# The Role of Dental Hygienists in Molar–Incisor Hypomineralization Care: a scoping review

Lavínia Lourenço Costa[a], Mylenne Karolayne Silva Ribeiro[b], Patrícia Bittencourt Santos[c]

[a]Graduate student, Department of Pediatric Dentistry, Federal University of Rio Grande do Norte, Natal, Brazil

[b] Undergraduate student, Department of Pediatric Dentistry, Federal University of Rio Grande do Norte, Natal, Brazil

[c] Assistant professor, Department of Pediatric Dentistry, Federal University of Rio Grande do Norte, Natal, Brazil

**Correspondence: Dr. Patricia Santos**
Department of Pediatric Dentistry
Federal University of Rio Grande do Norte.
Av. Senador Salgado Filho, 1787
59056-000
Natal - RN
Brazil
Business Phone/Fax: +55 84 999222420
e-mail: pati_bittencourt@hotmail.com

**ABSTRACT**

**Objectives:** This scoping review provides an overview of MIH, emphasizing the critical role of dental hygienists in its management. **Materials and Methods**: A literature search was conducted using the PubMed, Scopus, and Web of Science databases to identify relevant studies on Molar-Incisor Hypomineralization (MIH) and the role of dental hygienists. Articles published in English addressing diagnosis, management and clinical implications of MIH, and studies focusing on dental hygienists in pediatric dental care were included. **Results:** Dental hygienists are frequently the first to identify MIH and play a pivotal role in its early diagnosis, preventive management, and follow-up care. Effective oral health prevention is crucial, and early implementation of individual preventive measures can delay restorative treatments and reduce long-term discomfort. Topical fluorides and pit and fissure sealants are key strategies for remineralization and preventing caries and fractures. The color of MIH opacities can guide clinicians in determining appropriate recall intervals, with no intervals longer than six months recommended. **Conclusion:** The involvement of dental hygienists is essential for ensuring the oral health and well-being of children with MIH by preserving dental structure through comprehensive care.

**Keywords:** dental hygienists; fluorides; molar incisor hypomineralization; oral hygiene; pediatric dentistry; prevention

**CDHA Research Agenda category**: oral health frameworks

## PRACTICAL IMPLICATIONS OF THIS RESEARCH

- Dental hygienists can effectively contribute to the early detection and management of MIH, utilizing preventive strategies such as fluoride and sealant applications to reduce sensitivity and caries risk, and working in oral hygiene education.
- The work of dental hygienists can enhance patient outcomes through comprehensive preventive care and patient education of patients with MIH, showing their important role in multidisciplinary dental practice.

## INTRODUCTION

Molar-incisor hypomineralization (MIH) is a qualitative developmental defect of enamel that affects first permanent molars (FPMs) and can also be associated with the permanent incisors.[1] Hypomineralized enamel is characterized by high porosity and an increased organic component compared to healthy teeth, making children with MIH more susceptible to caries lesions, and post-eruptive breakdown (PEB) (Figure 1). Additionally, patients often experience hypersensitivity and/or pain, which may impact their oral hygiene habits. Thus, given the significant burden on children's health and quality of life, MIH emerges as a public oral health concern.

In response to the variability in clinical presentation of MIH, the European Academy of Paediatric Dentistry (EAPD) proposes a classification system based on severity, dividing cases into mild and severe.[2] Mild cases typically present as demarcated opacities, often white or cream in color, with no enamel breakdown, minimal sensitivity, and limited aesthetic concern. In contrast, severe cases are associated with darker opacities (yellow or brown), post-eruptive enamel breakdown, significant hypersensitivity, and a higher risk of caries and restorative failure. While some studies propose a three-tier system including a "moderate" category, the two-level classification remains the most widely adopted in clinical guidelines.[3]

Given the uncertain prognosis and increased susceptibility to caries, patients with MIH require special attention. A study performed by Jälevik & Klingberg (2002) has reported that, in certain cases, children with MIH may require up to ten times more treatment compared to unaffected peers, especially in severe presentations.[4] The irregular shape of PEB cavities, poor bond strength to adhesive restorative materials, and difficulty obtaining adequate anesthesia all impede successful outcomes using traditional methods. Therefore, early diagnosis is essential, along with the

implementation of preventive or curative treatments, due to the rapid breakdown of the tooth structure and consequent exacerbation of symptoms.[5]

In many countries, the number of specialist paediatric dentists is limited, and most paediatric dental care is provided by general dental practitioners and dental hygienists working in the public dental service.[6] For this reason, dental hygienists are often the first to identify children with MIH, and patients requiring restorative treatment are referred to a dentist. Treating MIH often requires multiple dental appointments for both the child and parents, resulting in a significant financial burden for the families and the state. Although dental hygienists play an important role in diagnosing MIH, it has been reported that these professionals have limited knowledge about MIH as a clinical problem.[7]

Due to the significant burden of managing MIH-affected teeth and the crucial role of dental hygienists in patient care, it is essential for the healthcare team to understand the evidence base for available information. This scoping review aims to explore and map the existing literature specifically related to MIH as it pertains to the clinical roles, preventive strategies, and educational responsibilities of dental hygienists. This review is focused on the intersection between MIH and dental hygiene practice, with the goal of informing future research, training, and clinical protocols.

## MATERIALS AND METHODS

This scoping review was conducted according to the PRISMA-ScR (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) Extension for Scoping Reviews checklist.[8]

A comprehensive literature search was conducted using the PubMed, Scopus, and Web of Science databases to identify relevant studies on Molar-Incisor Hypomineralization (MIH) and the role of dental hygienists.

### Eligibility criteria

Articles published in English, with no specific period of publication. Studies addressing the diagnosis, management, and clinical implications of MIH were included, as well as studies focusing on dental hygienists in pediatric dental care, were eligible for inclusion. Opinion articles, gray literature and letters were excluded.

### Search strategy

For article selection, two independent examiners (L.L.C.) and (M.K.S.R.) conducted a literature search using MeSH terms and boolean operators. Search strategies specific to each database are detailed in Table 1.

### Study selection

Two researchers (L.L.C. and M.K.S.R.) independently verified which studies met the inclusion criteria for the review by evaluating the titles and abstracts of the searched articles. The searches were further complemented by screening the references of selected articles to identify those that did not appear in the databases. Full-text copies were retrieved for studies that met the inclusion criteria or for those where the title and abstract provided insufficient information to make a clear decision. Any disagreements regarding study eligibility, at any point in the process, were resolved through consensus or by consulting a third-party evaluator (P.B.S.).

