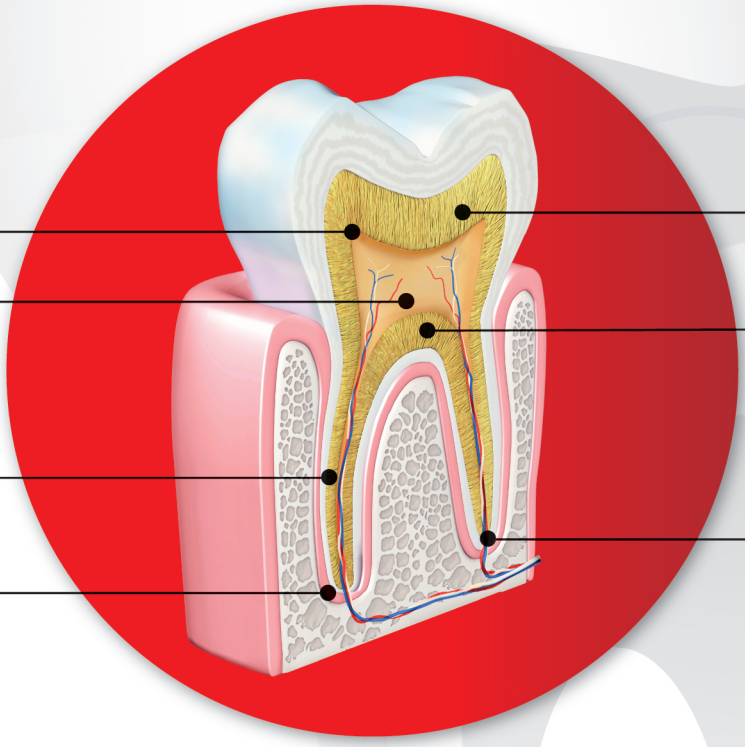
DENTINE CARE INNOVATION

Biodentine™

... is the first all-in-one, biocompatible and bioactive material to use wherever dentine is damaged



For **crown** and **root** indications

Helps the **remineralisation** of dentine

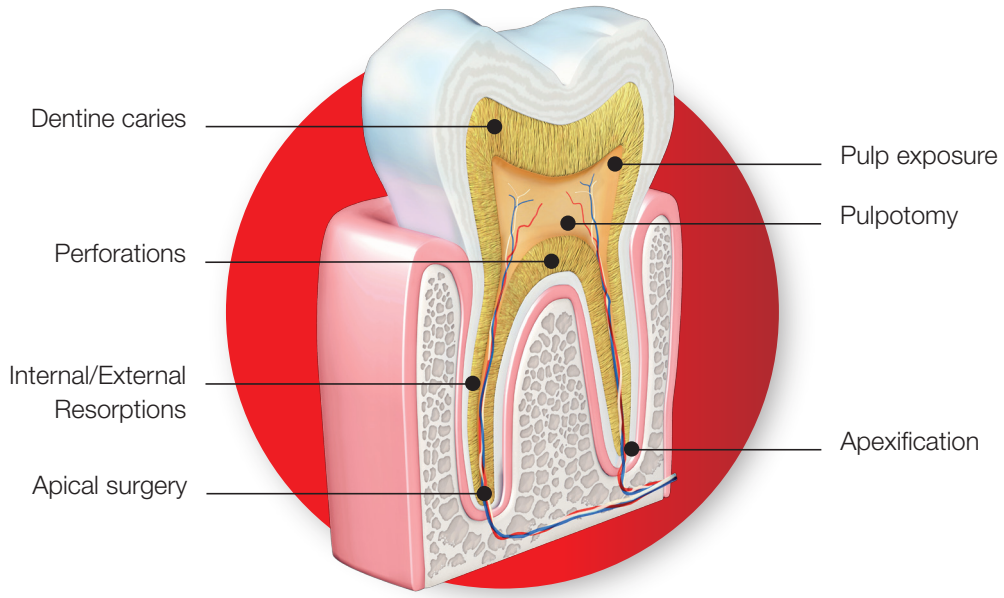
Preserves pulp vitality and **promotes pulp healing**

