



# Pregnancy and the management of dental and oral health in expectant patients

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**Abstract:-** Pregnancy is a special and thrilling time in a woman's life since the human body goes through a lot of changes. Because the mouth is not an exception, maintaining excellent dental health is crucial when expecting. Oral health is typically the aspect of health that is neglected the most throughout life, and the main reason for this neglect is a lack of awareness on the part of the public. These issues are made worse when a woman is pregnant because of misunderstandings, false information spread by the media, and general ignorance. However, the truth is that a woman's body experiences a number of intricate physiological changes during pregnancy, which can negatively impact her dental health and ultimately have an impact on the results of her pregnancy, such as low birth weight or preterm birth. In order to prevent these issues during pregnancy, proper dental care is crucial. Eating foods that could lead to dental issues, brushing and flossing correctly, and

Regular dental checkups are one way to guarantee optimal oral health during pregnancy.

**Keywords:** Pregnancy, Oral health, Dental health, dental plaque.

## 1.INTRODUCTION

The reproductive process that results in the conception, incubation, and eventual birth of a new infant is called pregnancy. A woman's life is special and fascinating during pregnancy because it brings to light her incredible creative abilities. The developing fetus in the womb gets all of its need from the healthy body of its mother. As a result, expecting mothers need to take action to maintain their best level of health. Pregnant women experience several changes, and their mouths are no different. Maintaining good oral hygiene is crucial when expecting. Pregnancy and dental health are related. Pregnancy-related hormone fluctuations can make a pregnant woman's mouth more susceptible to dental issues from plaque and germs, which can have a negative impact on the growing fetus. Health professionals should have a responsibility to inform expectant mothers about the benefits of maintaining good dental health for both the mother and the fetus. Prenatal dental health counseling is crucial for educating expectant mothers about the problems that poor dental health presents to both the mother and the developing fetus.

## 2.PREGNANCY & ORAL CHANGES:

The complicated physiological changes that a woman's body goes through during pregnancy can have a negative impact on her dental health.

1. **Effect on Periodontal Tissues:-** However, the primary factor negatively affecting the health of periodontal tissues is the presence of bacteria in tooth plaque biofilms. However, there are also secondary reasons or factors that can produce oral alterations and negatively impact the periodontium. Examples of these include smoking, some drugs like CCBs, medical diseases like diabetes, vitamin deficiencies, and hormone changes like those that occur during pregnancy. A number of hormones, like as the sex steroids, affect the cellular constituents of periodontal tissues and may disrupt the processes underlying the pathophysiology of periodontitis. Significant changes in the periodontium may arise from fluctuations in the levels of these hormones in physiologic or non-physiologic situations, particularly when there is preexisting plaque-induced gingival inflammation. The following alterations are caused by these sex hormones (progesterone and estrogens) on the periodontium- Involvement in vascular

functions such as angiogenesis and vascular permeability, An effect of estrogen on salivary peroxidases, The increased level of estrogen in body, Progesterone-induced reduction of the anti-inflammatory reactions.

2. **Tooth surface loss in pregnancy-** Tooth surface loss, primarily through acid-induced erosion, may be seen if there has been nausea and associated repeated vomiting during pregnancy. The palatal surfaces of the upper incisors and canines are often the most affected. The woman commonly presents complaining of sensitivity, which is a consequence of the resulting dentine exposure.
3. **Dental caries & pregnancy-** Dental caries is a multifactorial bacterial illness that causes localized tooth deterioration through the fermentation of dietary carbohydrates by bacteria. Three key organisms are involved in the development and progression of dental caries: *Actinomyces* sp., *Lactobacilli*, and *Streptococcus mutans*.
4. **Mucosal Changes in pregnancy** –The oral mucosa proliferates and desquamates more during pregnancy as a result of the elevated estrogen levels. These desquamating cells improve the microenvironment by giving bacteria food and a conducive place to flourish, which may make teeth more susceptible to cavities.
5. **Halitosis** –During pregnancy, halitosis, or bad breath, is prevalent. During pregnancy, hormonal imbalances, morning sickness, dehydration, calcium shortage, and dental issues can all contribute to bad breath in women. Elevations in progesterone and estrogen levels may worsen the gums' inflammatory reaction to plaque, leading to gingivitis. Food might become trapped in the pockets created by swollen gums, which stinks.

