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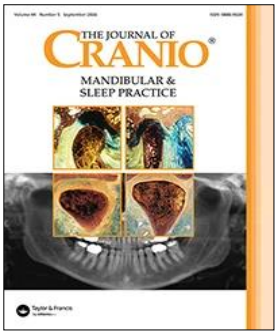
Journal Name: Cranio-The Journal of Craniomandibular & Sleep Practice **IF: 5.4**

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: International Dental Journal **IF: 5.2**

Title: Dental Stage or Chronological Age? Rethinking Orofacial Functional Maturation in Children

Author: Dhull K.S.; Devraj I.M.; Surana P.

Details: Volume-76, Issue-6, December 2026

Abstract:



URL: https://www.sciencedirect.com/science/article/pii/S0020653926017879?via%3Dihub

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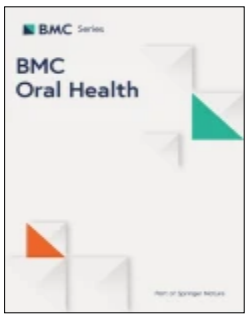
Journal Name: BMC Oral Health **IF: 3.8**

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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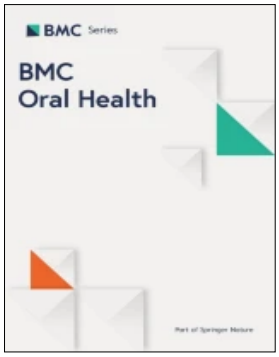
Journal Name: BMC Oral Health **IF: 3.8**

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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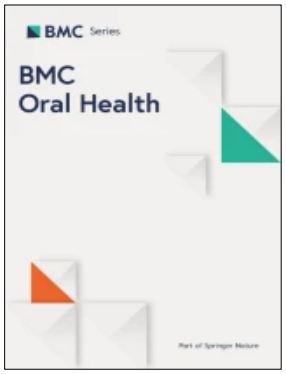
Journal Name: BMC Oral Health **IF: 3.8**

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 (β = 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: Dentistry Journal **IF: 3.4**

Title: Forces and Moments Generated by Thermoforming Aligners and Direct-Printed Aligners: A Systematic Review

Author: Mohanty P.; Priyadarshini S.; Mohanty D.; Tumedei M.; Del Fabbro M.; Tirunelveli Mani P.; Chaudhary P.P.; Krishnan B.; Das M.; Dash B.P.; Biswal B.S.; Goker F.; Panda S.

Details: Volume-14, Issue-9, September 2026

Abstract: Objectives: This systematic review aims to compare the forces and moments generated by thermoforming aligners and direct-printed aligners in guiding tooth movement in orthodontic patients, evaluating their impact on orthodontic outcomes. Methods: A systematic search was conducted in PubMed, Web of Science, and Scopus databases, covering studies on thermoforming and direct-printed aligners from inception to October 2024. Eligible studies included randomized controlled trials, quasi-experimental studies, and observational studies assessing forces and moments generated by these aligners on teeth. In vitro studies pertinent to the topic were also considered. Data extraction focused on study characteristics, aligner details, force and moment measurements, and clinical outcomes. Quality assessment utilized the ROBINS- I for Risk of Bias. The review has been registered on PROSPERO CRD42024620341. Results: A total of nine studies met the inclusion criteria. Findings indicate that thermoforming aligners, while effective in initial force application, exhibit significant force decay over time due to material stress relaxation. In contrast, direct-printed aligners maintain more consistent force levels, potentially resulting in more predictable and sustained tooth movement. Both aligner types vary in their ability to control force direction and magnitude, with direct-printed aligners showing advantages in customization and force retention. Conclusions: The biomechanical properties of thermoforming and direct-printed aligners offer distinct advantages and limitations. Direct-printed aligners may enhance clinical predictability and reduce treatment time through consistent force application, though further research is necessary to validate these benefits in clinical settings. This review underscores the importance of material selection and fabrication method in optimizing orthodontic outcomes.



URL: https://www.mdpi.com/2304-6767/14/9/577

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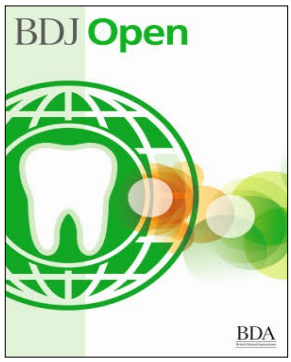
Journal Name: BDJ Open **IF: 3.1**

Title: Adjunctive antimicrobial photodynamic therapy in the nonsurgical treatment of periodontitis: an umbrella review

Author: Mehta V.; Patil S.; Dash K.S.; Mathur A.