Replaces natural dentine with the **same mechanical properties**

ACTIVE BIOSILICATE TECHNOLOGY

septodont

BIOACTIVE DENTINE SUBSTITUTE: WHEREVER DENTINE IS DAMAGED, YOU CAN USE BIODENTINE™



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

1 - Preservation of pulp vitality
2 - Prevention of clinical failures
3 - Ultimate dentine substitute

From an unique innovative technology

ACTIVE BIOSILICATE TECHNOLOGY

> 10 years of research and development in Septodont laboratories

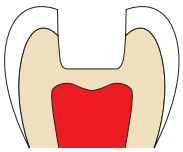
> Unique technological platform of biocompatible and bioactive materials promoting remineralisation and pulp healing

> In-house synthesised Tricalcium Silicate to guarantee high purity

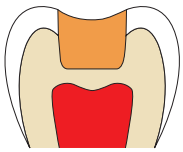
> Strict control at each manufacturing stage to guarantee high quality of the product

BIODENTINE™: CLINICAL IMPLEMENTATION

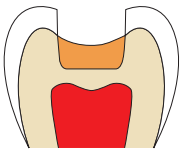
Direct restoration in a deep cavity



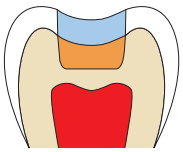
1 Prepare the cavity



2 Fill the cavity with Biodentine™

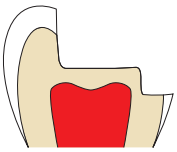


3 After at least 48h, prepare the upper part of Biodentine™ for enamel restoration

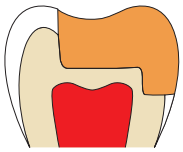


4 Finish the restoration with a composite

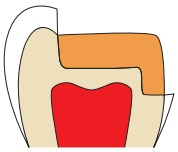
Inlay/Onlay



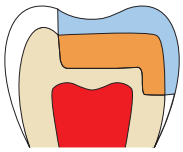
1 Prepare the cavity



2 Re-build the tooth with Biodentine™ and keep it as a temporary enamel restoration



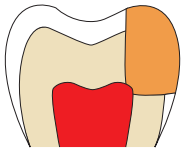
3 After at least 48h, prepare the upper part of Biodentine™ for enamel restoration



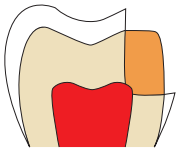
4 Finish the restoration with a composite or with an inlay/onlay

Pulp exposure

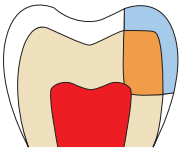
1 Prepare the cavity



2 Use Biodentine™ as a pulp capping agent and bulk filling material to re-build the tooth

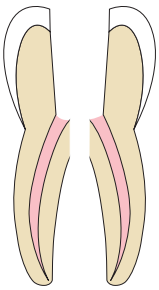


3 After at least 48h, prepare the upper part of Biodentine™ for enamel restoration

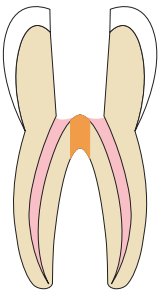


4 Finish the restoration with a composite

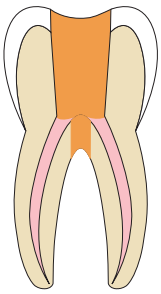
Pulp floor perforation



1 Perform your root canal filling with Gutta-Percha and endodontic sealer



2 Place Biodentine™ to seal the perforation



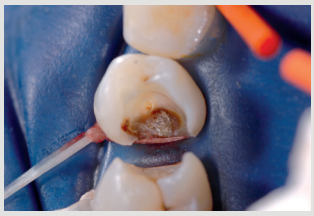
3 Fill the cavity with Biodentine™ before placing the final restoration

1 PRESERVATION OF PULP VITALITY

- Absence of post-operative sensitivity: high biocompatibility reducing the risk of pulp or tissue reaction
- Bioactive: remineralisation of dentine for unique pulp healing properties
- Formation of reactionary dentine and dentine bridges
- Pulp healing promotion after pulp exposure: reversible pulpitis, trauma or iatrogenic exposure

