Menopause: Implications for Oral Health and Employers' Legal Responsibilities Toward Employees Experiencing Menopause

Aims:

To provide an overview of the potential effects of menopause on oral health and to summarise the 2024 Equality and Human Rights Commission (EHRC) updated guidance, with particular emphasis on the clarified legal responsibilities of employers towards employees experiencing menopause.

Objectives:

On completion of this verifiable CPD article the participant will be able to demonstrate, through completion of a questionnaire, the ability to:

- Define menopause and related terms.
- Identify the typical age of onset.
- Demonstrate knowledge of the general physiological changes that occur in the various systems of the body during menopause.
- Know the role of oestrogen and progesterone.
- Identify some of the potential oral manifestations of menopause including burning mouth syndrome, altered taste (Dysgeusia), xerostomia, and periodontal changes.
- Demonstrate knowledge of the preventive, diagnostic and therapeutic recommendations for the menopausal patient.
- Identify how Hormone Replacement Therapy (HRT) may impact on oral health during the menopause.
- Demonstrate knowledge of the 2024 Equality and Human Rights Commission (EHRC) updated guidance clarifying the legal responsibilities of employers towards workers experiencing the menopause.

Introduction

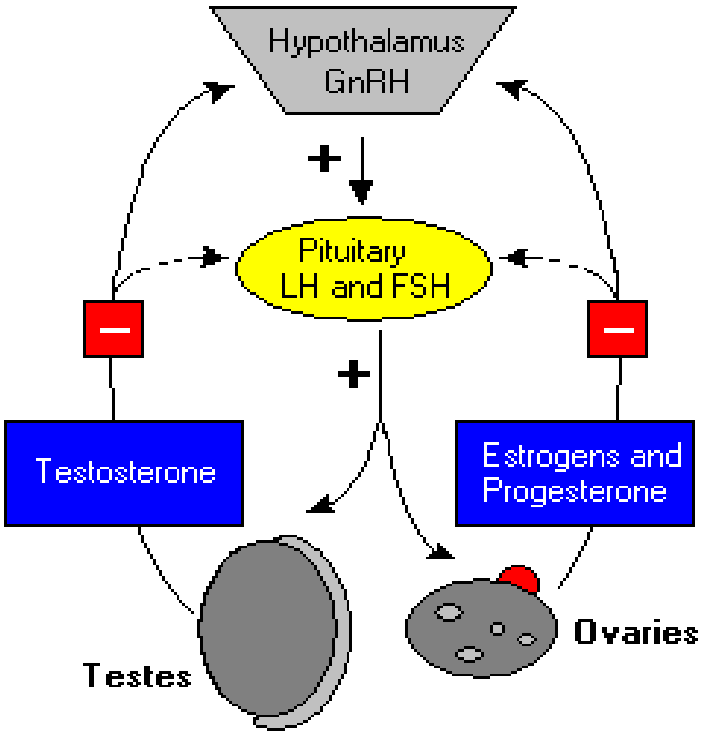
Menopause is the permanent cessation of menstruation and ovarian function and is a normal developmental stage in a woman's life, usually occurring between 45 and 55 years of age.[1,2] Menopause is diagnosed after 12 months of amenorrhoea (absence of menstruation).[3] In the UK, the average age for a woman to reach the menopause is 51.[2] However, around 1 in 100 women experience menopause before 40 years of

age.[2] Perimenopause consists of the years immediately preceding menopause and post menopause consists of the years after menopause.[4]

There are numerous symptoms that are associated with the menopause, and symptoms may vary greatly from person to person. These symptoms can include hot flashes, night sweats, vaginal dryness, sleeping difficulties, low mood or anxiety, reduced sex drive or problems with memory and concentration.[2]