Details: Volume-12, Issue-1, December 2026

Abstract: Aim: Antimicrobial photodynamic therapy (aPDT) has been proposed as a locally acting adjunct to subgingival instrumentation for periodontitis. This umbrella review aimed to synthesize and critically appraise systematic reviews of adjunctive aPDT during active nonsurgical periodontal therapy, with emphasis on methodological confidence, clinical importance, and overlap of the evidence base. Method: PubMed/MEDLINE, the Cochrane Library, Epistemonikos and Google Scholar were searched from inception through 24 July 2026, supplemented by backward and forward citation searching. For Google Scholar, the first 200 relevance-ranked results were screened, and exact-title and author searches were used to identify additional review reports. Systematic reviews with or without meta-analysis were eligible when they evaluated aPDT added to subgingival instrumentation and reported separable clinical evidence for adults receiving active nonsurgical treatment. Reporting followed PRISMA 2020 and PRIOR. Methodological confidence was appraised with AMSTAR 2; ROBIS domains were used as an interpretive framework rather than as a formal domain-by-domain rating tool. One reviewer completed selection, extraction and appraisal using a prespecified form and a structured second source-check pass for eligibility and numerical data. Results: Fifteen systematic reviews published from 2010 to 2025 were included. After recalculation using the AMSTAR 2 decision rules, four reviews had high methodological confidence, three had moderate confidence, three had low confidence, and five had critically low confidence. The 2024 Cochrane review included 50 randomized trials and 1407 adults. During active treatment at 6 months, adjunctive aPDT produced an additional PPD reduction of 0.52 mm (95% CI 0.31–0.74; 15 studies, 452 participants) and CAL gain of 0.44 mm (95% CI 0.24–0.64; 13 studies, 414 participants); both were very low-certainty and judged unlikely to be clinically important. BOP improved by 5.72 percentage points (95% CI 1.62–9.81; 5 studies, 171 participants), also with very low certainty.



URL: https://www.nature.com/articles/s41405-026-00503-3

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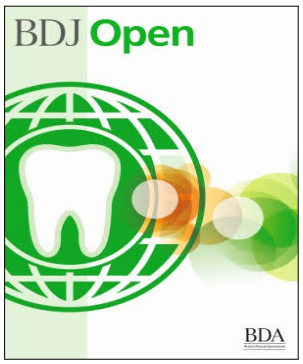
Journal Name: BDJ Open **IF: 3.1**

Title: Association between climate change and oral health outcomes: a systematic review of time-series studies

Author: Bhadania M.; Mehta V.; Noor T.; Das K.S.; Mathur A.

Details: Volume-12, Issue-1, December 2026

Abstract: Aim: This Systematic review aimed to assess the association between short term environment exposures and oral health outcomes using evidence from time-series studies. Method: The protocol was registered with PROSPERO (International Prospective Register of Systematic Reviews). A comprehensive search of PubMed, Embase, Scopus, Web of Science and Google Scholar were conducted to identify relevant studies. Records were imported to Rayyan AI for multistage screening by two independent reviewers, and any conflicting views were resolved with the third reviewer. Data extraction followed the PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analysis) guidelines, and findings were summarized narratively and in tabular form. Result: Seven time-series studies involving over 4 million epidemiological observations were included. Summarized evidence suggested association between change in climate and oral health outcomes. Lower air temperature was associated with 75% risk of periodontal diseases over a lag of 1 to 7 days. Every 10 µg/m3 increase in NO2 was associated with a 30% increase in outpatient visits for periodontitis over 0–4 lag days particularly on warmer days, whereas consistent exposure above threshold limits was associated with 12% risk of oral cancer over 3 years lag (at 95% CI: 10%, 13%). Furthermore, a unit increase in concentration level of pollutants such as PM2.5 and CO, was associated with increased risk of pulpitis by 2.4%, 5%, and 9.1%, respectively. Similarly, mean temperature 12.5 ℃ and air pollution was associated with higher risk of dental caries. Demographic characteristics appear to modify risk and O3 acts as a protective factor against periodontitis [RR = 0.99 at 95% C.I. (0.991, 0.995)]. Conclusion: Environmental exposures, particularly air pollution and temperature, may influence the outcome of oral health. Further well-designed studies are needed to clarify causal pathways and strengthen evidence base.



URL: https://www.nature.com/articles/s41405-026-00482-5