Direct Pulp Capping with an Adult Patient

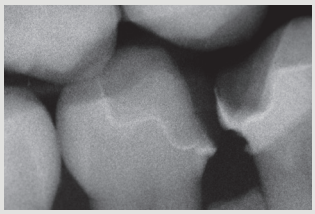
Pre-operatory x-ray



Pulp exposure

Placement of Biodentine™ used for direct pulp capping

Biodentine™ is used as a bulk filling material and kept as a dentine substitute



3-year follow-up x-ray

3-year follow-up clinical view

Courtesy Prof. G. Koubi, University of Marseille, France

Indirect Pulp Capping: Study in Rat Molars

"Biodentine™ stimulates the formation of reactionary dentine and maintains pulp vitality despite the preparation of a deep cavity and the placement of a filling material" (Goldberg 2009)

1 week	2 weeks	1 month	3 months
20-40 µm	40-80 µm	140-180 µm	180-200 µm

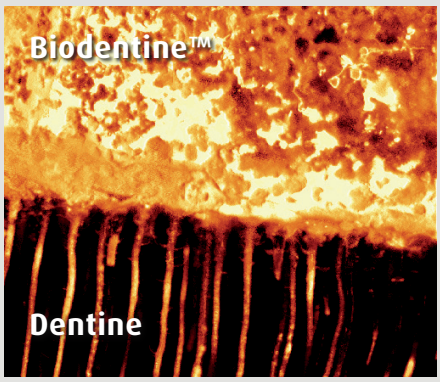
Reactionary dentine thickness on Rat Molars

Courtesy Prof. Goldberg, University of Paris, France

2 PREVENTION OF CLINICAL FAILURES

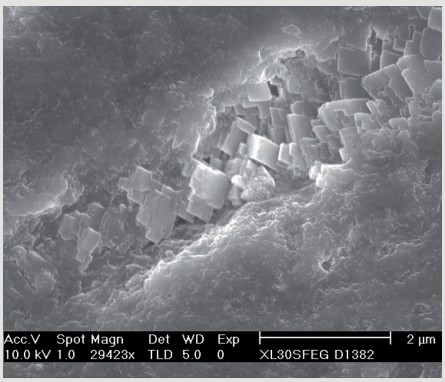
- Long lasting sealing properties: mineral tags in the dentine tubules combined with high dimensional stability over time
- Less risk of bacterial percolation: outstanding microleakage resistance
- Absence of post-operative sensitivity: no shrinkage
- No conditioning or bonding: natural mechanical anchorage in dentine tubules

Micro-mechanical anchorage ensuring long lasting seal



Biodentine™ labelled with fluorescein dye which has moved from the cement into the dentine tubules. Notice the plugs of material in the tubule openings

Courtesy Dr Amre Atmeh, King's College London

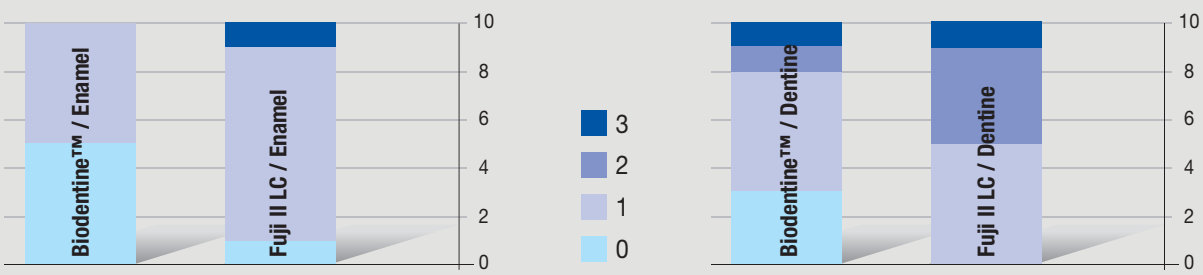


Mineral tags inside dentine tubules

Courtesy Prof. Franquin, Koubi, Dejou, 2007

High micro-leakage resistance

Biodentine™ has better resistance to leakage than Fuji II LC on enamel and dentine interfaces



