

# FEATURE ARTICLE

## Women's Oral Health Issues

Across a woman's lifespan, several gender-specific differences in health and disease may affect her oral health. Hormonal fluctuations, in addition to affecting a woman's reproductive system, have a strong influence on the oral cavity.<sup>1</sup> Puberty, menses, pregnancy and menopause are life stages that all influence a woman's oral health and should factor into a dental care provider's approach to therapy.<sup>1</sup>

### Puberty

The microbial environment of the oral cavity changes during puberty. Some bacterial species flourish in the presence of elevated concentrations of sex hormones,<sup>1</sup> and, concurrently, the response of gingival tissues to hormones is increased. Heightened local response of the gingiva to food debris, materia alba, plaque and calculus deposition, resulting in gingivitis, also occurs.<sup>1-3</sup>

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*Hormones in women influence oral health by acting directly on oral tissues, as well as by affecting a multitude of other body systems that in turn produce effects in the oral cavity.*

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### Menses

Oral changes that may accompany the menses include swollen gingival tissues, activation of herpes labialis, aphthous ulcers, prolonged hemorrhage following oral surgery, and swollen salivary glands.<sup>1</sup> Some women experience swollen and bleeding gums in the days preceding the onset of menstrual flow which resolves once menses begin. Swelling of the salivary glands, particularly the parotid, occurs occasionally during menses. In a pattern related to their menstrual cycle, some women may experience intra-oral recurrent aphthous ulcers and herpetic lesions which appear during the luteal phase of the cycle and heal after menstruation.

### Young Adulthood

Habits affecting health develop throughout adolescence and are usually established during the young adult years. *Smoking*, for example, which is associated with periodontal disease and poor wound healing, often begins during the teen years.<sup>3</sup>

In early adulthood, oral health may also be affected by *eating disorders* such as anorexia nervosa, bulimia nervosa, and binge-eating disorders which are serious concerns in oral, as well as general health.<sup>2,4</sup> Oral manifestations in patients with eating disorders may include: 1) smooth erosion of tooth

enamel (perimylolysis); 2) dental caries; 3) traumatized oral mucosal membranes and pharynx; 4) variations in the periodontium; 5) xerostomia; or 6) enlargement of the parotid glands.<sup>2,4,5</sup> The most serious oral problems seen in individuals with eating disorders stem from self-induced vomiting. *Perimylolysis* is the most common and dramatic effect of chronic (at least two years) regurgitation of gastric contents, the clinical manifestation of which is a loss of enamel and dentin on the lingual surfaces of the teeth as a result of the chemical and mechanical effects caused mainly by regurgitation of acidic stomach contents and associated tongue movements.<sup>1</sup> The erosion usually has a smooth, glossy appearance. When the posterior teeth are affected, a loss of occlusal anatomy is common.<sup>1</sup>

### **Reproductive Years**

Oral contraceptives are synthetic hormones taken to prevent ovulation by hormonally mimicking pregnancy. This hormonal-like influence may cause gingival inflammation due to an exaggerated response to plaque.<sup>3</sup> Women taking oral contraceptives are also reported to experience a two- to three-fold increase in the incidence of localized osteitis following extraction of mandibular third molars.<sup>1</sup>

Adult women may also experience greater levels of periodontal disease coincident with increased stress levels. Stress results in raised serum cortisol levels that inhibit inflammation and compromise the host's ability to combat infection.<sup>3</sup>

### **Pregnancy**

During pregnancy, a woman is exposed to significant hormonal changes as the placenta produces high amounts of estrogen and progesterone which, in turn, affect the oral tissues. Gingivitis is a common finding in pregnancy, and pregnancy tumor may occur in some patients.<sup>6</sup>

Historically, it has been thought that pregnancy causes tooth loss, and calcium is withdrawn in significant amounts from the maternal dentition to supply fetal requirements. However, there exists no direct evidence supporting this belief. Calcium is present in the teeth in a stable crystalline form which makes it unavailable for the systemic circulation to supply a calcium demand.<sup>1</sup> Although there is no loss of skeletal calcium in pregnancy, the rate of bone turnover and remodeling in pregnant women is twice that of non-pregnant women.<sup>1</sup>

Dental caries do not necessarily increase during pregnancy, though increases in dietary carbohydrate intake to meet energy demands may place a pregnant or nursing woman at increased risk for caries by providing greater amounts of a suitable substrate for cariogenic organisms.<sup>6</sup>

Adequate maternal health care and nutrition during pregnancy can have significant effects on both the mother's oral health and that of her unborn child. In severely economically deprived communities, maternal malnutrition has been found to result in malformed enamel in the child, known as

*odontoclasia*.<sup>6</sup> Some authors propose that one cause of early childhood caries might be malformed or defective enamel, either as hypoplasia, hypocalcification, or increased porosity.<sup>6</sup>

Maternal illness and environmental exposures may result in congenital craniofacial deformities in the child. Lack of adequate maternal prenatal care often predisposes women to premature delivery and low birth weight infants. Mothers with significant periodontal disease may be more likely to give birth to low birth weight infants than mothers with a healthy periodontium<sup>6</sup> (see the [Periodontal Page](#), this issue). These children may be susceptible to disturbances of dental calcification, along with delayed dental development and subsequent eruption.<sup>2,6</sup>

Fetal tooth formation can be affected by a range of factors.<sup>6</sup> Some examples are seen in the figure. (see [Figure](#)) By recommending preventive measures and taking a proactive approach in the early stages of pregnancy, dental professionals can ensure a healthier outcome for both the mother and child.<sup>2</sup>


## **Menopause**

Alterations in the amounts and types of sex hormones during the perimenopausal and menopausal years in women increase the risk of developing autoimmune (e.g., rheumatoid arthritis) and cardiovascular diseases,<sup>2</sup> with severe xerostomia (dryness of mouth) frequently accompanying these conditions.<sup>3</sup> The primary oral complications of xerostomia are susceptibility to dental caries and *candida* infection, while the presence of rheumatoid factor is associated with a chronically inflamed gingiva and greater-than-normal alveolar bone loss.<sup>3</sup>

Other commonly reported oral cavity changes in menopausal women (occurring in 20% to 90% of these patients) include oral discomfort (pain and burning sensations) and altered taste perception. Changes in the oral mucosa can vary from an atrophic pale appearance to a condition known as *menopausal gingivostomatitis*, marked by dry and shiny gingiva that bleed easily, and decreased salivary flow in the presence of disease.<sup>1</sup>

Osteoporosis is a common condition in the elderly that disproportionately affects women.<sup>3</sup> Generalized bone loss from systemic osteoporosis may render teeth susceptible to accelerated alveolar bone resorption and chronic periodontitis.<sup>1,3</sup> Although osteoporosis is not an etiologic factor in periodontitis, it can affect the severity of the disease in preexisting periodontitis.<sup>1</sup>

## **Conclusion**

Because the oral health status of women is continuously shaped by the interplay between biologic, behavioral and social forces, dental care providers must be alert in diagnosing and monitoring conditions to ensure that proper dental treatment is given. As always, appropriate preventive strategies are key in the management of women's oral health issues. 

## References

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