Application of Desensitizing Medicaments and Resins

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➲ Instructions for Use

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Related Dental Policy

- Topical Medicaments for Caries Prevention or Remineralization

Coverage Rationale

Application of Desensitizing Medicament or Resin

Application of desensitizing medicaments or resins is indicated for teeth with sensitivity that does not resolve with an over-the-counter desensitizing dentifrice.

Application of desensitizing medicaments or resins is not indicated for teeth with asymptomatic erosion, recession, cervical abrasion, abfraction, or as a base or liner prior to restoration placement.

Applicable Codes

The following list(s) of procedure and/or diagnosis codes is provided for reference purposes only and may not be all inclusive. Listing of a code in this policy does not imply that the service described by the code is a covered or non-covered health service. Benefit coverage for health services is determined by the member specific benefit plan document and applicable laws that may require coverage for a specific service. The inclusion of a code does not imply any right to reimbursement or guarantee claim payment. Other Policies and Guidelines may apply.

CDT Code	Description
D9910	Application of desensitizing medicament
D9911	Application of desensitizing resin for cervical and/or root surface, per tooth

Description of Services

Many individuals experience tooth sensitivity that is not due to decay or tooth injury. It may be localized to select teeth, or involve the entire dentition, and may be caused by gingival recession, erosion of tooth enamel, craze lines, abrasion and abfraction from toothbrushing and traumatic occlusion, as well as systemic factors. Often cases of hypersensitivity respond favorably to over-the-counter desensitizing products, however when sensitivity persists there is a variety of treatment options available by prescription, or in office application. Lasers, alone or in combination with desensitizing agents, are emerging as another treatment for hypersensitivity.

Pursuant to CA AB2585: While not common in dentistry, nonpharmacological pain management strategies should be encouraged if appropriate.

Application of Desensitizing Medicament or Resin

In a 2025 systematic review and meta-analysis, Hjertberg et al. summarized and assessed the evidence on various treatment modalities for addressing hypersensitivity in teeth with Molar-Incisor Hypomineralization (MIH) in children aged six-18. Seven studies with 19 to 66 individuals were included. The desensitizing methods included sealants (resin-based, glass ionomer, resin-modified glass ionomer, and polyacid-modified resin) desensitizing pastes (including fluoride varnish), resortations and full coverage crowns. Follow up times ranged from 8 weeks for pastes to 2 years for full coverage crowns. The results showed reduction in hypersensitivity using all modalities except fluoride alone. The most significant improvement for mild posterior MIH was resin composite or glass ionomer cement and full coverage crowns were most effective for severe cases. These results are limited by the quality of the available studies, specifically that only one reported the extent of the MIH. Furthermore, small numbers of individuals and short follow up times limit the ability to draw definitive conclusions and further research is needed to validate these findings.

In a 2022 randomized clinical trial, Tolentino et al., evaluated the efficacy of low power lasers and desensitizing agents for treatment of dentin hypersensitivity. Fifty-four patients (303 teeth) were randomly assigned to three treatment groups, G1- 3% potassium nitrate gel, G2- photobiomodulation (PBM) with low level infrared laser, and G3- both potassium nitrate and PBM. Three treatments were provided at 72-hour intervals, and re-evaluations were performed immediately after each treatment and at 1 week and 1 and 3 months after treatment. The patients' response to air spray stimulation was rated via the visual analog scale (VAS). The results showed decreased sensitivity in all treatment groups after the three sessions with no significant differences. The authors concluded that all three methods applied in three sessions are effective for reducing sensitivity.

Jain et al. (2020) conducted a randomized split mouth trial to evaluate the effectiveness of fluoride varnish [sodium fluoride (NaF)], diode laser, and the combination of NaF and diode laser in the treatment of dentin hypersensitivity. Sixty patients aged 20-60 years suffering from dentin hypersensitivity to air-blast, cold, and tactile stimulation corresponding to 4 cm and above on the Visual Analog Scale (VAS) in three quadrants with at least two hypersensitive teeth per quadrant were selected. Hypersensitive teeth were allotted to Group 1 - 5% NaF varnish application alone, Group 2 - 810-nm gallium-aluminum-arsenide laser (GaAlAs) diode laser (0.5 W) irradiation alone, and Group 3 - NaF varnish application, followed by diode laser irradiation. VAS score was recorded at baseline, 1 week, 2 weeks, 1 month, 3 months, and 6 months. A statistically significant reduction in dentin hypersensitivity was observed in all the three groups, from the baseline to the 1st-, 3rd-, and 6th-month follow-ups ($p < 0.05$). Group 2 and Group 3 demonstrated a significantly higher reduction ($p < 0.05$) in dentin hypersensitivity for all the stimuli as opposed to Group 1 at all follow-up intervals. However, no statistically significant difference ($p > 0.05$) was present between Group 2 and Group 3 at all follow-ups. The authors concluded that Diode laser is significantly more effective than fluoride varnish alone in the treatment of dentin hypersensitivity over a period of 6 months.

