

Layers 2

Direct Composites: The Styleitaliano Clinical Secrets

Jordi Manauta • Anna Salat • Walter Devoto • Angelo Putignano

Powered by Styleitaliano

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to Marc...



to Àlex...



to Diego.

Dedicated to:

*To Marc, Àlex and Diego.
To my beloved family.
To my brother, role model and hero.
To my dearest friends, you know who you are.
To Miguel Tamés and Walter Devoto, my teachers and idols.
To the loving memory of Carlos Alanís and Manolo Casas.
To you Anna, always you.*

Jordi

*"If you want to build a ship, don't drum up people together to collect wood and don't assign them tasks and work, but rather teach them to long for the endless immensity of the sea." (Antoine de Saint-Exupéry)
I am in the immensity of the sea in a great boat. But a boat without someone to steer it, the boat will drift.
Thanks to always be there my love.
To you Jordi.
I love you.*

Anna

Jordi Manauta

Born in Mexico City, Jordi Manauta graduated with a degree in dentistry from the Technological University of Mexico (UNITEC) with high honors. He continued his postgraduate studies in operative and esthetic dentistry, earning a master's degree from the International University of Catalonia (UIC) in Barcelona, Spain. A disciple of Miguel Tames (Mexico City) and Walter Devoto (Italy), he has developed and continues to develop various materials and precision instruments for esthetic dentistry, colorimetry, and photography in collaboration with international companies. He is a visiting lecturer at Siena University and a scientific consultant for two European journals. Dr Manauta has been a member of the Styleitaliano study group since 2008 and is head of the Styleitaliano idea factory. He is coauthor of the book *Layers* (Quintessence 2012), author and coauthor of many publications in international journals, and a frequently invited lecturer on these topics.

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Anna Salat

Born in Barcelona, Spain, Anna Salat studied dentistry at Universitat Internacional de Catalunya (UIC) in Barcelona. She completed a specialization in esthetic and restorative dentistry at the same university, where she became a professor in that department. She has been visiting professor in Siena, Marseille, Valencia, Barcelona, and Lisbon. She is particularly interested in composites, esthetics, and cosmetic dentistry and teaches courses on these topics. She is the author of publications in international journals such as the *European Journal of Esthetic Dentistry* and the *Tropical Dental Journal*. Together with Dr Manauta, she wrote the book *Layers: An Atlas of Composite Resin Stratification* (Quintessence 2012) and is a coauthor of the book *Mulher Dentista* (Quintessence 2016). She is an honorary member of the Styleitaliano group. She loves to find ways to make things look better, and she applies this life philosophy by combining adhesive dentistry and conservative techniques to improve smiles.

Instagram
@dr.anna_salat



More than Layers...

The moment when you realize your work is meaningful is when someone asks you to dedicate a worn copy of your own book. Seeing your work referenced in articles, books, and lectures, many of them by your personal heroes, is reassuring and a reason to keep working.

From 2009 to 2012 we spent many hours making composite restorations and taking photographs for the first book. Those extraoral exercises were essential to our professional growth. This time, the same thing happened, but the materials were collected over a much longer period of time.

This second episode of Layers comes to life after years of gathering and creating simple things that have transformed our daily dentistry into something enjoyable, and it was written from the most sincere wish to share, to return the favor of those teachers who generously gave us much more than a head start; they changed our life.

The most difficult thing we faced during the creation of this book was to keep it short. Avoiding distractions such as describing all the available techniques, we considered it mandatory to go straight to the point, to keep the message as understandable and meaningful as we intended.

There is not enough room to thank all the people whom we care about and are grateful to, but we will try our best:

First of all, thanks to our family, especially the little ones. This is to you Marc, Àlex, and Diego; mom and dad did all this work in their working hours so that no time was taken from you. No project is worth that.

Rita, thanks from the heart.

The most sincere thanks to Walter and Angelo — all of this exists because of you; it is impossible to express how much we admire you and are grateful to you.

To Zsolt, you need no words nor a spotlight.

Thanks to the Styleitaliano team, we are super proud and really enjoy being part of this family.

To César Hinostrroza, you know what we feel about you; thanks from the heart, dear friend.

To Asunción Mendoza and Enrique Solano, our eternal gratitude.

To Giuseppe Chiodera, Calogero Bugea, and Florin Cofar: teachers, best friends, brothers.

Thanks from the heart to the incredible people who gave us their knowledge for each interview to start each one of these chapters; it is a dream to share these pages with you, Stefen, Rade, Newton, Weber, Walter, Lorenzo, Nitzan, Ronaldo, Nasser, Didier, Roberto, Louis, Angelo, and Miguel: giants among giants.

HONORARY MEMBER STYLE ITALIANO™ COURSE

To Miguel Tamés, Rafael Tamés, Pablo Mayer, Diego Genovés, Raul Uriza, Emilio Canales, Arturo Monroy, and Mario Gutiérrez, you will always represent my first and strongest step in dentistry, and Monte Líbano Office in Mexico City will be always my home.

To Nina Nudel and Moises Mitrani, representing my university UNITEC in Mexico City. To all my teachers, classmates, and people involved in my dental training from 1996 to 2000.

To Miguel Roig, Luis Jané, and Juan Basilio, representatives of UIC in Barcelona. The postgraduate training with you gave us the tools to build this and more — Jordi in the 2002 generation and Anna in the 2007 generation.

To the people that are part of Walter Devoto's, Fabio Currarino's, and the Dentcof dental offices. You are the engine of this work.

To our editor at Quintessence: professional, precise, serious, impeccable, the best! Thanks for your trust; a book cannot work without a good editor.

Thanks Gaia Rosenberg for your invaluable work; you are the “fifth Beatle” of this book.

Thanks Manuel Ruiz Alfaro from Asterizco Publicidad, you are a genius of graphic design. Again, we did a second book from 10,000 km away. Your work from the first Layers has been an inspiration to many other books, inside and outside of dentistry.

To our dental technicians Alberto Villanueva in Zaragoza, Spain; Daniele Rondoni in Savona, Italy; and Marat Awdaljan in Amsterdam, Netherlands.

To the companies involved in chapter 12—what an amazing team.

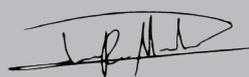
Thanks to our readers and attendants of our lectures and courses. We are nothing without you.

Dedicated to the victims of the Covid-19 pandemic and for all of the ones that kept us safe during these times.

If we forgot anyone, or intentionally omitted you, it means we will thank you personally in the form of a nice friendly gathering.

To all of you, here is our book, full of love, with all the relevant information we were able to gather, and we want to deliver it to you in the same way as our teachers did once with us, unconditionally and with no secrets whatsoever.

What seemed so complex has become simple. In the end, it is all about simplification. Step by step, layer by layer, we did it again!



Jordi



Anna



Preface:

Ten years ago, Jordi and Anna asked for our approval and assistance to develop their first book.

