Pediatrics

Biodentine®
Dentin Substitute

ACTIVE BIOSILICATE TECHNOLOGY
Biodentine®: Therapeutic care for your younger patients’ teeth

1. Maintain pulp vitality
   - Biodentine® is bioactive and promotes the pulp’s self healing capacity
   - In indirect and direct pulp caps, in partial or total pulpotomies: Biodentine helps you save the pulp of vital teeth
   - Its bioactivity allows the apical closure of immature teeth
   - Its high pH reduces the risk of bacterial proliferation

2. Adapted to younger patients
   - Biodentine is “bulk filled” into the cavity prep
   - The final restoration in the same session is possible, whether a direct composite or a stainless steel crown
   - The enamel restoration can be completed in the same session or within 6 months if the pulp requires monitoring.
   - No post-operative pain and no discoloration
   - No need for extra bonding, no extra steps
For younger patients, treatments historically have not always been pulp friendly and have many drawbacks. With Biodentine, you bring a different level of care to your young patients.

**Technical Insights**

**Higher biocompatibility and bioactivity for pediatric indications**

- High biocompatibility assessed and evidenced through many scientific publications - Highest amount of calcium and hydroxide ions released upon setting as compared to similar bioactive products (4)
- Induces thick dentin bridge formation (5,6) due to the large calcium surface concentration compared to similar dental materials (7)
- Shows both osteogenic and angiogenic properties to promote pulp and tissue healing (8)
- Calcium silicate based materials show better clinical & radiographic results than Formocresol (2,3)
- Allows the tooth to grow naturally

**Bulk fill placement for a strong restoration**

- Similar mechanical properties as dentin allowing durable bulk fill procedure
- Fast growing mechanical strength with a solid restoration as soon as Biodentine is set
- Resin free formula reduces risk of failure by providing an outstanding seal

**Product properties designed for pediatric dentistry**

- Setting time of 10-12 min allows placement of a stainless steel crown in the same office visit
- No tooth discoloration (1)
- Antimicrobial properties due to alkaline pH (=12) (9)
- No post-operative pain was present in clinical trials (10)

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**Total handling time**

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<table>
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<td>Mixing &amp; placement</td>
<td>6 min.</td>
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<td>Setting time in mouth</td>
<td>6 min.</td>
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Immediate post-op X-ray after Biodentine placement. The open apex is clearly visible.

The 9-month follow-up X-ray shows the apical closure.

Courtesy Prof. L. Martens & Prof. R. Cauwels, UZ Ghent, Belgium
Clinical cases

Pulpotomy
This includes pulpotomy in deciduous teeth and partial pulpotomy in permanent teeth. Besides its bioactivity, Biodentine’s fast setting time allows immediate crown restoration.

Traumatized teeth
Incisors are mostly concerned when it comes to crown fractures. Treatment of these complicated fractures in immature teeth is often a real challenge since the goal is to stimulate the pulp so that the apex can pursue its physiological maturity process. Biodentine shows dentin-like mechanical properties, does not discolor teeth\(^1\) and has a short setting time (10-12 min).

Deep caries treatment
After excavation of caries, the pulp may be visible through a thin layer of hard tissue or the pulp may be exposed. Biodentine is a restorative material that can directly be placed on the pulp and is evaluated as superior to MTA, CaOH and Formocresol in numerous publications.\(^2,3\) It offers zero discoloration of teeth,\(^4\) provides an outstanding seal, is easy to handle, sets fast and is antibacterial. You can therefore “bulk fill” Biodentine without extra conditioning and bonding.
Cervical pulpotomy (vital pulp, non-inflammatory, hemostasis possible).

Bulk fill Biodentine from the pulp chamber to the occlusal surface.

Placement of a stainless steel crown.

X-ray follow-up image at 3 months showing the absence of any periradicular lesion.

After one week, the patient was asymptomatic and final restoration was done with composite on top of Biodentine.

X-ray follow-up image at 12 months showing continued root formation.

Indirect capping with Biodentine, Figure A and B show the radiographic image before and after treatment.

Radiograph after treatment.

X-ray follow-up image at 12-months, showing the continued formation of radicular apices.
<table>
<thead>
<tr>
<th>Authors</th>
<th>Title</th>
<th>Journal</th>
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<th>Ref.</th>
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**Available in:**
- Box of 15 capsules and 15 single-dose pipettes
- Box of 5 capsules and 5 single-dose pipettes

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