



SCHOLARLY PUBLICATIONS School of Dental Sciences KIIT Deemed to be University

Journal Name: The Cochrane database of systematic reviews

IF: 11.1

Title: Non-invasive management strategies for molar-incisor hypomineralization (MIH) in children

Author: Kumari P.; Dhull K.S.; Lewis S.R.; Dutta B.; Bagchi A.; Gugnani N.; Pathi J.; Singh D.K.; Sahoo N.; Bhuyan L.

Details: Volume-7, 15th July, 2026

Abstract: OBJECTIVES: This is a protocol for a Cochrane Review (intervention). The objectives are as follows: To assess the benefits and harms of non-invasive management strategies for molar incisor hypomineralization (MIH) in children aged six to 14 years.



URL: <https://www.cochranelibrary.com/cdsr/doi/10.1002/14651858.CD016369/full>





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Journal Name: Cranio-The Journal of Craniomandibular & Sleep Practice

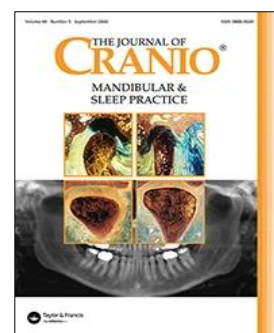
IF: 5.4

Title: Orofacial pain-related manifestations associated with elongated styloid process: a systematic review

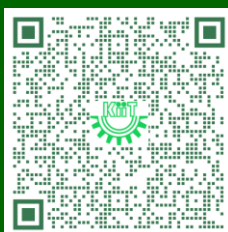
Author: Kumar, G; Singh, A; Parasar, B; Dash, KS; Jha, K; Menon, I

Details: 20th September, 2026

Abstract: Long styloid process, often occurring in Eagle's syndrome, is one of the rare causes of chronic orofacial pain, which is often under-diagnosed since its clinical features are similar to the ones of many other orofacial pain syndromes. The current review aims at summarizing the clinical features, diagnosis, and treatment of elongated styloid process. An extensive search in the databases such as PubMed, Scopus, Web of Science and ProQuest which revealed 6 relevant articles. The main clinical symptoms were characterized by the following: facial pain, throat pain, dysphagia, otalgia, and headache. Panoramic radiography and cone-beam computed tomography were used for diagnosis. Conservative and surgical treatments could effectively reduce symptoms; however, styloidectomy provided better results. Systematic review registration: <https://www.crd.york.ac.uk/prospero/>, under registration ID: CRD420261398356.



URL: <https://www.tandfonline.com/doi/full/10.1080/08869634.2026.2735942>





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Journal Name: BMC Oral Health

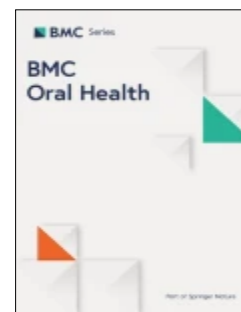
IF: 3.8

Title: Chitosan pulpotomy medicaments versus conventional agents in primary teeth: a systematic review and meta-analysis

Author: Kumari P.; Dhull K.S.; Dutta B.; Bagchi A.; Sharva V.; Devraj I.M.

Details: Volume-26, Issue-1, December 2026

Abstract: Background: Vital pulpotomy is routinely performed to maintain radicular pulp vitality in carious primary molars, yet the long-standing use of formocresol persists despite concerns about potential cytotoxic, mutagenic, and systemic effects. Chitosan, a naturally derived polysaccharide with antibacterial, hemostatic, and regenerative properties, has been proposed as a more biocompatible pulpotomy medicament. Objective: To evaluate the radiographic and clinical results of conventional and chitosan-based pulpotomy medicaments (formocresol, ferric sulfate) in primary molars, based exclusively on randomized controlled trials. Methods: From database inception to January 15, 2026, a PRISMA-compliant systematic review and meta-analysis of randomized controlled trials was carried out in PubMed, Web of Science, Scopus, and the Cochrane Library. Cochrane RoB 2 was used to evaluate the risk of bias, and GRADE was used to score the certainty of the evidence. Mantel-Haenszel random-effect model was used to aggregate six-month clinical and radiographic success as risk ratios (RR) with 95% confidence intervals (CI). Results: Four parallel-group trials from India, involving 196 primary molars in children aged 4–9 years, met the inclusion criteria. Six-month clinical success was identical for chitosan and conventional agents (83/86, 96.5% vs. 83/86, 96.5%; RR 1.00, 95% CI 0.94–1.06; $I^2 = 0\%$), and radiographic success was likewise comparable (76/85, 89.4% vs. 73/85, 85.9%; RR 1.04, 95% CI 0.93–1.16; $I^2 = 0\%$). Conclusions: Chitosan-based pulpotomy medicaments provide short-term clinical and radiographic success rates comparable to formocresol and ferric sulfate and represent a biologically favorable alternative for pulpotomy in primary molars. Multicenter RCTs with 12–24-month follow-up and contemporary comparators are needed to clarify chitosan's role in pediatric pulp therapy guidelines. Trial registration: The study protocol was registered in the PROSPERO database (registration number CRD420251151362) on September 19, 2025.