## RESULTS

Ninety-one possibly eligible studies were identified in the electronic databases and processed on the “Rayyan” platform. Duplicates were removed, resulting in 80 studies for title and abstract screening. Considering the inclusion criteria, 58 articles were excluded based on title and abstract evaluation, leaving 21 articles for full-text analysis, that were considered eligible for the review after full-text screening, as shown in Figure 2.

## DISCUSSION

This scoping review aimed to explore and map the existing literature related to the role of dental hygienists in the prevention, diagnosis, and management of MIH. Recent reviews have provided important context addressing prevalence and risk factors, etiology, management, and clinical guidelines, addressing MIH in a broader way[9–11]. However, their work did not examine the specific involvement of dental hygienists or their contributions to early detection, oral education, and preventive care within community and clinical environments. By concentrating on this professional group, our work addresses a gap in the current literature and offers practical insights for training and protocol development targeted at dental hygiene practice.

### Prevalence

Within the 20 years since the well-established definition of MIH, considerable efforts have been made to assess its prevalence. Indeed, there is now data from several observational studies conducted in nearly every part of the world.[12] To standardize the diagnosis, the European Academy of Paediatric Dentistry (EAPD) developed specific diagnostic criteria of MIH. Despite this, studies still show significant variation in MIH prevalence, with reported figures ranging from 2.8% to 40.2%. This variation is primarily due to differences in the age groups examined, sample sizes, and ethnicities of the individuals included, which compromise the comparability of these studies.[13] However, a recent systematic review estimated the global prevalence of MIH to be approximately 13.5%.[14]

## Etiology

Although the exact etiology of MIH remains unclear, numerous observational studies have described a wide variety of risk factors, often involving an insult at a critical phase of tooth mineralization during the final stages of gestation and the first three years of life, when calcification of first molars and incisors occurs.[15]

Prenatal exposures, such as maternal illness and medication use; perinatal complications, including cesarean delivery, premature birth, and low birth weight; and postnatal exposures, such as chronic childhood illnesses, environmental pollutants, and medication, have been associated with MIH.[16] However, approximately a quarter of children with MIH do not exhibit these risk factors.[17] Recent studies have advanced the understanding of the pathogenesis of MIH, suggesting that insults during the maturation phase of amelogenesis may impair ameloblast function, leading to the development of hypomineralized enamel. [18,19]

Additionally, a twin study conducted by Teixeira et al. (2018) reported greater concordance of MIH among monozygotic twins compared to dizygotic twins, indicating a possible genetic influence. However, environmental factors such as family income and hemorrhage during pregnancy were also associated with the condition, reinforcing its multifactorial nature.[20,21]

## The role of dental hygienists in MIH

### *Early diagnosis*

Dental hygienists working in private or public practices frequently play a vital role in introducing children to dental care.[7,22] This initial interaction typically aligns with the eruption of the first permanent molars, which generally occurs for the lower teeth at around 6 years old.[23] This timeframe marks an opportune time for diagnosis,

considering the significance of early initiation of preventive care for limiting the degree and size of PEB, and controlling the risk of caries and hypersensitivity.[21,24]

Diagnosis should be based on a thorough observation of the enamel surface under good artificial lighting and previous prophylaxis or tooth brushing. Teeth should be visualized wet, and dental cotton rolls should be utilized to clean the areas and achieve a proper vision of the surface if needed.[13] The use of air jet may not be suitable for these patients, as it can exacerbate hypersensitivity and have a negative impact on the child's experience and behavior management.[13,24]

The clinical presentation of MIH can sometimes be mistaken for other conditions such as white spot lesions, enamel hypoplasia, and amelogenesis imperfecta (AI).[13] To effectively treat patients with MIH, it's important to differentiate it from these conditions accurately. White spot lesions tend to occur adjacent to the gingival margin where biofilm accumulates, while MIH is less common in these regions. Enamel hypoplasia is a quantitative enamel defect, whereas MIH involves a qualitative defect. However, it can be challenging to distinguish between the two when an MIH-affected tooth presents PEB. The borders of hypoplastic enamel are usually smooth and regular, while hypomineralized teeth with PEB have sharp and irregular borders due to enamel fracture (Figure 3). AI and MIH can present similarly, but they differ markedly in clinical presentation and distribution.[13] AI is a hereditary condition that affects all or nearly all teeth in a generalized, symmetrical pattern, often involving both dentitions. In contrast, MIH is characterized by a sporadic and asymmetrical distribution, typically affecting one to four first permanent molars, and sometimes associated with permanent incisors. Furthermore, while AI typically presents with enamel that is uniformly thin or soft across teeth, often assessed through family history[25], MIH lesions

are often limited to demarcated opacities, with variable severity and localized post-eruptive breakdown.[13]

***Prevention of oral diseases***

Hypomineralized teeth have high porosity, which promotes the penetration of bacteria into the dentinal tubules, leading to subclinical pulpal inflammation and pain. The discomfort experienced by patients can be spontaneous or triggered by thermal or mechanical stimuli. Consequently, children may avoid toothbrushing due to the hypersensitivity, which increases their vulnerability to caries.[26,27] (Figure 4).

Effective prevention is crucial for patients with MIH, and dental hygienists play a key role in this process. Dental teams can promote effective brushing with fluoride toothpaste and emphasize the importance of a positive attitude towards prevention. For patients with MIH, dental hygienists should highlight the importance of thorough oral hygiene practices, including brushing all tooth surfaces and the gum line with fluoride toothpaste at least twice a day using a toothpaste with at least 1,000 ppm fluoride. They should also recommend additional cleaning aids for interproximal surfaces. Consistent preventive care can significantly reduce the risk of caries and maintain oral health in MIH-affected patients.[28] In the office, hypersensitivity poses difficulties for dental professionals when performing routine dental procedures, such as prophylaxis and scaling. Therefore, dental hygienists should be aware of this and take steps to minimize thermal and tactile stimuli in hypomineralized areas. Successful management of dental caries in MIH-affected teeth begins with a focus on oral health promotion and prevention by providing recommendations to parents or caregivers. The earlier these measures are implemented, the more effective they will be. Individual preventive measures can postpone the need for restorative treatments and reduce patient discomfort in the long term.[29]

Initiatives from working groups such as *The D3 Group* (D3G) and its Chalky Teeth Campaign (available at *https://www.thed3group.org*) have made important contributions to public and professional education on hypomineralized enamel conditions. These freely accessible resources offer clinical tips, visual guides, and educational materials that can support not only dental professionals but also children and their families in understanding the condition and adopting preventive care strategies at home.

