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## 3M<sup>SM</sup> Health Care Academy

# Replacement of a restoration on the upper right central incisor.

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When replacing a dental restoration, it is important to achieve good optical integration so the patient is satisfied with the result.

In detailed steps, this case study shows the successful replacement of a restoration on the upper right central incisor of a young female patient. A variety of techniques are demonstrated: precisely matching the colour and natural translucency in the incisal aspect of the adjacent tooth; simplifying the build-up of the palatal and proximal wall; reproducing a natural shape and texture in the final stages of the replacement procedure. Good optical integration is ultimately achieved, resulting in a happy patient.



**Figure 1:** Initial situation. The young female patient asks for the replacement of her restoration on tooth 11 (FDI notation). This restoration has an inadequate shape and colour.



**Figure 2:** Photography helps us to match colour. With the StyleItalliano™ recipes available for 3M™ Filtek™ Supreme XTE Universal Restorative, we are able to reproduce VITA® classical A1–D4 shade guide (VITA Zahnfabrik) colours. In this case, we will have to use the combination A3E for the enamel and A3D for the dentine.

To get	use the shade	combined with
A0	Dentine W (WD)	Enamel A2 (A2E)
A1	Dentine A1 (A2D)	Enamel A3 (A3E)
A2	Dentine A2 (A2D)	Enamel A3 (A3E)
A3	Dentine A3 (A3D)	Enamel A3 (A3E)
A3.5	Dentine A4 (A4D)	Enamel A3 (A3E)
A4	Dentine A4 (A4D)	Body A4 (A4B)

**Figure 3:** Styletitaliano™ recipes for precise reproduction of the A-shades of the VITA® classical A1-D4 shade guide with 3M™ Filtek™ Supreme XTE Universal Restorative.



**Figure 7:** In this frontal view of the preparation, a buccal chamfer is visible. It will support the practitioner in achieving an aesthetic integration of the restoration with the natural tooth.



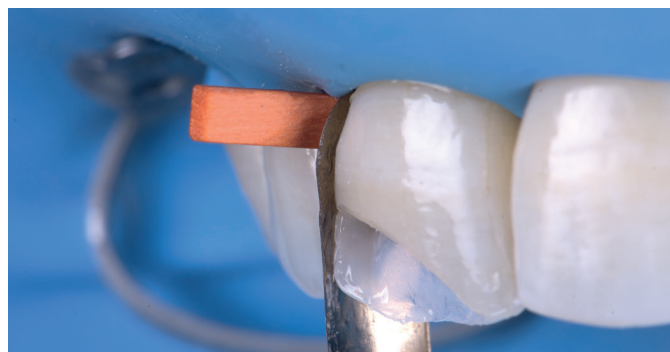
**Figure 4:** Cross-polarised photography reveals the internal structure of the teeth. In this case, it shows us that we will have to use some translucent effects on the incisal edge to copy the appearance of the adjacent natural tooth.



**Figure 8:** After bonding with 3M™ Scotchbond™ Universal Adhesive used according to the manufacturer's instructions, the palatal wall is built up with 3M™ Filtek™ Supreme XTE Universal Restorative in the shade A3E by use of a silicone key.



**Figure 5:** Situation after the placement of rubber dam, which is mandatory when doing restorative and adhesive dentistry.



**Figure 9:** Metal matrix used in a vertical way. This simplifies the build-up of the proximal wall with the selected universal restorative in the shade A3E.



**Figure 6:** After removal of the old restoration, tooth preparation is carried out and the prepared tooth surface has to be polished carefully.



**Figure 10:** Sculpting of the dentine mamelons is carried out with the Fissura instrument (LM Arte). Before, the A3D dentine layer was applied, excess material was removed and a controlled layer thickness of 0.5 mm ensured using the Misura instrument (LM Arte).





**Figure 11:** The natural translucency in the incisal aspect of the adjacent tooth is imitated by placing a thin layer of composite in the Clear Translucent Shade on top of the dentine. Here, it is already covered by the final enamel layer created with A3E.



**Figure 14:** Post-operative situation. An aesthetic result with a good optical integration is obtained.



**Figure 12:** The finishing and polishing procedure starts with the drawing of lines used to facilitate the definition and reproduction of the natural shape and texture.



**Figure 15:** The patient is happy with her new restoration.



**Figure 13:** Outcome of the finishing and polishing procedure with the rubber dam still in place.



## Dr Grégory Camaleonte

I was born in 1980 in Marseille-France and I have graduated in 2006 from the University of the Méditerranéan – Faculty of Dentistry of Marseille.

I have graduated in 2008 from the same university the DUORE (University Degree of Aesthetic and Adhesive Dentistry).

I am a member and a teacher of the Smile Academy ([www.academie-du-sourire.com](http://www.academie-du-sourire.com)) with André Faucher (my professional father), Jean-Louis Brouillet and Jean-Christophe Paris and a member of Mimesis, a research group in aesthetic and adhesive dentistry ([www.mimesis-esthetique.com](http://www.mimesis-esthetique.com)).

Author and co-author of several publications, lecturer in national congresses and courses.

I'm passionate about photography and I am also graduated from the Nikon School.

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