

Ca(OH)₂ Water-Based Paste
Calcipex II

Q&A



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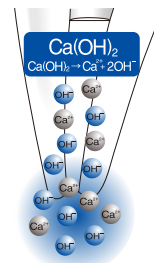
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Q&A about *CalcipexII*

Q1. What is *CalcipexII* ?

- A** CalcipexII is a **water-based calcium hydroxide paste** containing water as a base material. The convenient one-paste type product needs no mixing and can be directly filled into the root canal from the syringe. After filling the root canal, it immediately starts **sustained release** of hydroxide ion and calcium ion, shows **strong alkalinity (pH=12.4)** and cleanses the root canal.



Q2. What is the composition of *CalcipexII* ?

- A** The composition of CalcipexII is as follows:
Calcium hydroxide,
Barium sulfate (radiopacifier),
Purified water, others

Q3. Is *CalcipexII* radiopaque?

- A** CalcipexII is radiopaque so that the reach of paste in the vicinity of the root apex can be verified.
• It contains the minimum quantity of radiopacifier to verify the reach of paste in the vicinity of the root apex.

Q4. What is the difference between *CalcipexII* and a paste prepared by mixing calcium hydroxide powder with purified water?

- A** **CalcipexII shows strong alkalinity (pH=12.4)** and has clinical performance equivalent to a paste prepared by mixing calcium hydroxide powder with purified water. In addition, CalcipexII offers the following advantages:
- 1) It is a **stable and easy-to-use paste**.
 - 2) **Because of its high flowability, it can be filled in the root canal easily.**
 - 3) **It is moderately radiopaque to enable verification of paste filling in the apical region.**
 - 4) **As it comes in a syringe, it can be directly filled in the root canal.**

Q5. What is the difference from the products containing Iodoform?

- A** Calcium hydroxide pastes containing iodoform are an oil-based paste (containing silicone oil) while **CalcipexII is a water-based paste and has high flowability.**
Since CalcipexII does not contain iodoform, it is not contraindicated for patients with iodine hypersensitivity and has an **excellent biocompatibility** (refer to Q6 in Page 2).
Calcium hydroxide pastes containing iodoform contain iodoform as a radiopacifier while CalcipexII contains barium sulfate as a radiopacifier.

Q6. Is *Calcipect II* biocompatible?

A

Yes,

Calcipect II is a biocompatible material¹⁾.

*In the case where a small amount of paste is overfilled out of the apical foramen, it usually has low irritation to the periapical tissue, but transient pain may occur due to the extrusion pressure.

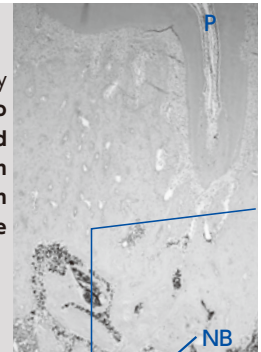
*Since adverse events (refer to Q6 in Page4) may occur in the case where the paste is overfilled, use the paste locally in the root canal.

Experiment and Result ¹⁾

After **Calcipect II** was filled into a bone cavity formed near the apical region in rats, **no acute inflammation findings were observed** and the bone cavity was **mostly filled with mature new bone**. **New bone formation was observed surrounding the structure considered to be the material.**

(P: Pulp)

(Photo: 6 weeks after filling)



New bone formation

Q7. What are the advantages compared to formalin-based and phenol-based products?

A

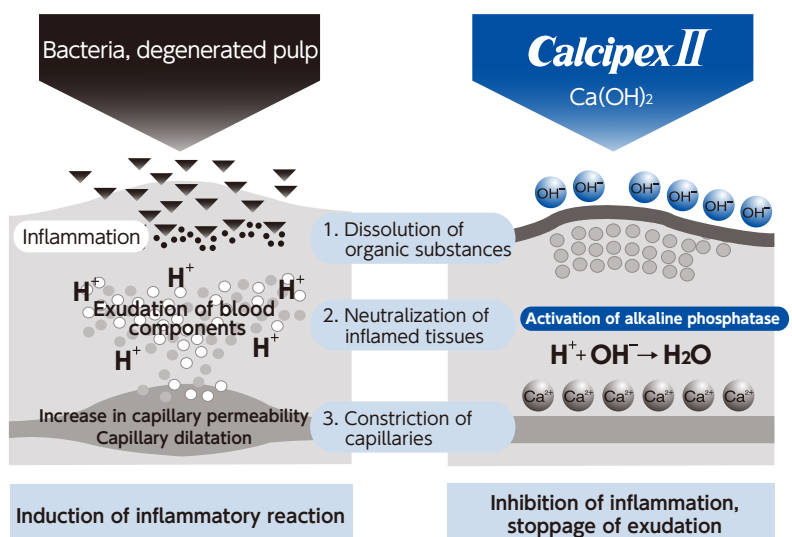
Formalin-based and phenol-based products sometimes show strong harmful actions to the tissue, and their efficacy sometimes disappears within a short period. In contrast, **Calcipect II has low irritation to the pulp and the periodontal tissue and its efficacy lasts for a long period.**

Q8. Why can calcium hydroxide stop exudation?