***Remineralizing agents and pain management***

Studies evaluating affected enamel have found that mineral loss can reach up to 20% in specific lesions, particularly those with severe hypomineralization, although this value does not apply uniformly to all affected teeth. This increase in protein content weakens the mechanical properties of the defective enamel.[30] Remineralizing agents are often recommended for managing MIH to enhance the mineral content of hypomineralized areas, reduce hypersensitivity, and prevent caries lesions and PEB.[31]

Topical fluorides and pit and fissure sealants are commonly reported preventive methods, though scientific evidence regarding their effectiveness remains limited. Fluoride varnishes (FV) are widely used by dental professionals, including dental hygienists.[32,33] The application of 5% FV has been employed in the treatment and prevention of caries and hypersensitivity in patients with MIH.[34] Incorporating calcium and phosphate ions into FV formulation can significantly enhance its efficacy in preventing caries lesions. This improvement is primarily due to the increased retention of fluoride and calcium ions within the oral environment, which collectively contributes to a more robust remineralization process.[35]

Glass ionomer cement (GIC) sealants have shown significant efficacy in caries prevention and hypersensitivity reduction in teeth affected by MIH. This material acts as a physical barrier against the oral environment and releasing fluoride ions which enhance enamel remineralization. GIC sealants facilitate improved biofilm removal by reducing discomfort during oral hygiene routine in children.[17,36] For optimal results, it is crucial that the GIC covers the entire opacity area, as the porous structure of hypomineralized enamel predisposes it to hypersensitivity and an increased risk of caries in MIH patients. Fragelli et al. (2017) evaluated the clinical longevity of glass ionomer sealant over an 18-month period as a caries prevention method in hypomineralized teeth. They found a retention success rate of 72% for the applied sealants after the follow-up period.[37] Schraverus et al. (2021) evaluated the use of GIC in molars with mild forms of MIH (only opacities). The authors found that the application of GIC reduced the likelihood of developing dental caries. However, the same protective effect was not observed for PEB.[36] Other materials have also been reported as a preventive treatment for MIH-affected teeth, like composite resins and resin-modified glass ionomer cement (RMGIC) sealants.[29]

Although some clinical guidelines offer general recommendations for the management of MIH, it is important to highlight that many of these are based on limited evidence. Moreover, strategies traditionally effective in managing dental caries may not yield the same outcomes when applied to hypomineralized enamel due to the altered structure, increased porosity, and hypersensitivity often observed in hypomineralized teeth, compromising adhesion and increasing post-operative discomfort. Therefore, the applicability of caries-focused interventions should be evaluated cautiously, and clinical decision-making in MIH cases requires individualized approaches informed by current, albeit limited, evidence.

***Follow-up visits***

Children with MIH require closer observation and more frequent appointments to monitor and manage preventive treatments, restorations and sealants. Unfortunately, there is no standardized interval for patient follow-ups. It is suggested that dental check-ups be scheduled every 3 to 6 months, coupled with a healthy diet and controlled sugar intake to effectively monitor the affected teeth. However, due to the varying severity of lesions, establishing a fixed interval is challenging. It is known that the color of an MIH opacity can guide clinicians in prescribing recall intervals to prevent unnoticed deterioration. This is because the color of an MIH enamel opacity is linked to the prognosis of the condition.[38]

Enamel affected by MIH exhibits distinct variations in its structural, mechanical, and chemical properties compared to healthy enamel. It is characterized by an increased protein content, and reduced elasticity modulus,[39,40] resulting in the enamel being softer and more porous. These factors predispose to a weak adhesion to resin composites, once phosphoric acid cannot create regular etching patterns in MIH enamel.[41–43] Consequently, adhesion failures are more likely to occur in restorations bonded to hypomineralized enamel, with cracks and marginal fractures being common issues.[40,41] (Figures 5 and 6).

Therefore, children with MIH should be monitored at shorter intervals and followed up with a preventive therapeutic approach that addresses hypersensitivity, facilitates proper dental hygiene of mineralized surfaces and soft tissues, and focuses on household lifestyles to reduce risk factors for dental caries.[44]

Although this review focused specifically on MIH, we acknowledge the growing interest in adopting the broader term Molar Hypomineralization (MH) to encompass a

wider range of clinical presentations. Given our emphasis on the role of dental hygienists and the continued use of MIH in clinical guidelines and scientific literature, we chose to retain this terminology, while recognizing that future studies may benefit from adopting more inclusive frameworks.

To our knowledge, this is the first review to specifically address the role of dental hygienists in the context of MIH, highlighting their contributions to early detection, patient education, and preventive care. The study followed a transparent search strategy across three major databases, applying predefined eligibility criteria. These methodological choices contribute to the rigor, reproducibility, and relevance of the findings, especially for professionals involved in public oral health and pediatric dental care.

However, this study also has limitations. The number of eligible articles was limited, which reflects the current scarcity of research focused specifically on this topic and may affect the generalizability of the findings. Inclusion was limited to articles published in English, which may have introduced language bias and excluded relevant studies published in other languages. Grey literature was not included in this review, which may have led to the omission of potentially valuable non-indexed sources such as government reports, conference abstracts, or unpublished studies. Additionally, this review focused specifically on MIH, and did not include studies addressing broader presentations of MH, such as defects affecting second permanent molars. As such, the findings should be interpreted within this scope.

## CONCLUSION

The dental hygienist's involvement in the management of patients with MIH is essential for ensuring their oral health. Through early diagnosis, preventive

management, and follow-up care, dental hygienists can significantly contribute to the preservation of dental structure and well-being of children affected by MIH.

**ACKNOWLEDGEMENTS**

This work was supported by Coordenação de Aperfeiçoamento de Pessoal de Nível Superior - Brazil (CAPES) - Financing Code 88887.925770/2023-00.

**CONFLICTS OF INTEREST**

The authors have no conflicts of interest to disclose.

**DATA AVAILABILITY STATEMENT**

Data sharing is not applicable to this article as no new data were created or analyzed in this study.

## REFERENCES


1. Weerheijm K, Jälevik B, Alaluusua S. Molar-Incisor Hypomineralisation [Internet]. 2001. Available from: www.karger.com/journals/cre

2. Lygidakis NA, Garot E, Somani C, Taylor GD, Rouas P, Wong FSL. Best clinical practice guidance for clinicians dealing with children presenting with molar-incisor-hypomineralisation (MIH): an updated European Academy of Paediatric Dentistry policy document. European Archives of Paediatric Dentistry. 2022 Feb 20;23(1):3–21.

3. Mathu-Muju K, Wright JT. Diagnosis and treatment of molar incisor hypomineralization. Compend Contin Educ Dent. 2006 Nov;27(11):604–10; quiz 611.

