

**The unique**

Pulp  
therapeutic  
&  
Restorative  
material



***Biodentine***<sup>TM</sup>

in the Bio-Bulk Fill procedure<sup>20</sup>



# Pulp therapeutic

**Superior  
Bioactivity<sup>1-4\*</sup>**

**Excellent  
Biocompatibility<sup>5-7\*\*</sup>**

**Antimicrobial  
Properties<sup>10</sup>**

\* Highest mean value of Calcium release and its superior concentration that encourages positive interaction with pulp cells.

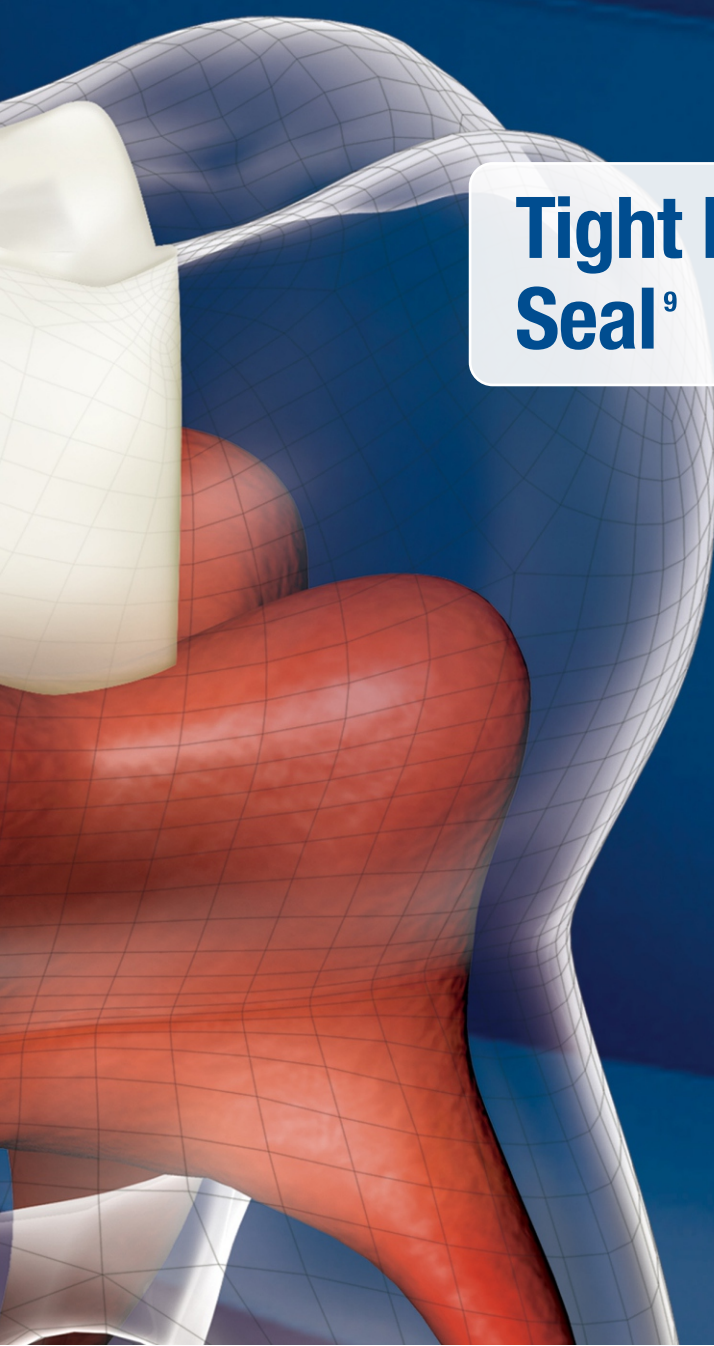
\*\* Biodentine™ showed the highest % of cell biocompatibility.

Properties verified by preclinical studies.

# Restorative material

**Strong Mechanical  
Properties<sup>5,7</sup>**

**Tight Marginal  
Seal<sup>9</sup>**

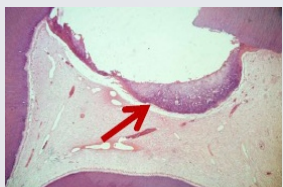


# Pulp therapeutic

## Superior Bioactivity<sup>1-4</sup>

### Favorable interaction with pulp cells

Dense dentinal bridge formation to protect pulp.



Remineralization of damaged dentin.