Their ideas were not only very good but revolutionary, and after evaluating them our advice was:

“Make a book with no clinical cases: If your ideas are correct, you will be able to develop them in little time, and they will be the basis for your professional growth.”

A beautiful challenge if you think about it.

And here we have Layers2, with which we can finally say, “When the student is ready, the teacher will appear.”

At that time we spotted passion and force, but there was only one thing missing: control.

And this is precisely what you find in this book. A text full of smart ideas, tricks, and advice for beginners, experts, and lovers of the most passionate specialty in dentistry: direct restorative treatment.

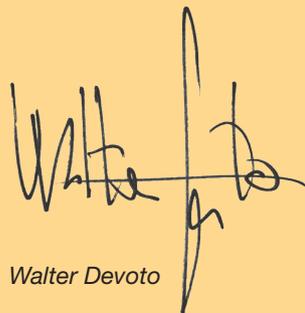
This is NOT a second part; this is version 2.0: a completely different vision to see composite resins, with a contemporary approach, knowledge of the materials, techniques, and accessories. All of these instruments were developed with and through Styleitaliano, and most of them have become worldwide bestsellers.

Challenge accepted! Challenge widely won!

We are proud of our students Jordi and Anna, who are now at our side, shoulder-to-shoulder, teaching whoever approaches Styleitaliano, which in the present-day are thousands.

And to all of you, we hope reading these pages provides inspiration to write other masterpieces and to stay united by passion, enthusiasm, esthetic sense, and attention to our patients and experience.

Have a lovely reading.
Angelo & Walter



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Target 3

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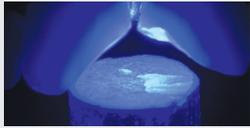
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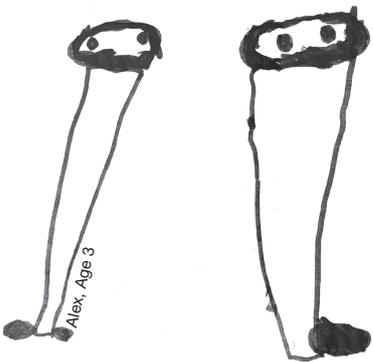
Collaborators:

In no particular order, we present you the people who enthusiastically and selflessly collaborated on this book.

You gave us cooperation, trust, forward thinking, and mentorship, among many other things, but what we value the most, by far, is your friendship.

We cannot thank you enough. This book goes to you!

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An Quoc Nguyen, Private practice, Tandheelkunde, Netherlands
Valentin Vervack, Private practice, Ghent, Belgium



“Good judgment comes from experience, and a lot of that comes from bad judgment.”

Will Rogers

CHAPTER 2

LAYERS

Manauta • Salat • Putignano • Devoto

Interview with Newton Fahl Jr



BRAZIL



Newton Fahl Jr. DDS

Dr Newton Fahl Jr graduated in dentistry from the State University of Londrina, Brazil, in 1987. In 1989 he received the title of Specialist in Operative Dentistry and a master's degree from the University of Iowa, USA. After returning to Brazil, he settled in Curitiba, where he maintains his clinic, working mainly in the field of cosmetic dentistry. Newton Fahl Jr is a member of the American Academy of Esthetic Dentistry (AAED) and a founding member and former president of the Brazilian Society of Esthetic Dentistry (SBOE). He is a fellow at the Medical College of Georgia (MCG)-Hinman Foundation, USA. For his excellence in education, he received the "2008 President's Award for Best Teacher" from the AAED and the "Excellence in Cosmetic Dental Education Award" from the American Academy of Cosmetic Dentistry in 2011.

He is a member of the editorial boards of several journals in the field of esthetic dentistry. He also works as a consultant for several companies in the development and improvement of new materials and techniques in the field of restorative cosmetic dentistry. He has published several relevant articles on adhesive cosmetic dentistry. Restorations in composite resins are of special interest, and Dr Fahl takes particular pleasure in teaching direct and indirect techniques in a methodical and understandable way to enable easy and pleasant learning.

Q: How can a layering technique impact your clinical life, and what is your position on simplification?

In a nutshell, layering exists for basically one reason: to favor optimal anatomy and color. We currently have several techniques and gadgets available to aid a composite restoration's layering, from prefabricated clear matrices to silicone indexes made on a waxed-up model, which provides excellent control over the anatomy. Even freehand layering can be a viable alternative for smaller restorations, often providing excellent results. In a broader sense, the form is more important than color, so the number of layers and effects is secondary to perfect anatomy. Therefore, simplification can, at times, be the best approach to realizing excellent anterior composite restorations because it is more clinically relevant for practitioners who are more comfortable with using fewer shades. Although replicating lifelike characteristics—such as incisal halos, mamelons, and opalescence—adds a “wow factor,” these are seldom understood or appreciated by many patients. That is not to say that a uniquely polychromatic restoration that mimics a natural tooth in all its chromaticity is not a goal to which to aspire. Ultimately, the operator must have a thorough knowledge of the different layering techniques available to judge when and how to use more than just one or two shades. I think that each case should be appraised on an individual basis to determine how the use of a simplified versus a more elaborate layering strategy will impact the overall result. The final call should be made based on the operator's mastery of layering techniques, chairside time, and cost-effectiveness.

Technique selection

There are literally hundreds of layering techniques, ranging from the ones inspired by nature, the ones inspired by laboratory techniques, and those specifically developed for the application of a new material or to solve a specific problem.

For several years the success or failure of a restoration has been related to one specific composite system, or, in general, to composite as a material. This has led many practitioners to commit to one single system, which has made several dentists miss the opportunity of testing completely different materials, colors, opacities, and handling and physical properties.

The material focus drew the attention away from the techniques that had to be applied and thus eliminated criticism of the layering techniques.

Dental professionals on a quest for a universal technique can relate to having had several failures when narrowing their technique selection to a single one.

A common problem is the false belief that the more complicated a technique is, the better results it will provide. While in some cases complex techniques can excel, they often fail without the required experience, training, and accurate case selection.

Simplified techniques sometimes sound detrimental, but, on the other hand, it is true that simplified techniques have a higher success rate. Although there are several reasons for this, the main one is that they tend to reduce the chance of error. Fewer masses, fewer layers, and fewer steps are the keys to obtaining success.

Many times, less is more

Does adding more ingredients to a pizza make it better? NO! Ask anybody in its hometown, Naples. There are only a couple of authentic pizzas, among which are the margherita and the marinara: two or three ingredients, nothing less, nothing more.

This of course does not mean that an overloaded pizza can't be delicious, it just means that finding balance between a lot of ingredients may be challenging and easily lead to poor results. So, generally speaking, sticking to simplicity pays off.

There are several ways you can bake:

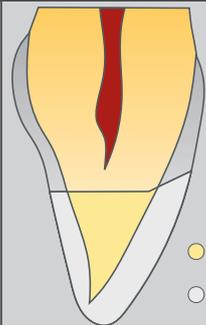
1. Follow a well-established recipe.
2. Improvisation.
3. Lucky strike.