A

The following combined actions are considered to inhibit inflammation and stop exudation:

1. Dissolution of organic substances that can act as an antigen, such as bacteria and degenerated pulp, by strong alkalinity (pH=12.4).
2. Neutralization of acidic inflamed tissues by alkali ion (OH⁻).
Activation of alkaline phosphatase.
3. Constriction of capillaries by calcium ion (Ca²⁺).



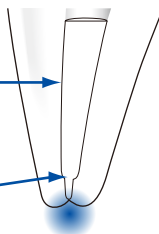
Q&A about Method of Use

Q1. What are the indications and the standard application period?

A

1. Treatment of infected root canal

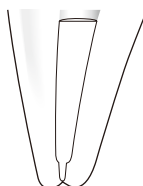
- Ordinary treatment of infected root canal
- Treatment of infected root canal of deciduous teeth
- Cases with constant exudation
- Cases with continuous percussion pain



**Standard application period:
1-2 weeks**

*If the treatment period is relatively long, repeat the application at the interval of 1-2 weeks and observe the progress.

2. Post-extirpation of pulp

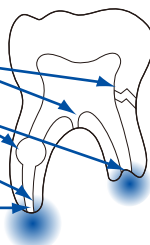


**Standard application period:
1-2 weeks**

*If the treatment period is relatively long, repeat the application at the interval of 1-2 weeks and observe the progress.

3. Temporary root canal filling

- Perforated or fractured teeth
- Internally or externally resorbed teeth
- Incomplete root teeth
- Cases with large periapical lesion
- Implanted, reimplanted, and traumatic teeth



Standard application period:

Perform filling every 1-2 months and observe the progress for several months.

4. Root canal filling of deciduous teeth

Standard application period:

Observe the progress and reapply CalcipexII as necessary.

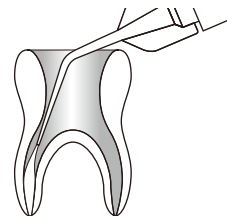
Q2. What are the cases where *CalcipexII* should not be applied?

A

In the case where significant acute symptom is found or it is predictable, do not use CalcipexII. Apply CalcipexII after the acute symptom disappears.

Q3. What is the filling method?

- A** It is recommended to directly fill the root canal using the accessory Nishika Spin or to fill the root canal using a Lentulo spiral.

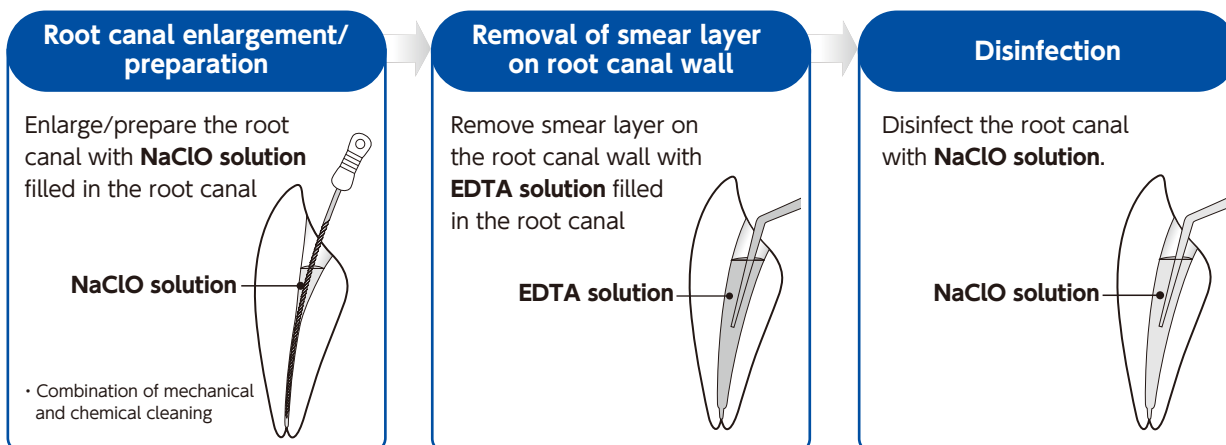


Q4. Can it be applied with a cotton pellet or a paper point coated with *Calcipex II*?

- A** Since the paste has good flowability, it can be applied without any problem by coating a cotton pellet or a paper point and inserting it into the root canal. In the clinical practice, successful results are obtained using these methods, especially in the cases of narrow root canals such as deciduous molars.

Q5. What is the effective root canal irrigation method before filling?

- A** Root canal irrigation method using sodium hypochlorite (NaClO) solution and EDTA solution as shown below is recommended.



Q6. Is it okay if the paste is extruded beyond the apical foramen?