4. Jälevik B, Klingberg GA. Dental treatment, dental fear and behaviour management problems in children with severe enamel hypomineralization of their permanent first molars. Int J Paediatr Dent. 2002 Jan;12(1):24–32.

5. FRAGELLI CMB, SOUZA JF de, JEREMIAS F, CORDEIRO R de CL, SANTOS-PINTO L. Molar incisor hypomineralization (MIH): conservative treatment management to restore affected teeth. Braz Oral Res. 2015 Jun 16;29(1):1–7.

6. Gambetta-Tessini K, Mariño R, Ghanim A, Calache H, Manton DJ. Knowledge, experience and perceptions regarding Molar-Incisor Hypomineralisation (MIH) amongst Australian and Chilean public oral health care practitioners. BMC Oral Health. 2016 Aug 18;16(1):75.

7. Skaare AB, Houlihan C, Nybø CJ, Brusevold IJ. Knowledge, experience and perception regarding molar incisor hypomineralisation (MIH) among dentists and dental hygienists in Oslo, Norway. Eur Arch Paediatr Dent. 2021 Oct;22(5):851–60.

8. Tricco AC, Lillie E, Zarin W, O'Brien KK, Colquhoun H, Levac D, et al. PRISMA Extension for Scoping Reviews (PRISMA-ScR): Checklist and Explanation. Ann Intern Med. 2018 Oct 2;169(7):467–73.

9. Al-Nerabieah Z, AlKhouli M, Dashash M. Navigating the Complexities of Molar Incisor Hypomineralization: Challenges and Strategies in Pediatric Dentistry. Int J Dent. 2025 Jan 6;2025(1).

10. Alrehaili R, Khalil A, Mergami J, Koriri A, Yamani N, Albayat S, et al. Current Knowledge of the Etiology and Management of Molar Incisor Hypomineralization in Children: A Narrative Review. Cureus. 2024 Nov 29;

11. Buzalaf MAR, Rios D. Is It Possible to Remineralise Hypomineralised Enamel Lesions in Patients with Molar Incisor Hypomineralisation? In 2024. p. 173–84.

12. Sluka B, Held U, Wegehaupt F, Neuhaus KW, Attin T, Sahrmann P. Is there a rise of prevalence for Molar Incisor Hypomineralization? A meta-analysis of published data. BMC Oral Health. 2024 Dec 1;24(1).

13. Ghanim A, Silva MJ, Elfrink MEC, Lygidakis NA, Mariño RJ, Weerheijm KL, et al. Molar incisor hypomineralisation (MIH) training manual for clinical field surveys and practice. European Archives of Paediatric Dentistry. 2017 Aug 18;18(4):225–42.

14. Lopes LB, Machado V, Mascarenhas P, Mendes JJ, Botelho J. The prevalence of molar-incisor hypomineralization: a systematic review and meta-analysis. Sci Rep. 2021 Dec 1;11(1).

15. Bussaneli DG, Vieira AR, Santos-Pinto L, Restrepo M. Molar-incisor hypomineralisation: an updated view for aetiology 20 years later. European Archives of Paediatric Dentistry. 2022 Feb 1;23(1):193–8.

16. Garot E, Rouas P, Somani C, Taylor GD, Wong F, Lygidakis NA. An update of the aetiological factors involved in molar incisor hypomineralisation (MIH): a systematic review and meta-analysis. Vol. 23, European Archives of Paediatric Dentistry. Springer Science and Business Media Deutschland GmbH; 2022. p. 23–38.

17. Elhennawy K, Schwendicke F. Managing molar-incisor hypomineralization: A systematic review. Vol. 55, Journal of Dentistry. Elsevier Ltd; 2016. p. 16–24.

18. Bezamat M, Souza JF, Silva FMF, Corrêa EG, Fatturi AL, Brancher JA, et al. Gene-environment interaction in molar-incisor hypomineralization. PLoS One. 2021;16(1):e0241898.

19. Bussaneli DG, Restrepo M, Fragelli CMB, Santos-Pinto L, Jeremias F, Cordeiro R de CL, et al. Genes Regulating Immune Response and Amelogenesis Interact in Increasing the Susceptibility to Molar-Incisor Hypomineralization. Caries Res. 2019;53(2):217–27.

20. Teixeira RJPB, Andrade NS, Queiroz LCC, Mendes FM, Moura MS, Moura L de FA de D, et al. Exploring the association between genetic and environmental factors and molar incisor hypomineralization: evidence from a twin study. Int J Paediatr Dent. 2018 Mar 22;28(2):198–206.

21. Raposo F, de Carvalho Rodrigues AC, Lia ÉN, Leal SC. Prevalence of Hypersensitivity in Teeth Affected by Molar-Incisor Hypomineralization (MIH). Caries Res. 2019;53(4):424–30.

22. Burgette JM, Ok SH, Ray KN, Faulds S, Stiles A, Hoberman A, et al. Race and payor type for child visits with public health dental hygienist practitioners. J Public Health Dent. 2022 Jan 10;82(1):53–60.

23. Padmanabhan V, Baroudi K, Abdulla S, Hesham S, Ahmed Elsayed M, Mustahsen Rahman M, et al. Association of Body Mass Index and Chronology of Tooth Eruption in Children visiting a Dental Hospital in UAE: A Cross-sectional Study. Saudi Dent J. 2024 May;36(5):810–4.

24. Dulla JA, Meyer-Lückel H. Molar-incisor hypomineralisation: narrative review on aetiology, epidemiology, diagnostics, and treatment decision. Vol. 131, SWISS DENTAL JOURNAL SSO.

25. Crawford PJ, Aldred M, Bloch-Zupan A. Amelogenesis imperfecta. Orphanet J Rare Dis. 2007 Dec 4;2(1):17.

26. Ben Salem M, Chouchene F, Masmoudi F, Baaziz A, Maatouk F, Ghedira H. Are Molar-Incisor Hypomineralization and Hypomineralized Second Primary Molars Predictive of Dental Caries?: A Systematic Review. Eur J Dent. 2023 Feb 19;17(01):007–15.

27. Gambetta-Tessini K, Mariño R, Ghanim A, Calache H, Manton DJ. The impact of MIH/HSPM on the carious lesion severity of schoolchildren from Talca, Chile. European Archives of Paediatric Dentistry. 2019 Oct 14;20(5):417–23.