Number 1 has little to no risk of making a big mistake, while number 2 requires special sensitivity and skills and could lead to a mediocre outcome, even for the talented. Number 3 is that dish you'll never be able to reproduce but will keep on dreaming of getting it right once again.

As it happens with baking, in dentistry there are very simple techniques and complicated ones. The bad news is that there is no one perfect technique, so sit tight and concentrate.

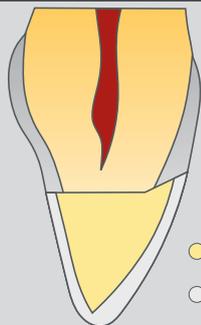


Layering techniques summary



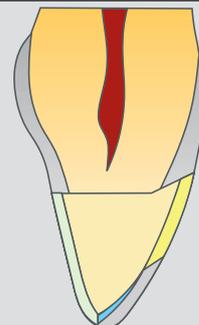
- Dentin
- Enamel

Histo-anatomical. Dentin and enamel composites are placed according to the natural thicknesses. No material to date is able to mimic precisely the optical behavior of the natural tooth. This technique currently fails to hide the margin properly.



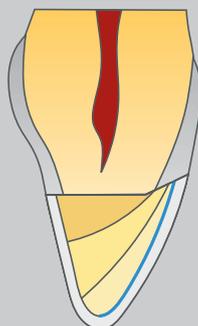
- Dentin
- Enamel

Natural layering. Proposed by Didier Diestchi, this technique compensates for the lack of refraction index, light scattering, and opalescence of the composite materials compared to the enamel by considerably reducing the thickness of the enamel and lowering the opacity of the dentin. Enamel usually lightens a chromatic dentin.



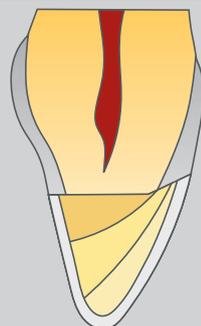
- Milky white
- Dentin
- Trans
- Enamel body
- Enamel value

Polychromatic technique. Not dependent on a specific commercial brand; described by Newton Fahl Jr. This technique relies on multiple colors, chromaticities, and opacities of enamel mimicking the histo-anatomical features of natural teeth. The number of layers varies according to the characteristics of the tooth to be restored.



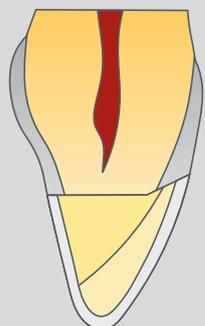
- High chroma dentin
- Mid chroma dentin
- Low chroma dentin
- Fluorescent DEJ
- Enamel

Anatomical stratification. Proposed by Lorenzo Vanini; consists of three layers of dentin of increasing chroma and a highly fluorescent dentinoenamel junction (DEJ) before a final layer of achromatic enamel of the chosen value. The technique is mainly based on the “desaturation” of the dentinal body.



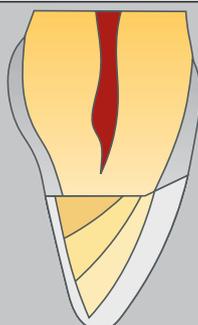
- High chroma dentin
- Mid chroma dentin
- Low chroma dentin
- Enamel

Anatomical stratification variant. Variation without the highly fluorescent DEJ layer, which was proven useless. This technique gives exactly the same result as the original anatomical stratification technique.



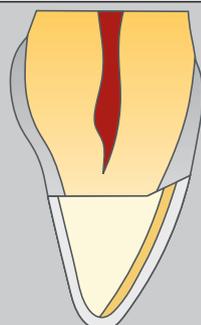
- Mid chroma dentin
- Low chroma dentin
- Enamel

Simplified anatomical stratification. Variation of the anatomical stratification techniques with fewer masses. Includes the mixture of two different chroma dentins in order to generate intermediate chroma with the apposition of dentin layers to broaden the spectrum of possible shades to obtain.



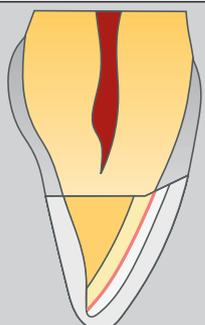
- High chroma dentin
- Mid chroma dentin
- Low chroma dentin
- HR Enamel

Anatomical High Refraction (HR). Variation of the anatomical stratification technique designed to increase the thickness of the enamel. This alteration to the technique was the result of the development of an enamel composite with a high refractive index.



- Bleach dentin
- High chroma dentin
- Enamel

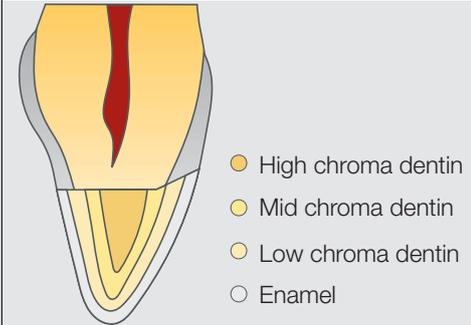
Reverse chroma. Proposed by the authors to exploit the benefits of extremely low chroma dentins to block dark features of teeth and a layer of a highly chromatic dentin to restore the correct shade. Has little thickness tolerance, and color can be easily mismatched.



- Opaque dentin
- Translucent dentin
- Transparent DEJ
- High opacity enamel
- Low opacity enamel

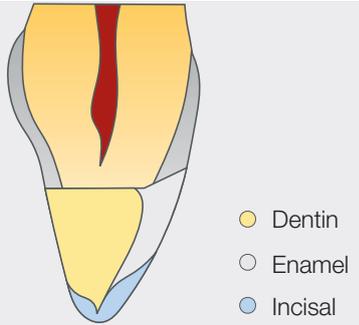
Penta-laminar. Proposed by Bazos et al. Consists of five differentiated optical genres of tissues. The layers from the inside to the surface are: inner dentin (high opacity), outer dentin (mid opacity), DEJ (transparent), inner enamel (mid-high translucency), and outer enamel (mid translucency).

An update of nearly all techniques available



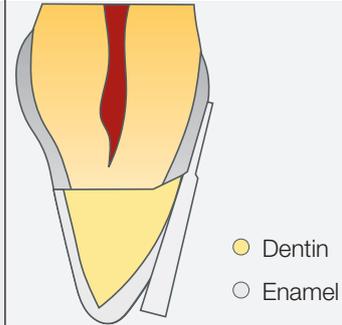
- High chroma dentin
- Mid chroma dentin
- Low chroma dentin
- Enamel

Cones. An anatomical stratification designed for chromatic desaturation of the restoration body, proposed by Daniele Rondoni. This technique is mainly intended for indirect approaches and situations in which a wax-up is not possible.