Compared dye penetration at the dentine/material interface. 0= No dye penetration - 3= Total dye penetration
Courtesy Prof. Dejou

3 ULTIMATE DENTINE SUBSTITUTE

- Easy handling for optimised clinical use
- Superior radiopacity for clear short and long term follow-up
- Comparable to human dentine: similar mechanical behaviour

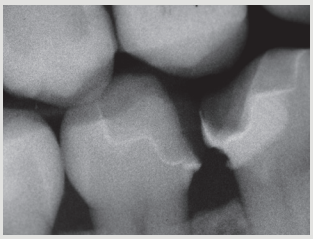
Easy handling

TOTAL HANDLING TIME	
12 min	
MIXING AND PLACEMENT TIME	SETTING TIME IN MOUTH
6 min	6 min

> Minimal modelling of Biodentine™ during the working time, not overworking it

> Let it set for 6 min without touching it

Superior radiopacity

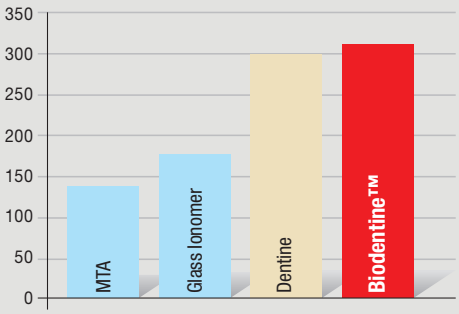


> 3.5 mm Aluminium radiopacity

> Easy differentiation from tooth structure for simple short and long term follow-up

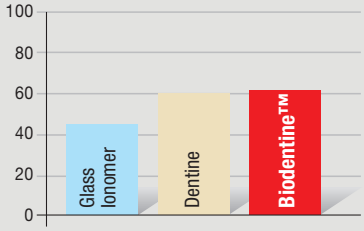
Comparable to human dentine

Similar strength to dentine



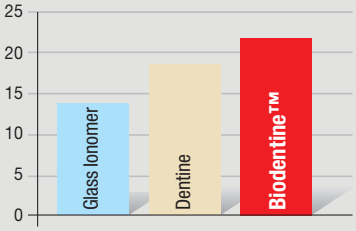
Compressive Strength, MPa
(1 month)

Biodentine™ cuts like dentine



Vickers Micro Hardness, HVN
(24 hours)

Similar stress absorption and flexural behaviour as dentine

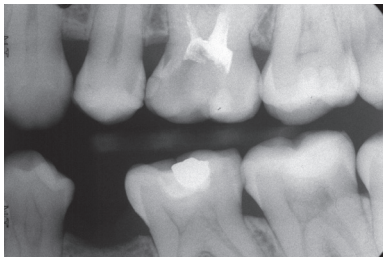


Flexural Modulus, GPa
(24 hours)

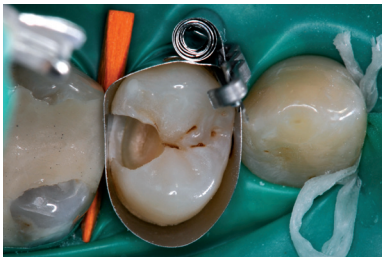
Source: Septodont internal data, data on file

CLINICAL CASES

Indirect pulp capping

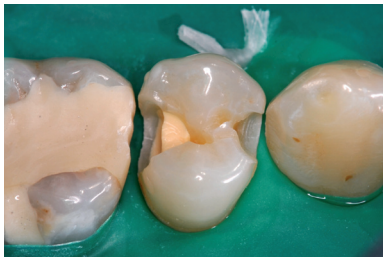


Pre-op x-ray: proximal caries on the upper premolar



Deep cavity in the distal surface

Placement of Biodentine™ in the distal cavity



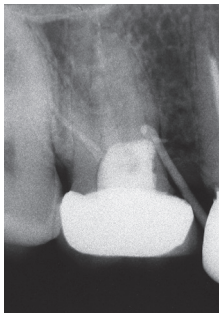
Biodentine™ is reworked and kept as a dentine substitute. Mesial cavity is prepared

