



## ORAL HEALTH OF WOMEN DURING MENOPAUSE AND ITS MANAGEMENT- A LITERATURE REVIEW

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### Abstract

Adaptive alterations at the systemic and oral levels are a result of menopause, which is characterized by physiological changes in women. Taking care of one's teeth and gums becomes more important as we all get older. Dentists are the first to notice the oral and mucosal changes that accompany menopause. The hormonal changes that occur in the mouth and gums soon before menopause make the teeth and gums more vulnerable to infections and make it harder for the body to fight off small infections and keep the oral environment balanced with good and bad bacteria. The purpose of this study was to have a better grasp of the various dental care regimens utilised during menopause and the key oro-dental issues that women experience during this time. For this literature review, we scoured “PubMed, PubMed Central, Cochrane, Google, Medknow, Ebsco, Science Direct, and Ind Med, among other well-known website search engines. A higher prevalence of oral mucosal and dental disorders, such as candidiasis, may result from the accumulation of pertinent data, which shows that periodontal health is most seriously impacted (up to 60%), followed by dry mouth (25%) and burning mouth (glossodynia; 15%).” Hormone replacement treatment works, but it won't stop or alleviate women's oral problems on its own. Hence, the establishment of more genuine therapeutic recommendations for the effective care of these ORAL DISEASES need well-controlled, long-term randomised research.

**Keywords:** Menopause, Oral health, Hormonal changes, Dental management, Burning mouth syndrome (BMS), Dry mouth, Periodontal health, Hormone replacement therapy (HT), Xerostomia

### Introduction

Menopause, also known as natural menopause, occurs when a woman's periods stop occurring naturally for 12 months in a row between the ages of 45 and 55 (mean 50–52).[1] Several clinical impacts, including changes in circulating sex hormone levels, might impact an individual's psychological state and quality of life throughout middle age, when a woman goes through the

climacteric cycle. In addition, menopause is accompanied by a number of hormonal changes that make gums more prone to plaque buildup, increasing the likelihood of gingivitis and advanced periodontitis.[2,3] The jaw's relative anchoring on teeth might be diminished as a result of menopause's effects on bones throughout the body.[4] The first line of defence against permanent damage is a regimen of perfect oral hygiene that includes brushing your teeth at least twice a day to remove tartar and plaque. Hormone treatment (HT) helps with other menopausal symptoms as well. As we enter the third century, HT is widely used to improve the dental health of women by reducing symptoms associated with menopause. [5,6]

Many women who are going through menopause have mouth discomfort in addition to other climacteric issues. Dry mouth, painful mouth (PM) caused by a number of reasons, and burning mouth syndrome (BMS) are the oral symptoms that women feel the most often before and throughout menopause. Dry mouth is the most prevalent oral symptom.

The presence of removable partial dentures might exacerbate painful oral symptoms, which are often linked to a decreased salivary flow rate. Oral candidiasis, oral ulcerations, diffuse gingival atrophy, and other conditions are possible side effects of dry mouth. [7,8]

Menopausal and postmenopausal women often have BMS as a serious problem. A persistent disorder known as burning sensation of the oral mucosa, dysgeusia (taste distortion), and xerostomia may occur in the absence of any visible lesions, abnormalities in laboratory testing, or underlying systemic disease. Moderate to severe burning or cutting sensations on both sides of the mouth, particularly the tongue, lips, and other oral mucosal surfaces, are common complaints from those who suffer from this condition. It would seem that xerostomia is more common in women than in males. [9,10,11] Recent studies have shown that the quality of life anxiety and anguish experienced by xerostomia patients varies with the **etiology** of the condition.[12] Nonetheless, Ship et al. found no variation in flow rates **among** women before and after menopause. [13,14] One possible cause of mouth problems during menopause is a decrease in salivary flow rate. Different oral and maxillofacial diseases do not seem to influence or change the salivary composition. Nonetheless, there is enough evidence in the literature to demonstrate that menopausal women's saliva undergoes changes in composition, particularly in protein and calcium content.[15] Taking all of this into account, it is crucial that patients who are approaching menopause or who are already going through it learn about the potential effects of menopause on their dental health and how to prevent problems like cavities and periodontal disease. The authors of this study set out to find solutions to the oral health issues that women and their doctors face during menopause by gathering information on the most common concerns, as well as practical recommendations and methods for managing these issues.