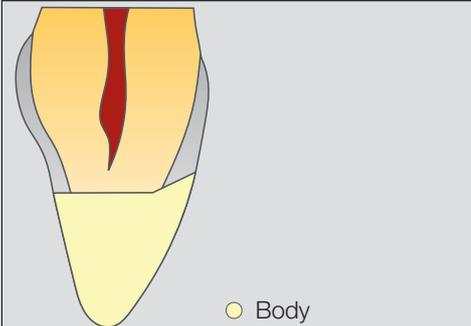
- Dentin
- Enamel
- Incisal

Biomimetic. Described by Pascal Magne; it is inherent in the opacity analysis of the composite materials to selectively layer them according to the anatomical features of the tooth. The incisal edge is developed more or less exhaustively, depending on the wear.



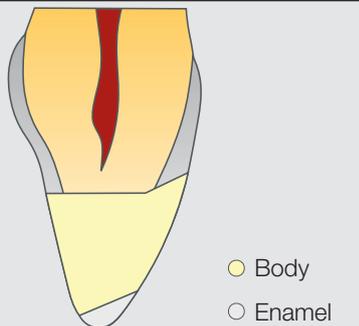
- Dentin
- Enamel

Controlled body thickness. Proposed by Styleitaliano, it gathers the benefits of all similar techniques and establishes a 0.5-mm measurement for the final enamel layer, with a dedicated instrument (Misura, LM-Arte) for this purpose and a personalized shade guide (My Shade Guide, Smile Line) with the same measurements as the instrument.



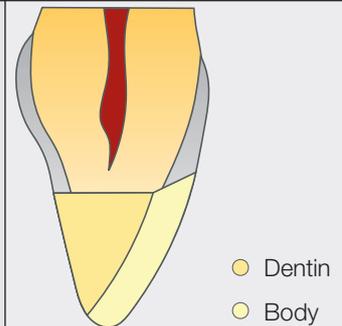
- Body

Single shade. Universally conceived, consists of only one shade, generally body. It is the most widespread technique for obvious reasons. When optimizing color matching and opacity selection, this technique can be the most ideal in a large number of situations due to its simplicity and its numerous advantages.



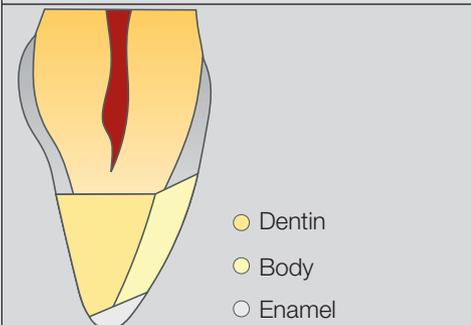
- Body
- Enamel

Characterized single shade. Proposed by the authors, it brings together all the benefits of single-shaded restorations while allowing incisal translucency and any kind of characterization to the incisal edge if needed.



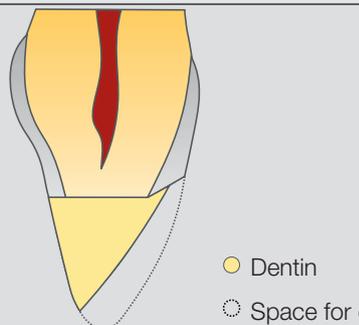
- Dentin
- Body

Body screen. Proposed by Styleitaliano, this technique gathers all the benefits of the single and dual shade approaches by taking advantage of a thick body layer, while including a deep layer of opaque dentin, which helps to eliminate the low-value properties of the body shades without losing translucency, especially in thin restorations.



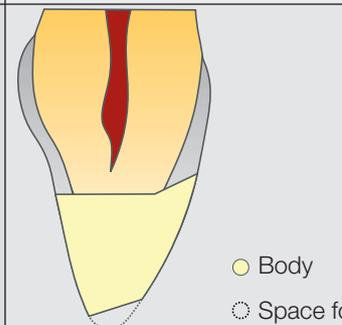
- Dentin
- Body
- Enamel

Characterized body screen. A variation of the body screen technique, probably the most versatile one, with all the advantages of the previous one, but with the possibility of adding any kind of characterization.



- Dentin
- Space for enamel

Natural cut back. Exactly like the controlled body thickness (CBT) and natural layering techniques, but the space is not obtained with modeling but with milling, which in specific cases can be more precise.



- Body
- Space for enamel

Single shade cut back. A variation of the characterized single shade, it consists of a full-contour restoration buildup with a single shade and incisal space creation performed by milling.

The future of layering

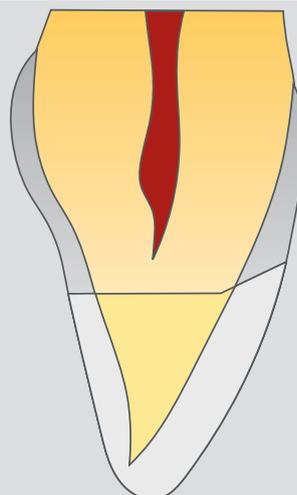
Each of the described techniques has specific uses and indications. Some of these techniques are too specific, and the variety is so broad that making a perfect choice becomes very difficult or a task for only the very expert.

Sometimes a specific layering technique is the only possible solution.

It is fair to say that many of these techniques have been and still are inspirational and sources of learning, without which better-performing techniques never would have been developed.

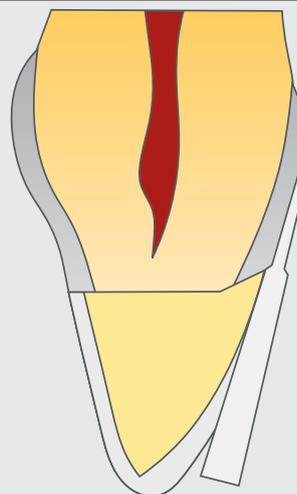
Among the currently available techniques, six (five in reality) are the authors' most used.

Histo-anatomical. The all-time future promise. Will not be described, as currently there are no materials that can actually imitate the optical properties of the enamel and dentin, regardless of the presence of the DEJ.



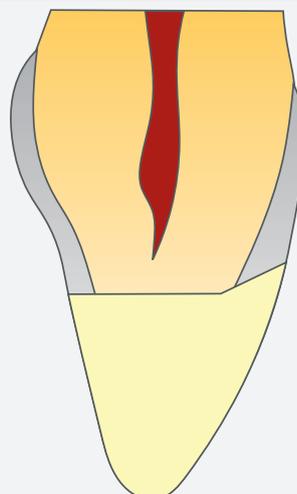
- Dentin
- Enamel

Controlled body thickness. We will review this technique under the concept of cloning color and opacity, with no room for mistake. This is possible thanks to calibrated shade guides and to the calibration of the layering on the tooth to leave 0.5 mm over the dentin mass for a layer of enamel. This is compatible with the most important layering techniques.