28. NHS. Delivering Better Oral Health. – an evidence-based toolkit for prevention. 2021;

29. Dental caries prevention in pediatric patients with molar incisor hypomineralization: a scoping review. Journal of Clinical Pediatric Dentistry. 2023;

30. Olgen IC, Sonmez H, Bezgin T. Effects of different remineralization agents on MIH defects: a randomized clinical study. Clin Oral Investig. 2022 Mar 25;26(3):3227–38.

31. Restrepo M, Jeremias F, Santos-Pinto L, Cordeiro RC, Zuanon AC. Effect of Fluoride Varnish on Enamel Remineralization in Anterior Teeth with Molar Incisor Hypomineralization. Journal of Clinical Pediatric Dentistry. 2016 Jun 1;40(3):207–10.

32. Woodward MJ, Reynolds J, Kelly M. Dental Hygienists' Attitudes and Experiences with Public Health Supervision in Iowa. Vol. 23, The Journal of Dental Hygiene. 2021.

33. Uhlen MM, Wang NJ, Skudutyte-Rysstad R. Fissure sealants or fluoride varnish? Routines and attitudes among dental health personnel in Norway. European Archives of Paediatric Dentistry. 2019 Dec 1;20(6):577–83.

34. Kumar A, Goyal A, Gauba K, Kapur A, Singh SK, Mehta SK. An evaluation of remineralised MIH using CPP-ACP and fluoride varnish: An in-situ and in-vitro study. European Archives of Paediatric Dentistry. 2022 Feb 31;23(1):79–87.

35. Naik S V, Attiguppe P, Malik N, Ballal S. CPP–ACP and Fluoride: A Synergism to Combat Caries. Int J Clin Pediatr Dent. 2019 Apr;12(2):120–5.

36. Schraverus MS, Olegário IC, Bonifácio CC, González APR, Pedroza M, Hesse D. Glass Ionomer Sealants Can Prevent Dental Caries but Cannot Prevent Posteruptive Breakdown on Molars Affected by Molar Incisor Hypomineralization: One-Year Results of a Randomized Clinical Trial. Caries Res. 2021;55(4):301–9.

37. FRAGELLI CMB, SOUZA JF de, BUSSANELI DG, JEREMIAS F, SANTOS-PINTO L dos, CORDEIRO R de CL. Survival of sealants in molars affected by molar-incisor hypomineralization: 18-month follow-up. Braz Oral Res. 2017;31(0).

38. Cabral RN, Nyvad B, Soviero VLVM, Freitas E, Leal SC. Reliability and validity of a new classification of MIH based on severity. Clin Oral Investig. 2020 Feb 25;24(2):727–34.

39. Santos PB. Why orthodontists need to know about molar incisor hypomineralization. American Journal of Orthodontics and Dentofacial Orthopedics. 2024 Mar 1;165(3):256–61.

40. Bekes K, Amend S, Priller J, Zamek C, Stamm T, Krämer N. Hypersensitivity relief of MIH-affected molars using two sealing techniques: a 12-week follow-up. Clin Oral Investig. 2022 Feb 1;26(2):1879–88.

41. Krämer N, Bui Khac NHN, Lücker S, Stachniss V, Frankenberger R. Bonding strategies for MIH-affected enamel and dentin. Dental Materials. 2018 Feb 1;34(2):331–40.

42. Lagarde M, Vennat E, Attal JP, Dursun E. Strategies to optimize bonding of adhesive materials to molar-incisor hypomineralization-affected enamel: A systematic review. Int J Paediatr Dent. 2020 Jul 1;30(4):405–20.

43. Bozal CB, Kaplan A, Ortolani A, Cortese SG, Biondi AM. ULTRASTRUCTURE OF THE SURFACE OF DENTAL ENAMEL WITH MOLAR INCISOR HYPOMINERALIZATION (MIH) WITH AND WITHOUT ACID ETCHING. Vol. 28, Acta Odontol. Latinoam. 2015.

44. Mazur M, Corridore D, Ndokaj A, Ardan R, Vozza I, Babajko S, et al. MIH and Dental Caries in Children: A Systematic Review and Meta-Analysis. Vol. 11, Healthcare (Switzerland). MDPI; 2023.

## Figures

Figure 1. Hypomineralized 6-year molar, presenting yellow-brown opacities

Figure 2. PRISMA 2020 flow diagram

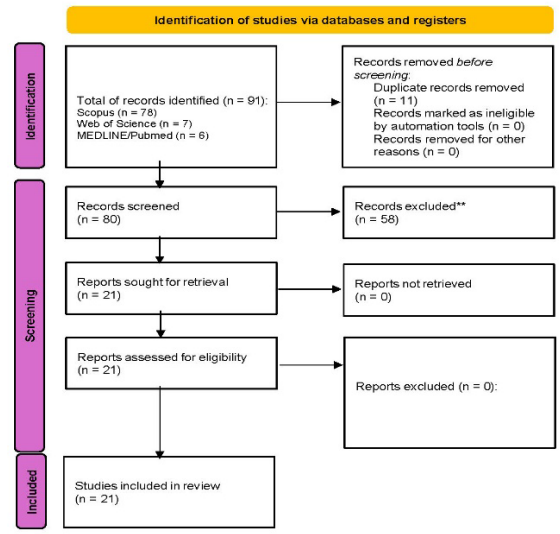


Figure 2. PRISMA 2020 flow diagram.

Figure 3. Hypomineralized 6-year molar exhibiting PEB, indicating a severe presentation with high susceptibility to sensitivity, caries, and restorative challenges

Figure 4. Biofilm accumulation on a hypomineralized 6-year molar due to pain and discomfort experienced during oral hygiene in affected children

Figure 5. Marginal fracture observed on a hypomineralized 6-year molar

Figure 6. Failure of restoration on a hypomineralized 6-year molar, revealing underlying structural weakness. The image emphasizes the clinical challenge of maintaining long-term restorative success in teeth with severe enamel hypomineralization

| Database | Search Strategy | Articles |
|---|---|---|
| MEDLINE/PubMed | ((“molar incisor hypomineralization” OR “molar incisor hypomineralisation” OR “MIH” OR “molar-incisor hypomineralization” OR “molar-incisor hypomineralisation” OR “hypomineralized molars” OR “hypomineralised molars”) AND (“dental hygienists” OR “oral hygienists” OR “dental health professionals” OR “oral health professionals” OR "dental therapists" OR "oral health therapists")) | 6 |
| SCOPUS | ALL ((“molar incisor hypomineralization” OR “molar incisor hypomineralisation” OR “MIH” OR “molar-incisor hypomineralization” OR “molar-incisor hypomineralisation” OR “hypomineralized molars” OR “hypomineralised molars”) AND ALL (“dental hygienists” OR “oral hygienists” OR “dental health professionals” OR “oral health professionals” OR "dental therapists" OR "oral health therapists")) | 78 |
| Web of Science | ((“molar incisor hypomineralization” OR “molar incisor hypomineralisation” OR “MIH” OR “molar-incisor hypomineralization” OR “molar-incisor hypomineralisation” OR “hypomineralized molars” OR “hypomineralised molars”) AND (“dental hygienists” OR “oral hygienists” OR “dental health professionals” OR “oral health professionals” OR "dental therapists" OR "oral health therapists")) | 7 |
| Total | | 91 |

Table 1. Search strategies on databases and number of articles found.