### 3 ORAL HEALTH & ITS OUTCOMES ON PREGNANCY :

- **Preterm birth & low birth weight of developing baby:** Preterm birth, also called preterm birth, is the term used to describe when a baby is born earlier than the expected due date, typically before 37 weeks of gestational age, as opposed to the typical 40 weeks. It has been proposed that subclinical infections like periodontitis may be linked to low birthweight and premature delivery because pathogenic microorganisms or their microbial products, like lipopolysaccharide (LPS), can enter the uterus through the bloodstream and cause the decidua or membranes to release cytokines, which in turn cause the production of prostaglandins or even contraction of the uterine muscle. When produced in the periodontal tissues in response to LPS stimulation, inflammatory mediators such as cytokines and prostaglandins may also represent a genuine hazard to the fetoplacental unit, increasing the risk of premature delivery and low birthweight.
- **Fetal growth restriction:** The Prostaglandins, interleukins, cytokines, and tumor necrosis factor are examples of circulating inflammatory mediators that are elevated in periodontitis. In addition to these mediators, bacterial endotoxins from periodontal disease can cause fetal growth restriction and preterm deliveries.
- **Vertical transmission of cariogenic *Streptococcus mutans*:** The transfer of diseases or microorganisms from mother to child in the early postpartum period is known as vertical transmission. *Strep mutans* can be passed from mother to child through the placenta or by direct contact during or after delivery, and there is a considerable possibility that the baby will develop caries in the future as a result of this.
- **Severe and even life-threatening odontogenic infections:** Changes in immunological function during pregnancy can put patients with poor dental health at high risk of getting severe odontogenic infections, which can be fatal for both the mother and her unborn child.

### 4 DENTAL MANAGEMENT IN PREGNANT PATIENT :

The lack of oral health care during pregnancy may be attributed to patient, dental, and prenatal perceptions of the safety of dental therapy during pregnancy. Inaccurate beliefs about dental treatment during pregnancy can also be caused by pregnant women's ignorance of the relationship between oral health and pregnancy outcomes, a lack of two-way communication between gynecologists and the dentist, and occasionally the dentist's own reluctance to treat pregnant patients.

Pregnancy-related physiological changes provide some difficulties for the dentist and medical staff treating the expectant patient, but these can be effectively handled. Pregnancy brings about a lot of changes in the expectant mother; the timing of dental care can influence what needs to be done and how. These modifications and timings have led to the classification of dental care for pregnant patients into four groups, which comprise:

1. **Emergency treatment** - As the name implies, this type of care is necessary to prevent a patient's life from being in danger. Oral bleeding, Ludwig's angina, severe odontogenic infections, and traumatic traumas are among the emergencies in dentistry.
2. **Urgent care** — Patients who are exhibiting severe symptoms are deemed to require urgent dental care. It is not anticipated that a minor treatment delay will have a major impact on the course of treatment. This comprises non-severe dental abscesses, cracked tooth syndrome, and symptomatic irreversible pulpitis.
3. **Necessary treatment** – Dental care that is required during pregnancy is considered necessary if it has the potential to enhance the health of the expectant mother or fetus. Some instances are: mild discomfort brought on by a broken tooth, teeth with impaired periodontal health that could become avulsed and aspirated during intubation if the mother is given general anesthesia during childbirth, cavities that are either symptomatic or may develop into symptomatic during pregnancy, irreversible pulpitis with no symptoms

4. Elective therapy - Neither the pregnant woman's nor the fetus's health is anticipated to be impacted by elective dental care. This covers dental whitening, veneers (no caries), and cosmetic surgery.

Anytime during her pregnancy, a healthy expectant mother experiencing a typical pregnancy should have her urgent and emergency dental requirements attended to. The patient's condition and the nature of the pathology will determine whether dental treatment is provided at an outpatient dental clinic or a hospital.

