

*Biodentine*TM

Clinical procedures



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Immediate enamel restoration



Non-immediate enamel restoration



**Pulp capping
(direct and indirect)**



**Pulpotomy (reversible
& irreversible pulpitis)**



Repair of root perforations



Repair of furcation perforations



**Repair of perforating
internal resorptions**



Apexification



**Root-end filling in
endodontic surgery**

Immediate enamel restoration

■ 1 session
recommended



Assess pulp vitality by the usual tests.

- 1) Isolate the tooth with a rubber dam.
- 2) Remove the infected dentine with a round bur and/or a hand excavator. Leave the affected dentine.
- 3) Adapt a matrix around the tooth if a wall is missing.
- 4) Prepare Biodentine™ according to Biodentine™ mixing instructions (as described in the IFU).
- 5) Insert Biodentine™ in the cavity, so that the volume of missing dentine is replaced by the same volume of Biodentine™ avoiding trapping air bubbles. Flatten the material without excessive pressure and ensure good adaptation to the cavity walls and margins.
- 6) Wait until the end of the setting time before performing the permanent enamel restoration. Biodentine™ is compatible with all direct crown restoration techniques and particularly with all types of bonding systems.

Non-immediate enamel restoration

■ 2 sessions recommended



First session

Assess pulp vitality by the usual tests.

- 1) Isolate the tooth with a rubber dam.
- 2) Remove the infected dentine with a round bur and/or a hand excavator. Leave the affected dentine.
- 3) Adapt a matrix around the tooth if a wall is missing.
- 4) Prepare Biodentine™ according to Biodentine™ mixing instructions (as described in the IFU).
- 5) Insert Biodentine™ in the cavity avoiding trapping air bubbles. Ensure good adaptation of the material to the cavity walls and margins. Do not apply excessive pressure on the material.
- 6) Model the surface of the restoration.
- 7) Wait until the end of the setting time before removing the matrix.
- 8) To optimize the mechanical properties of the material and facilitate removal of the matrix, a varnish can be applied onto the surface of the restoration.
- 9) Check occlusion.

Second session (1 week to 6 months later)

Within one week to six months after placement of Biodentine™, prepare the cavity according to the criteria recommended for the selected restorative material. The remaining Biodentine™ material can be considered as sound artificial dentine and permanently left in deep areas of the cavity and in areas adjacent to the pulp chamber. Biodentine™ is compatible with all direct or indirect crown restoration techniques (Inlay/Onlay), and particularly with all types of bonding systems.

Pulp capping (direct and indirect)

■ 1 or 2 sessions
recommended



First session

Assess pulp vitality by the usual tests.

- 1) Isolate the tooth with a rubber dam.
- 2) Remove the infected dentine with a round bur and/or a hand excavator. Leave the affected dentine.
- 3) Adapt a matrix around the tooth if a wall is missing.
- 4) If there is bleeding in the pulp, haemostasis must be achieved before applying Biodentine™.
- 5) Prepare Biodentine™ according to Biodentine™ mixing instructions (as described in the IFU).
- 6) Place Biodentine™ directly on the exposed pulp avoiding trapping air bubbles. Ensure good adaptation of the material to the cavity walls and margins. Do not apply excessive pressure on the material.
- 7) Perform the immediate or non-immediate enamel restoration as indicated above.

In case of non-immediate enamel restoration, a second session will be required.

Patients should be followed according to current recommendations.

Pulpotomy (reversible & irreversible pulpitis)

■ 2 sessions recommended



First session

Assess pulp vitality by the usual tests. In case of clinical signs and symptoms of irreversible pulpitis, pulpotomy is recommended when bleeding can be controlled in 5 minutes.

- 1) Isolate the tooth with a rubber dam.
- 2) Remove the infected dentine with a round bur and/or a hand excavator.
- 3) Gain access to the pulp chamber and clean out the pulp.
- 4) If there is bleeding in the pulp, haemostasis must be achieved before applying Biodentine™. If haemostasis cannot be achieved after 5 minutes, further pulp tissue should be removed (partial or full pulpotomy) step by step until a controlled bleeding. A full coronal pulpotomy can be carried out to the level of the root canal orifices with bleeding arrested.
- 5) Adapt a matrix around the tooth if a wall is missing.
- 6) Prepare Biodentine™ according to Biodentine™ mixing instructions (as described in the IFU).
- 7) Place Biodentine™ directly in the pulp chamber and ensure good adaptation to the cavity walls and margins.
- 8) Model the surface of the restoration.
- 9) Wait until the end of the setting time of the material before removing the matrix.
- 10) To optimize the mechanical properties of the material and facilitate removal of the matrix, a varnish can be applied onto the surface of the restoration.
- 11) Check occlusion.

Second session (1 week to 6 months later)

- 1) Within one week to six months after placement of Biodentine™, prepare the cavity according to the criteria recommended for the selected restorative material.
- 2) Patients should be followed according to current recommendations. The remaining Biodentine™ material can be considered as sound artificial dentine and permanently left in deep areas of the cavity and in areas adjacent to the pulp chamber. Biodentine™ is compatible with all direct or indirect crown restoration techniques, and particularly with all types of bonding systems.

