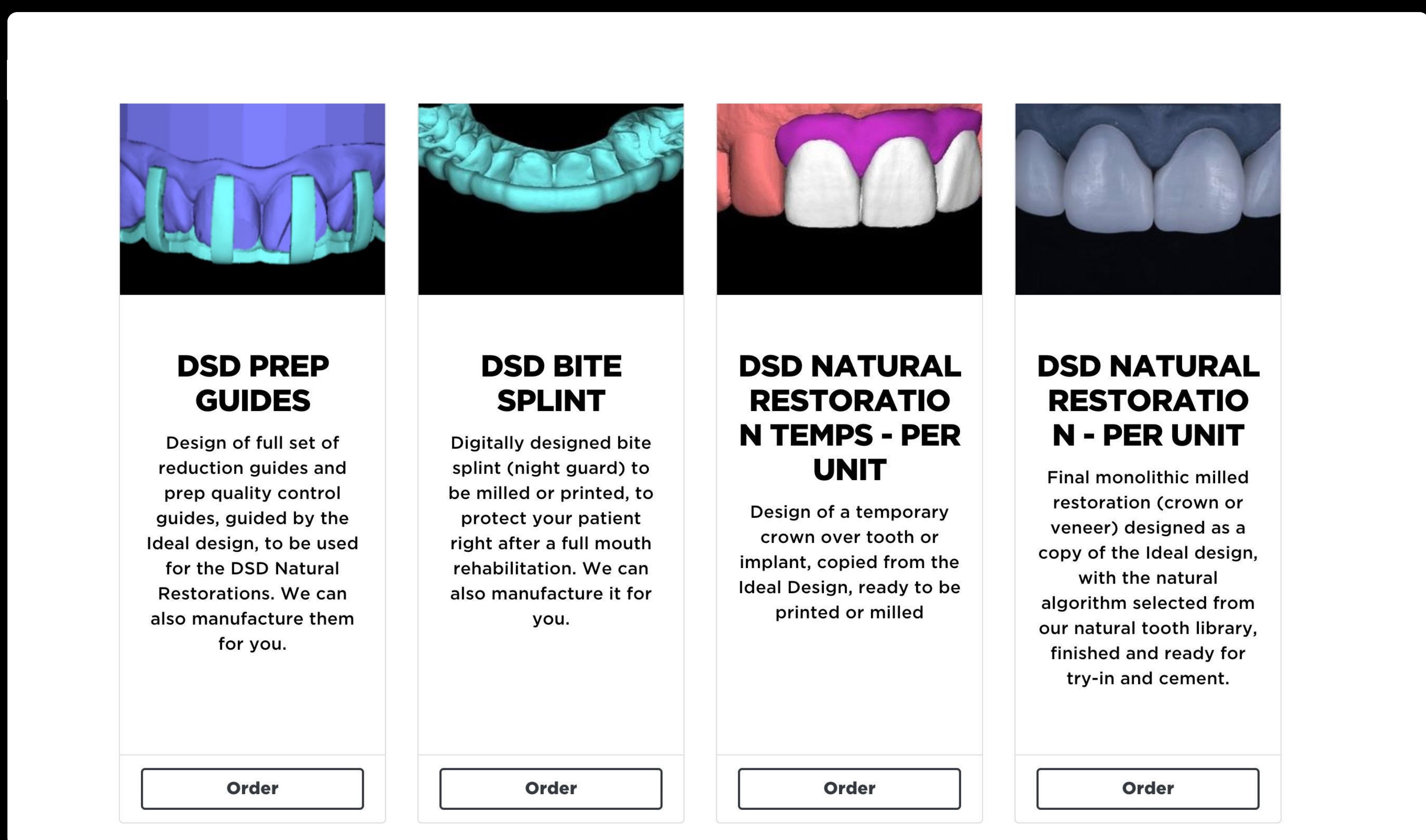


Once the periodontal treatment or orthodontic treatment is finished, we need to take a new scan as the initial situation of the patient has changed. Once again, we will visit the DSD Planning Center page, select our patient and request the DSD Direct.

If the patient's treatment plan was only DSD Direct, you will skip the previous step and go directly to request the DSD Direct planning (shown on the following slide).

DSD Direct Workflow

In the RESTORE section of the list of products, select DSD DIRECT. When you select it, you will once again have the option to request only the planning or the planning and manufacture of one arch or both.



If you request the manufacture in addition to the design, you will receive our Magic Box containing the printed models and the perforated transparent silicone index ready to perform the flow composite injection treatment.

1

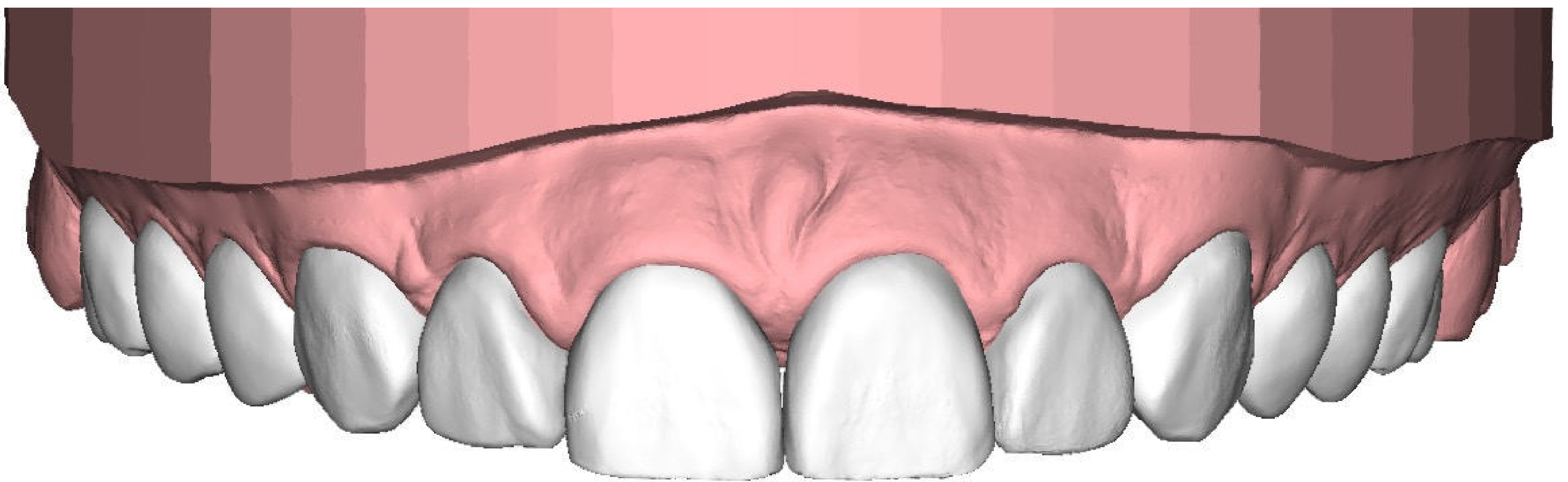
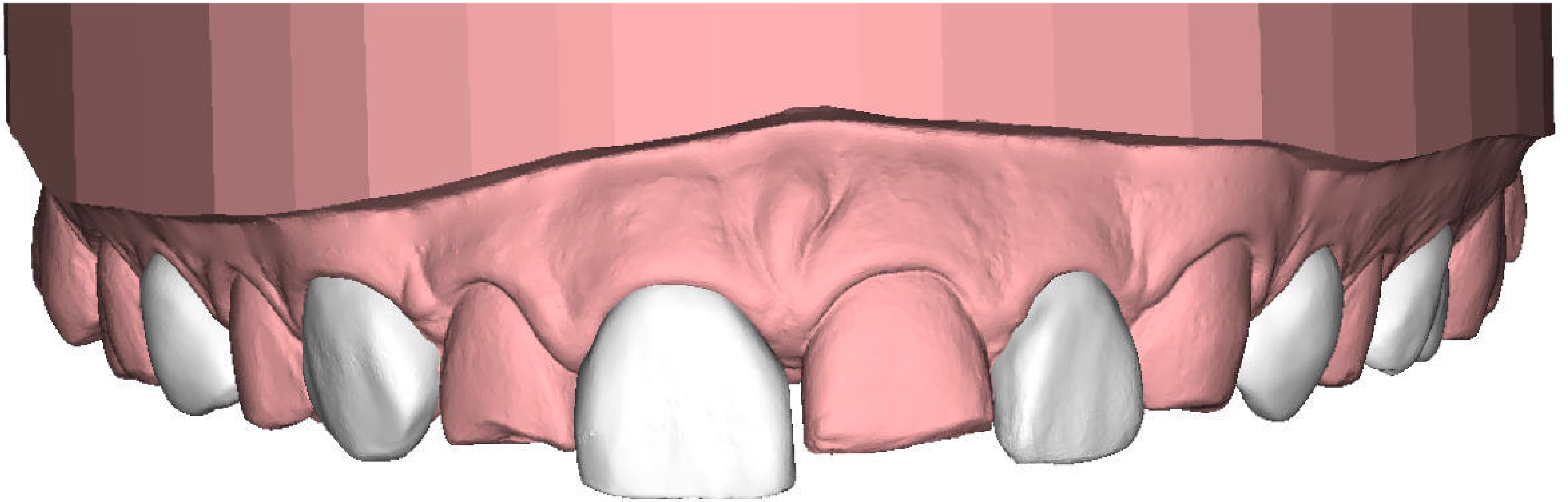
Partial design
3D printed model
& silicone index



2

Full design
3D printed model
& silicone index





DSD **Direct Workflow**

If you only request the planning, you will receive two models for each arch. One completely designed and the other partially designed, so that you can print them in the clinic or laboratory of your choice to later manufacture the silicone index for each model.

Do it yourself

The silicone index is one of the key pieces for the success of this technique.

You will need a translucent silicone as the light must pass through it in order to polymerize the flow composite. While there are many brands for translucent silicone, our recommendation is to use Exaclear from GC. It has suitable rigidity and is the most transparent on the market – it is almost like glass. This is not crucial in order to perform this technique, but having it be completely transparent allows you to see through it during the injection process and therefore avoid bubbles or missing material. To make the index we have two options:

- 1. Use an impression tray. Ideally we eliminate the retention or use one without retention.
- 2. Create a customized tray for the case. One of the ways to make this custom tray is as follows:

1

Create a putty silicone index and position it on the printed model. This will serve as a spacer when making the individual tray. (fig 2)

2

Place a polymerizable acrylic sheet and create the shape of the bucket (fig 3 and 4), or use a transparent 1mm sheet for vacuum and make this thermoformed bucket.

3

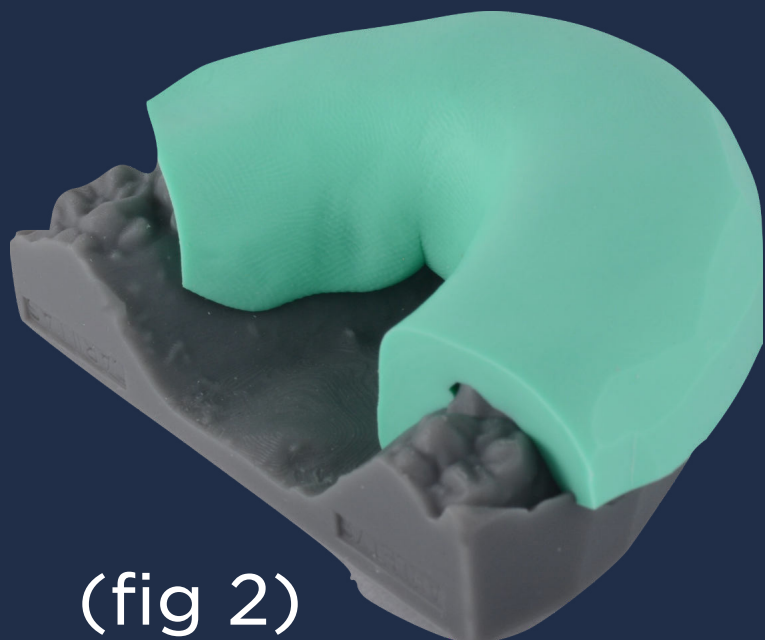
It will remove the silicone from the inside of the tray and in this way we will obtain the customized tray with the adequate space for the transparent silicone. (fig 6 and 7)

It is important to have enough space, as the transparent silicone index must have adequate thickness to maintain rigidity and not modify the design.