## **Material and Method**

A variety of resources were combed through using MeSH (Medical Subject Headings; PubMed) based keywords, including popular search engines (Google, Google Scholar, Yahoo), academic databases (PubMed, PubMed Central, Medline Plus, Cochrane, Medknow, Ebsco, Science Direct, Hinari, WebMD, IndMed, Embase), and textbooks. The terms used included "menopause," "post-menopausal complaints," "oral discomfort," "dental health," "saliva," "BMS," "dry mouth," and "xerostomia." Dental publications published in English and Spanish over the last 30 years were the only ones screened for reviews, meta-analyses, and clinical guidelines. We found 198 articles in total. We were able to narrow the list down to 42 publications after reviewing the abstracts and titles. Following data collection from each article, we included two more relevant papers (two case-control studies). In the end, 44 papers were taken into account to evaluate clinical outcomes and follow-ups after treatment.”

## **Oral Alterations During Menopause**

Menopausal women's rapidly shifting hormone levels are the main causes of the changes seen in the mouth. Below, we have listed the most common mouth symptoms that women experience

throughout menopause.

### **Periodontal health and menopause**

There is no causal link between rapid bone loss in postmenopausal women and endocrine disruption-induced bone resorption; rather, it seems to be the primary pathogenic mechanism. [16–20] Periodontal diseases are caused by hormonal changes in women and may manifest in several ways, including pregnancy and puberty-related gingivitis. [21,22] Periodontal disease susceptibility is only associated with menopause or an estrogen-deficient condition in a small number of research published in the literature. [23,24] On the other hand, periodontal disease may be preceded by systemic bone loss, and the increased risk of tooth loss after menopause is associated with lower bone mineral density [25,26] Thus, it is possible that future oral health outcomes may have been improved by preventing and treating osteoporosis after menopause.[25,27] Changes in periodontal health may be linked to fluctuations in sex hormone levels, according to a number of studies.[23] Periodontitis was shown to be more common in postmenopausal women who did not use HT compared to premenopausal women.[28] Alternatively, the periodontal health of postmenopausal women who used HT was comparable to that of premenopausal women. According to a German population-based epidemiological research including 4,290 individuals, postmenopausal women who used oestrogen had more teeth than males of the same age. Furthermore, compared to other women in the research, those who did not take hormone therapy had a lower number of teeth [29]. This confirms what was found in the American Women's Health Study, which followed 42,171 women after menopause and found that those who used HT at the time had a 24% decreased incidence of tooth loss compared to those who did not.[30] However, in order to assess the impact of HT on oral health indicators, more research with lengthier follow-up periods is required. Controversy persists on HT's function in relieving oral discomfort.[31,32]

### **BMS**

Most cases of burning mouth syndrome (BMS), often called glossodynia or stomatodynia, occur in middle-aged and older women. There is an obvious 7:1 female-to-male ratio in this condition.[33] When you have BMS, you may feel a burning sensation in several parts of your mouth, including your tongue, palate, lips, and even the places that hold your dentures in place. The lack of pathology evidence is a hallmark of this condition, which is often bilateral. Symptoms such as dry mouth or changes in taste perception may also occur. [34–36] It is still not known what the root reasons are. Some have proposed that neuropathic factors and female sex hormones might be involved, perhaps via oral mucosal small-fiber sensory neuropathy. Primary stomatodynia is differentiated from secondary BMS by standard clinical investigations and testing. Systemic clonazepam or low-dose topical (no ingesting) clonazepam is the treatment. The outcomes of using this medication with tricyclic antidepressants have been unpredictable.