#### 5 TIMMINGS OF DENTAL TREATMENTS IN PREGNANT PATIENTS:

Conventional wisdom dictates that no dental work of any sort should be done in the first trimester of pregnancy in order to protect the developing fetus during organogenesis. However, there is now insufficient evidence to disregard dental care, even in the first trimester of pregnancy. Emergency dental procedures are recommended at all times during pregnancy and can be carried out at any stage when postponing necessary care could put the mother and the fetus at serious risk. The start of the second trimester is the best time for a pregnant woman to have all elective dental operations. The uterus is not yet big enough to cause discomfort, nausea and vomiting have gone, and there is no risk of teratogenesis at this point. But it's crucial to keep in mind that removable partial dentures, crown and bridge, and major restoration should wait until after pregnancy.

#### 1. The following are first trimester dental care recommendations:

- a. Inform the patient about changes in the mother's mouth during pregnancy;
- b. Stress the importance of following rigorous oral hygiene instructions in order to control plaque.
- c. Restrict dental care to emergency care and periodontal prophylaxis alone;
- d. Steer clear of elective procedures.
- e. Steer clear of routine radiography. Use sparingly and only when necessary.

#### 2. Dental treatment suggestions for the second trimester include:

- a. Plaque control and training on oral hygiene Avoid routine radiography;
- b. Scaling, polishing, and curetting may be done if necessary;
- c. Elective dental care (root canals, extractions, restorations) is safe; and
- d. Use sparingly and only when necessary.

#### 3. The following suggestions should be followed throughout the third trimester:

- a. teach oral hygiene and control plaque;
- b. perform scaling, polishing, and curettage if necessary;
- c. control active oral illnesses;
- d. reduce the use of radiographs.
- e. While elective dental care is safe to undergo, it is best to avoid it in the second half of the third trimester.

•General advice for dental care during pregnancy: Pregnant women should only have brief appointments at the dentist's office. It's critical to reduce stress in expectant mothers. Since there is a decrease in cardiac output as a result of growing fetus and physiological changes, and since pressure from the developing fetus on a dental chair can further reduce cardiac output, it is important to avoid patient mishaps by using the left lateral position during short appointments and avoiding the supine position on a dental chair. In dental radiography, the employment of lead aprons and high-speed film has been rather common. Because amalgam restorations leak mercury when a woman is pregnant, their use is contentious. Because mercury is known to induce congenital abnormalities, it is not advisable to use these restorative materials.

#### 6 DRUGS USE IN DENTISTRY IN PREGNANT PATIENTS:

The safety of drugs to the growing baby is the main worry when it comes to their administration during pregnancy. The US FDA has established many drug categories in order to assess the hazards associated with drug usage during pregnancy. Of these, categories A and B are deemed safe. Medications that are safe to use during pregnancy in order

to receive dental treatment or diagnosis include:

- a. Local anesthetics: Because lignocaine belongs to group B, it is safe to use during pregnancy.
- b. Analgesics: paracetamol category B, aspirin falls in c/d and should not be taken in the third trimester, ibuprofen low dose should also not be taken in the third trimester.
- c. Antibiotics: Amoxicillin and amoxicillin-clavulonate, azithromycin, cephalosporins, and erythromycin (apart from estolate form) are safe antibiotics for dental prescriptions.
- d. Mouthwashes: According to the US FDA, pregnant women can safely be prescribed chlorohexidine mouthwashes since they are classified as category B. Therefore, understanding medications and their effects is crucial for the proper prescription of antibiotics and analgesics in dental practices.

7 CONCLUSION: Based on the above overview, we can infer that the hormonal changes brought on by pregnancy raise the risk of gum disease, which can be dangerous for the mother and have an effect on the health of the unborn child. In order to inform patients about the connection between oral health and pregnancy, doctors and midwives should provide prenatal patient counseling or send them to a dentist. In order to maintain a healthy oral environment during this critical time, the patient should also be given dietary instructions and instruction on proper brushing and flossing techniques. This will help to prevent pregnancy complications that may arise from poor oral health.



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