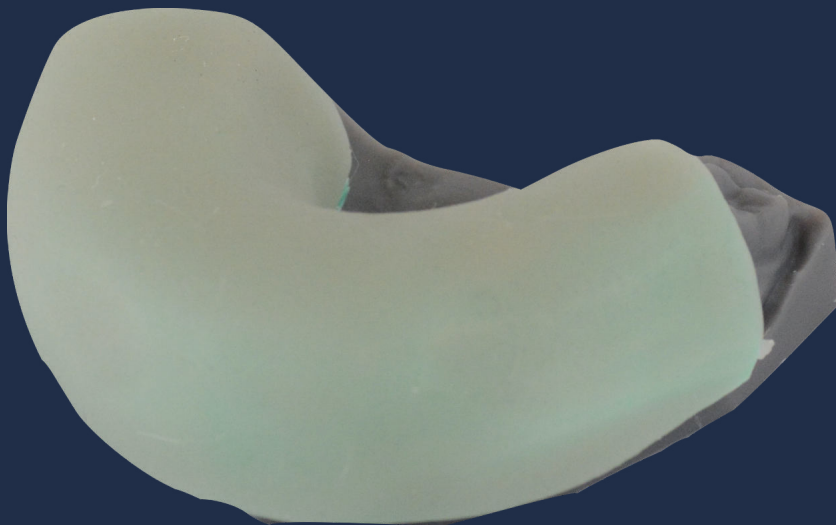
(fig 1)



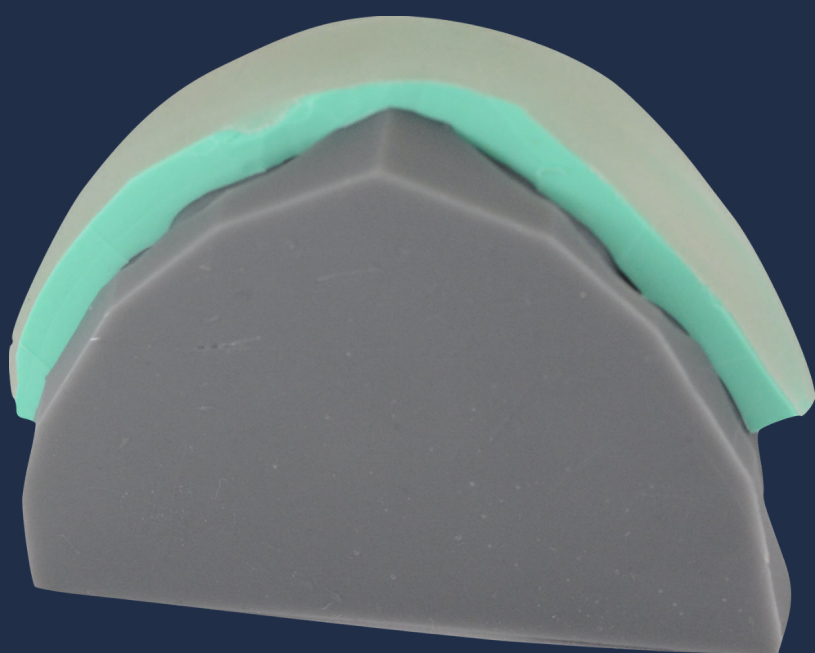
(fig 2)



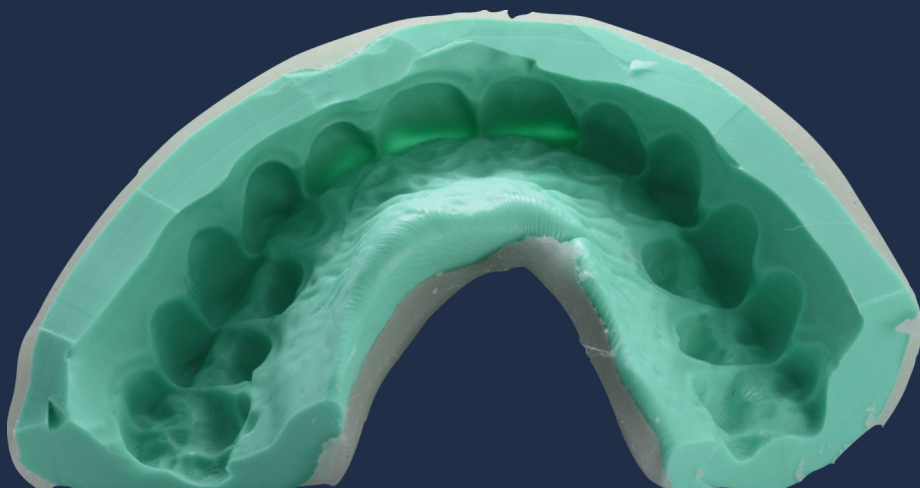
(fig 3)



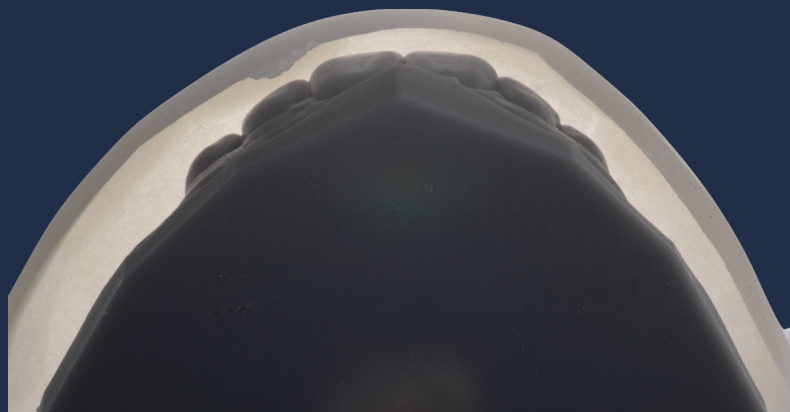
(fig 4)



(fig 5)



(fig 6)



(fig 7)

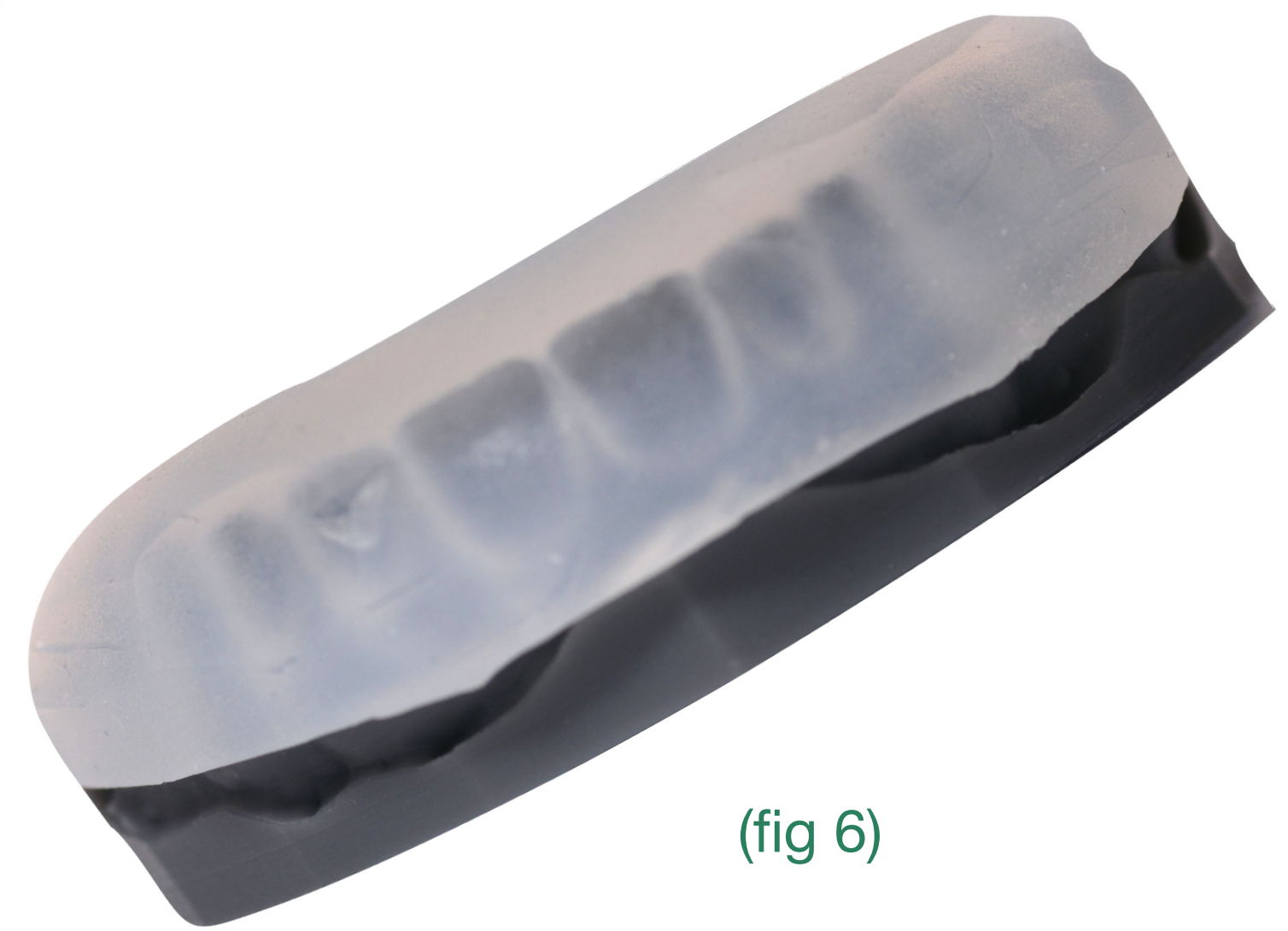




(fig 2)



(fig 3)



(fig 6)

Do it yourself

1

Once the customized tray is made, place the transparent silicone inside it (fig 2).

2

Then, put a some silicone on the vestibular face of the model, take the tray to the model and put it inside a pressure pot at 1.5 bar (fig 3). This is a very important step to avoid bubbles in the transparent index and therefore achieve a faithful copy of the printed model.

3

Remove the model from the pressure cooker and separate the cuvette from the model (fig 5) to obtain the silicone index (fig 6).

For this case, we used silicone from Ivoclar - Transil and as you can see, the color is different from the GC - Exaclear.

Do it yourself

Below is the step-by-step guide to creating the silicone index using a custom tray with a thermoformed sheet.

1.- Once the tray to be used is defined, select the transparent silicone to use. In this case, Exaclear by GC (fig 1).

2.- Apply the silicone inside the tray and on the vestibular and incisal faces of the printed model (fig 2 and 3).

3.- Position the model inside the tray, taking care to maintain adequate thickness on all sides. It is important not to press the model too hard, or it will contact the tray and we will not have sufficient silicone thickness (fig 4).

4.- Place the model with the cuvette and the silicone inside the pressure pot at 1.5 bar approximately for five to ten minutes (fig 5).



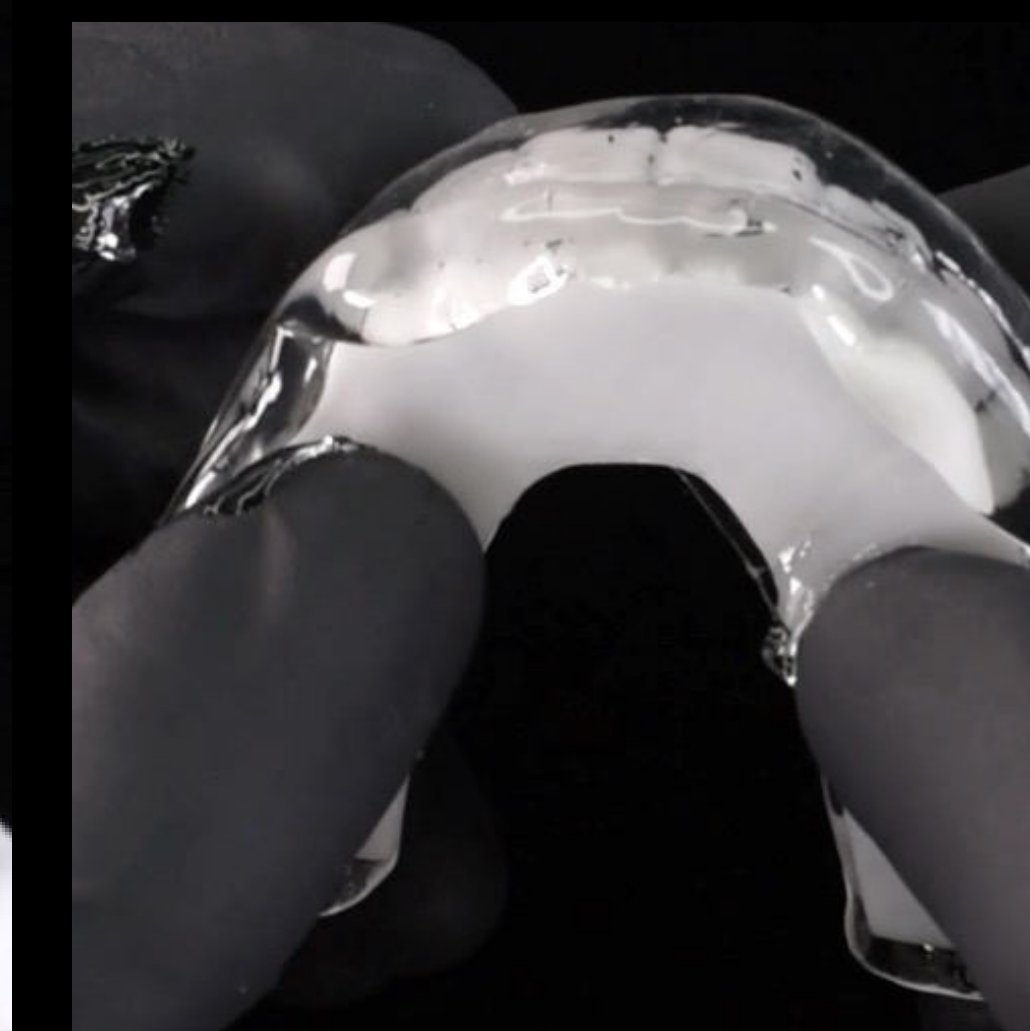
(fig 1)



(fig 2)



(fig 3)



(fig 4)



(fig 5)



(fig 6)

Do it yourself

5.- Remove the model from the pressure pot and cut all the excess (fig 6).