- Dentin
- Enamel

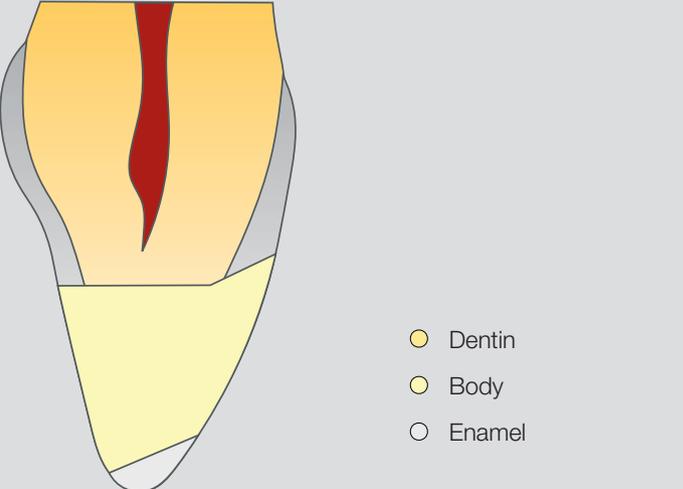
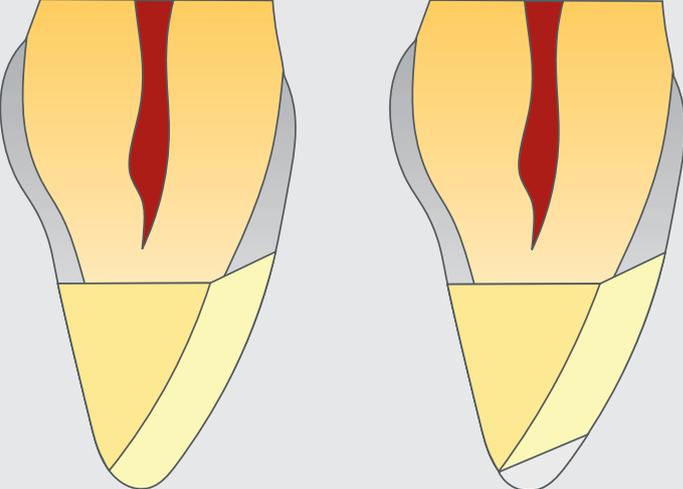
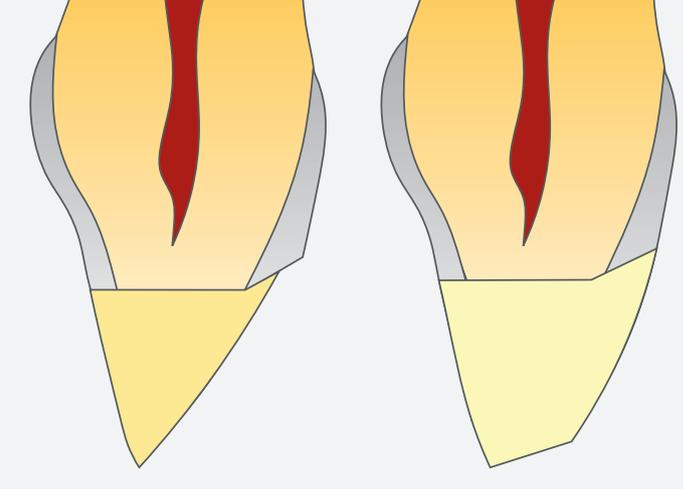
Single shade. An optimization of the use of the single shade, taking it to the next level by perfecting the modeling steps and optimizing the color and opacity selection through database-building comparisons, both analog and digital.



- Body

Of course new techniques may come into play, depending on the development of new materials. This is the case with the histo-anatomical approach, which requires the use of a natural thickness of enamel and dentin; this concept is still eagerly anticipating a material that can match up to those needs.

The following techniques are based on the existing materials and are designed to get the best results out of them. The aim is to be able to apply them to the widest range of clinical situations and variety of materials as possible.

<p>Modified single shade. An optimization of the use of the single shade, taking it to the next level by perfecting the modeling steps and optimizing the color and opacity selection through database-building comparisons, both analog and digital.</p>		
<p>Body screen. A versatile fusion of single-shade and dual-shade restorations, it offers all the advantages of single shade simplicity and at the same time the chromatic complexity of dual layering, with or without characterizations.</p>		
<p>Cutback. When single-shade restorations require the presence of characterizations and optical features, there is the possibility to cutback a single-shade cured composite in different ways to develop a multi-shade restoration. Its main advantage is spatial precision, and it is applicable to CAD/CAM milling technology with multi-shade blocks, flowable injection techniques and some free-hand techniques.</p>		

Controlled body thickness

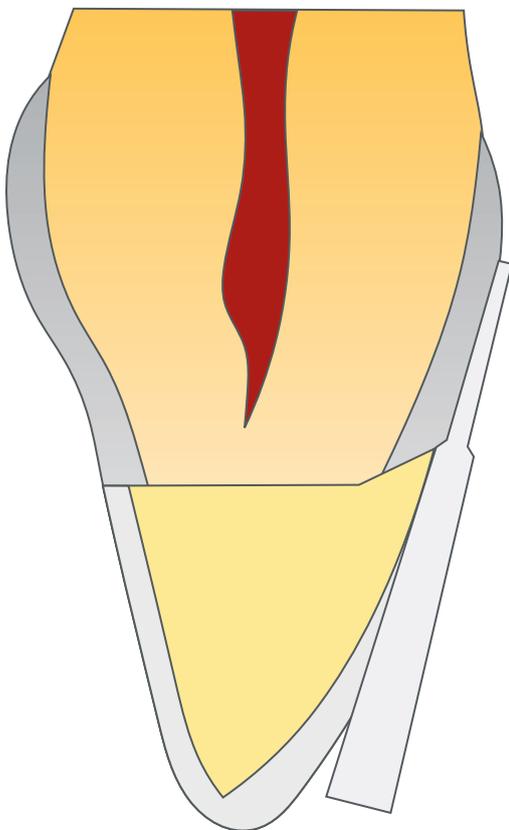
Every time we face a class IV restoration, the main challenge is dealing with color. This is not just about the shade, it's about hiding the margin and creating a seamless and natural composition of translucent and opaque areas.

