111. THE IMPACT OF DIABETES MELLITUS ON SYSTEMIC AND ORAL HEALTH IN CHILDREN: A REVIEW OF LITERATURE PUBLISHED BETWEEN 2020-2025

Author: Cristina Deșan**; Co-author:** Tudorina-Alexandra Deșan

Scientific adviser: Iurie Spinei, MD, PhD in Medical Sciences, Associate Professor, *Ion Lupan* Department of Paediatric Oral-Maxillofacial Surgery and Pedodontics, *Nicolae Testemitanu* State University of Medicine and Pharmacy, Chisinau, Republic of Moldova

Introduction. Diabetes mellitus is a major public health challenge of the 21st century. According to 2024 International Diabetes Federation (IDF) data, 589 million people worldwide have diabetes, projected to reach 853 million by 2050. The disease increasingly affects young individuals and even during the perinatal period.

Aim of study. To assess the literature on the impact of diabetes mellitus on systemic and oral health in children, highlighting salivary alterations, oral microbiota composition, and changes in hard and soft oral tissues with clinical relevance.

Methods and materials. The review used databases such as PubMed, National Library of Medicine, JAMA Network, Oxford Academic, MDPI, Google Scholar, National Bibliometric Instrument, Research4Life, with keywords “diabetes in children”, “type 1 diabetes”, “oral health implications”, and “systemic health”. According to the search criteria, a total of 599 articles were identified, of which 74 were available as free full-text articles published between 2020 and 2025. 49 articles were excluded due to an irrelevant sample size or because the participants were older than 18 years. As a result, 25 articles met the inclusion criteria and were selected for analysis.

Results. The analysis of 25 articles revealed that diabetes mellitus can impact health even during the perinatal period, contributing to complications such as premature birth, preeclampsia, and fetal death. Children with type 1 diabetes frequently exhibit bone health abnormalities, including reduced bone mineral density, low vitamin D levels, and decreased auditory acuity. Regarding oral manifestations, children with diabetes are characterized by dental surface colonization by Streptococcus mutans and Lactobacillus species, the primary bacteria involved in the etiology of dental caries. Xerostomia, with a prevalence of 34-51% among diabetic patients, represents another key risk factor for caries and may lead to halitosis, burning mouth syndrome, and taste alterations (5,7% sweet, 6,8% salty). Periodontal disease typically begins with exudative, hemorrhagic, and proliferative gingivitis, progressing to chronic marginal periodontitis, with destruction of alveolar bone and supporting tissues. Poor glycemic control increases recurrent stomatitis, aphthous ulcers, and opportunistic Candida infections (C. dubliniensis and C. tropicalis, 84% of cases).

Conclusions. Diabetes mellitus profoundly affects systemic and oral health in children, from perinatal complications and bone abnormalities to dental caries, periodontal disease, xerostomia, and infections. Interdisciplinary collaboration is essential to ensure the health of patients with diabetes.

Keywords. diabetes in children, oral health implications, systemic health.

https://doi.org/10.66603/medespera2026.189