

Mouth on fire: Oral discomfort in postmenopausal women may be surprising!!

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In recent years, interest in the improvement of women's health has received great worldwide attention. The health of girls and women are affected by developmental, physiological, and psychological age. Women's lives are marked by a continuum from intrauterine life to the elderly years: Infancy, childhood and adolescence, menarche, reproductive life, the menopausal transition, postmenopausal years, the elderly, and frail elderly.

Across the life span of a woman, menopause probably has the greatest impact on health. Menopause is a natural aging process during which a woman passes from the reproductive to the nonreproductive years. Despite this natural process, many women still experience menopausal symptoms such as vasomotor episodes or "hot flashes," as well as pathophysiologic conditions such as loss of bone mineral density and thinning and drying of skin. These events induce major modifications in the genital apparatus as well as in other areas of the body.^[1]

The oral problems may include a paucity of saliva leading to xerostomia, burning mouth syndrome (BMS), increase in the incidence of dental caries, dysesthesia, taste alterations, atrophic gingivitis, periodontitis, and osteoporotic jaws [Table 1].^[2-4]

One of the major oral problems in these patients is BMS, which is characterized by intense pain and a spontaneous

burning sensation affecting mainly the tongue and sometimes the lips and gums.^[5] Menopause plays an important role in the incidence of glossodynia. Mean patient age for the onset of BMS is 50-60 years. Certain microorganisms such as *Candida albicans*, *Staphylococci*, *Streptococci*, and various anaerobes have also been suggested as the etiological factor of BMS, along with xerostomia (associated to Sjogren's syndrome, anxiety, and medication), anemia (Pernicious or Iron deficiency), nutritional disorders related to Vitamin B complex or iron, diabetes mellitus, climacteric hypoestrogenemia *per se*, certain mechanical factors (abnormal oral habits, chronic denture-induced irritation) and other idiopathic factors. Psychological disorders, including depression, anxiety, phobia for severe illnesses such as cancer and other psychogenic alterations appear to play a fundamental role. Because during menopause some women may experience neglect by their husband and children, or financial difficulties or a change in their role within the house. These problems may aggravate any psychological or sexual difficulties already being experienced, and are classified as psychosocial problems.^[6] The diagnosis of BMS is based on the compilation of a detailed case history, the absence of findings in the physical examination and laboratory tests and the exclusion of other possible oral disorders. In general, a clinical diagnosis is established without difficulty, though the factors underlying the symptoms are either difficult or impossible to identify. Treatment consists of low dose topical (without swallowing) or systemic clonazepam. The association of this drug to tricyclic antidepressants has afforded variable results.^[7]

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Table 1: Oral findings in postmenopausal women

Condition	Article	Oral findings
Xerostomia	Masler <i>et al.</i> (1951)	93% of subjects with oral complaint of dry mouth signifying the prevalence of xerostomia
	Kullander and Sonesson (1965)	Lower salivary secretion rates in menopausal women than menstruating women
	Wardrop (1989)	43% subjects with dry mouth
	Ship <i>et al.</i> (1991)	No significant differences in salivary flow volume in premenopausal women versus postmenopausal females
	Wactawski <i>et al.</i> (1996)	Dry mouth is not the only cause for oral malodor seen in postmenopausal women.
	Agha-Hosseini (2009)	Negative correlation between the severity of dry mouth sensation and the salivary concentration of 17-beta-estradiol
	Mirzaii-Dizgah, Agha-Hosseini (2011)	Salivary progesterone level appears associated with oral dryness feeling in menopause
Burning mouth syndrome	Minicucci <i>et al.</i> (2013)	Salivary flow was lower in menopausal group
	Delibasi <i>et al.</i> (2003)	(35%) of the female patients noticed alteration in taste perception during the postmenopausal period as particular microorganisms such as <i>Candida albicans</i> , yeast, <i>Streptococci</i> , plays an important role in of burning mouth syndrome
Periodontal health	Gao <i>et al.</i> (2009)	Menopausal women with burning mouth syndrome had higher follicle stimulating hormone levels and lower estradiol levels than those without oral symptoms
	Laine and Virtanen (1996)	No statistical changes in periodontal conditions between menopausal and nonmenopausal women by using the gingival index

Saliva plays an essential role in maintaining oral health. Postmenopausal women have decreased unstimulated and stimulated submandibular and sublingual salivary gland flow compared with premenopausal women; a finding unrelated to any medication effect. Alterations in salivary function may lead to impairment of oral tissues and have a large impact on the patient's quality of life. Dry mouth not only is annoying, but may lead to yeast infections, dental caries, mouth ulcers, and oral malodor because saliva functions to wash away food debris, plaque, carbohydrates, and helps prevent new plaque build-up along with remineralization of the teeth and combating harmful microorganisms. Dry mouth is not the only cause for oral malodor seen in postmenopausal women. Various other contributing factors such as those related to the digestive system increased the incidence of caries and periodontal problems, yeast overgrowth due to inability to maintain good denture hygiene, sinusitis, which are shown to afflict older people more than the younger are responsible for bad breath as seen in older females approaching toward menopause.^[2,8,9]

Other less common menopause-associated symptoms include bad or altered taste, viscous saliva and mucosal disorders such as lichen planus, benign mucosal pemphigoid, and Sjogren's syndrome.^[10] Nutritional status is also important during menopause as nutritional condition may have a direct effect on the chemosensory function, which in turn would induce changes in dietary habits. Individuals with loss of sensitivity to sweet tastes may sweeten foods with potentially serious consequences, especially for those with diabetes mellitus, cardiac disease, or obesity. A significant reduction in sucrose perception and palatal sensitivity in postmenopausal women is also noted.^[11]

Psychological distress in menopausal women may lead to eating disorders. Oral changes may crop from self-induced vomiting and resultant regurgitation of gastric contents. Smooth erosion of enamel, perimolysis, enlarged parotid glands, trauma to oral mucous membrane, and pharynx resulting from the use of fingers, combs, and pen to induce vomiting, angular cheilitis, dehydration, and erythema may be observed in menopausal women suffering from eating disorders.^[12] Trigeminal neuralgia is also known to occur frequently in postmenopausal women owing to compression of the superior cerebellar artery on any one of the branches of trigeminal nerve. The same is characterized by severe unilateral, lancinating, "electric shock" like pain usually in the middle and lower third of the face. Apart from this other neurological disorders such as Alzheimer's disease and atypical facial pain/neuralgia may affect postmenopausal women. Neurological disorders influence impression making procedures, jaw relation records, and denture retention. Thus, employment of anxiety and stress reduction protocols are suggested in menopausal women during treatment procedures.^[13,14]

Peri or postmenopausal women take hormone replacement therapy for relieving climacteric symptoms and increasing the quality of life.^[15] However, an improved comprehension of the systemic and oral manifestations at menopause shall facilitate an improved response of the physician, gynecologist, endocrinologist, as well as dentist, to the needs of the patients. Scientific advances, unique clinical circumstances, and individual patient preferences must be factored into clinical decisions.

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There are no conflicts of interest.

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