

# PREVENTION OF EARLY CHILDHOOD CARIES WITH PRENATAL ORAL HEALTH CARE

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## INTRODUCTION

Dental caries is perhaps the most common bacterial infection in humans. Mutans streptococci are the principal bacteria responsible for dental caries. Infants are thought to acquire these organisms by vertical transmission from an infected individual, primarily the mother within a discrete period called the "window of infectivity". Recent investigations showed that colonization of *S. mutans* can occur in pre-dentate infants. If an infant acquires MS from the mother before or after the emergence of the primary teeth, preventive interventions aimed at reducing the mother's burden of MS could prevent or reduce the vertical transmission of these organism to infants and hence reduce subsequent caries experience.

## PURPOSE

The goal of this literature review was to show, if prenatal preventive interventions done in pregnant mothers, like dental health prophylaxis by fluoride application and chlorhexidine mouthwash, can prevent transfer of MS from mother to fetus and, hence, reduce early childhood caries (ECC) occurrence in their children.

## METHOD

A review of literature was done using four search engines (PubMed, Scopus, Google Scholar, and Science Direct) with keywords: Prenatal Oral Health Care, ECC, Caries, and Streptococcus Mutans. The search was run with no language restrictions and covered period 1997 – 2016.

### PREGNANCY



**EARLY PREGNANCY**  
It is important to see a dental provider early in pregnancy. Dental treatment is safe and can be done during any trimester.

**MID PREGNANCY**  
Gingivitis or gum inflammation is more common during pregnancy due to hormones. Gingivitis can lead to gum disease if not treated, which is associated with having a baby too early and too small.

**LATE PREGNANCY**  
Cavity-causing germs can spread from your mouth to your baby's mouth.

## ORAL HEALTH AND PREGNANCY

Oral health care in pregnancy is often avoided and misunderstood by patients. Pregnant women are at higher risk of tooth decay for several reasons, including increased acidity in the oral cavity, sugary dietary cravings, and limited attention to oral health.



Untreated dental caries can lead to oral abscess and facial cellulitis. Children of mothers who have high caries levels are more likely to get caries. Pregnant patients should decrease their risk of caries by brushing twice daily with a fluoride toothpaste and limiting sugary foods. Patients with untreated caries and associated complications should be referred to a dentist for definitive treatment.

## EDUCATION AND PREVENTION PROGRAMS

Every pregnant woman should be assessed for dental hygiene habits, access to fluoridated water, oral problems (e.g., caries, gingivitis), and access to dental care. Oral examination should include the teeth, gums, tongue, palate, and mucosa. Patients should be counseled to perform routine brushing and flossing, to avoid excessive amounts of sugary snacks and drinks, and to consult a dentist. Status of and plans for oral health should be documented. Xylitol and chlorhexidine lower maternal oral bacterial load and reduce transmission of bacteria to infants when used late in pregnancy and/or in the postpartum period. Both topical agents are safe in pregnancy (U.S. Food and Drug Administration [FDA] pregnancy category B) and during breastfeeding. Studies have used different dosing levels, and the optimal dose for consistent prevention is unclear.

## RESULTS

Thirteen articles, including two meta-analyses and Cochrane Library review were included. Vast majority of studies were hospital-based. Many public health factors, like socioeconomic disadvantage, ethnic minorities, and quality of dental care in developing countries negatively influenced quality of dental care during pregnancy. Although characteristics used for analysis slightly differed in the reviewed studies, the positive influence of oral health maintenance of pregnant mothers leading to decreased incidence of ECC in their children was clearly demonstrated.

## CONCLUSION

There is no doubt that maintenance of good oral and dental health and preventive strategies including regular dental check-up during pregnancy are important for dental health of the child. However, even in the US and other developed countries, oral and dental health care is often neglected during pregnancy. Education, oral health promotion, and development of guidance programs addressing disparities, minorities, and ethnical differences for women, who are planning or are already pregnant, are critically important for prevention of ECC in children.



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