

Biodentine™

The first and only dentin in a capsule



Wherever dentin is damaged, you can use Biodentine[™]. Now, also do the full restoration in one session.

Biodentine[™] is the first material offering bioactivity and outstanding sealing properties to fully replace dentin, both in the crown and in the root with unique benefits:

- Preservation of pulp vitality
- Prevention of clinical failures
- Ultimate dentin substitute





From a unique innovative technology

- 10 years of research and development in Septodont laboratories
- Unique technological platform of **biocompatible and bioactive** materials promoting remineralization and pulp healing
- In-house synthetized Tricalcium Silicate to guarantee high purity
- Strict control at each manufacturing stage to guarantee high quality of the product

Biodentine[™]: clinical implementation

Direct restoration in a deep cavity - Now also possible in one session* -





2 Replace the missing dentin by the same volume of Biodentine™



8 Bond the composite after 12 min from start of mix to finish the restoration



Inlay/Onlay





Biodentine[™] and keep it as a temporary enamel restoration for a week



a dentin substitute level and take the impression



onto Biodentine[™] to finish the restoration

Pulp exposure - Now also possible in one session* -



Gutta-Percha and

endodontic sealer



Bond the composite after 12 min from start of mix to finish the restoration



Pulp floor perforation Place Biodentine^{*} Perform your root canal filling with

to seal the perforation **B** Fill the cavity with Biodentine[™] before placing the final restoration

* Poster #1021, AADR 2012, Tampa, Florida, USA, see page 6 Successful 1-year clinical follow-up published in Quintessenz, see page 4

1 Preservation of pulp vitality

Absence of post-operative sensitivity:

- High biocompatibility
- Low risk of pulp or tissue reaction

Bioactive properties:

- Pulp cells stimulation
- Optimal pulp protection through formation of dentin bridges

Pulp healing promotion in case of:

- Deep cavities
- Pulp exposure: reversible pulpitis, trauma or iatrogenic exposure

Full restoration in one session



latrogenic pulp exposure occurred after complete caries excavation during the final finishing of the cavity



Biodentine[™] is applied to the cavity to replace the dentin layer



A matrix band and wedges are put in place to finish the restoration



The composite restoration is bonded onto Biodentine[™] after 12 min from start of mix

Courtesy Dr. T. Dammaschke, University of Münster, Germany Reproduced with kind permission of Quintessenz Verlag GmbH



1-year follow-up: clinical view



The 1-year follow-up radiograph shows no pathological changes in the apical region







Long lasting sealing properties:

- Mineral tags in the dentin tubules
- High dimensional stability

Less risk of bacterial percolation:

- Dynamic and biomimetic interface with dentin
- Remineralization of interfacial dentin

No conditioning or bonding:

• Natural micro-mechanical anchorage in the dentin tubules



Dynamic and biomimetic interface with dentin



Biodentine[™] cement labelled with fluorescein dye which has moved from the cement into the dentin tubules. Notice the plugs of material in the tubule openings. Courtesy Dr Amre Atmeh, King's College London

> Mineral tags inside dentin tubules Courtesy Prof. Franquin, Koubi, Dejou, University of Marseille



High micro-leakage resistance







3 Ultimate dentin substitute

Full restoration in one session to reduce chair time

- Biodentine[™] exhibits immediate physical properties as Glass-ionomers making the Biodentine[™] + Composite full restoration in one session a safe procedure^{*}
- After 12 min from start of mix, you can bond the composite onto Biodentine[™], preferably with a self-etch adhesive

* Source: Poster #1021, AADR 2012, Tampa, Florida, USA

Easy handling for optimized clinical use

- Slightly model Biodentine[™] during the working time, not overworking it
- Let it set for 6 min without touching it

Total Handling Time			
12 min			
Mixing and placement time	Setting time in mouth		
6 min	6 min		

Superior radiopacity for clear short and long term follow-up

- 3.5 mm aluminum radiopacity
- Easy differentiation from tooth structure for easy short and long term follow-up



Comparable to human dentin: similar mechanical behavior

Similar strength as dentin



Biodentine[™] cuts like dentin



Similar stress absorption and flexural behavior as dentin



Source: Biodentine[™] Scientific File

Clinical cases

Pulp floor perforation





Pre-op x-ray with a point inserted in a palatal fistula

Removal of the filling material shows a pulp floor perforation

Courtesy Dr F. Bronnec, Private Endodontic Practice, Paris, France



Dentin loss repair with Biodentine[™] used as a dentin substitute



Post-op x-ray

Indirect pulp capping



Pre-op x-ray: proximal caries on the upper premolar



Deep cavity in the distal side



Placement of Biodentine[™] in the distal cavity



Biodentine[™] is reworked and kept as a dentin substitute. Mesial cavity is prepared



Final restoration is done using N'Durance[®] Dimer Flow as a liner



Courtesy Dr M. Kaup, University of Münster, Germany

Adopted and acknowledged by experts in the dental community

Author	Country	Title	Publication
Т. Даммазснке	Germany	Case report: Direct pulp capping with Biodentine [™] - full restoration in one session	2012
L. Roubalikova	Czech Republic	Case report: Personal clinical experience with Biodentine™	2012
G. Koubi, P. Colon, JC Franquin, A. Hartmann, G. Richard, MO. Faure, G. Lambert	France	Clinical evaluation of the performance and safety of a new dentin substitute, Biodentine™, in the restoration of posterior teeth - a prospective study	Clinical Oral Investigation 2012
A. Atmeh, F. Festy, C. Ee Zhuan, T. Watson	United Kingdom	Dentin-cement interfacial interaction: calcium silicates and polyalkenoates	Journal of Dental Research 2012
A. Shayegan	Belgium	Biodentine ${}^{\mbox{\tiny TM}}$ vs. MTA in pulpotomy and direct pulp capping in pigs	Pediatric Dentistry 2012
S. KOUBI, H. ELMERINI, G. KOUBI, H. TASSERY AND J. CAMPS	France	Quantitative Evaluation by Glucose Diffusion of Microleakage in Aged Calcium Silicate-Based Open-Sandwich Restorations	International Journal of Dentistry 2012
Т. Даммазснке	Germany	Case report: Direct pulp capping with a new bioactive cement	Quintessenz Germany 2011
P. Laurent, J. Camps, I. About	France	Biodentine [™] induces TGF-81 release from human pulp cells and early dental pulp mineralization	International Endodontic Journal 2011
Han L., Okiji T.	Japan	Uptake of Calcium and Silicon released from calcium silicate based endodontic materials into root canal dentin	International Endodontic Journal 2011
L. GOUPY	France	Case report: A novel dentin substitute for use in paediatric conservative dentistry	2011
M. Firla	Germany	Case report: Direct Pulp capping with a bioactive dentin substitute	2011
Т. Даммазснке	Germany	Case report: A new bioactive cement for direct pulp capping	2011
F. BRONNEC	France	Case report: A dentin substitute for the repair of root perforations, apexification and retrograde root filling	2011
C. Villat, V.X. Tran, F. Wenger, N. Pradelle-Plasse, P. Ponthiaux, B. Grosgogeat, P. Colon	France	Impedance methodology: A new way to characterize the setting reaction of dental cements	Dental Materials 2010



Presentation

Available in:

- Box of 15 capsules and 15 single-dose containers
- Box of 5 capsules and 5 single-dose containers





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