Table 2. Summary of key findings from the literature search.

| Author and year | Country | Study design | Number of participants | Objectives | Results | Conclusions |
|---|---|---|---|---|---|---|
| Crombie et al. (2008) | Australia | Cross-sectional | 130 | To ascertain the knowledge and opinions regarding MIH in a population of Australian dental care providers. | 98.5% were familiar with MIH, and 95.4% encountered it in practice. 53.1% reported an increase in MIH cases, while 26.2% were unsure and 20.0% saw no increase. Only 16.9% knew of Australian prevalence data, but 96.9% felt it should be investigated. Clinical challenges were reported by 96.9% of clinicians, with common issues including aesthetics, defining cavity margins, and restoration longevity. Glass ionomer cements (81.7%) and composite resin (73%) were widely used, while resin-modified GIC, compomer, flowable composite, amalgam, and cast restorations were less common. Preformed crowns were more frequently used by pediatric dentists and postgraduate students. | MIH is widely recognized and poses significant clinical challenges, especially in providing high-quality restorative care. Knowledge and opinions on its prevalence, etiology, and management vary, with most respondents showing limited understanding of MIH prevalence but supporting further research. |
| Gambetta-Tessini et al. (2016) | Australia | Cross-sectional | 232 | To compare the knowledge, clinical experience and perceptions regarding MIH of Australian and Chilean oral health care practitioners (OHCPs) from the public dental sector. | The majority of respondents had observed MIH in their patients (88.6 %) and the level of knowledge regarding MIH was high in Australian participants (p = 0.03). Australian respondents felt more confident when diagnosing (OR 8.80, 95 % CI 2.49-31.16) and treating MIH-affected children (OR 4.56, 95 % CI 2.16-9.76) compared to Chilean respondents. Oral health therapists reported higher levels of confidence than Australian general dental practitioners when providing treatment to children with MIH (OR 7.53; 95 % CI 1.95-29.07). | Updating clinical guidelines can enhance practitioners' ability to diagnose and treat MIH-affected children. Raising awareness and disseminating information about MIH, especially among general dental practitioners in public clinics in Chile, is crucial. |
| Ghanim et al. (2019) | Australia | Validation | Not applicable | To explore the reproducibility and validity of a new instrument developed to assess MIH. | The index confirmed the hypothesized associations with the presence, prevalence, and severity of MIH, demonstrating strong construct validity. Researchers found the codes and definitions to be clear and appropriate for international use. It showed satisfactory sensitivity, specificity, and PPV/NPV scores. Examiners reached "Substantial" to "Almost perfect" agreement levels in assessing clinical presentation and lesion extent. | The index demonstrated solid properties, offering confidence in its reliability and validity for use in both population-based and clinical screenings for diagnosing MIH and other enamel defects. |

| Author and year | Country | Study design | Number of participants | Objectives | Results | Conclusions |
|---|---|---|---|---|---|---|
| Rodd et al. (2021) | United Kingdom | Review | Not applicable | To provide an up-to-date review of the epidemiology, etiology, diagnosis and clinical management of MIH. | Evidence on the etiology, presentation, and clinical management of MIH is expanding. Current research focuses on potential genetic factors and the development and validation of diagnostic indices for managing MIH. There is also growing recognition of both the global and individual impact of this common condition. | Dental health professionals should consistently review the latest basic science and clinical literature on MIH to ensure they provide the best possible short- and long-term care for their young patients. |
| Skaare et al (2021) | Norway | Cross-sectional | 100 | To gather baseline information on knowledge, perceptions, clinical experience and treatment options regarding MIH among dental care providers in Oslo, Norway. | Replies were received from 74.1% (n=100) after two reminders. All respondents encountered MIH in practice, with varying perceptions of its prevalence in Oslo. Most felt confident diagnosing MIH (86%), especially those qualified in the last 10 years (p=0.016). While 68.3% were confident in treatment, 88% viewed MIH as a clinical challenge. Treatment approaches varied, with difficulties in local anesthesia (71.4%) and child behavior (84.1%) as barriers. About 69% sought further training, particularly on MIH etiology (70%), diagnosis (57%), and treatment (77%). | All clinicians were familiar with the diagnosis of MIH and experienced the condition to be a clinical problem. Continuing education on etiology, diagnosis and treatment of MIH is requested by dental health personnel. |
| Butera et al. (2021) | Italy | Review | Not applicable | To review studies that focus on investigating possible associations between genetic factors or prenatal, perinatal, and postnatal causes and these enamel defects | Twenty-five articles were included. Regarding genetic factors, SNPs expressed during the secretion or maturation stages of amelogenesis showed statistical relevance in 16% of studies and 80% of those investigating these factors. For prenatal, perinatal, and postnatal causes, postnatal factors showed statistical significance, including breastfeeding period (2%), asthma (16%), high fever (20%), infections/illnesses (20%), chickenpox (12%), antibiotic use (8%), diarrhea (4%), and pneumonia (4%). | The results support the multifactorial etiology of dental enamel defects. Further studies with larger, well-diagnosed, and ethnically diverse populations are needed to better understand the genetic and environmental factors that may influence the occurrence of DMH, HPSM, and MIH. |