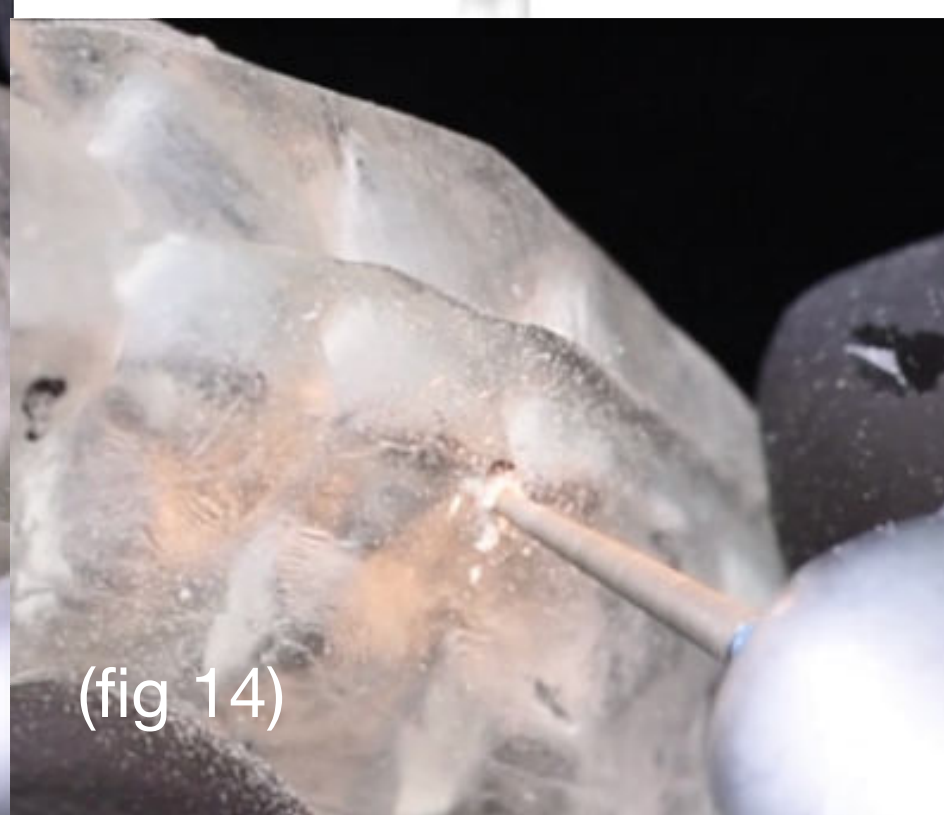
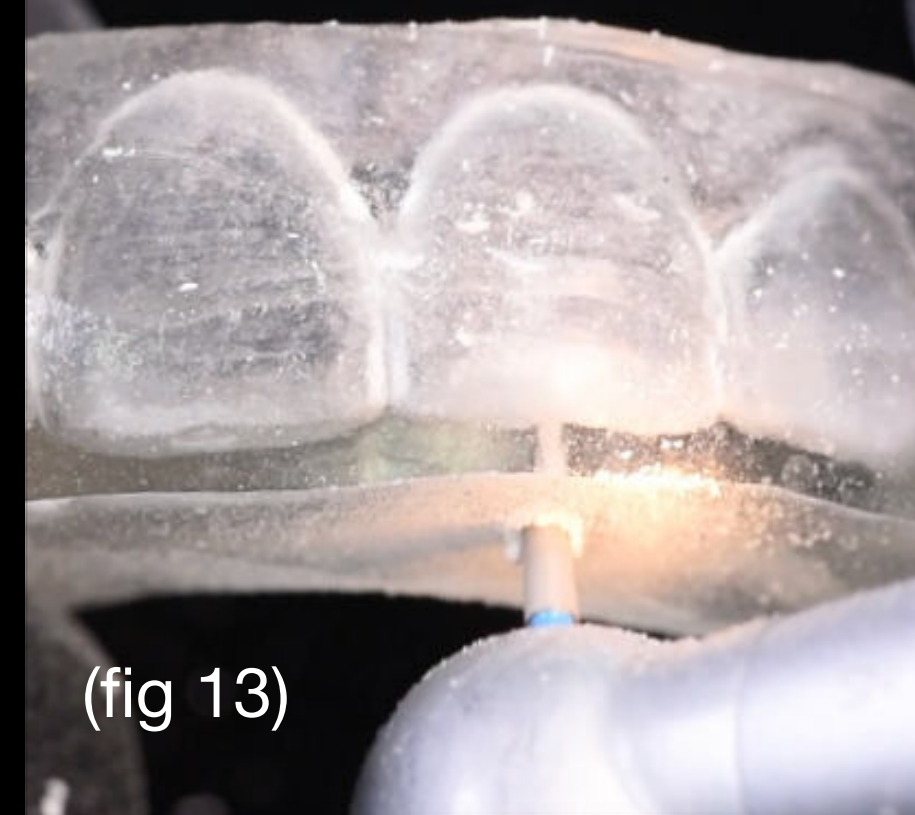
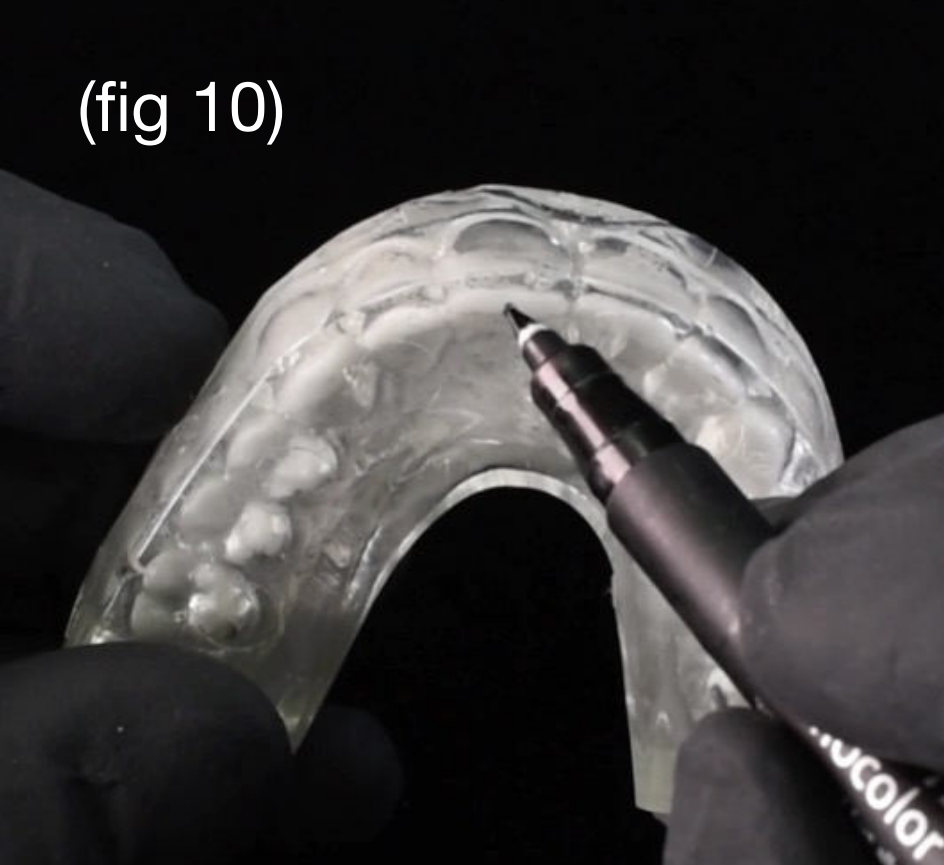
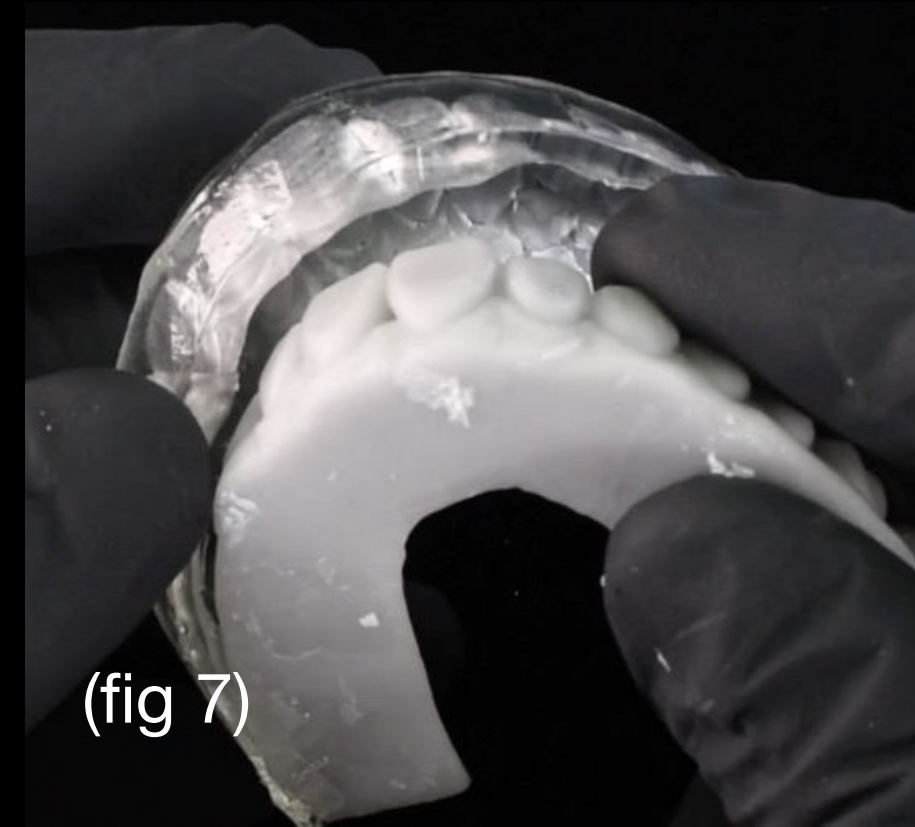
6.- Separate the tray from the model (fig 7) and clean it very well internally with alcohol (fig 8 and 9).

7.- Mark the index using a marker in the place where you need to open the hole for the injection. The hole must be made at the incisal edge with a slight inclination towards the vestibular to guide the tip of the flow composite (fig 10 and 11).

8.- Open the holes with a diamond bur at each of the points we marked in the previous step (fig 12, 13 and 14).

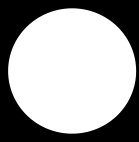
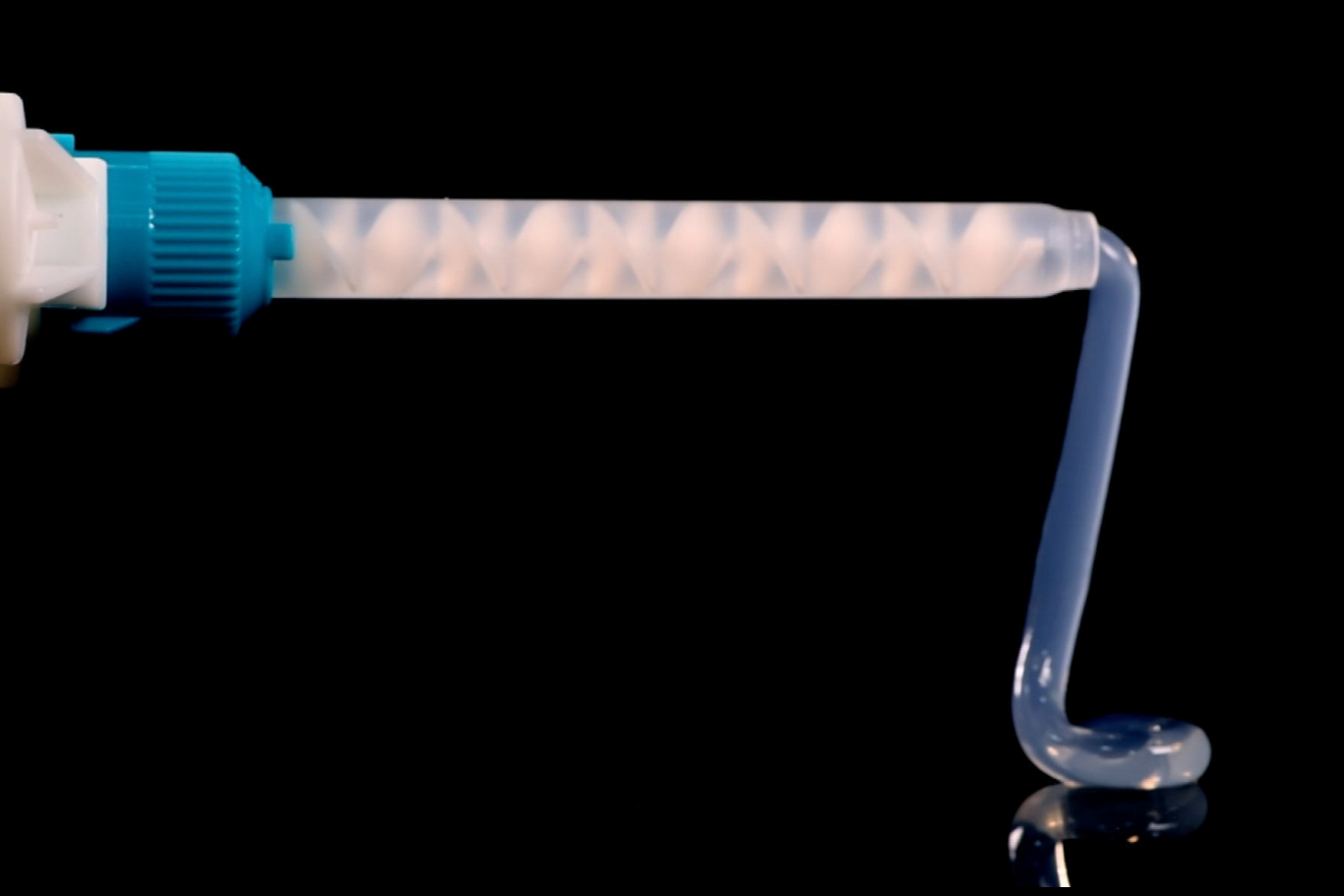
Remember that we have two models with alternating design – ensure you make the hole in the right tooth.