In a split-mouth, triple-blind, randomized clinical trial, Galvão et al. (2019) evaluated the long-term clinical efficacy of experimental potassium oxalate in relieving dentin hypersensitivity (DH). Thirty-one subjects were enrolled in the study and 5% and 10% potassium oxalate gels were randomly applied at four different sessions per protocol. DH levels were evaluated at 1 week, 1 month, 3, 6, 9 and 12 months for each participant. The results showed that regardless of the potassium oxalate concentration, the desensitizing effect was maintained until the 6-month follow-up evaluation. However, the group that received the 10% concentration showed better desensitizing effects for both 9- and 12-month time periods when compared with the 5% concentration. No complications were noted for the participants. Limitations of the study included the small sample size. The authors concluded both concentrations of potassium oxalate (5 and 10%) proved to be effective on DH reduction for up to six months. This study provides primary clinical evidence, suggesting that multiple application sessions and higher concentrations of potassium oxalate may result in maintenance of the desensitizing effect for more extended periods.

Usai et al. (2019) conducted an interventional, randomized, single-center clinical trial to compare the 24-week effectiveness of Teethmate Desensitizer (TD), a pure tetracalcium phosphate (TTCP) and dicalcium phosphate dihydrate (DCPD) powder/water, to that of Dentin Desensitizer (DD), and Bite & White ExSense (BWE) on Dentin Hypersensitivity (DH). A total of 105 subjects were selected. A random table was utilized to form three groups of 35 subjects. DH was evaluated using the evaporative sensitivity, tactile sensitivity tests, and the visual analogue scale (VAS) of pain. Response was recorded before the application of the materials (Pre-1), immediately after (Post-0), at 1 week (Post-1), 4 weeks (Post-2), 12 weeks (Post-3) and 24 weeks (Post-4). The results showed that all the materials decreased DH after 24 weeks, however, the TTCP/DCPD cement showed the greatest statistical efficiency. The authors concluded that the significant decrease of (visual analog scale) VAS pain scores produced by TD in the long term suggest the material is reliable in the clinical relief of DH.

Ravishankar et el. (2018) conducted a randomized, split mouth clinical trial testing the effect of three different desensitizing agents on reduction of pain due to hypersensitive cervical dentin lesions. 28 individuals were selected with 84 teeth diagnosed with cervical dentin hypersensitivity (DH) in at least one tooth. Patients exhibiting pain scores of two or more on the visual analog scale (VAS) were included in the study. Random assignment was performed to one of the three treatment groups based on computer-generated random number. The desensitizing agents used were Profluorid Varnish (Voco: Cuxhaven Germany), Admira Protect (Voco: Cuxhaven Germany), and PRG-Barrier Coat (Shofu: japan). One operator recorded the baseline sensitivity scores. A second operator who was not aware of the baseline values applied the desensitizing agents and recorded the sensitivity scores. VAS scores for both the stimuli were noted immediately after application, 1 week, and after 1 month. The data were analyzed using repeated measure ANOVA and post hoc Tukey's multiple comparison tests. There was a significant reduction in VAS scores from baseline in all the three groups at all the time intervals. Admira Protect showed significant reduction of hypersensitivity scores at 1 month compared to the other groups. It was concluded Admira Protect was proved to be better in reducing pain due to DH than PRG-Barrier Coat and Profluoride Varnish after 1 month of application.