Final restoration is done using N'Durance® Dimer Flow as a base

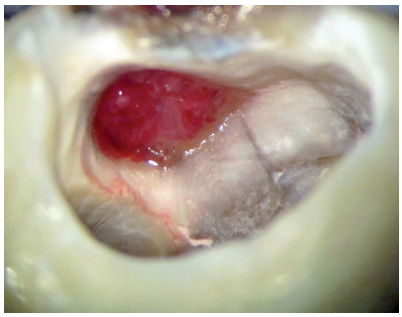
Clinical view of the final restoration with N'Durance®

Courtesy Dr M. Kaup, University of Münster, Germany

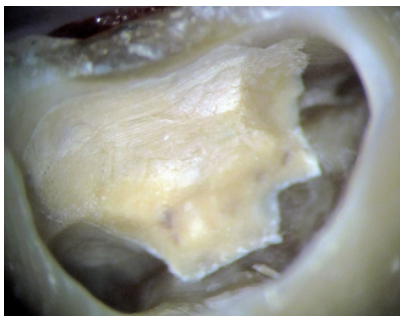
Pulp floor perforation



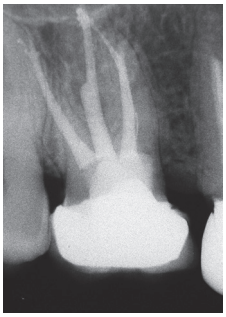
Pre-op x-ray with a point inserted in a palatal fistula



Removal of the filling material shows a pulp floor perforation



Dentine loss repair with Biodentine™ used as a dentine substitute



Post-op x-ray

Courtesy Dr F.Bronnec, University of Paris, France

MORE THAN 300 PATIENTS INCLUDED IN CLINICAL STUDIES SINCE 2005

University	Subject	Duration	Date of Publication
Paris VII - Prof. Machtou	Clinical study: Endodontic applications	3 years	2011
Marseille - Prof. Koubi	Clinical study: Direct pulp capping	3 years	2011
Marseille - Prof. Koubi	Clinical study: Class I and Class II restorations	3 years	2011
Lyon - Prof. Colon, Dr Grosgogeat	Bactericidal properties	3 months	2010
Brussels - Dr Shayegan	Pulpotomies in swine teeth	1 year	2010
Marseille - Prof. About	Early stages of dentinal genesis	1 year	2010
Paris - Prof. Colon	Microleakage of open sandwich class II restoration	1 year	2010
London - Prof. Watson	Evaluation of permeability	3 months	2010
Paris - Prof. Goldberg	Indirect pulp capping in rat molars	1 year	2009
Marseille - Prof. About	Induction of specific cell response to a Ca_3SiO_5 - based material	1 year	2008

ADOPTED BY ACKNOWLEDGED EXPERTS

IN THE DENTAL COMMUNITY

Prof. Tim Watson PhD BSc MCSP

"Biodentine™ is a material that, for the first time, allows a dentist to achieve biomimetic mineralisation within the depths of a carious cavity. Biodentine™ has the potential to revolutionise the management of the deep carious cavity in operative dentistry, whether or not the pulp is exposed.

Prof. Callum Youngson BDS, DDSc, FDS, DRD, MRD, FDS(Rest Dent) RCS (Edin), FDS RCS (Eng)

"Biodentine™ finally provides us with a material that closely resembles lost dentine and has the potential to promote, rather than just allow, healing of the pulpitic tooth. Biodentine™, is also compatible with the final composite restoration, making it an important addition to the clinician's armamentarium."

Dr. Julian Webber BDS MSc DGDP FICD

"Sophisticated biosilicate technology and 100% biocompatibility makes Biodentine™ the perfect root canal repair material. With its improved handling ability and quick setting time, Biodentine™ offers considerable advantages over other similar materials. I cannot recommend it more highly"

Product Presentation

Available in:
Box of 15 capsules,
15 single-dose containers

septodont