9.- Clean the internal surface of the index with a brush since silicone will remain inside the holes (fig 15).



Do it yourself

Below are some examples of silicone brands that can be used for this technique, along with their varying colors and fluidities.



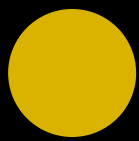
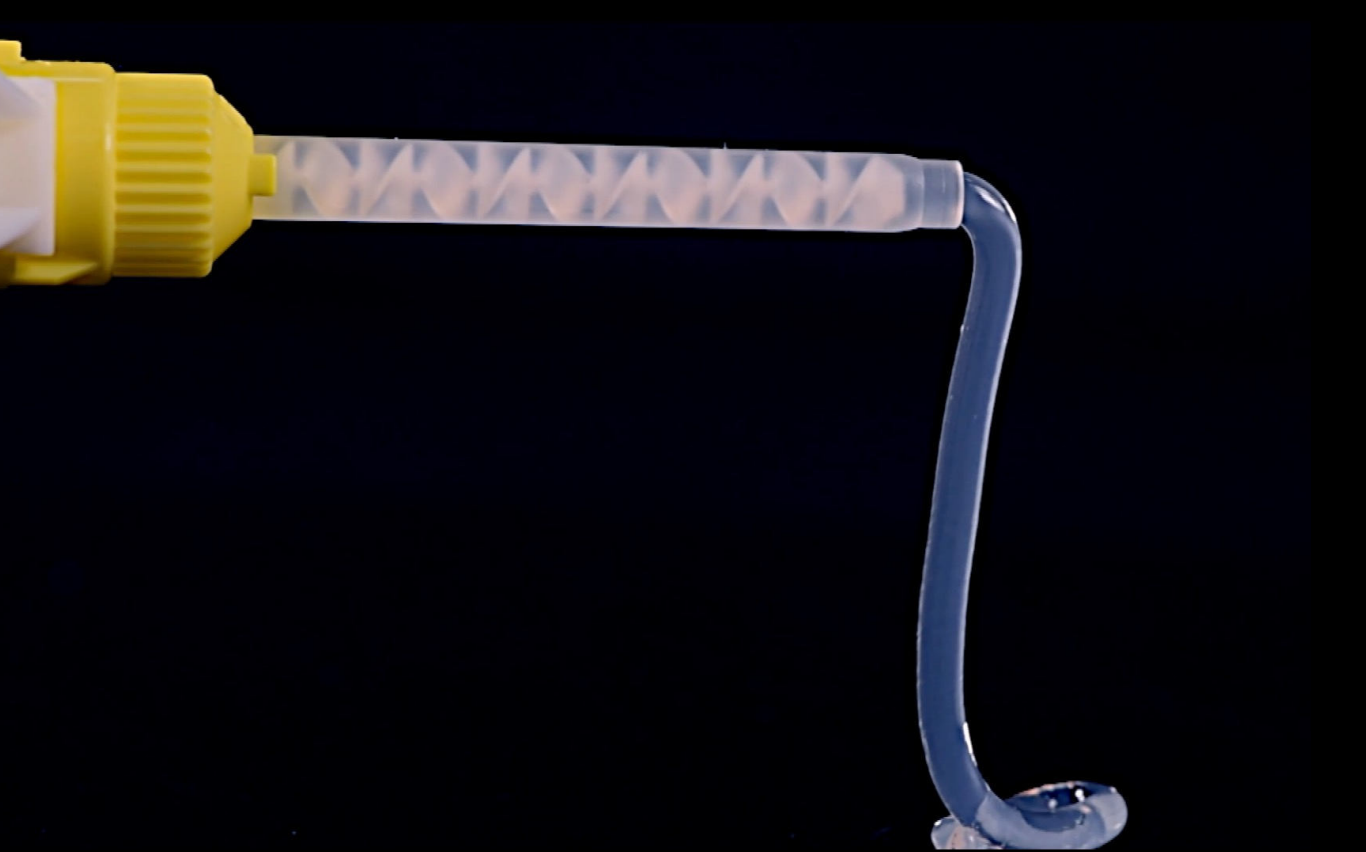
Transil F - Ivoclar



Exaclear- GC



Elite Glass- Zhermack



Elite Transparent- Zhermack



Scan Translux- Yller



**How do you
perform the DSD
Direct technique
clinically?**

—

CLINICAL Color test

Selecting the color we are going to use for this technique is very important. As the composite we inject will have different thicknesses on different teeth, the appearance may be different.

Furthermore, the restoration will be a single color and we must ensure that it is the final color that the patient wants.

For cases in which there is a lot of dental tissue that we want to restore, we must avoid showing the transition between the restored part and the tooth.

In the video below, you can see how we do this color test.

First, we put glycerin on the tooth in order to be able to easily remove the injected composite used for the test. As this is only a test, we must not perform an adhesive technique.

Then, we place the first silicone index of the partial design and inject the 11. Next, we place the second silicone index of the total design and inject the 21.

We can do this with each one of the composites that we believe may be a good option for the case, before then making the final decision.

If you are unsure which composite to select, you can repeat this step as many times as you want. The important thing is to make an appropriate decision.



Useful tip! During the color test, polish the composite surface after injecting. As it usually looks a little opaque when injecting, it can give us an inaccurate perception of the color and gloss.





CLINICAL Color test

For this case, we believed three different flow composites might be a good fit, so we decided to do three tests.

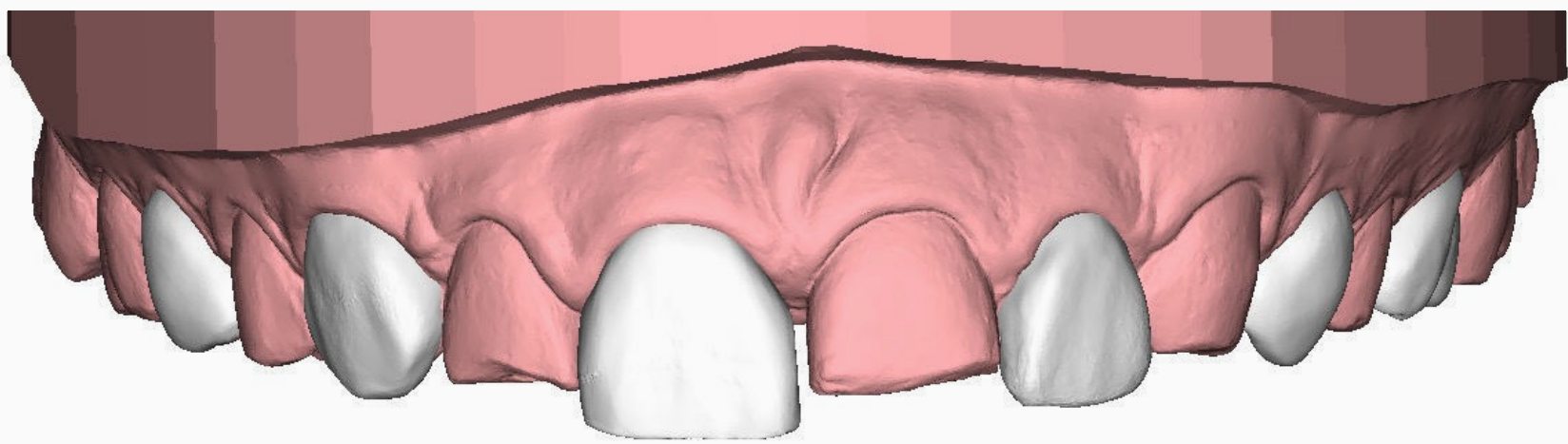
In the photo above, you can see how each composite looks different.

For this case, we used Clearfil Majesty W.

Once the color is defined, you are ready to begin the DSD Direct process.

CLINICAL Preparation

This is the patient's initial situation before we began the restorative process.



It is recommendable to use mouth gaps such as the Optragate for increased comfort during the clinical procedure and to avoid contamination of the composite during the process.

Before beginning, confirm:

- That you have the appropriate silicone index, corresponding to the partial design.
- That the holes are in the correct teeth.
- That the index fits perfectly in the mouth.



CLINICAL Preparation

To improve adhesion, you can first prepare the surface. To do this, we recommend using devices such as Aquacare or doing a mechanical polish to ensure that the surface is ready for the restorative material





CLINICAL Isolation

The injection technique will be carried out in two steps. First we inject half an arch and then the remaining teeth.

To do this, it is necessary to isolate the teeth that are not being injected to prevent them from sticking to the composite that can flow during the injection process.

This isolation is done using teflon tape on each tooth.

There are different types of Teflon which vary in thickness and width. The wider the better, as it gives you more surface and will make it easier to cover the entire tooth.

We do not recommend using varieties that are too thin because they break and tear easily.

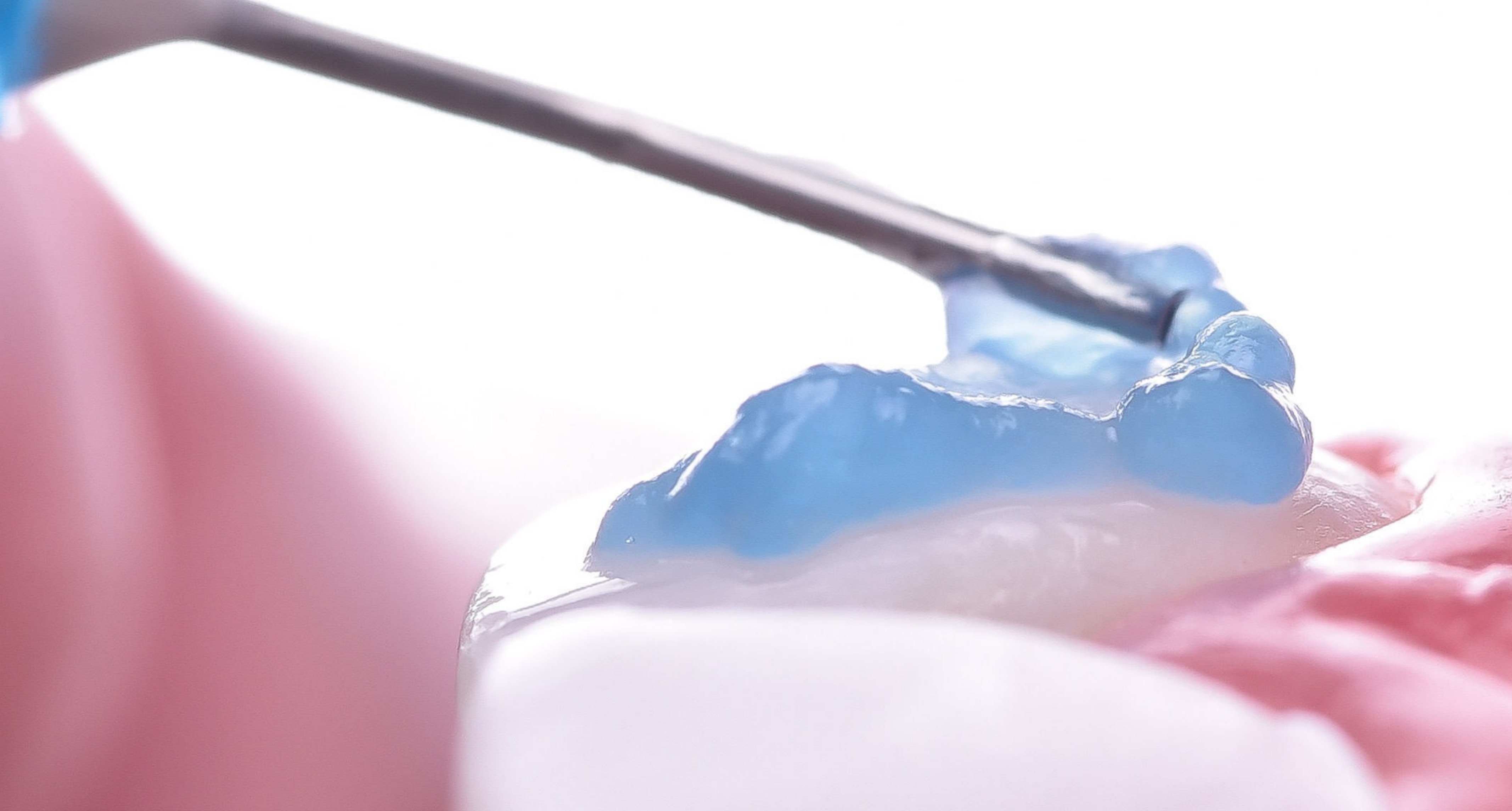
The video below shows the process of placing the Teflon.