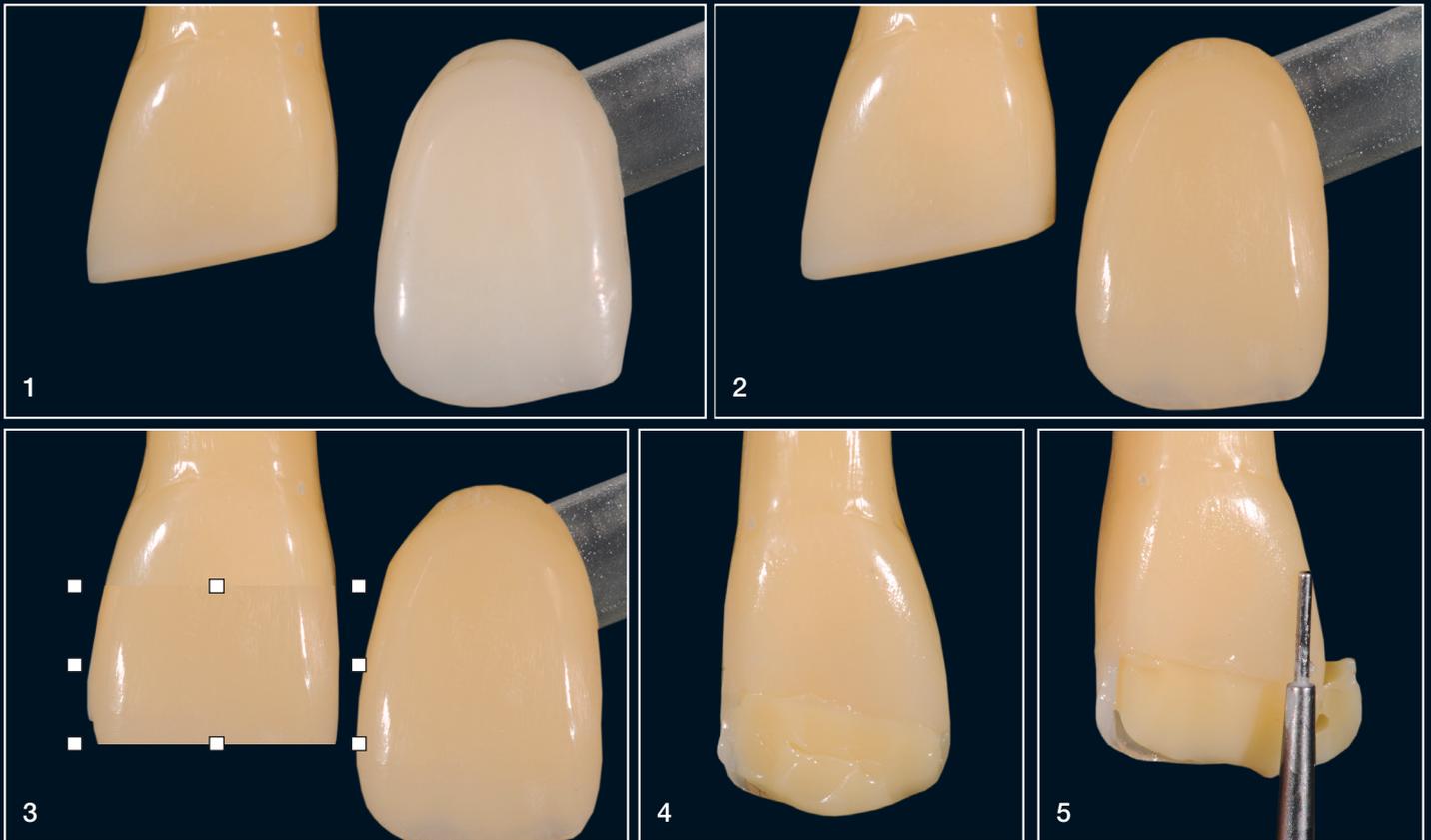
The CBT technique is based on a method for predictable color matching, which is brought into the mouth by color-cloning clinical stratification.

As complicated as it might sound, it actually involves very simple procedures, based on the calibration of two masses, to recreate the dentin-enamel ensemble. This technique is, in fact, aimed at applying exact science to dentistry, thus making a thousand variables become few.

The CBT technique consists of three simple rules:

- Create your custom shade guide with a 0.5-mm enamel layer (OUT) and 3- or 6-mm dentinal body (IN), or obtain a digital recipe with OptiShade Styleitaliano (Smile Line) and Layer Tools app.
- Clinical stratification, using the Misura instrument to achieve a controlled 0.5-mm buccal spacing for the enamel (OUT), and using it as a reference point to generate other thicknesses.
- If corrections are needed, the 0.5-mm buccal composite must be removed.





1. Typically, company recipes or their color labeling or arrangements do not match the Vita shade guide.
2. As shade matching with this technique is very precise, it only works if the calibrated thickness of the personalized shade guide matches the tooth or if the recipe was obtained digitally. Many times color arrangements are not logical (eg, A2D + A3E). If this is not the case, the predictability of the technique will reflect negatively in a predictably poor outcome.
3. If lacking a digital colorimeter, and in order to make the process more accurate, it is highly advised to take a picture with the best matching sample and place it in-context through a digital mock-up as described on pages 42,43.
4. Fast dentin placement up to the margin, ready to be calibrated.
5. Precise removal of the dentin with Misura instrument creates the perfect space to do a replica of the shade guide or recipe.

Indications

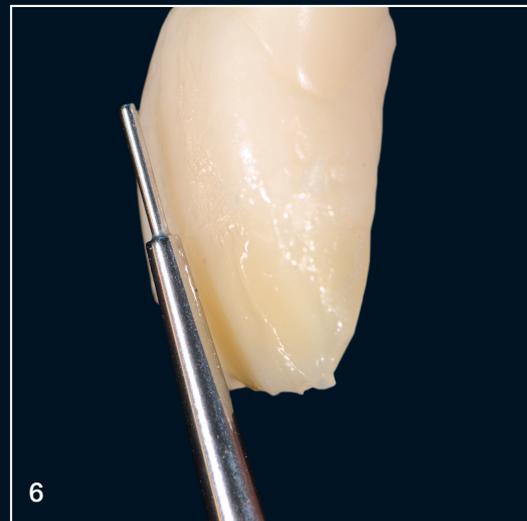
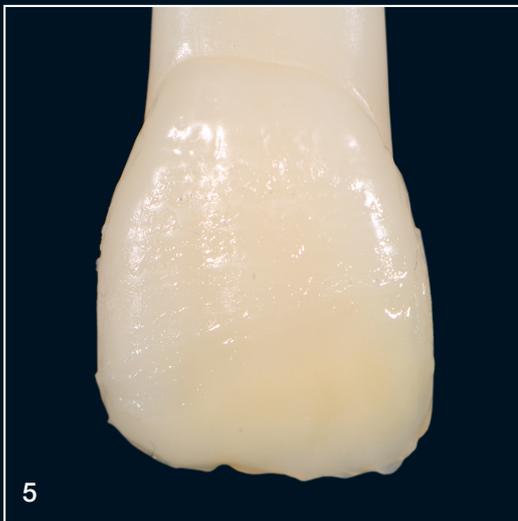
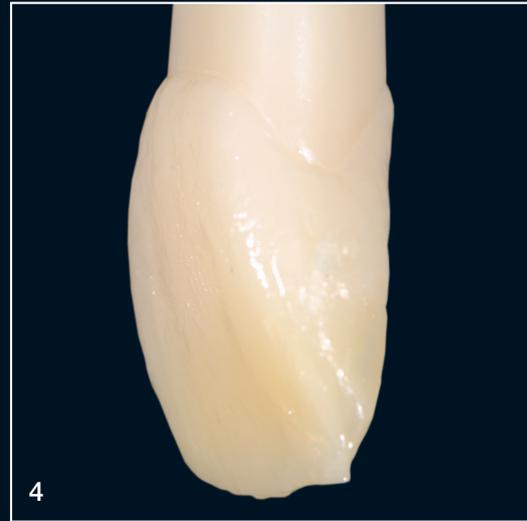
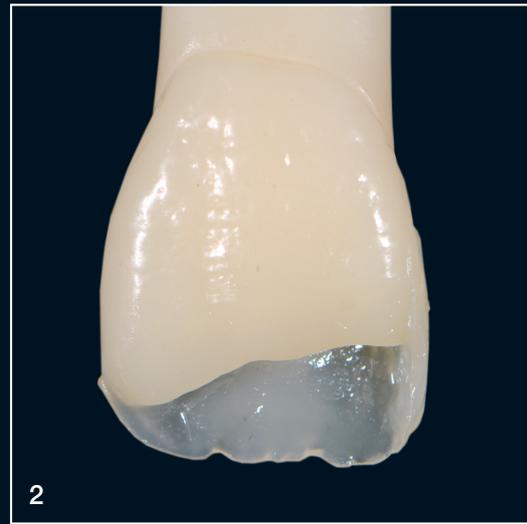
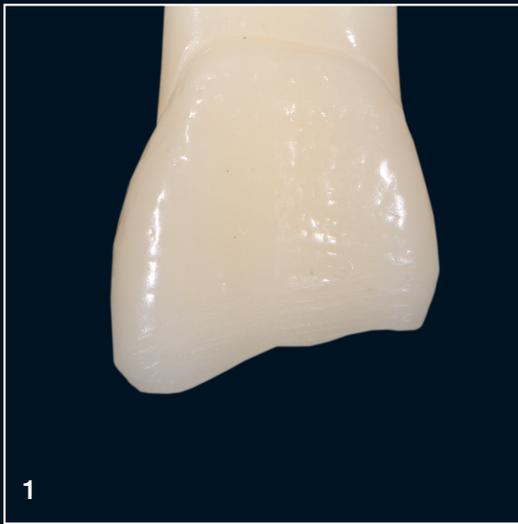
- Class IV restorations
- Need for a precise color
- Teeth with a challenging opacity
- No room for mistakes

