**Disease/Medical Condition**  
**PREGNANCY**  
Date of Publication: Sept. 11, 2014

### Is the initiation of non-invasive dental hygiene procedures* contra-indicated?

**No.** Routine dental hygiene care is generally safe for the healthy pregnant patient/client.

- Is medical consult advised? No, unless significant unaddressed medical concerns are detected/suspected on history or clinical examination (e.g., blood pressure exceeding 140/90, pregnancy-induced hypertension, gestational diabetes, threat of spontaneous abortion, or history of premature labour) or if patient/client has not yet accessed prenatal care.

### Is the initiation of invasive dental hygiene procedures contra-indicated?**

**No.** Invasive dental hygiene procedures can safely occur during all three trimesters, with early second trimester (i.e., 14 to 20 weeks' gestation) being the safest period to provide routine oral health care. (Early second trimester is after organogenesis has been completed, with lower pregnancy loss compared to the first trimester. As well, the pregnant uterus is below the umbilicus, and the woman is generally more comfortable than she will be as the pregnancy progresses.)

- Is medical consult advised? ........................................... See above.
- Is medical clearance required? ........................................... No
- Is antibiotic prophylaxis required? ........................................... No
- Is postponing treatment advised? ................................. No, unless there are specific current medical concerns, such as pregnancy-induced hypertension or threat of spontaneous abortion (as suggested by vaginal bleeding/spotting). After the middle of the third trimester (about 35 weeks' gestation), elective dental hygiene care is often best postponed because of increasing discomfort that many expectant mothers experience. (It is very unlikely that any dental hygiene procedure itself would be implicated in spontaneous abortion, provided fetal hypoxia and exposure of the fetus to teratogens are avoided.)

### Oral management implications

- As a result of vasomotor instability, pregnant patients/clients are susceptible to postural hypotension. Therefore, changes in dental chair position from reclining to upright should be performed very slowly.
- During late pregnancy (especially the last half of the third trimester), supine hypotensive syndrome may occur as a result of compression of the inferior vena cava by the enlarged uterus. This manifests as an abrupt fall in blood pressure, bradycardia, lightheadedness, pallor, sweating, nausea, weakness, and air hunger when the patient/client is in a supine position. This condition can be remedied by having the patient/client roll on her left side and placing a pillow or rolled towels to elevate her right hip or buttock by about 15 degrees. This positioning lifts the uterus off the vena cava. Prolonged time in the dental chair should be avoided after the mid-third trimester. Scheduling short appointments, allowing the patient/client to assume a semi-reclining position, and ensuring frequent changes of position will minimize problems.
- Pregnant women have delayed gastric emptying due to hormonal changes and an incompetent lower esophageal sphincter. As a result, pregnant patients/clients should be considered to always have a “full stomach”, and thus are at increased risk of aspiration. Intra-office gastroesophageal reflux can be reduced by keeping the dental chair as upright as possible to relieve abdominal pressure and keep the patient/client comfortable.
- X-ray exposure should be minimized during pregnancy (especially during the first trimester), with lead apron and thyroid collar being used if X-rays must be taken of the mouth. Digital radiography, which uses less radiation than traditional film, may decrease risk even further.
- Tooth mobility, localized or generalized, occurs uncommonly during pregnancy. Such mobility is sign of gingival disease, disturbance of the attachment apparatus, and mineral changes in the lamina dura. Daily removal of local irritants, adequate levels of vitamin C, and delivery of the baby usually result in reversal of tooth mobility.

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Oral management implications  (cont’d)

- Fluoride treatment may be indicated for patients/clients with severe gastric reflux; because topical fluoride gel may cause nausea, application of a fluoride varnish may be better tolerated. Fluoride-containing mouth rinses (alcohol-free) are an option for home use.

- Small pyogenic granulomas (see below) respond to local debridement, chlorhexidine rinses, and improved oral hygiene measures, but large lesions require deep excision by a dentist. If excised during pregnancy, the granuloma may recur; therefore patients/clients should be advised that additional surgical procedure might be needed postpartum.

- If the dental hygienist discovers an odontogenic infection, prompt referral for treatment should occur. Although pregnant patients/clients are not usually immunocompromised, the maternal immune system does become suppressed in response to the fetus; consequently, odontogenic infections have the potential to rapidly develop into deep-space infections.

- Pregnant women should be advised to check with their physician before taking over-the-counter (and prescribed) medications during pregnancy. Acetaminophen, overall, is considered the safest analgesic for use during all three trimesters.

- Dental hygienists have a role in promoting good preconception and prenatal care. Eating a well balanced diet; avoiding alcohol, cigarettes, and illicit drugs; limiting caffeine; and maintenance of good oral hygiene are important advice to female patients/clients of childbearing age.

- Infertility treatment may affect the oral cavity. Ovulation induction may exacerbate gingival inflammation, gingival bleeding, and gingival crevicular fluid (GCF) volume; duration of induction drug use is correlated with severity of gingival inflammation. The dental hygienist has a role in educating the patient/client about these potential side effects, and in managing their manifestations.

- Nitrous oxide use during dental treatment is controversial. At a minimum, it is best to avoid nitrous oxide in the first trimester of pregnancy, when organogenesis is occurring. Pregnant dental hygienists should minimize their exposure to nitrous oxide, particularly during the first trimester. Exposure should not exceed 50 ppm N₂O in the air for 8 hours per week.

- Maternal plaque control may reduce the risk that the infant will become infected with oral *Streptococcus mutans* and develop caries. Maternal saliva is the primary vehicle for the transfer of cariogenic streptococci to the infant.