| Author and year | Country | Study design | Number of participants | Objectives | Results | Conclusions |
|---|---|---|---|---|---|---|
| Dian et al. (2022) | Indonesia | Cross-sectional | 266 | To evaluate the knowledge and perception of MIH among general dental practitioners (GD), pediatric dentists (PD), and other dental specialists (DS) in Indonesia using a self-administered questionnaire. | Significant differences were found in overall knowledge scores between GD, PD, and DS ($p < 0.001$), particularly regarding the caries pattern associated with MIH and its etiology. Most PDs (83.3%) could distinguish MIH-related caries from the classic pattern. Additionally, PDs showed higher confidence in diagnosing and treating MIH compared to GDs and DSs ($p = 0.000$). Across all groups, the majority agreed on the need for continuing education on MIH, covering etiology, diagnosis, and treatment, to enhance their knowledge and confidence in clinical management. | Dental care providers, especially GD and DS, need further training and education on MIH to improve their confidence in managing affected patients. Sharing the latest MIH information with GDs, as primary care providers in Indonesia, is essential for accurate diagnosis and proper treatment. |
| Seremidi et al. (2022) | Greece | Cross-sectional | 360 | To record knowledge and attitudes of Greek dentists regarding diagnosis and treatment of MIH and correlate findings with non-dental characteristics. | 185 were general dental practitioners (GDPs) and 175 specialists (59 pediatric dentists - PDs, 38 orthodontists, and 78 from other specialties). MIH was frequently encountered, with GDPs more likely than PDs to cite genetics and fluoride intake as causes ($p < 0.05$). Permanent molars and incisors (44%) were most affected, with yellow/brown demarcated opacities (68%) being the most common feature, more often reported by PDs ($p < 0.05$). Dentists treating over 10 children weekly were 2–5.5 times more likely to experience anesthesia difficulties and hypersensitivity. While GDPs and specialists agreed on less invasive treatments for anterior lesions, non-PDs preferred bulk-fill restorations or onlays for severely affected posterior teeth, whereas PDs favored preformed metal crowns ($p < 0.05$). Clinician age, experience, and number of children treated per week significantly influenced treatment decisions for severely affected posterior teeth. | Most participants had encountered MIH in their clinical practice and could identify the primary etiological factors and clinical features associated with the condition. However, their knowledge of treatment options was limited. |

| Author and year | Country | Study design | Number of participants | Objectives | Results | Conclusions |
|---|---|---|---|---|---|---|
| Karkoutly et al. (2022) | Syria | Cross-sectional | 703 | To evaluate and compare the knowledge, perceptions, attitudes, and clinical experiences on MIH among general dental practitioners and pediatric dentists in Syria. | Pediatric dentists showed significantly greater familiarity with MIH ($p < 0.001$) and confidence in diagnosing it ($p < 0.001$). Most participants (43.95%) reported an increase in MIH prevalence in Syria. Stainless steel crowns were the preferred restorative material for molars with post-eruptive breakdown (51.38%), while composite resin was favored for molars and incisors with opacities (41.82% and 67.51%, respectively). General dental practitioners expressed a need for further training in MIH treatment ($p < 0.001$). | Pediatric dentists had more knowledge and confidence in diagnosing MIH, while general practitioners need further training. Most noted an increase in MIH cases, though Syrian prevalence data is limited. Stainless steel crowns and composite resin were the preferred restorative materials. |
| Dian et al. (2022) | Indonesia | Cross-sectional | 145 | To analyze knowledge and perception in undergraduate clinical stage and pediatric dentistry postgraduate dental students in Indonesia. | There was a statistically significant difference in knowledge scores between undergraduate and postgraduate students ($p < 0.05$), with scores of $45.1 \pm 6.6$ and $51.2 \pm 5.4$, respectively. Most postgraduate students (88.7%) recognized that the caries pattern associated with MIH differs from the classic caries pattern, while only 42.2% of undergraduate students were aware of this distinction. Additionally, 67.5% of undergraduate students expressed a lack of confidence in treating MIH. Almost all students from both groups desired further training on MIH. | MIH knowledge among Indonesian dental students needs improvement due to limited exposure, raising concerns for future practice. Adding MIH to the curriculum is key to building confidence in diagnosis and management. |
| Gómez-Clavel et al. (2023) | Mexico | Cross-sectional | 391 | To evaluate the knowledge, experience, and perceptions of dental surgeons regarding the detection, assessment, and treatment of MIH in the metropolitan area of Mexico City. | 86% of participants identified MIH lesions, with 84% reporting they had observed them in practice. The most observed lesions were yellow-brown opacities (47%), followed by white opacities (46%), while post-eruptive fractures accounted for only 7% of cases. The primary challenge in managing MIH-affected teeth was a lack of training for treating children with this condition. Additionally, 84% of dentists expressed a desire for more information on treating MIH lesions. | Most of the surveyed dentists recognized MIH and reported having observed MIH lesions in their practice. Most of the dentists indicated that the main problem for the management of the MIH is the lack of training. |

| Author and year | Country | Study design | Number of participants | Objectives | Results | Conclusions |
|---|---|---|---|---|---|---|
| Gunay (2023) | Turkey | Cross-sectional | 218 | To evaluate the knowledge, attitudes, and practices of 4th- and 5th-year dental students about MIH. | A statistically significant difference was observed between 4th-year students (68.5%) and 5th-year students (98.1%) regarding prior awareness of the term MIH (P<0.001). While most students recognized the clinical features of MIH, only 26.1% felt confident in their ability to diagnose it. Additionally, a significant difference was noted between 4th- and 5th-year students in their perception of MIH as a clinical issue, particularly concerning aesthetic problems and the ability to provide adequate restorations (P=0.012). | While most students had theoretical knowledge of MIH, they lacked confidence in their diagnostic abilities and struggled to differentiate it from other dental anomalies. However, 5th-year students demonstrated greater awareness compared to their 4th-year counterparts. |
| Afzal et al. (2023) | Norway | Longitudinal | 3013 | To investigate the prevalence and factors associated with MIH in 8–9 year-old children in Oslo. | The overall MIH prevalence was 28.2%, with no gender differences. Higher prevalence was seen in children who had early-life illnesses or whose mothers were ill during pregnancy, though no link was found with prematurity or maternal medication use. Multivariable analysis showed children with MIH were more likely to have had early illnesses (OR = 1.41), used antibiotics in their first year (OR = 1.68), experienced tooth pain (OR = 1.33), and felt pain during brushing (OR = 2.17). | The prevalence of MIH was high in the children in the present study. Among the possible etiological factors investigated, illness in early childhood and use of antibiotics during the first year of life were associated with MIH. |
| Hajdarević et al. (2024) | Sweden | Cross-sectional | 357 | To investigate attitudes and preferred therapy choice for first permanent molars (FPM) with Molar-Incisor Hypomineralization (MIH). | Orthodontists and pediatric dentists were more likely than general dentists to extract first permanent molars (FPMs) with moderate to severe MIH. Resin composite was the preferred material for restoring FPMs with moderate MIH, while pediatric dentists more often used glass-ionomer cement for severe cases. Fluoride varnish was commonly used for mild MIH. The ideal time for extracting FPMs with severe MIH was during root furcation development in the second molar, with general dentists frequently relying on pediatric dentists' recommendations. | Extraction of FPMs with moderate and severe MIH is considered a therapy of choice among general dentists and specialists, and the preferred time of extraction is before the eruption of the second permanent molar. |