## Excellent Biocompatibility<sup>5-7</sup>

Extra-pure  
C3S

0  
resin

0  
cell death

## Antimicrobial Properties<sup>10,21</sup>

pH **11+**

pH 10.99 at release and  
pH >11 maintained for 28 days.

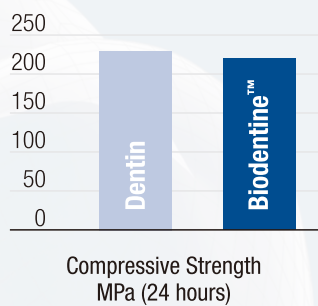
Unfavorable environment for  
bacteria responsible for pain  
and secondary caries.

# Restorative material

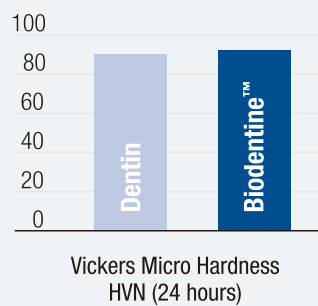
## Strong Mechanical Properties<sup>7,8</sup>

Similar to sound dentin

Resistance to external impact of mastication forces



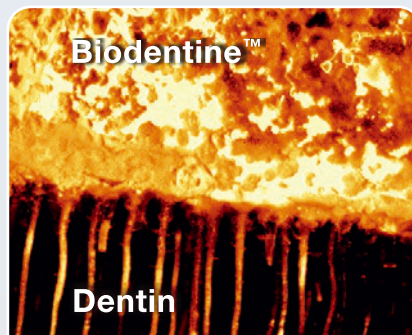
Stress absorption



## Tight Marginal Seal<sup>4,9,11</sup>

**0**  
shrinkage

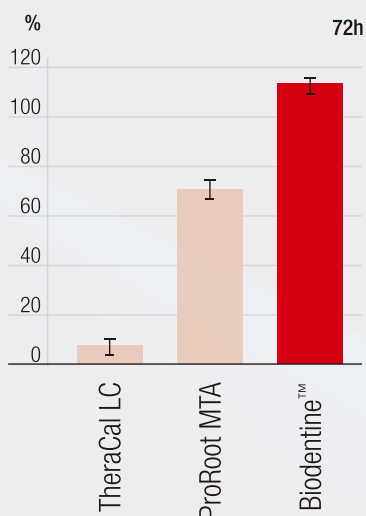
Thanks to its resin-free formulation, long-lasting dimensional stability is ensured.



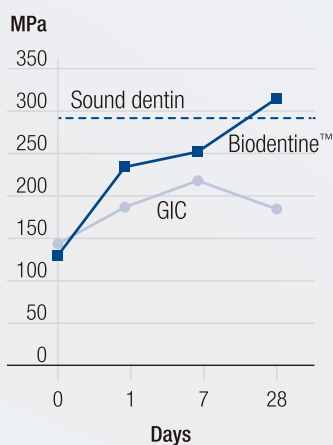
Deep penetration within dentin tubules.

## Pulp therapeutic & Restorative material

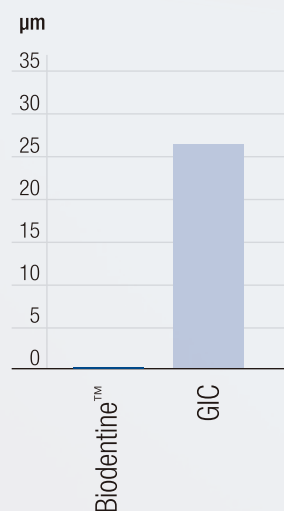
### Better cell viability <sup>5</sup>



### Better compressive strength <sup>8</sup>



### Less microleakage <sup>11, 12</sup>



“Results reflect a percentage of cell viability compared to cells cultured without pulp capping materials, which were considered 100%.”

*Biodentine™ exhibited > 100%, the highest percentage of cell biocompatibility among the tested pulp capping materials.”*

Poggio C et al. 2015

“A specific feature of Biodentine™ is its capacity to continue improving with time over several days until reaching 300 MPa after one month.”

*This value becomes quite stable and is in the range of the compressive strength of natural dentine (297 MPa).”*

Internal data: Biodentine™ scientific file  
O'Brian 2008

“Biodentine™ exhibits superior marginal sealing ability as well as marginal adaptation under composite resin as compared to GIC.”