Try to insert the Teflon between the papilla and the tooth, inside the gum in the cervical area if you can. The better the isolation, the easier the process of cleaning the excess composite after the first injection.





Teflon 1ST ISOLATION
CLINICAL Isolation

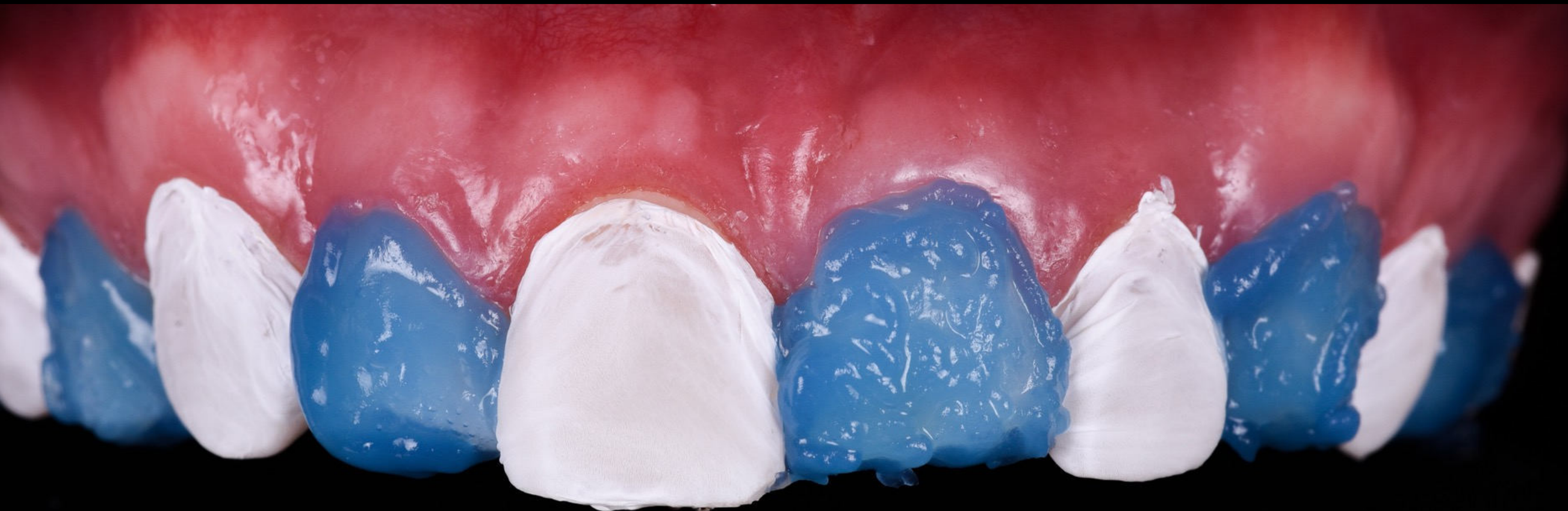


CLINICAL: Etching

Once the isolation process is complete, we begin the process of etching with orthophosphoric acid. This follows the protocol of the adhesive technique that we routinely use and we will apply it to the teeth that we have not isolated.

Remove the acid using suction, clean the excess with water and dry the tooth to proceed to the next step.

You must be careful not to remove the Teflon isolation completed in the previous step with the suction or air. If this happens, you must place the Teflon again where it has been moved or removed, taking care not to contaminate the tooth surface already etched with acid.





CLINICAL Adhesive Technique

After etching the tooth, we follow the adhesive technique that we routinely use. In this case, we used Ivoclar Vivadent universal adhesive which we rubbed on the entire tooth surface, eliminating all excess using high suction.



Adhesive polymerization

Note: Remember to test the first silicone index (partial design) in the patient's mouth before performing the adhesive technique.

This shouldn't be done afterwards because it will contaminate the treated surfaces that are ready for adhesion.



CLINICAL Cleaning

Before we begin the injection process, we clean the silicone index internally with alcohol to ensure that there are no traces of the color test composite or grease that could affect the final result.

We do this cleaning using micro applicators and dry with cotton buds.





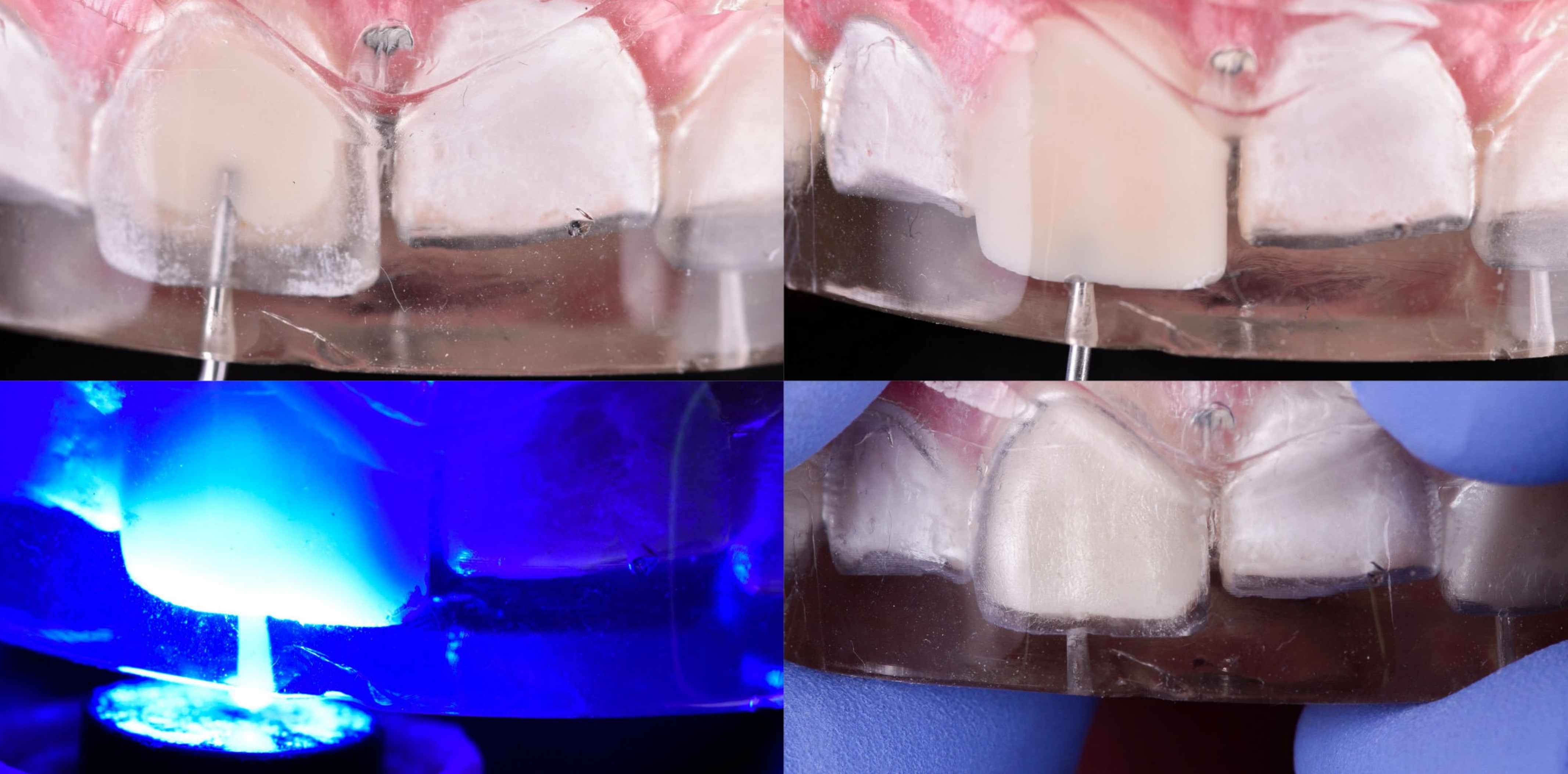
CLINICAL Injection 1

1

Place the silicone index corresponding to the partial design. It must be perfectly clean internally and the Teflon must be in the correct position.

2

Before starting to inject, ensure that the tip of the flow composite is not covered by pressing the plunger of the syringe until you see a drop of the flow composite come out, and also ensure that we will not inject air.



CLINICAL Injection 1

3

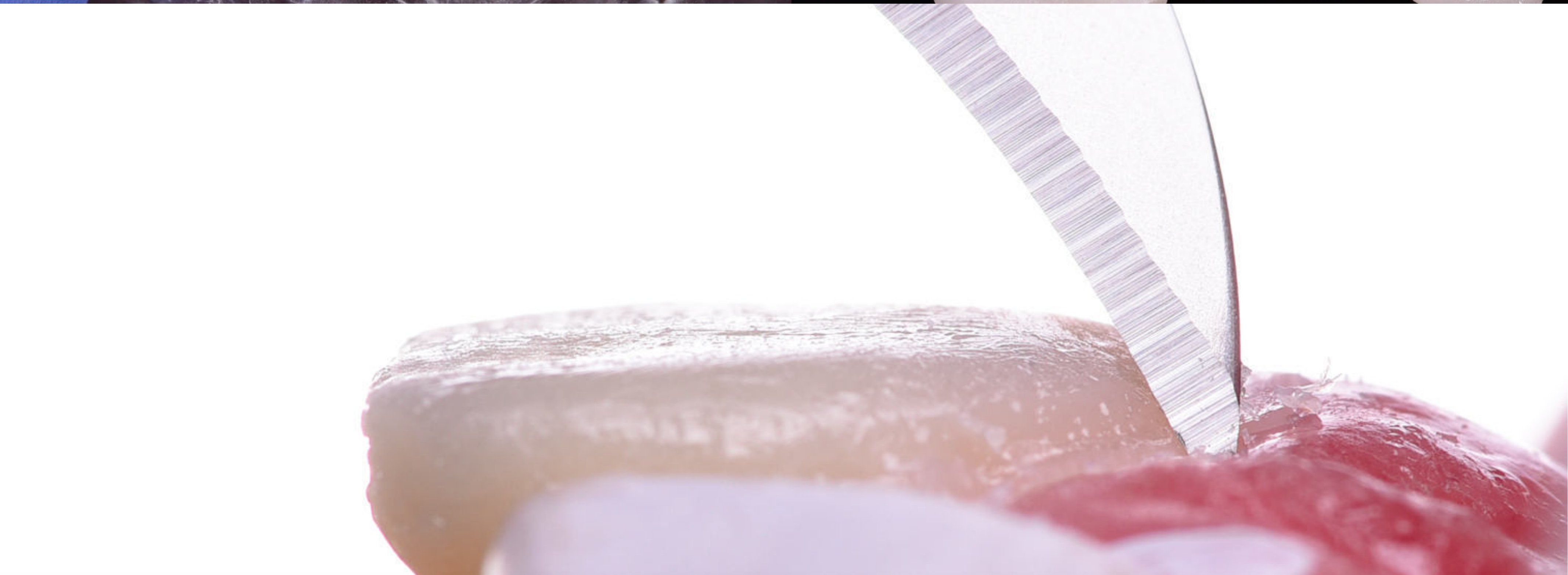
Insert the tip of the syringe through the hole corresponding to the tooth to be injected as close as possible to the cervical zone.

4

Begin to inject the composite, making lateral movements to avoid bubbles while pulling towards the incisal until the tip of the syringe comes out of the silicone index.

5

Apply some pressure occlusally to ensure that the index is in the correct position and polymerize the composite.



CLINICAL Injection 1

After repeating the injection process for each of the teeth corresponding to the partially designed model, remove the index from the mouth and clean the excess.

Remove the excess flow composite using a curette and a scalpel.