Advantages

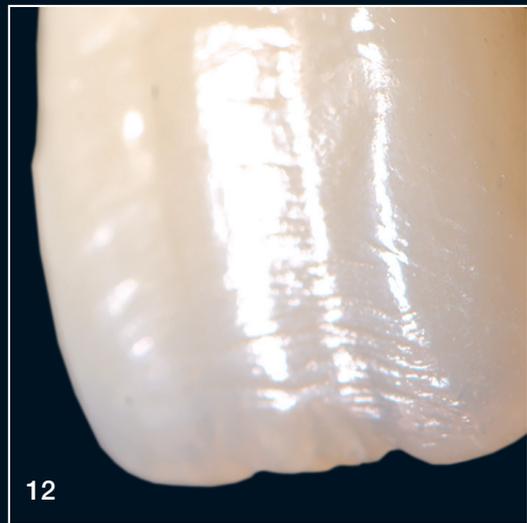
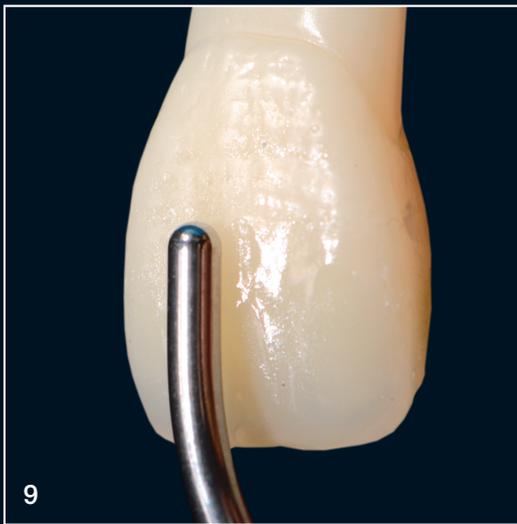
- Overall reliability
- Color predictability
- Opacity accuracy

Disadvantages

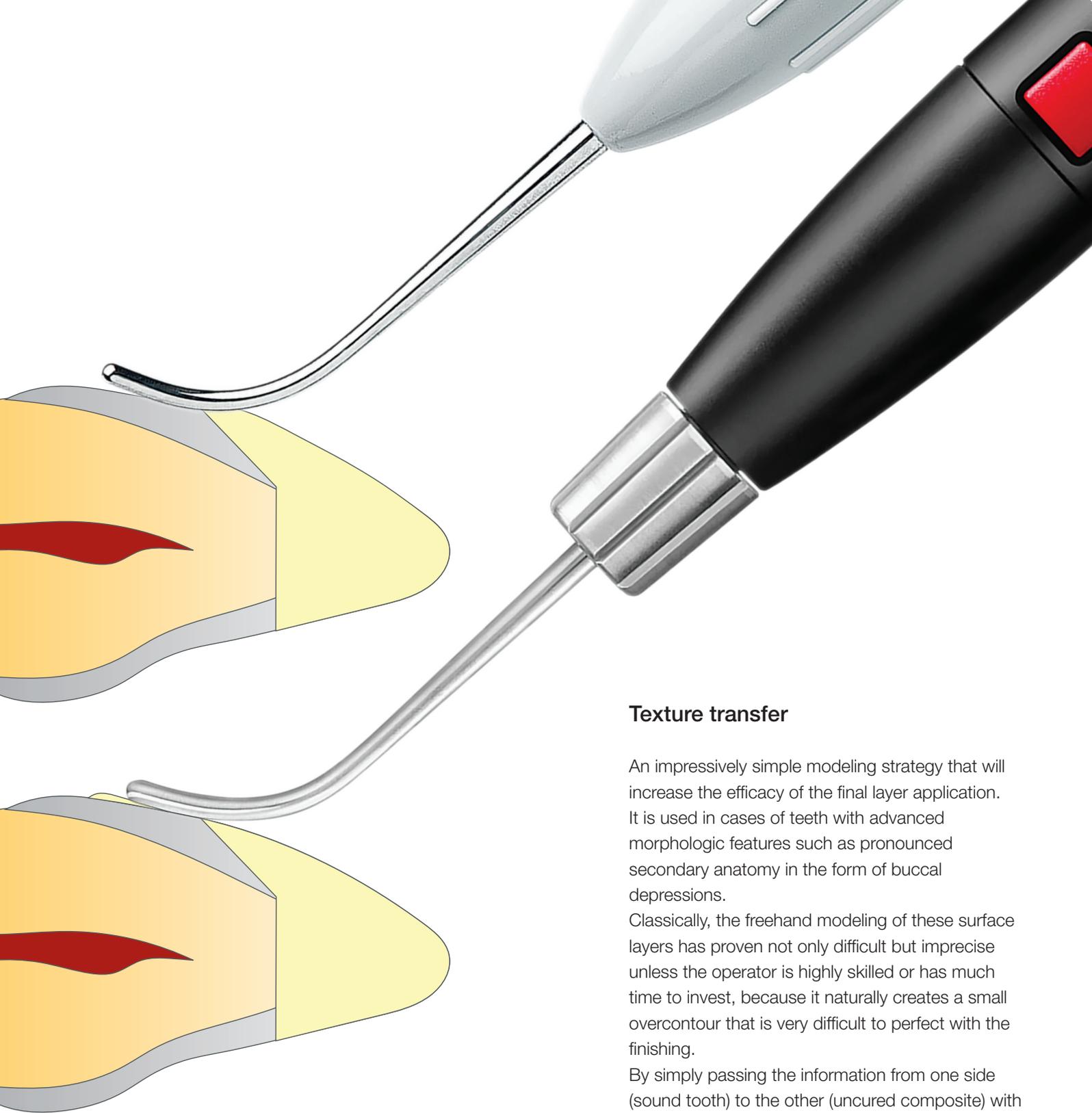
- Requires a wax-up or a technique to replace it
- Requires high skills
- Requires custom shade guide or digital colorimeter