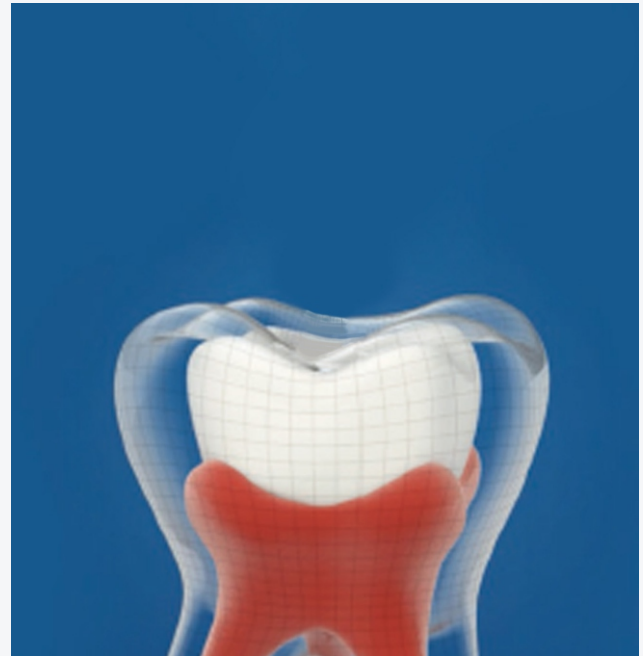
*“Resistance to microleakage is important for preventing challenges such as the development of secondary caries, tooth sensitivity, aesthetic concerns, and the potential for restoration failure.”*

Niranjan et al. 2016  
Aljehani et al. 2023

**Biodentine™ is THE unique material suited for**

## **Bio-Bulk Fill procedure**<sup>17,20</sup>

Fill **the entire cavity** with only Biodentine™  
**from the pulp to the tooth surface.**



### **Final enamel restoration to be performed:**

- ▶ in the same session
- or
- ▶ in the second session, which can be performed **between 2 weeks and 6 months later**<sup>18</sup>.

**Pulp  
therapeutic**



**Restorative  
material**

Success in your  
deep cavity restoration procedures

**daily**

Clinical success rate

**Direct  
pulp capping**

**96.4 %<sup>15</sup>**

**Pulpotomy**

**93.9 %<sup>16</sup>**

**Indirect  
pulp capping**

**95.8 %<sup>13</sup>**

When dentin thickness is:

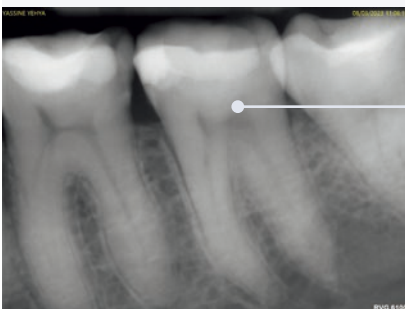
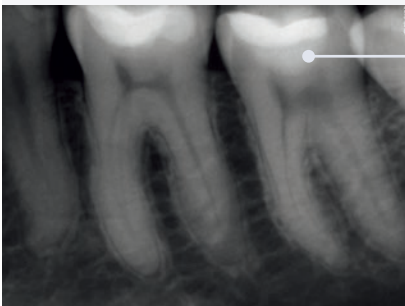
- **Less than 0.5 mm**
- **Difficult to determine** in a clinical setting<sup>14</sup>

Using just one product,  
Biodentine™ lets you:

- Heal the pulp
- Preserve pulp vitality
- Save tooth structure<sup>21</sup>

**12** years of success of Biodentine™  
in the Bio-Bulk Fill procedure

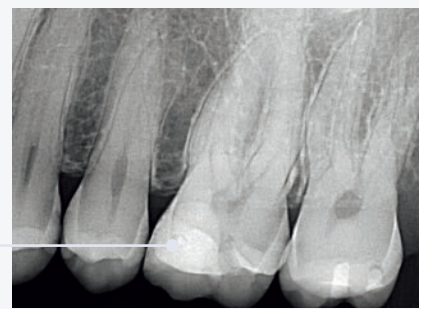
**Patient 1**  
1- and 12-year recall



Healthy teeth with  
pulp vitality and  
tooth structure  
preserved.

