



IAPD/Consensus Recommendations, 2020

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Grupe 5H, 5C i 5E

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- *Preporuke Međunarodnog udruženja dječjih stomatologa (International Association of Paediatric Dentistry) mijenjaju se i modificiraju kako se i struka mijenja i napreduje te bi trebale dovesti do ujednačenije zdravstvene zaštite utemeljene na dokazima.*
- *Omogućuju studentima i praktičarima pristup aktualnim znanostima.*



Minimal Invasive Dentistry: Foundational Articles and Consensus Recommendations, 2020

Crystal YO, Marghalani AA, Ureles SD, Wright JT, et al. Use of silver diamine fluoride for dental caries management in children and adolescents, including those with special health care needs. *Pediatr Dent.* 2017, 15; 39(5): 135-145

Chatzimarkou S, Koletsi D, Kavvadia K. The effect of resin infiltration on proximal caries lesions in primary and permanent teeth. A systematic review and meta-analysis of clinical trials. *Journal Dentistry* 2018; 77: 8-17.

IAPD Consensus Recommendations

- 1.** Minimal invasive dentistry focuses on caries arrest procedures rather than surgical intervention.
- 2.** The strategies for minimal invasive dentistry include: early caries detection and caries risk assessment; remineralization of demineralized enamel and dentin; optimal caries preventive measures; minimally invasive surgical interventions; and repair rather than replacement of restorations.
- 3.** Demineralized, non-cavitated carious lesions may naturally arrest or arrest through preventive interventions.
- 4.** The use of silver diamine fluoride (SDF) can be effective in arresting cavitated caries lesions.
- 5.** Micro-invasive approaches such as infiltration methods, can be effective in the management of non-cavitated proximal carious lesions.
- 6.** The use of minimal invasive dentistry should be complemented by preventive measures for caries arrest that include optimization of patient's topical fluoride exposure, and maintenance of good oral health practices.
- 7.** When necessary, surgical interventions should emphasize minimal cavity designs, conservative removal of carious dentin approximating the pulp, and adhesive restorative materials.

How to cite: IAPD Foundational Articles and Consensus Recommendations: Minimal Invasive Dentistry, 2020.
http://www.iapdworld.org/06_minimal-invasive-dentistry.

Management of Dental Erosion: Foundational Articles and Consensus Recommendations, 2020

Bartlett D, Ganss C, Lussi A. Basic Erosive Wear Examination (BEWE): a new scoring system for scientific and clinical needs. *Clin Oral Invest* (2008) 12 (Suppl 1):S65–S68.

Ganss C. Is Erosive Tooth Wear an Oral Disease. *Erosive Tooth Wear*. Lussi A, Ganss C. (eds) *Monogr Oral Sci*. Basel, Karger, 2014, 25: 16-21.

IAPD Consensus Recommendations

- 1.** Dental erosion is defined as the irreversible loss of tooth structure due to chemical dissolution by acids not of bacterial origin. The acid source can be intrinsic (e.g. gastric acid) or extrinsic (e.g. dietary acids).
- 2.** The primary dentition is more susceptible to erosion compared to the permanent dentition due to its thinner and less mineralized enamel.
- 3.** Once dental erosion is observed, the location and level of erosion should be documented by utilizing a scale (e.g. BEWE scale, Keels-Coffield scale).
- 4.** The acid etiology of the dental erosion should be explored. Acidic dietary exposures, history of gastro-esophageal reflux disease (GERD) and Bulimia need to be considered. In pediatric patients, dental erosion on the molars is more common with GERD and dental erosion on the lingual of the upper incisors is associated with Bulimia. Dental erosion from dietary acids can appear on any tooth surface dependent upon how the individual drinks, chews, swishes, gargles or holds the acidic beverage or food in their mouth.
- 5.** If dietary acidic exposures is the culprit, then the patient and caregiver should be counseled to reduce acidic food and beverage exposure. One should avoid swishing any acidic beverages to avoid erosion of the facial surfaces of all teeth.
- 6.** If the child expresses symptoms of GERD (e.g. stomach aches, hot burps, heart or throat burning) then a referral to their medical provider should be made.
- 7.** If bulimia is suspected, then a referral to their medical provider is indicated.
- 8.** At each subsequent dental visit, dental erosion should be monitored and documented. Patients with erosive tooth wear should use an additional fluoride source like toothpaste or rinse preferably containing stannous fluoride. If the dental erosion is progressing, then the etiology needs to be re-addressed and appropriate management offered. Restorative intervention should be delayed as long as possible to allow for monitoring, Erosive lesions causing pain should be treated using minimally invasive restorative techniques.