1. Resin tooth for practice, showing the initial situation with a medium-sized class IV defect.
2. Palatal and proximal walls are built with an enamel shade.
3. Dentin application, taking excess from the incisal edge and respecting the margin area.
4. Dentin placement is done in full contour, occupying all the buccal volume.
5. Incisal excess is easily and selectively removed thanks the fully anatomical palatal wall.
6. The Misura instrument allows removal of the dentin to leave an exact 0.5-mm space.



7. It is also possible to model mamelons for a more natural appearance.
8. The buccal 0.5-mm thickness is filled with enamel composite.
9. The Condensa instrument (LM-Arte) or the big tip of Compo-Vibes (Smile Line) transfers the anatomy to the composite surface (page 94)
10. After excess is removed, a brush is used to improve the surface of the raw composite.
11. After light curing the restoration is almost finished.
12. Good finishing and polishing complete a lifelike restoration.



Texture transfer

An impressively simple modeling strategy that will increase the efficacy of the final layer application. It is used in cases of teeth with advanced morphologic features such as pronounced secondary anatomy in the form of buccal depressions.

Classically, the freehand modeling of these surface layers has proven not only difficult but imprecise unless the operator is highly skilled or has much time to invest, because it naturally creates a small overcontour that is very difficult to perfect with the finishing.

By simply passing the information from one side (sound tooth) to the other (uncured composite) with the help of a modeling instrument, we can recreate with much precision the buccal surface.

Besides being compatible with almost every layering technique, the main advantage of this strategy is that the outcome is obtained effortlessly, thus giving precision to the modeling itself and more time to focus on other features of the restoration.

Rounded instruments are preferred, and a vibrating instrument such as Compo-Vibes (Smile Line) would be the first choice.



The final enamel layer is typically placed and manually modeled. In teeth that have increased texture, this task can be challenging.



Passing a composite plugger, such as the thick end of the Condensa instrument, with side-to-side movements and burnishing-type pressure will adapt the composite to the buccal depressions, guided by the instrument. The smaller end can be used as well if more precision is needed.



Once the “texture transfer” is done, and before polymerization, we can focus on the removal of excess incisally. Once this is done, the finishing and polishing stage will become much easier as the margin area will remain virtually untouched by the abrasive tools for shaping (see page 460), and the same thing will happen to the natural enamel (see page 105 for the final outcome of this exercise).

If there is any mistake, before polymerizing, the composite is brought back again near the margin with a modeling brush to “reset” the layer and repeat the “texture transfer” movement until the outcome is satisfactory.



Video 1





A poorly characterized old restoration on the maxillary right central incisor. The patient asked for a more mimetic restoration with better shape and color.

Digital mock-up with the custom-calibrated shade guide placed "in context" for a more predictable outcome.



The palatal structure is intact, so we decided to use it to recreate the exact same palatal anatomy.

Before removing the old restoration, a silicone key was fabricated to keep a similar base for the tooth (see pages 176 and 177).



Proper isolation is mandatory to working in a safe, moisture-free environment. Rubber dam placement protocol in pages 490-491.

Composite interface was detected using a zirconia bur at low speed. Low-speed carbide burs can be used as well. It is important to do it without water.



Once the margin is detected, a diamond bur may be used to remove the restoration more quickly.



It is also strongly advised to use a sharp instrument (eg, Eccesso, LM-Arte) in the cervical-proximal area to remove invisible composite excess.



A round carbide bur, at low speed and without water, is ideal for removing the remaining proximal composite and caries inside the cavity.



After all the composite is gone, the margin is smoothed to remove brittle enamel prisms, and the bevel is mechanically polished to improve bond strength.



After adhesive procedures, a small composite increment is placed on the mesial margin of the left central incisor in order to optimize proportions.



The palatal wall is layered on the silicone index, extraorally, with an enamel mass.



A sectional matrix, QuickmatFLEX (Polydentia, Switzerland) is inserted vertically and stabilized with a wedge in order to guide the proximal buildup.



The image shows the perfect adaptation of the matrix.



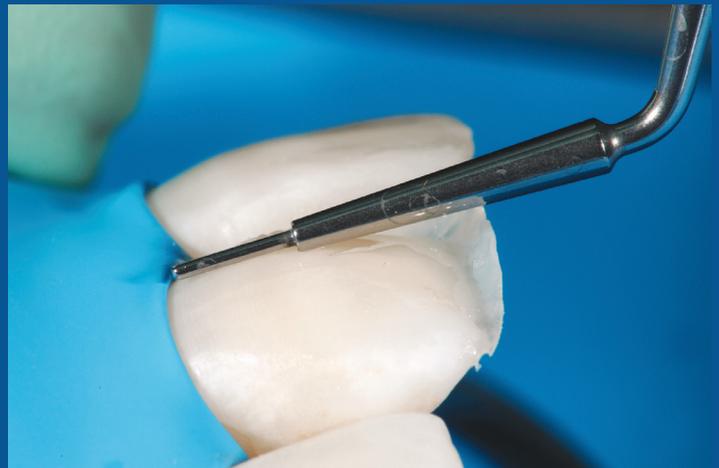
The proximal wall is built. At this time the outline of the future restoration can be easily and safely modified.



A diamond bur is used to refine the inner buildup without water irrigation. The powder generated should then be wetted with bonding agent.



The dentin is then layered, leaving space for the incisal enamel.



Before curing the dentin composite, the Misura instrument is passed several times along the margin to leave a calibrated 0.5-mm spacing.



The spacing is double-checked with the other end of the Misura, which allows for better visibility and improved access to narrow areas.



A little translucent composite is placed at the incisal and mesial to mimic the natural opalescence.



The enamel composite is then layered on top of the cured composite.



Finishing is just as important as shade matching. A perio diamond bur is used at low speed.



A round carbide bur is used to create the V-shaped grooves on the surface (see page 470).



A few perikymata have been created, and the restoration has been thoroughly polished. See page 471.