CLINICAL Injection 1

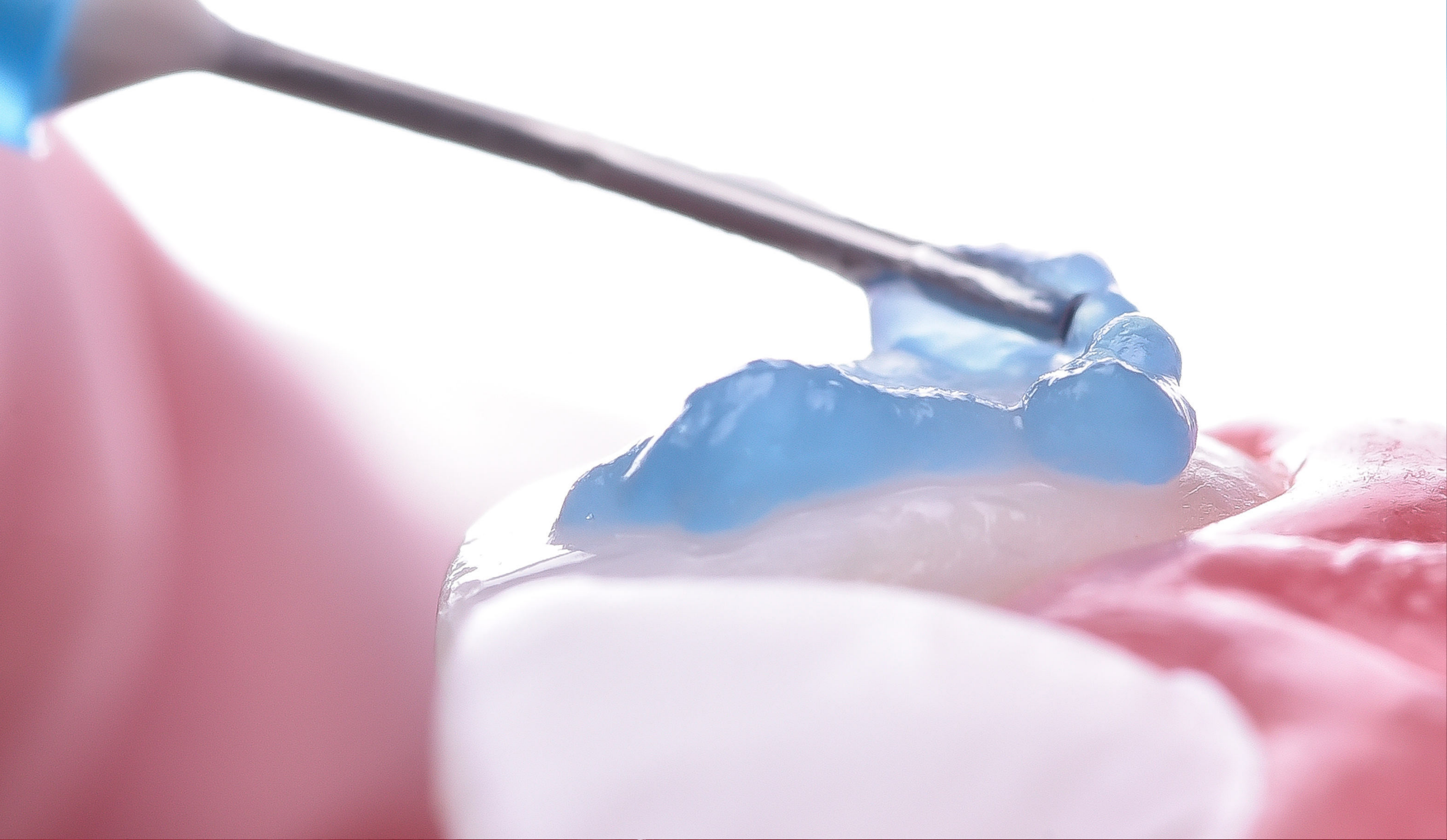
This was the result of the first injection. In this step we did not polish the injected teeth, we simply removed the excess to ensure that the next silicone index would fit correctly.

After following all the steps, this is what our first injection looked like – exactly the same as the partially designed model.



CLINICAL Isolation 2

Repeat the same isolation process with the Teflon, this time on the teeth that were previously injected.



CLINICAL Etching 2

Do the etching on the teeth that are not isolated (the same as in the first injection).

CLINICAL

Adhesive

Technique 2

After etching the tooth, apply the adhesive technique routinely used. In this case, we used universal Ivoclar adhesive which we rubbed on the entire tooth surface, eliminating all excess using high suction.



CLINICAL

Injection 2

Place the second silicone index corresponding to the completely designed model (cleaned first using micro applicators and alcohol). Repeat the same injection process on the corresponding teeth, the same as for the first injection.

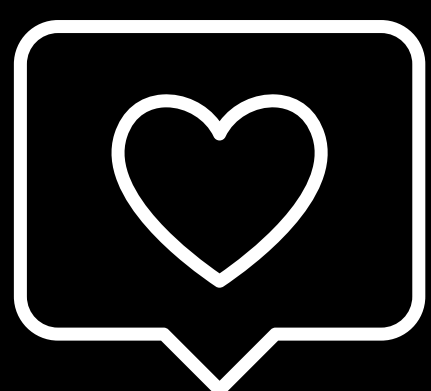




CLINICAL Injection 2

Remove the index. A good tip before removing the index is to get rid of the excess composite remaining in the holes to make it easier to remove.

It is normal for there to be a little more excess flow composite in the second injection than the first. This occurs as a result of adjusting the silicone index and will depend on how well you have cleaned the excess after the first injection.



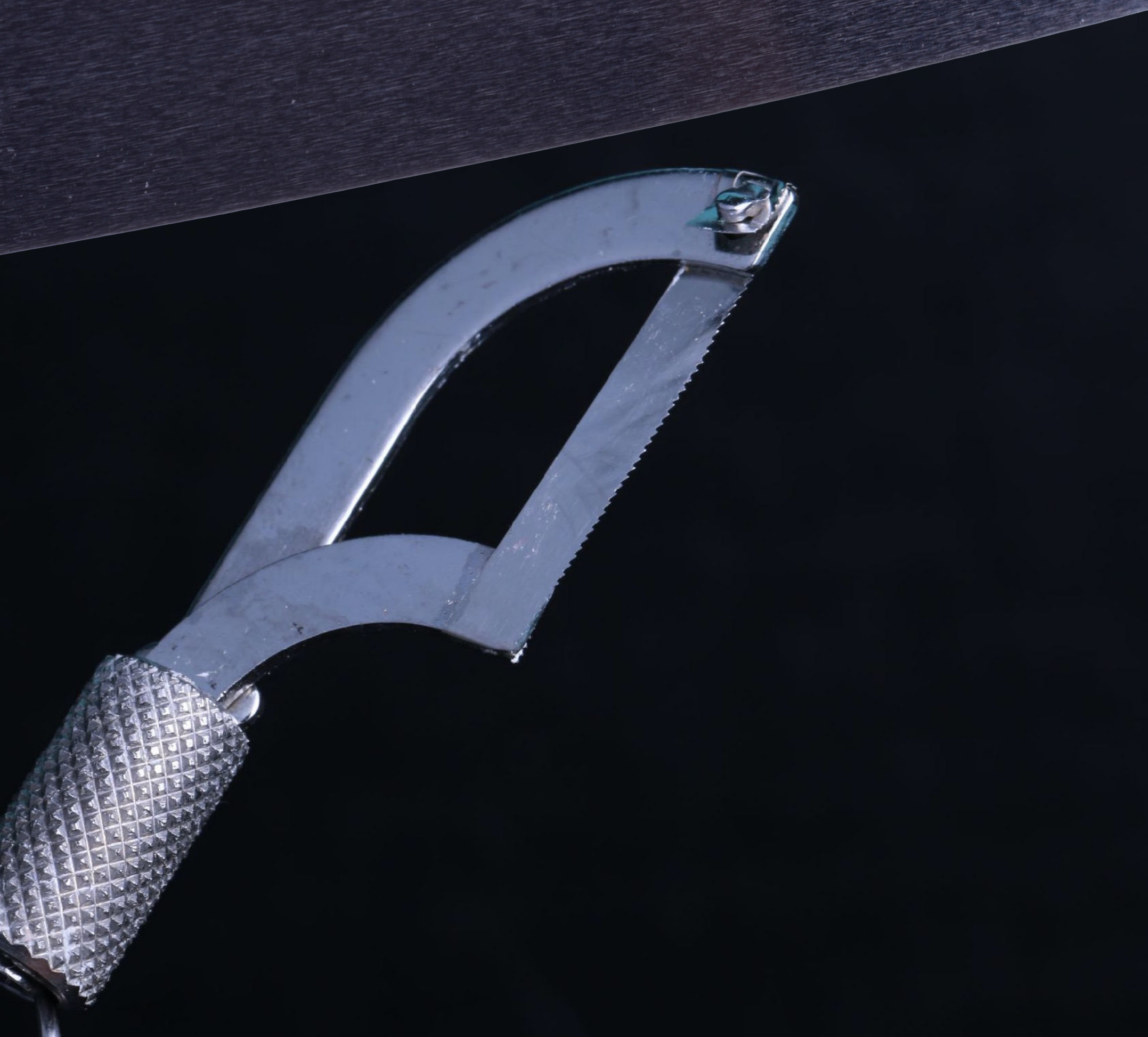
Another tip is to not polymerize the composite too much through the silicone index. Just enough to make it stiff so that once the index is removed it will be easier to take out the excess and then perform a final polymerization on all the teeth. Glycerin can be used on all surfaces before this final polymerization.



CLINICAL Injection 2

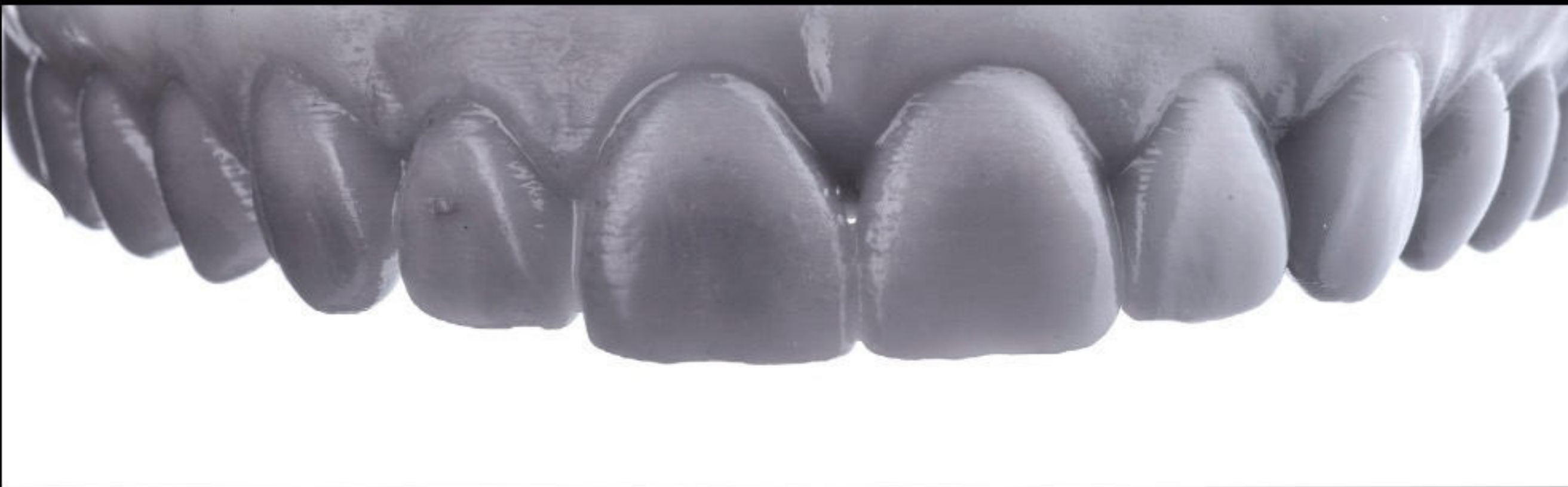
Remove the Teflon and clean all the excess composite with a curette and a scalpel.

In this step, take as much time as necessary to clean all surfaces as well as possible. For interproximal areas, it is best to use a hacksaw and then polishing strips.





Result of the first injection



Result of the second injection



Project of the result of the 2nd injection

CLINICAL Injection 2

This was the result of the first and second injections.

After following all the steps, this is how our second injection looked – exactly the same as the total design model.

CLINICAL Finishing and Polishing

Another key step is the finishing and polishing of the injected composite. It's important to ensure that all surfaces are correctly finished and polished.

One of the most important areas is the cervical area. You need to ensure that the surface is polished and that there are no remains that could irritate the gums, or steps that could retain plaque or food and compromise the durability of the restoration.

To do this, we use a fine-grain diamond bur on the entire cervical area before a fine-tip polishing rubber to access this area. We should avoid touching the vestibular faces as this will modify the natural texture of the teeth achieved using the injection and the design based on examples of real teeth.



Polishing discs can be used on the different faces of the tooth but we must take care not to apply too much pressure or use very abrasive discs, as this can cause the texture of the tooth to be lost. We must remember that one of the biggest advantages of this technique is the natural texture we can achieve.