Management of Molar Incisor Hypomineralization: Foundational Articles and Consensus Recommendations. 2020

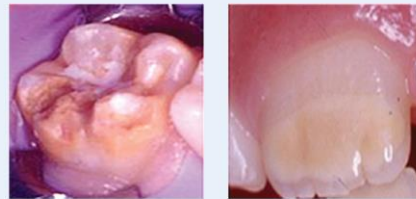
Da Cunha Coelho A, Mata P, Lino CA, Macho VP, Areias C, Norton A, Augusto A. Dental hypomineralization treatment: A systematic review. *J Esthet Restor Dent.* 2019; 31: 26-39.

Elhennawy K, Schwendicke F. Managing molar-incisor hypomineralization: A systematic review. *J of Dent* 2016; 55: 16-24.

Elhennawy K, Manton DJ, Crombie F, Zaslansky P, Radlanski RJ, et al. Structural, mechanical and chemical evaluation of molar-incisor hypomineralization-affected enamel: A systematic review. *Arch Oral Biol* 2017; 83: 272-281.

IAPD Consensus Recommendations

Molar Incisor Hypomineralization (MIH) presents as demarcated, qualitative developmental defects of enamel affecting minimum one posterior tooth with or without involvement of the permanent anterior teeth. The severity of MIH defects varies from mild to severe, and the clinical appearance from creamy/white through yellow to brown color with or without post-eruptive enamel breakdown and possible tooth hypersensitivity. Hypersensitivity impairs tooth brushing and thus increases the risk of caries for MIH teeth (mainly molars). MIH prevalence has been reported to be from 2 to 40%. Presence of hypomineralized 2nd primary molars is associated with higher risk of MIH in permanent molars.



1. Early diagnosis allows provision of preventive or early restorative intervention in order to avoid progressive breakdown and possible pulpal inflammation and hypersensitivity.

2. Restorations in MIH affected teeth are associated with poorer long-term outcomes than unaffected teeth.

3. Long-term treatment concepts include decrease in hypersensitivity, remineralization, sealants, resin infiltration, micro-abrasion, composites, amalgams, veneers and crowns.

- Hypersensitivity may be managed by arginine desensitizing paste and fluoride varnish.

- MIH affected enamel may have compromised bonding for sealants and composites. Adhesive restorations cavity preparations should extend into sound tooth hard tissue for better adhesion.

- Amalgam restorations show high failure rates in atypically shaped molar MIH-preparations. The need for retentive cavity preparations might aggravate existing tooth substance defects.

- Glass ionomer cements have high failure rate in MIH, but may be used for temporization of teeth.

- For mild cases of MIH in incisors a combination of be a conservative approach. For more severe cases, micro-abrasion or composite veneers may improve aesthetics. For severe cases of MIH in molars, full coverage crowns may be necessary for maintenance.

- Additional local anesthetic procedures may be necessary to manage hypersensitivity during restorative procedures.

4. Tooth extractions of first permanent molars with or without subsequent orthodontic alignment may be considered before the eruption of the second permanent molars when more than one tooth is affected with severe MIH and pain, considering the patient's dental age (preferably 8-9 years-old), and taking into account the occlusion and the status of the neighboring teeth.

5. Frequent recalls should be established for these patients, due to the high failure rate of the restorations in order to avoid secondary caries and more extensive breakdown.

Paediatric Periodontal Disease: Foundational Articles and Consensus Recommendations, 2020

Byrd G, Quinonez RB, Offenbacher S, Keels, MA and Guthmiller JM. Coordinated Pediatric and Periodontal Dental Care of a Child with Down Syndrome. *Pediatr Dent* 2015; 37(4): 381- 385.

Delaney JE, Keels MA. Pediatric Oral Pathology: Soft-Tissue and Periodontal Conditions. *Pediatr Clin North Am* 2000; 47(5):1125-1147.

Doufexi A, Mina M, Ioannidou E. Gingival Overgrowth in children: Epidemiology, pathogenesis, and complications. A literature review. *J Periodontol* 2005; 76: 3-10

Dougherty MA and Slots J. Periodontal Diseases in Young Individuals. *Cal Dent Assoc J* 1993; 21: 55-69.