Repair of root perforations

■ 3 sessions recommended



First session

- 1) Isolate the tooth with a rubber dam.
- 2) Prepare the root canal alternately using suitable endodontic instruments and a solution of sodium hypochlorite.
- 3) Dry the canal with paper points without totally dehydrating the root canal and use a chlorhexidine solution or a calcium hydroxide paste for disinfection between visits. Tightly seal the access cavity with a temporary cement to protect the temporary filling.

Second session (1 week later)

- 1) At the next visit (usually after one week), place a rubber dam and remove the temporary crown restoration. Clean the canal alternately using a solution of sodium hypochlorite and suitable endodontic instruments. Dry the canal with paper points without totally dehydrating the root canal.
- 2) Prepare Biodentine™ according to Biodentine™ mixing instructions (as described in the IFU).
- 3) Dispense Biodentine™ over the perforation site using a suitable instrument.
- 4) Condense Biodentine™ with a plugger.
- 5) Take an X-ray to check that the material is correctly positioned.
- 6) Remove excess material and place a temporary filling.

Third session

Complete root canal treatment at the next visit according to current recommendations.

Repair of furcation perforations

■ 2 sessions recommended



First session

- 1) Isolate the tooth with a rubber dam.
- 2) Rinse the cavity with a solution of sodium hypochlorite to disinfect the area.
- 3) If there is bleeding, haemostasis must be achieved before applying Biodentine™.
- 4) Dry the pulp chamber.
- 5) Prepare Biodentine™ according to Biodentine™ mixing instructions (as described in the IFU).
- 6) Dispense Biodentine™ and condense. Perforation repair and crown restoration are performed in a single step.
- 7) Take an X-ray to check that the material is correctly positioned.
- 8) Remove excess material.

Second session

At a subsequent visit, if all clinical signs of a successful treatment are present, the possibility of a permanent restoration can be considered.

Repair of perforating internal resorptions

■ 3 sessions recommended

First session

- 1) Isolate the tooth with a rubber dam.
- 2) Prepare the root canal alternately using suitable endodontic instruments and a solution of sodium hypochlorite.
- 3) Dry the canal with paper points without totally dehydrating the root canal and use a calcium hydroxide paste for disinfection between visits. Tightly seal the access cavity with a temporary cement to protect the temporary filling.

Second session (1 week later)

- 1) At the next visit (usually after one week), place a rubber dam and remove the temporary crown restoration. Clean the canal alternately using a solution of sodium hypochlorite and suitable endodontic instruments. Dry the canal with paper points without totally dehydrating the root canal.
- 2) Prepare Biodentine™ according to Biodentine™ mixing instructions (as described in the IFU).
- 3) Dispense Biodentine™ over the resorptive defect using a suitable instrument.
- 4) Condense Biodentine™ with a plugger.
- 5) Take an X-ray to check that the material is correctly positioned.
- 6) Remove excess material and place a temporary filling.

Third session

Complete root canal treatment at the next visit according to current recommendations.



■ 3 sessions
recommended

Apexification



First session

- 1) Isolate the tooth with a rubber dam.
- 2) Prepare the root canal alternately using suitable endodontic instruments and a solution of sodium hypochlorite.
- 3) Dry the canal with paper points without totally dehydrating the root canal and use a calcium hydroxide paste for disinfection between visits. Tightly seal the access cavity with a temporary cement to protect the temporary filling.

Second session (1 week later)

- 1) At the next visit (usually after one week), place a rubber dam and remove the temporary crown restoration. Clean the canal alternately using a solution of sodium hypochlorite and suitable endodontic instruments. Dry the canal with paper points without totally dehydrating the root canal.
- 2) Prepare Biodentine™ according to Biodentine™ mixing instructions (as described in the IFU).
- 3) Dispense Biodentine™ in the root canal using a suitable instrument.
- 4) Condense Biodentine™ with a plugger.
- 5) Take an X-ray to check that the material is correctly positioned.
- 6) Remove excess material and place a temporary filling.

Third session

Complete root canal treatment at the next visit according to current recommendations.

Root-end filling in endodontic surgery

■ 1 session
recommended



- 1) Gain access to the operative site following the current recommendations in endodontic surgery.
- 2) Using a specific ultrasonic tip, prepare a root-end cavity, 3 to 5 mm deep in the apical portion of the root canal.
- 3) Isolate the area. Achieve haemostasis. Dry the cavity with paper points.
- 4) Prepare Biodentine™ according to Biodentine™ mixing instructions (as described in the IFU).
- 5) Dispense Biodentine™ in the cavity using a suitable instrument. Condense Biodentine™ with a small plugger.
- 6) Remove excess material and clean the surface of the root.
- 7) Take an X-ray to check that the material is correctly positioned.