- A** Use the paste locally in the root canal since the following adverse events have been reported.
- Serious adverse event caused by intrusion of a large amount of the material into the maxillary sinus
 - Hypoesthesia or paralysis of the inferior alveolar nerve caused by intrusion of a large amount of the material into the mandibular canal.

Q&A about Method of Use

Q7. What should be done if the paste overflows beyond the apical foramen?

- A** Transient pain may occur due to the extrusion pressure, but the material itself has low irritation to the periapical tissue. In the case where the extruded amount is marginal and where the immune strength of the patient and the efficacy of calcium hydroxide prevail, improvement toward healing can be expected through observations of the progress.

On the other hand, in the case where the extruded amount is more than a little amount or where the patient reports a severe or persistent pain, etc., a surgical intervention should be considered.

Q8. How should temporary sealing be performed after the application of *Calcipex II*?

- A** It is recommended to place a cotton ball in the pulp chamber and perform temporary sealing with a temporary cement having a good sealing ability. Note that excessive amount of filled paste would press the apical region when filling a temporary cement and would cause pain. Therefore, make sure to remove the excessive paste before filling a temporary cement.

Q9. How can the paste be removed?

- A** Using an EDTA solution in combination with a sodium hypochlorite solution, remove the paste as follows²⁾.

- ① With the final file used for the root canal enlargement up to the apical foramen, remove the paste mechanically.
- ② Filling the root canal with an EDTA solution, treat the root canal for more than 2 min. (for more than 1 min. in the case where ultrasonic irrigation is performed).
- ③ Perform irrigation using a sodium hypochlorite solution.

Note) It has been reported that the calcium hydroxide material remaining in the apical region decreases the apical sealing ability after root canal filling^{3, 4)}.

Q10. What kind of root canal sealer should be used after application of *Calcipex II*?

- A** Any of eugenol, non-eugenol and bioceramic sealers can be used. According to the case reports to date, there are no significant differences in the clinical results and good progress is observed whichever is used, eugenol, non-eugenol or bioceramic sealer.

Q11. Can *Calcipex II* be used as a root canal sealer?

A

No, it is not recommended.

- Since CalcipexII does not get hardened in the root canal, it would be absorbed leaving a dead space and could become a source of infection.

Q12. What precautions should be taken to avoid post-operative pain?

A

1. Before treatment

- Do not use CalcipexII in the case where significant acute symptom is found or it is predictable.

2. When filling the root canal

- Be careful not to apply pressure to the apical region.
- In order not to extrude the infected dentin near the apical foramen beyond the foramen, apply the material locally in the root canal (refer to Q6 in Page 4).

3. When performing temporary sealing

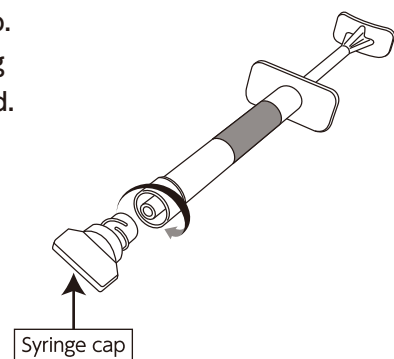
- Excessive amount of filled paste would press the apical region when filling a temporary cement and would cause pain. Therefore, make sure to remove the excessive paste before filling a temporary cement.

Q13. What is the appropriate storage method?

A

When storing a used syringe, make sure to attach the syringe cap.

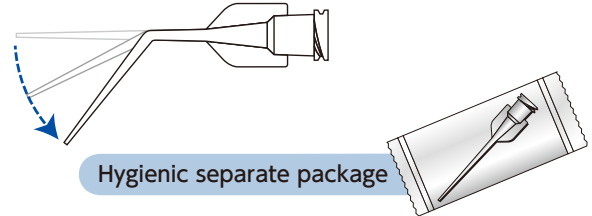
- Use the enclosed needle cap to avoid the paste from leaking out when the application of CalcipexII is temporarily stopped. Dispose of the needle cap after each use.



Q&A about *Dental plastic needle* NISHIKASpin

Q1. What are the advantages of NISHIKASpin?

- A** The narrow soft tip makes the application **easier even in the case of deciduous teeth or curved root canals** which is difficult to fill with a metallic needle. Nishika Spin can be bent at a desired position and angle. In addition, the separate package enables hygienic usage.

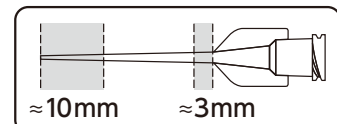


Q2. What is the material and size of NISHIKASpin?

- A** The material is **polypropylene**.
The diameter at the tip is **φ0.6 mm (corresponding to 23 G)**.

Q3. What are the precautions?

- A**
- Screw up Nishika Spin until it is firmly locked.
Improper locking may let the needle come off during injection.
 - Do not bend Nishika Spin at the grey parts in the right figure.
This may be a cause of breakage or clogging.
 - In order to prevent cross contamination, make it a rule to change Nishika Spin patient by patient.



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