URL: <https://link.springer.com/article/10.1186/s12903-026-09147-z>





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Journal Name: BMC Oral Health

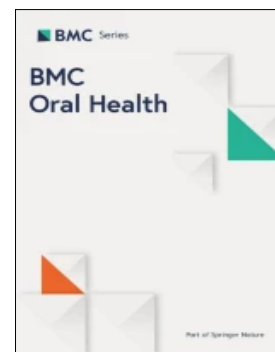
IF: 3.8

Title: Physicochemical and mechanical properties of gallium oxide-, cerium oxide-, and graphene oxide-modified mineral trioxide aggregate: an in vitro study

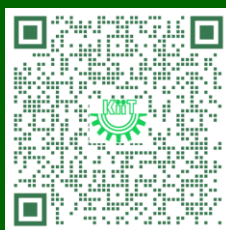
Author: Patri G.; Bansal S.; Lath H.

Details: Volume-26, Issue-1, December 2026

Abstract: Background: Mineral trioxide aggregate (MTA) is widely used in endodontics for its excellent sealing ability and bioactivity. However, its prolonged setting time, challenging handling, and limited early strength restrict clinical efficiency. This in-vitro study evaluated the effect of incorporating gallium oxide (Ga_2O_3), cerium oxide (CeO_2), and graphene oxide (GO) nanoparticles on the physicochemical and mechanical properties of MTA. Methods: Nanoparticles (1 wt%) were homogeneously blended with MTA powder before hydration. Eighty specimens were prepared and divided into four groups ($n = 20$ each): unmodified MTA (control), MTA + Ga_2O_3 , MTA + CeO_2 , and MTA + GO. Tests for setting time, dimensional change, solubility, and pH were performed on six specimens per group, while compressive strength was assessed using ten specimens per group, in accordance with ANSI/ADA Specification No. 57 and ISO 6876:2012 standards. Data were analyzed using one-way ANOVA with Tukey's post hoc test ($p \leq 0.05$). Results: All nanoparticle-modified groups exhibited significantly reduced initial and final setting times compared with control MTA ($p < 0.001$). Dimensional change improved in all modified groups at 24 h and remained consistent at 30 days. Compressive strength increased over time for all nanoparticle-modified cements, with CeO_2 + MTA and Ga_2O_3 + MTA showing the highest values at 30 days. Solubility outcomes were nanoparticle-dependent: Ga_2O_3 + MTA demonstrated the lowest long-term solubility, whereas GO + MTA and CeO_2 + MTA showed slightly higher early values. All formulations maintained an alkaline pH, with CeO_2 + MTA and Ga_2O_3 + MTA showing the highest levels. Conclusions: Incorporating 1 wt% Ga_2O_3 , CeO_2 , or GO nanoparticles into MTA enhanced setting characteristics, compressive strength, dimensional change, and alkalinity. Solubility changes were nanoparticle-specific rather than universally reduced.



URL: <https://link.springer.com/article/10.1186/s12903-026-08621-y>





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Journal Name: BMC Oral Health

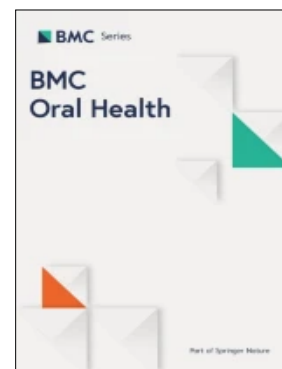
IF: 3.8

Title: Knowledge-practice gaps and dental service utilisation under India's national oral health programme: a community-based study in Rural Odisha

Author: Kumar G.; Dash P.; Francis D.L.; Pape Reddy S.S.; Karmakar S.