Henry RJ and Sweeney EA. Langerhan's Cell Histiocytosis: case reports and literature review. *Pediatr Dent* 1996; 18: 11-16.

IAPD Consensus Recommendations

- 1.** At each dental examination, the health of the gingiva, periodontium and tooth mobility should be assessed and documented. Once the permanent dentition is established one should probe to confirm healthy alveolar bone levels. Appropriate radiographs should be obtained to document the health of the alveolus. Clinical photographs are helpful in documenting and monitoring the periodontal condition.
- 2.** Generalized gingivitis should be considered of viral origin initially. If the generalized gingivitis persists beyond two weeks, a non-viral systemic cause should be considered. Close follow-up is recommended. Most common differentials include cyclic neutropenia, chronic idiopathic neutropenia and leukemias. Appropriate medical referral is indicated for any periodontal conditions where a systemic cause is suspected.
- 3.** To assist in triaging a child with the presentation of pediatric periodontal disease, one can use the Keels-Quinonez Pediatric Periodontal Matrix (see attached) to aid in identifying the diagnosis.
- 4.** A child with non-trauma related loss of a primary incisor with only localized gingivitis before the age of 4 should be evaluated for hypophosphatasia. The tooth should be evaluated by oral pathology for the health of the cementum on the prematurely exfoliated primary incisor.
- 5.** A child with premature eruption of primary molars in the neonatal period should be evaluated for Langerhans Cell Histiocytosis X. A gingival biopsy of the tissue near the molar should be evaluated for presence of Birbeck granules.
- 6.** A child with persistent gingival inflammation beyond two weeks, may require periodontal culturing to help eliminate any anaerobic strains of bacteria that may be triggering an aggressive immune response as in Papillon-Lefèvre Syndrome or contributing to the inflammation and bone loss as in the neutropenias.
- 7.** Monitoring the gingival and periodontal health of patients with a diagnosis of a systemic disease is a critical marker for compliance as well as effectiveness of any medication used to enhance the immune response. An example would be documenting the effectiveness of granulocyte colony stimulating factor (G-CSF) in treating Cyclic Neutropenia or compliance with insulin in the treatment of insulin-dependent diabetes.
- 8.** In rare cases, a child may require a stem cell transplant to restore an intact immune system which will result in improved periodontal health. Examples where a stem cell transplant may be used is in children with Chronic Granulomatous Disease and Leukocyte Adhesion Deficiency Disorder.

Pediatric Periodontal Disease Matrix

Copyright MA Keels and RB Quinonez, 2003

	HEALTHY BONE (no alveolar bone loss)	DISEASED BONE (alveolar bone loss)
Healthy Gingiva (pink, firm, stippled)	Healthy gingiva and no bone loss	Healthy gingiva and bone loss <ul style="list-style-type: none"> • Hypophosphatasia ** • Inconclusive Pediatric Periodontal Disease (LJP) * • Dentin Dysplasia Type I • Post Avulsion / Extraction
Diseased Gingiva (erythematous, hemorrhagic)	Unhealthy gingiva and no bone loss <ul style="list-style-type: none"> • Gingivitis • Mouthbreathing Gingivitis • Gingival Fibromatosis • ANUG • Leukemia (AML / ALL) • HIV • Vitamin C deficiency • Eruption related gingivitis • Minimally attached gingival • Herpetic Gingivostomatitis • Thrombocytopenia • Aplastic anemia • Acrodynia • Vitamin K deficiency • Factical Injury 	Unhealthy gingival and bone loss <ul style="list-style-type: none"> • Neutrophil quantitative defect: (agranulocytosis, cyclic neutropenia, chronic idiopathic neutropenia)* • Neutrophil qualitative defect: (Leukocyte adhesion deficiency)* • Inconclusive Pediatric Periodontal Disease (LJP) * • Langerhan Cell Histiocytosis X *** • Papillon-Lefèvre Syndrome * • Diabetes Mellitus * • Down Syndrome * • Chédiak-Higashi Syndrome * • Chronic Granulomatous Disease * • Tuberculosis * • Ehlers-Danlos (Type VIII) • Osteomyelitis *

* bacteriological culture and sensitivity needed

** tooth biopsy needed

*** gingival biopsy needed

How to cite: IAPD Foundational Articles and Consensus Recommendations: Paediatric Periodontal Disease, 2020.

http://www.iapdworld.org/08_paediatric-periodontal-disease.

- <https://iapdworld.org/publications/iapd-consensus-recommendations/>

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