A great tip to avoid too much wear when using the discs is to cut them in 3 points. This way, though we apply a lot of force, there will be little wear.



CLINICAL Finishing and Polishing

Once all surfaces have been smoothed and all excess has been removed from all faces, the next step is to polish to achieve the final shine on our restorations.

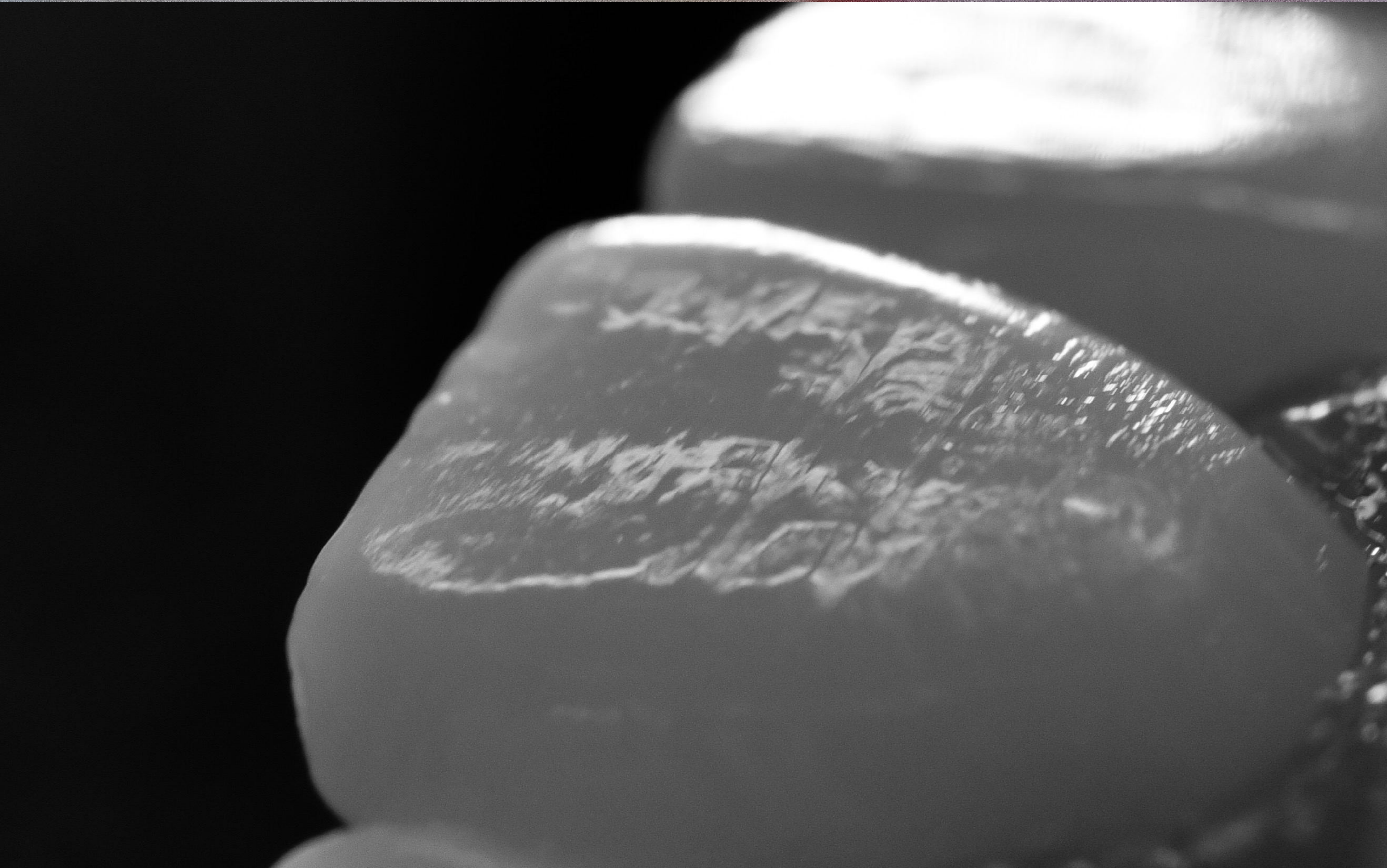
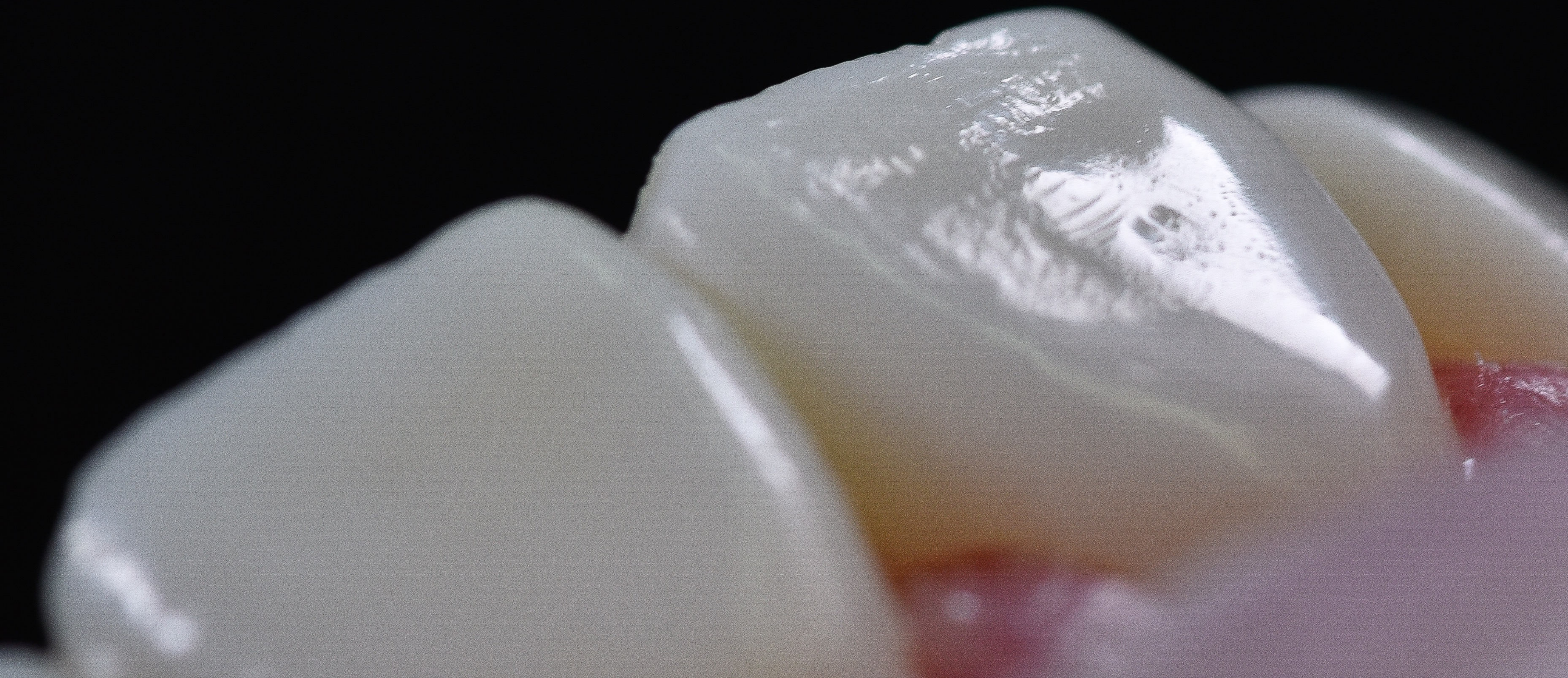
In this case we used a polishing disc with leather in the middle and polishing paste.

The polishing paste will be the one we use for the final polish of the composite. There are many options on the market but in this specific case we used DEI experience.

The last step is to polish in order to achieve that final shine. To do this, we used a mop disk.

