A Developmental Approach to Pediatric Oral Health

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KEYWORDS

• Oral health • Oral development • Life course • Dentition • Child • Adolescent

KEY POINTS

- Oral health maintenance must be closely linked to oral and craniofacial development.
- Surveillance for many dental developmental milestones can occur at well-visits in pediatric primary care, providing an opportunity for anticipatory oral health guidance.
- Pediatric primary care providers can play an important role in early identification of oral health problems.

INTRODUCTION

Orofacial growth and development is distinct from the rest of the body because it does not cease at the end of epiphyseal growth. Rather, orofacial structures continue to evolve and change over the life course, and can be influenced by factors including genetic background and environment (ie, nutrition, trauma, infection). Using the life course framework, this article moves beyond the biomedical perspective to a more comprehensive approach that acknowledges the multifactorial, dynamic, and cumulative nature of factors affecting orofacial growth and development.[1] As shown in **Fig. 1**, the life course perspective allows for an examination of the cumulative effects of biological, social, and environmental factors from gestation through childhood (and into adulthood) on chronic disease experience and progression.[1] The life course approach has many

Disclosure: None of the authors have any disclosures.

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Pediatr Clin N Am 65 (2018) 885–907
https://doi.org/10.1016/j.pcl.2018.05.003
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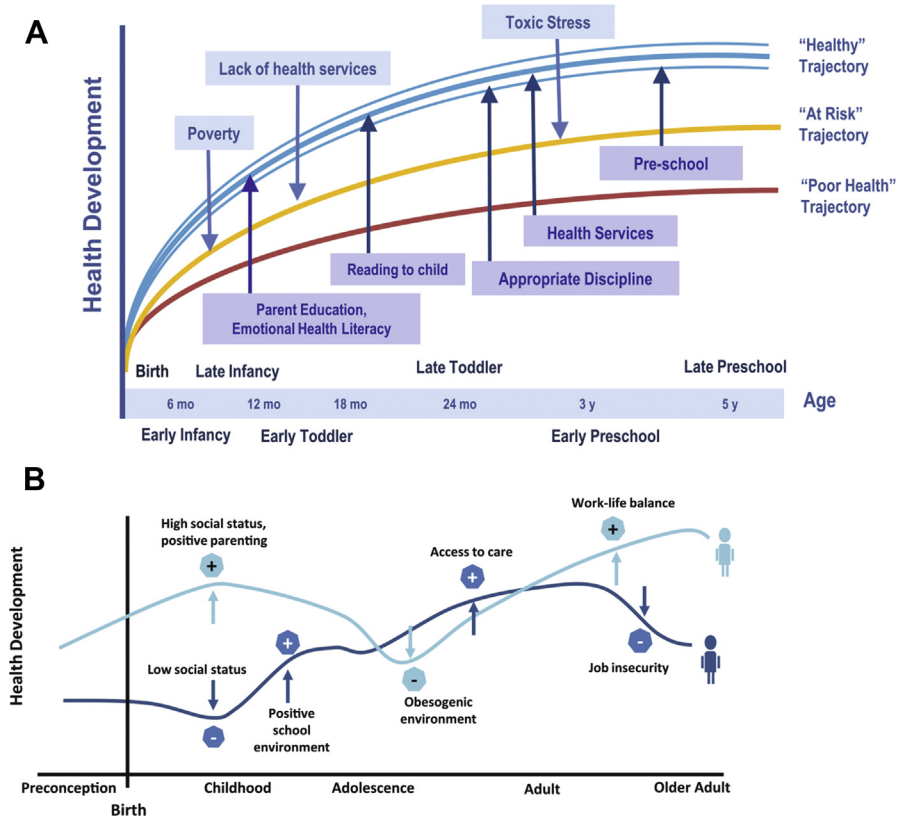

Fig. 1. Parts (*A*) and (*B*) show the effect of various health protective and injurious factors on lifecourse trajectories at different stages of human development. (*From* Halfon N, Larson K, Lu M, et al. Lifecourse health development: past, present and future. Matern Child Health J 2014;18(2):352; with permission.)

lessons to offer on population oral health, considering that the 2 most prevalent oral health conditions (dental caries and periodontal disease) are chronic and cumulative.

This article reviews the role of oral health in overall physical and social development in childhood and adolescence (**Table 1**). It begins with an examination of the effects of maternal oral health on children's oral health, and discusses the importance of establishing oral health maintenance routines in early childhood. It reviews important oral health–specific physical and social developmental milestones during early (0–3 years), middle (3–6 years), and late childhood (6–12 years) and adolescence (≥13 years). These age categories parallel time periods for tooth emergence and maintenance of the primary dentition (0–3 and 3–6 years), followed by the mixed dentition (6–12 years), and finally the permanent dentition (≥13 years). Issues particular to each age group are examined, as well as those spanning multiple age categories, including pediatric overweight and obesity, oral piercings, tobacco use, and dental trauma. It ends with an examination of the oral microbiome and emerging salivary diagnostics as promising research areas that can further the understanding of oral health and development in health and disease as we enter the era of personalized health care.

Although not reviewed in this article, the authors acknowledge that early life experiences and oral health status can have significant influence on oral health throughout the life course. For example, dental disease is a leading cause of school absenteeism,

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