Cases by Prof. J. Sabbagh  
DDS, MSc, PhD, FICD, HDR

**Patient 2**  
8-year recall



## 6.5 million teeth saved with Biodentine™<sup>19</sup>

### Biodentine™ in the Bio-Bulk Fill procedure



**Adapted  
to your practice**

1- or 2-session  
procedure



**Cost-  
effective**

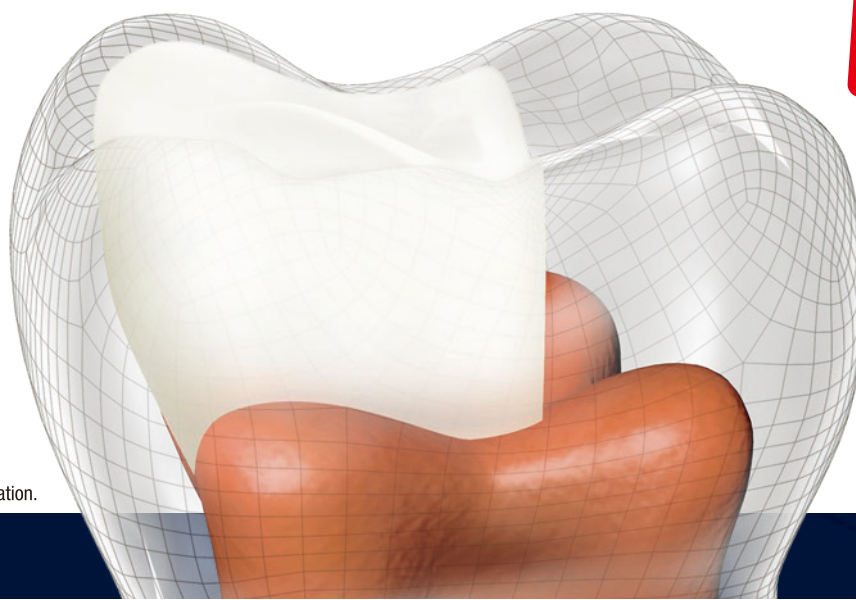
1 product  
for entire cavity\*



**Proven clinical  
success**

multiple  
clinical trials

**1400+**  
publications\*\*



\* under final enamel restoration.

\*\* Publications available at  
<https://pubmed.ncbi.nlm.nih.gov/>.

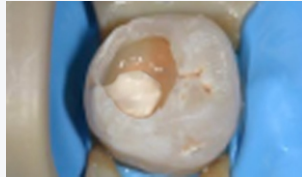
## Examples of Bio-Bulk Fill procedure in daily deep cavity restorations

### Indirect pulp capping in one session

By Prof. J. Sabbagh



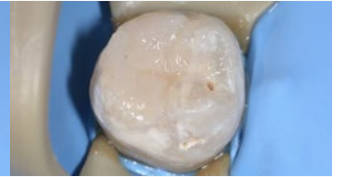
Cavity preparation.



Biodentine™ placement, Bio-Bulk Fill procedure.



Final restoration using self-etch adhesive system and composite in the same session.



### Indirect pulp capping in two sessions (final enamel restoration in two weeks)

By Dr. M. Ganowicz



Tooth after preparation.



Restoration of the proximal walls with composite material.



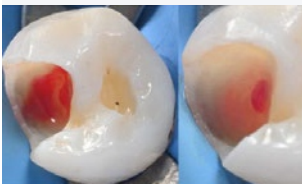
Filling of the rest of the cavity with Biodentine™.



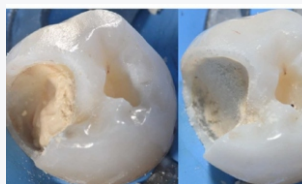
Final enamel restoration after two weeks.

### Direct pulp capping in one session

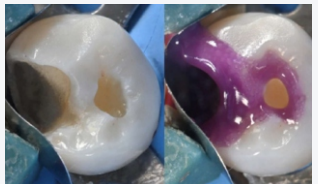
By Dr. V. Tosco



Clean cavity with pulp exposure.



Placement, hardening and shaping of Biodentine™ before restoration.



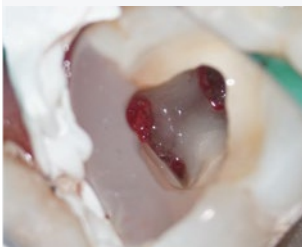
Selective enamel etching.



Final restoration using selective enamel etching and composite.

### Pulpotomy in two sessions (final enamel restoration in two weeks)

By Dr. S. Herbst



Complete pulpotomy with achieved hemostasis.



Bio-Bulk Fill procedure with Biodentine™.



Final restoration using self-etch adhesive system and composite in a second session.



Radiology check.

# The unique

# Pulp therapeutic & Restorative material



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