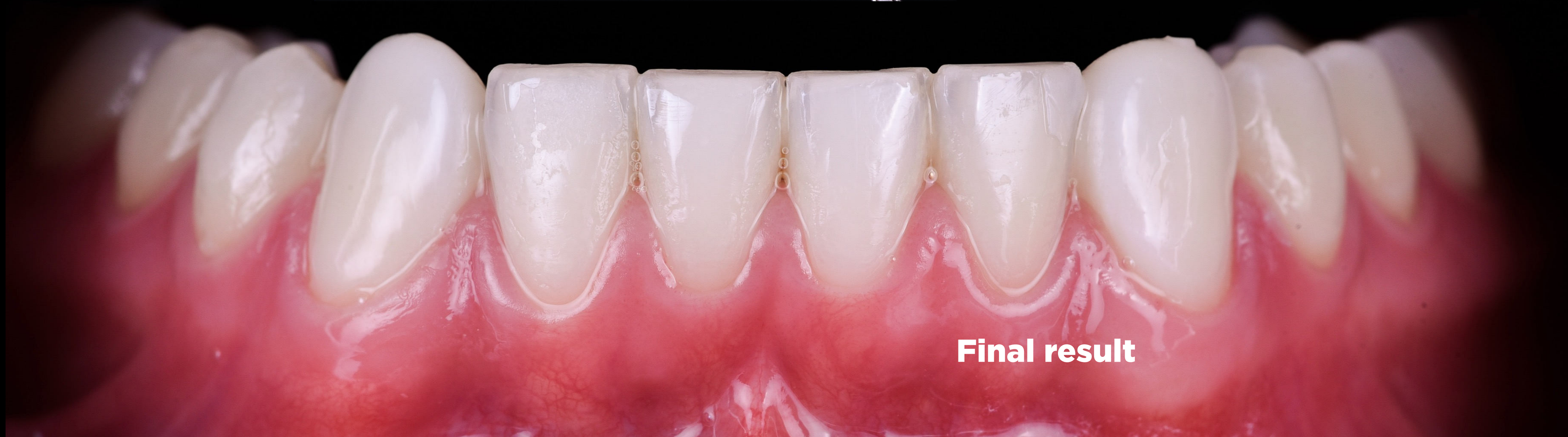
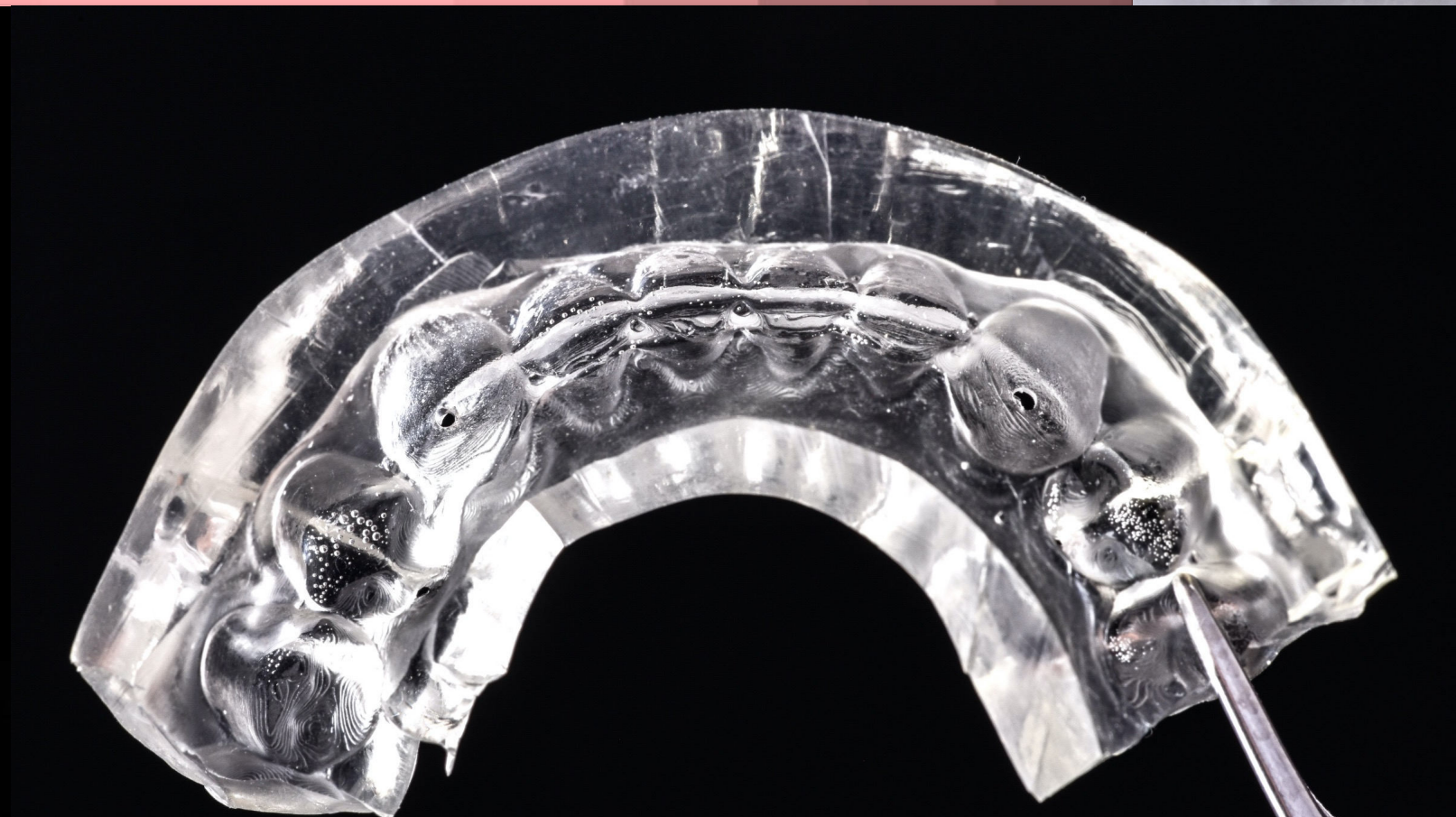
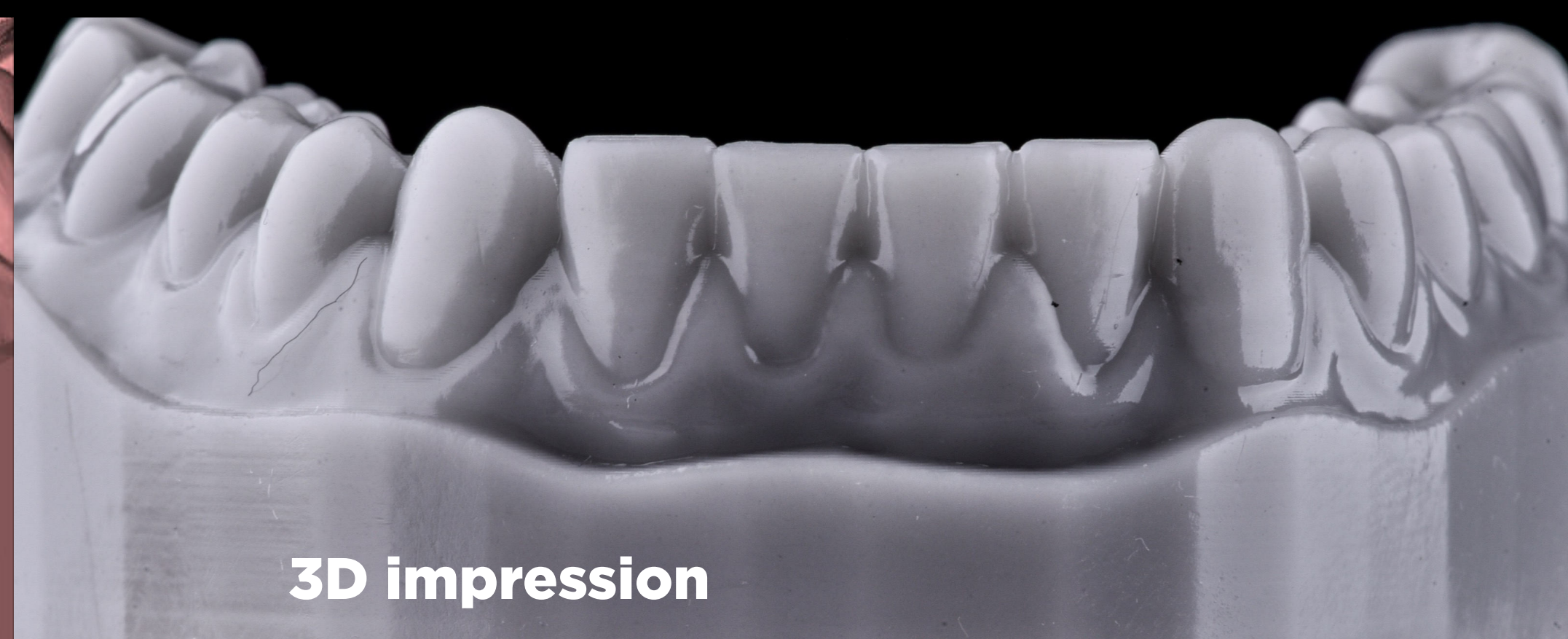
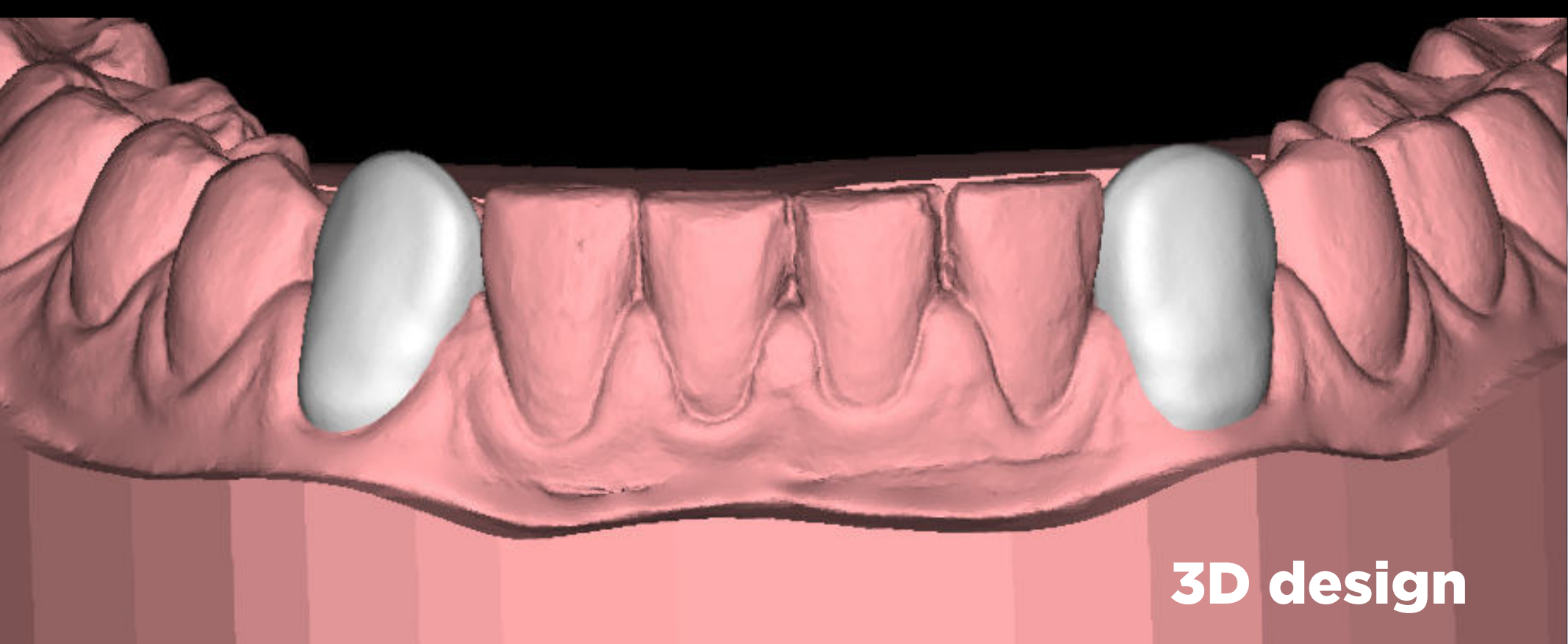
CLINICAL Finishing and Polishing

The result once the injection process is finished. In these images, you can see the detail of the texture obtained when each of the steps is performed correctly.



CLINICAL Lower Sector

In this case, we performed the same technique on the canines in order to restore what the patient had lost due to wear. In this case, we used this technique for esthetic and functional purposes.





CLINICAL Final

Before your patient leaves, it's important to ensure that there are no remains of any kind that may be uncomfortable, especially in cervical and interproximal areas.

To do this, thread dental floss through each of the teeth and review the occlusion to ensure that there is nothing that compromises the restoration or causes discomfort during occlusion.

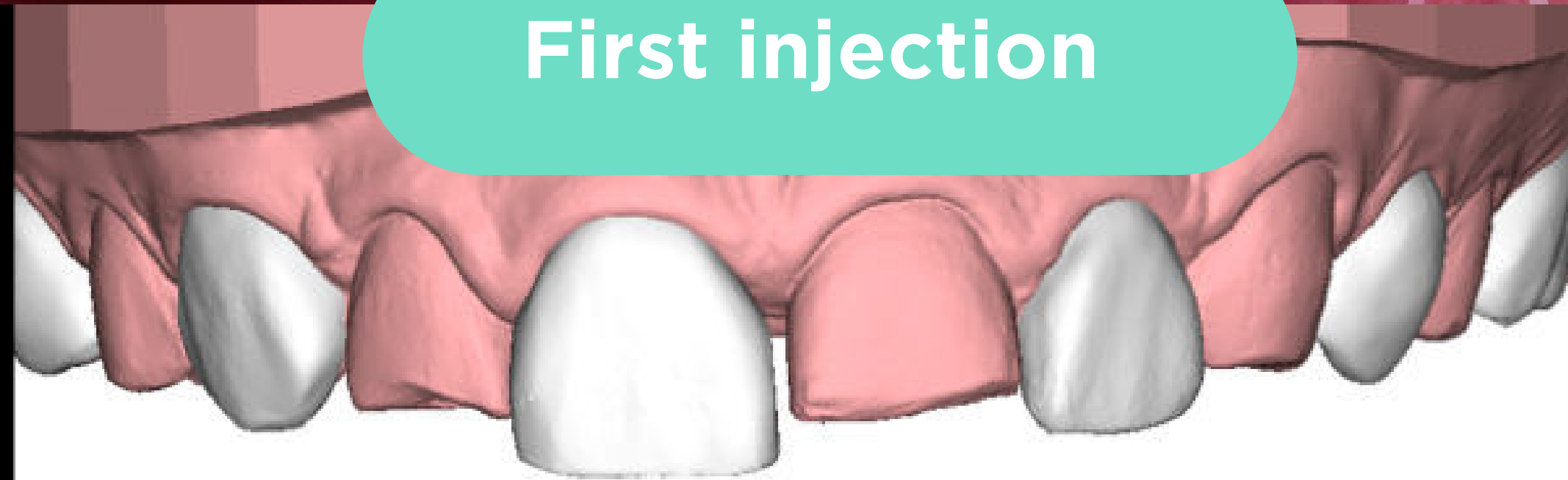
Take an impression of the final result and send it to the laboratory to make a splint to protect the restorations.

CLINICAL SUMMARY

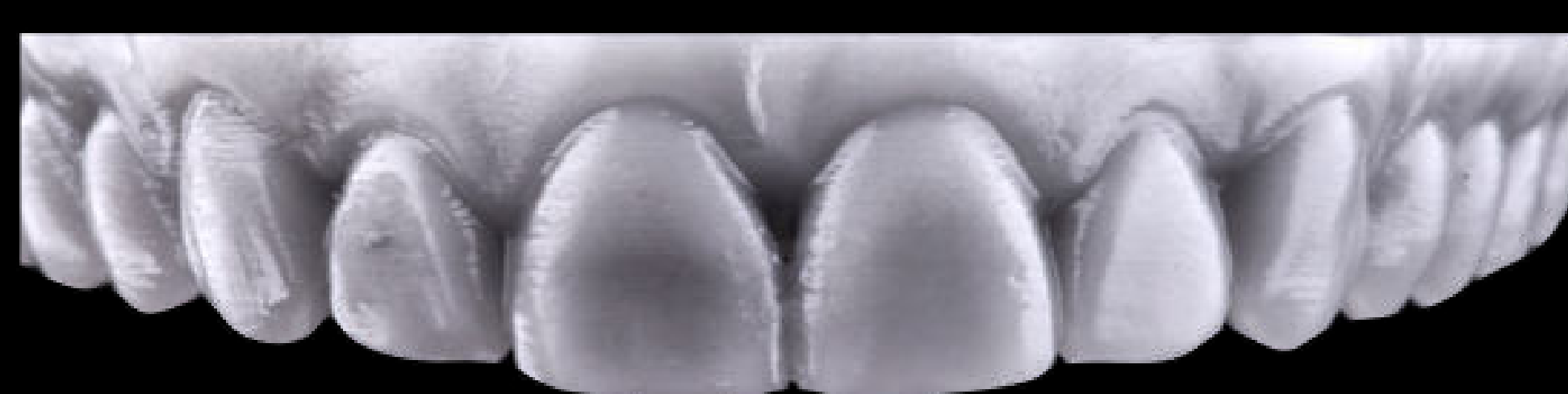
Initial Situation



First injection



Second injection



Final result



CLINICAL SUMMARY



INITIAL

3D DESIGN

MOCK-UP

2D
SIMULATION
DSD APP

CLINICAL SUMMARY



DSD DIRECT

CLINICAL CASE WORKFLOW



Case performed by Dr Jesús Creagh & Dr Luken de Arbeloa.
Design and planning carried out by the DSD Planning Center.

Many thanks to our patient for allowing us to use his image to demonstrate the step-by-step technique; the entire Dentoral DSD Clinic team for their collaboration in the execution of the case; and DSD KOLs Dr Federico Brunner and Dr Felipe Miguel Saliba for sharing excellent visual content.



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