

# IADR/AADR publish studies on severe early childhood caries -- proposes new classification

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The International and American Associations for Dental Research have published two studies about dental caries in children. These articles, titled "Hypoplasia-Associated Severe Early Childhood Caries – A Proposed Definition" (lead author Page Caufield, New York University College of Dentistry) and "Deciduous Molar Hypomineralization and Molar Incisor Hypomineralization" (lead author M.E.C. Elfrink, Academic Centre for Dentistry, Amsterdam) discuss the definitions of dental caries susceptibility to the hypomineralization and hypoplasia.

The study by Caufield et al proposes a new classification of severe [early childhood](#) caries (S-ECC) called hypoplasia-associated severe early childhood caries (HAS-ECC). This form of caries affects mostly young children living at or below poverty, characterized by structurally damaged primary teeth that are particularly vulnerable to [dental caries](#). These predisposing developmental dental defects are mainly permutations of enamel hypoplasia (EHP). Anthropologists and dental researchers consider EHP an indicator for infant and maternal stresses including malnutrition, a variety of illnesses and adverse birthing conditions. Differentiation of HAS-ECC from other forms of early childhood caries is warranted due to its distinct etiology, clinical presentation and eventual management. According to the study, defining HAS-ECC has important clinical implications: therapies that control or prevent other types of caries are likely to be less effective with HAS-ECC because the structural integrity of the teeth is compromised prior to

their emergence into the oral cavity. The study suggests that to prevent HAS-ECC, dentists must partner with other health providers to develop interventions that begin with pregnant mothers with the aim of eliminating or ameliorating the covariates accompanying poverty, including better pre- and postnatal care and nutrition.

The study by Elfrink et al was embedded in the Generation R Study, a population-based prospective cohort study from fetal life until young adulthood. This study focused on the relationship between deciduous molar hypomineralization (DMH) and permanent molar incisor hypomineralization (MIH). First permanent molars develop during a period similar to that of second primary molars, with possible comparable risk factors for hypomineralization. Children with DMH have a greater risk of developing MIH. In this study, clinical photographs of clean, moist teeth were taken with an intra-oral camera in 6,161 children (49.8% girls; mean age 74.3 mos, SD  $\pm$  5.8). First permanent molars and second primary molars were scored with respect to DMH or MIH. The prevalence of DMH and MIH was 9.0% and 8.7% at child level, and 4.0% and 5.4% at tooth level. The odds ratio for MIH based on DMH was 4.4 (95% CI, 3.1-6.4). The relationship between the occurrence of DMH and MIH suggests a shared cause and indicates that, clinically, DMH can be used as a predictor for MIH.

"Data from over 6,000 children show that children with hypomineralization in the deciduous dentition (DMH: prevalence 9.0%) have a greater risk of developing hypomineralization in the permanent dentition (MIH; prevalence 8.7%)," said J.M. ten Cate, professor at Academisch Centrum Tandheelkunde Amsterdam and co-author of the study titled "Deciduous Molar Hypomineralization and Molar Incisor Hypomineralization". "Therefore, in clinical practice, extra attention needs to be paid to children with DMH in the period when their permanent molars and incisors are erupting, given their increased risk of having MIH."

Satu Alaluusua, University of Helsinki, Institute of Dentistry, Finland, wrote a corresponding perspective article entitled "Defining Developmental Enamel Defect-Associated Caries: Where are we now?" In it, she states that it would be of value to distinguish hypoplasia associated severe early childhood caries as a subgroup of S-ECC and she emphasizes that developmental enamel defects whether hypoplasia, hypomineralization or in combination can increase caries risk.

**More information:** [jdr.sagepub.com/content/early/recent](http://jdr.sagepub.com/content/early/recent)

Provided by International & American Associations for Dental Research

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