Details: Volume-26, Issue-1, December 2026

Abstract: Background: Despite National Oral Health Programme launched in India significant knowledge-practice gaps persist in rural populations. This study evaluates oral health literacy, behavioural determinants, and clinical outcomes among rural Odisha residents using contemporary health behaviour frameworks. However, evidence on behavioural pathways and public dental service utilisation under NOHP in rural populations remains limited. Methods: A community based cross-sectional study was conducted among 417 adults (≥ 18 years) through two-stage stratified random sampling in Satyabadi Block, Puri District (May-September 2024). Data was collected using a validated 20-item questionnaire assessing knowledge, attitudes and practices (KAP) regarding National Oral Health Programme (NOHP) and WHO 2013 for oral health examination. Statistical analyses included descriptive statistics, regression models, and structural equation modelling (SEM) to examine complex pathways linking knowledge, attitudes, practices, and clinical outcomes. Results: Oral health program knowledge was low (6.7%), while attitudes were favourable (75.5–84.7%). Despite this, service utilisation remained minimal (2.4%). Mean DMFT was 3.69 ± 1.80 . SEM showed significant pathways from knowledge to practice ($\beta = 0.458$, $p < 0.001$), explaining 34.2% of variance in behaviour. A substantial knowledge–practice gap (95.2%) was observed. Conclusions: This study reveals a critical “know-do” gap where favourable attitudes fail to translate into preventive behaviours or service utilization. Structural barriers like geographic isolation, financial constraints, poor infrastructure may play a dominant role in individual-level factors. Multi-level interventions addressing systemic barriers, community health worker training, mobile dental units and behaviour change communication are imperative for NOHP effectiveness.



URL: <https://link.springer.com/article/10.1186/s12903-026-08783-9>





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Journal Name: Journal of applied oral science: revista FOB

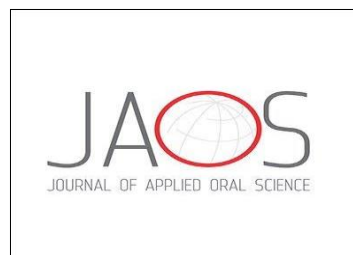
IF: 3.0

Title: Curcumin-loaded chitosan thermosensitive hydrogel with sustained release for periodontal applications: an in vitro evaluation

Author: Rao R.M.; Nikalje M.; Kumari S.; Tiwari R.; Dash K.C.; Shekhar S.; Sharma M.

Details: Volume-34, August 2026

Abstract: OBJECTIVE: Thermosensitive hydrogels have emerged as promising localized drug delivery systems for periodontal therapy. Curcumin possesses anti-inflammatory and antimicrobial properties but is limited by its poor solubility and bioavailability. This study aimed to develop and evaluate a curcumin-loaded chitosan thermosensitive hydrogel for periodontal application. METHODOLOGY: This in vitro experimental study included five groups as positive controls, negative control, blank chitosan hydrogel, free curcumin, curcumin-loaded hydrogel, and chlorhexidine (0.12%). The hydrogel was formulated using chitosan and β -glycerophosphate and was characterized for thermosensitive gelation and injectability. Drug release was assessed using dialysis. Cytocompatibility was evaluated in human gingival fibroblasts (HGF-1) using the MTT assay at 24, 48, and 72 h. The anti-inflammatory activity was assessed by measuring the levels of TNF- α and IL-1 β in LPS-stimulated cells. Antibacterial activity (MIC/MBC) and antibiofilm efficacy were tested against *Porphyromonas gingivalis* and *Aggregatibacter actinomycetemcomitans*. Data were analyzed using ANOVA with the appropriate post-hoc tests ($p < 0.05$). RESULTS: The curcumin-loaded hydrogel showed high cell viability ($>90\%$) and significantly reduced TNF- α and IL-1 β levels when compared with free curcumin. It demonstrated improved antibiofilm activity ($\sim 74\text{--}79\%$) and lower MIC values than free curcumin, although slightly less effective than chlorhexidine. A sustained drug release profile ($\sim 81.6\%$ at 14 days) following Korsmeyer-Peppas kinetics was observed. CONCLUSION: The curcumin-loaded chitosan thermosensitive hydrogel showed improved biological performance and sustained release when compared with free curcumin, suggesting its potential as a localized periodontal drug delivery system. Further in vivo studies are required to validate these findings.



URL: <https://www.scielo.br/j/jaosa/a/LJCVqv5G7FtqjVFRjfd6Th/?lang=en>