| Author and year | Country | Study design | Number of participants | Objectives | Results | Conclusions |
|---|---|---|---|---|---|---|
| Da Costa Rosa et al. (2024) | Brazil | Cross-sectional | 100 | To evaluate perceptions, attitudes, and clinical experience of Brazilian dental practitioners regarding molar incisor hypomineralisation (MIH). | Most private practitioners had 21-30 years of experience (28%) and master's degrees (50%), while public practitioners had 11-20 years of experience (32%) and PhDs (32%). MIH was recognized by 86%, with significant sector differences in MIH frequency ($p = 0.001$), incidence ($p = 0.039$), and lesion type ($p = 0.043$). Half of public practitioners reported uncertainty in managing MIH. For mild MIH in incisors, 43% chose no treatment, while fissure sealant was preferred for first molars (51%). Glass ionomer was used for severe MIH with moderate loss (38%), and endodontics with preformed crowns for extensive damage. | Brazilian dental practitioners frequently encounter MIH in clinical practice. While public sector professionals report lower confidence in diagnosing and treating the condition, no significant differences were found in treatment preferences between public and private sector practitioners. |
| Papanikolaou et al. (2024) | Netherlands | Cross-sectional | 231 | To assess the knowledge of and attitudes towards the management of MIH amongst dentists in the Netherlands. | The respondents included 76.6% general dental practitioners, 9.1% pediatric dentists, and 14.3% specialists, with an overall response rate of 25.6%. Most were familiar with the term MIH, its clinical features, and could differentiate it from other enamel defects. Regarding etiology, 76.6% believed in a genetic component. For asymptomatic cases, 47.3% opted for non-invasive treatments, while in mild symptomatic cases, treatments ranged from non-invasive to invasive ($p<.05$). In severe cases, most chose invasive treatments. Two-thirds expressed interest in further clinical training on MIH. | Respondents had adequate knowledge of MIH and its treatment, though differences were seen in managing mild symptomatic cases. All favored minimally invasive approaches. Ongoing education and evidence-based guidelines could improve care for MIH patients. |
| Afzal et al. (2024) | Norway | Cross-sectional | 3013 | To examine the distribution and severity of MIH in 8-9-year-olds and explore its association with hypersensitivity, caries, and involvement of incisors and second primary molars (SPM). | Nearly half (46.8%) of children with MIH had at least one severely affected molar, while 51.9% had affected incisors, with a higher prevalence in those with severe MIH (57.4%, $p < 0.01$). Second primary molars were affected in 29.6% of MIH cases, hypersensitivity in at least one first permanent molar was reported by 25.8%, and 30.8% had caries extending to dentine. Children with severe MIH were significantly more likely to experience hypersensitivity (OR 5.62, 95% CI 3.61–8.74) and dentine caries (OR 10.32, 95% CI 6.46–16.50) than those with mild MIH. | The prevalence of hypomineralized incisors and HSPM was high in children with MIH. Those with severe MIH were more likely to have affected incisors, dentine caries, and hypersensitivity compared to those with mild cases. These findings emphasize the need for further research on effective preventive strategies and treatments for MIH. |

| Author and year | Country | Study design | Number of participants | Objectives | Results | Conclusions |
|---|---|---|---|---|---|---|
| Da Costa Rosa et al. (2024) | Brazil | Cost-effectiveness | Not applicable | Conduct a cost-effectiveness analysis of restorative treatments for first permanent molars with severe MIH in the Brazilian public health system. | Cost-effective treatments included HVGIC, encapsulated GIC, and encapsulated GIC combined with etch-and-rinse adhesive and composite at 1 year and 10 years, respectively. The benefit gained from using encapsulated GIC with etch-and-rinse adhesive and composite compared to encapsulated GIC alone was minimal relative to the cost increase: at 1 year, there was a 3.28% gain with an additional cost of USD 24.26; at 10 years, the gain was 4% with a cost increase of USD 15.54. | Within the horizon and perspective analyzed, the most cost-effective treatment was encapsulated GIC restoration. |
| Tarazona-Valero et al. (2024) | Spain | Cross-sectional | 290 | To assess dental and dental hygiene students' knowledge of MIH and identify the need for curricular updates and standardized clinical guidelines. | Out of 290 questionnaires collected, 53.8% were from second-year oral hygiene students and 46.2% from dental degree students. Most respondents (75.2%) had heard of MIH, primarily through master classes, but 58.3% struggled to differentiate MIH lesions from other types. Dental students demonstrated greater knowledge about MIH in all areas assessed: prevalence, diagnosis, prevention, and treatment. Additionally, 83.8% of students expressed interest in further training on MIH, particularly in diagnosis and treatment. | The findings of this study highlight the necessity to enhance both theoretical and practical content on MIH in the curricula of Dentistry degree programs and Integrated Vocational Training Centers in Spain. |
| Mafla et al. (2024) | Colombia | Cross-sectional | 384 | To assess the association between stress, depression, and anxiety in pregnancy and the presence of MIH in children at a later age. | The prevalence of MIH was found to be 33.3%, with 12.8% of participants showing hypomineralization in both molars and incisors. DAG analysis and logistic regression revealed that the presence of MIH was associated with symptoms of maternal depression (ORadj = 3.26, 95% CI: 1.92-5.52, p < .001), while hypomineralization in both molars and incisors was linked to symptoms of maternal anxiety (ORadj = 3.49, 95% CI: 1.80-6.76, p < .001). | Psychological factors, among others, were significantly associated with the presence of MIH. |

| Author and year | Country | Study design | Number of participants | Objectives | Results | Conclusions |
|---|---|---|---|---|---|---|
| Ortega-Luengo et al. (2024) | Spain | Cross-sectional | 489 | To estimate the prevalence of MIH among children using primary care services in the Community of Madrid, Spain. | The prevalence of MIH was 28.63% (CI: 24.61–32.65%). The age groups most affected were 8 years (21.4%) and 11 years (20.7%), with a higher prevalence in girls (60.71%) compared to boys (39.28%). On average, each patient had 4.46 ± 2.8 affected teeth. The upper right first molar was the most commonly affected tooth (74.3%), while the upper left central incisor was the most affected incisor (37.85%). Opacities were the most frequently recorded defects (63.57%). | MIH prevalence was the highest in Spain, mainly affecting females aged 8 to 11. Opacities were the most common lesions, with less than one-third of the tooth surface affected. Molars often had brown defects, while incisors showed white or yellow defects. Longitudinal studies and awareness programs for primary health care personnel are needed. |