### **Saliva and menopause**

Another typical sign in women who have gone through menopause is Xerostomia, which is subjective mouth dryness accompanied with hypo salivation. In most situations, patients do perceive less saliva production, even if hyposialia is truly present in just one-third of those cases.[17] The intensity of dry mouth and the content of 17-beta-estradiol in saliva were shown to be negatively correlated in a case-control study of 38 postmenopausal women.[17] Patients in this category should be advised to drink plenty of water and to stimulate saliva production by eating sugar-free sweets or chewing gum. Pilocarpine and other sialogogues may be necessary in some instances. Multiple authors have shown that a significant number of women (up to 45%) who begin taking HT report an increase in their overall well-being, including a decrease in mouth pain. Additionally, they have put up the idea of "increased saliva secretion" as the primary cause of this favourable discovery. (9, 10, 37–39) It seems that oestrogen has a role in determining the content of saliva in both pre- and postmenopausal women, according to these studies. Furthermore, it appeared that the overall quantity of salivary bacteria in perimenopausal and postmenopausal women was unaffected by HT. In a research conducted in the United States by Ship et al. on 43 healthy females before and after menopause, they found no changes in saliva production. This

indicates that menopause and HT do not have a substantial impact on salivary gland function in healthy women. In [13] Menopausal women experiencing oral dryness were shown to have lower levels of unstimulated salivary progesterone and salivary flow compared to those without dry mouth, according to a research that compared the two. Therefore, it seems that the sensation of mouth dryness during menopause is linked to the salivary progesterone level. [40]

In a comprehensive study conducted by Farzaneh et al., researchers discovered that the levels of salivary cortisol were directly related to the degree of mouth dryness in postmenopausal women. [41] Data on the effects of menopause on saliva comes from research with limited patient numbers, and there are no randomised controlled trials that examine how HT affects salivary production and composition. Therefore, bigger studies are needed to corroborate these somewhat contradictory findings. It should be mentioned that various studies have employed varying hormone levels for climacteric symptom relief, and that the current suggested doses are lower than those from the past. [39,42]

### **Appropriate Method for Menopause Dental Care and Oral Health**

Thorough intraoral examinations, including comprehensive assessment of mucosal membranes, periodontal and dental conditions, and amount and quality of salivary flow, should be performed on all postmenopausal women after a complete clinical history has been gathered. Whenever necessary, the important confirmation “tests (X-rays, periodontal probing, sialometry) should also be carried out. In addition, chemotherapeutic medicines like chlorhexidine digluconate, together with proper oral hygiene aids (interproximal brushes, dental floss, brushing frequency and technique), are essential for keeping dental plaque levels low. The buildup of dental plaque is reduced, periodontal disease” is improved, and caries (the removal of a significant amount of *Streptococcus mutans*) is prevented by these substances. Root caries, which are more common in the elderly, are specifically prevented. [16,43] Use of fluoride-containing toothpastes, varnishes, or gels are beneficial to prevent cavities.

### **Conclusion**

Periodontitis, BMS, and xerostomia may develop in postmenopausal women because to changes in the oral cavity caused by hormonal changes and the natural ageing of the oral tissues. Even while modern dental care makes it possible for patients to keep their natural teeth, many individuals nevertheless have periodontal issues. Interestingly, this analysis demonstrated that climacteric symptoms were often related with the relative frequency of PM, but that HT did not lessen the incidence of oral symptoms. Controversy persists on HT's function in relieving oral discomfort. Some women with menopause-related symptoms get relief with HT, whereas others do not, suggesting that the impact of HT is quite unique. Nevertheless, no randomised controlled trials have been conducted to address these inquiries at this time. Hence, authenticating the impact of HT on oral health markers requires more research with extended follow-up periods.

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