Oral manifestations

- **Pregnancy-associated gingivitis** (PAG) is the most common oral complication of pregnancy. This hormone-related condition, which is exacerbated by poor oral hygiene, begins at the marginal and interdental gingiva, and it results from an exaggerated gingival inflammatory reaction to local irritants. Progression leads to development of fiesty red and edematous interproximal papillae that are tender to palpation. Tissues may be smooth and shiny, bleed easily, and involve increased probing depths. PAG usually starts during the second month of pregnancy and persists until after parturition, at which point the gingival tissues usually regress to the pre-pregnancy state, provided proper oral hygiene measures are implemented and any calculus present is removed.

- In about 1% of pregnant women, the hyperplastic response of pregnancy gingivitis may result in a localized pyogenic granuloma or “pregnancy oral tumour”. The most common location for this vascular lesion is the labial aspect of the interdental papillae, and it is usually lobulated and pedunculated (attached by a stem) with intense red to deep purple colour. The granuloma — typically no larger than 2 cm — is usually asymptomatic, but toothbrushing may traumatize the lesion and result in bleeding. Occurring in less than 10% of pregnancies, the lesions are most common after the first trimester and usually recede after delivery, but sometimes surgical excision is required during or after pregnancy.

- Pregnancy itself does not cause periodontal disease, but may modify or worsen pre-existing disease. Gestational diabetes, however, may be associated with an increased risk for periodontal disease.

- Pregnant women may be at higher risk for dental caries for several reasons, including increased acidity in the oral cavity and dietary cravings for sugary foods.

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## Oral manifestations

- Some expectant mothers may experience extreme nausea and frequent vomiting, which can be a cause of halitosis and enamel erosion. As well, taste alterations and increased gag response are common.
- Ptyalism (excessive secretion of saliva) is a complication of pregnancy that occurs most commonly in women suffering from nausea. In extreme cases, as much as 2 litres of saliva per day is lost through drooling. Reduction in the consumption of complex carbohydrates may improve this condition.
- Increased estrogen production during pregnancy results in edema of the nasal tissues, leading to nasal congestion and increased tendency to epistaxis (nosebleeds). As nasal breathing becomes more difficult, there is a tendency to breathe with the mouth open, especially at night. This can contribute to xerostomia, with the attendant loss of protection against dental decay provided by saliva.
- Oral herpes simplex flare-ups may be precipitated by the mild immunosuppression that develops during pregnancy.
- Contrary to popular misconception, pregnancy does not cause tooth loss — calcium is not mobilized from the maternal dentition to supply fetal requirements.

## Related signs and symptoms

- Normal pregnancy last about 40 weeks, with most organogenesis (formation of organs) occurring in the first trimester. A notable exception to the decreased risk of fetal malformations after the first trimester is the fetal dentition, which is susceptible to malformation from toxins or radiation, as well as discolouration caused by administration of tetracycline to the mother.
- Maternal fatigue is common during the first trimester, with a tendency towards syncope and postural hypotension. During the second trimester, patients/clients typically have a sense of well being and relatively few symptoms. During the third trimester, increasing fatigue and discomfort, sometimes accompanied by mild depression, may occur, and sleep is often impaired.
- Nausea and vomiting, or “morning sickness”, occurs in up to 70% of pregnancies. Typical onset is between 4 and 8 weeks’ gestation, with improvement by 16 weeks. However, between 10% and 25% of women still experience symptoms at 20 to 22 weeks of gestation, and some women experience this throughout their pregnancy.
- Common complications of pregnancy (particularly in expectant mothers who smoke and harbour oral and extraoral pathogens) include infection, enhanced inflammatory response, glucose abnormalities (i.e., insulin resistance), and hypotension.
- Anemia often occurs as pregnancy advances because blood volume increases more than red blood cell mass. As a result, there is often a marked need for increased folate and iron.
- The increase in blood volume associated with pregnancy is associated with high flow-low resistance circulation, tachycardia, and heart murmurs, and it may unmask glomerulopathies (kidney disease), peripartum cardiomyopathy, arterial aneurysms, or arteriovenous malformations in a pregnant woman.
- Pregnancy is associated with a hypercoagulable state, as well as a degree of immunosuppression. The decrease in cellular immunity likely explains why autoimmune-mediated diseases, such as rheumatoid arthritis, often improve during pregnancy.
- Changes in respiratory function include elevation of the diaphragm by the expanding uterus, which decreases total lung capacity. This can contribute to dyspnea (shortness of breath) that is worsened in the supine position.
- Gestational diabetes mellitus (GDM) occurs in 2% to 6% of pregnant women, and is most commonly diagnosed after 24 weeks of gestation. In most women, it does not cause noticeable symptoms during pregnancy. However, the birth weight of the child is typically greater than normal, and mothers with GDM have an elevated risk of developing Type 2 diabetes later in life, as does the child.

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**Disease/Medical Condition**

**PREGNANCY**

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<th>Related signs and symptoms (cont'd)</th>
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<tr>
<td>Hypertension occurs in some pregnant women, sometimes leading to preeclampsia (hypertension with proteinuria) in the late second or third trimester, and more rarely to the very serious eclampsia if seizures or coma develop. Preeclampsia is signaled by sudden weight gain, ankle swelling, headache, and vision changes.</td>
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<td>There is no evidence that a pregnant woman’s pre-existing mercury-containing amalgam fillings cause any adverse effect on the fetus.</td>
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<td>During the postpartum period, the mother may suffer from lack of sleep and, less commonly, postpartum depression.</td>
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<th>References and sources of more detailed information</th>
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* Includes oral hygiene instruction, fitting a mouth guard, taking an impression, etc.

** Ontario Regulation 501/07 made under the *Dental Hygiene Act, 1991*. Invasive dental hygiene procedures are scaling teeth and root planing, including curetting surrounding tissue.

**Date:** August 3, 2014