In a randomized, double-blind, split-mouth clinical trial, Madruga et al. (2017) performed a comparison of the desensitizing efficacy of resin-modified glass ionomer cement (GIC) ClinproTM XT and the conventional GIC Vidrion R. Subjects were required to have at least two teeth with dentin hypersensitivity. Teeth were divided at random into 2 groups, one group received Clinpro XT and the other conventional GIC Vidrion R. Treatments were assessed by tactile and air blast tests using Visual Analogue Scale (VAS) at baseline, after 20 minutes, and at 7, 15, 21-, 30-, 90- and 180-days post-treatment. Twenty subjects (152 teeth) were included. Both tests (tactile and air blast) showed a significant reduction of dentin hypersensitivity immediately after the application of Vidrion R and Clinpro XT (20 min). VAS scores obtained along the 6-month follow-up were statistically lower when compared to initial rates ($p < 0.05$). Both GIC were able to reduce dentin hypersensitivity up to 6-month post-treatment period without statistically significant differences among them ($p > 0.05$). Both cements provided satisfactory results in long-term dental sensitivity reduction.

In a randomized clinical trial, Han et al. (2017) evaluated the clinical efficacy of five commercially available desensitizing agents with different mechanisms applied to hypersensitive teeth. The study included 64 individuals that met the criteria, and each was randomly assigned to five commercially available desensitizing agents and applied according to the manufacturers' instructions. Before and after application of desensitizing agents, subjects were evaluated with the Visual Analogue Scale (VAS) at baseline, 1 week, 1 month and 3 months; no statistically significant differences between the products was shown. Desensitizing agents used in this clinical trial relieved dentin hypersensitivity up to 3 months. The authors concluded the five tested desensitizing agents with different mechanisms were clinically effective in relieving dentin hypersensitivity up to 3 months and showed statistically significant pain reduction when compared to baseline scores.

Ding et al. (2014) This short-term (4-week) randomized, double-blind, placebo-controlled, split-mouth study evaluated the effect of Clinpro XT Varnish (VXT) paste-liquid, resin-modified glass-ionomer and the resinous dentin desensitizing varnish and Gluma Dentin Desensitizer (Gluma) in treating dentin hypersensitivity (DH).A total of 119 teeth from 31 individuals were randomized into three groups: VXT, Gluma, and placebo (warm water). Dentin sensitivity was evaluated by subjects' perception of DH determined by pretreatment tooth sensitivity score (TSS) measured on a 0-10 visual analogue scale (VAS) after tactile (probe) or thermal/evaporative (blast of air) stimuli. TSS was scored at baseline, immediately after treatment (Day 0), after 1 week and after 4 weeks. For both stimuli, mean TSS was significantly decreased in the VXT and Gluma groups at all time points compared with baseline. Regarding comparisons of TSS between treatment groups, the VXT group had significantly lower mean TSS compared with the Gluma group and placebo control group at all time points after treatment regardless of stimuli.

Castillo et al. (2011) conducted a multi-center, randomized clinical trial to assess the effectiveness and safety of topical diamine silver fluoride on tooth sensitivity. From two sites, 126 adults with at least one tooth sensitive to compressed air were randomly assigned to either the topical silver diamine fluoride or sterile water, and pain was assessed by means of a 100-mm visual analogue scale at 24 hours and 7 days. The diamine silver fluoride reduced pain at 7 days at both sites. No tissue ulceration, white changes, or argyria was observed. A small number of participants in the silver fluoride group experienced a mild but transient increase in erythema in the gingiva near the tooth. No changes were observed in the gingival Index. The authors concluded that diamine silver fluoride is a clinically effective and safe tooth desensitizer.

U.S. Food and Drug Administration (FDA)

This section is to be used for informational purposes only. FDA approval alone is not a basis for coverage.

There are numerous products for in office application that have FDA clearance for reducing dental hypersensitivity. Refer to the following website and search for product specific name: http://www.accessdata.fda.gov/scripts/cdrh/cfdocs/cfPMN/pmn.cfm. (Accessed August 19, 2024)

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Policy History/Revision Information

Date	Summary of Changes
11/01/2025	**Supporting Information** • Updated *Clinical Evidence* and *References* sections to reflect the most current information • Archived previous policy version DCP034.13

Instructions for Use

This Dental Clinical Policy provides assistance in interpreting UnitedHealthcare standard and Medicare Advantage dental plans. When deciding coverage, the member specific benefit plan document must be referenced as the terms of the member specific benefit plan may differ from the standard dental plan. In the event of a conflict, the member specific benefit plan document governs. Before using this policy, please check the member specific benefit plan document and any applicable federal or state mandates. UnitedHealthcare reserves the right to modify its Policies and Guidelines as necessary. This Dental Clinical Policy is provided for informational purposes. It does not constitute medical advice.