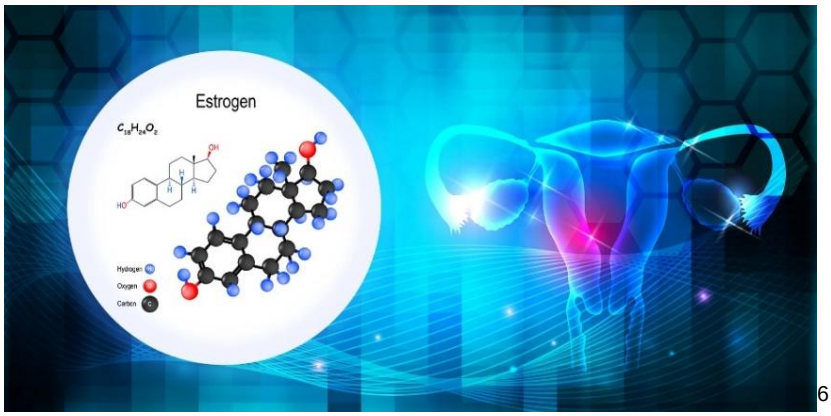
It has been reported that different phases of a woman's life: puberty, menses, pregnancy, and menopause have a varied influence on her oral health.[1] The decrease in oestrogen levels during menopause can significantly alter the oral environment. Oestrogen plays a key role in maintaining the health of bones, connective tissue, and mucosal linings, including those in the mouth. The dental professional should therefore be aware of the potential impact that menopause can have on oral health in order to be able to provide appropriate advice and oral health care during this time.

Hormonal Changes During Menopause.



The pituitary gland produces a number of different hormones that act on different target glands or cells. Two of these hormones are Luteinising hormone (LH) and Follicle-stimulating hormone (FSH) which are known collectively as gonadotropins. LH and FSH target the ovaries in women to produce oestrogen and progesterone, and testes in men to produce testosterone and sperm.[5]

Oestrogen



[6]

Oestrogen has a role throughout the body, such as:

- Developing and maintaining the reproductive system.
- Stimulating growth of breast tissue.
- Maintaining vaginal blood flow and lubrication.
- Causing lining of the uterus to thicken during the menstrual cycle.
- Keeping vaginal lining elastic.
- Contributing to cognitive health.
- Contributing to the function of the cardiovascular system.
- Contributing to bone health.[7,8]

There are three main types of oestrogen in the body:

1) **Oestrone (E1)** - This is the primary form of oestrogen after menopause. It is less potent than Oestradiol and does not follow the cyclical fluctuations seen in reproductive years.
2) **Oestradiol (E2)** - This is the most potent and prevalent oestrogen during the reproductive years. It plays a key role in regulating the menstrual cycle and enabling ovulation. After menopause, its levels decline significantly.[4]
3) **Oestriol (E3)** - This is the weakest form of oestrogen and is produced in significant amounts during pregnancy. Levels peak just before childbirth.

During perimenopause, the levels of oestrogen can fluctuate and eventually production falls to a very low level. When oestrogen is too high or too low, it may cause symptoms such as:

- Menstrual cycle changes
- Dry skin
- Breast tenderness
- Hot flashes
- Night sweats
- Palpitations
- Headaches
- Insomnia

- Fatigue
- Weight gain
- Decreased sex drive
- Mood swings
- Bone loss
- Vaginal dryness
- Anxiety or depression[9]

Progesterone

Progesterone is a steroid hormone primarily produced by the corpus luteum in the ovaries after ovulation. Its main function is to prepare the endometrium (lining of the uterus) for implantation of a fertilized egg and to help maintain early pregnancy.

During a normal menstrual cycle:

- Oestrogen rises in the follicular phase to support the development of the egg and uterine lining.
- After ovulation, progesterone dominates in the luteal phase, stabilising the endometrium in preparation for potential pregnancy.
- If pregnancy does not occur, progesterone levels fall, leading to menstruation.

From the mid-30s to early 40s, progesterone levels begin to decline due to less frequent ovulation. This often precedes a drop in oestrogen levels.[8] An imbalance between oestrogen and progesterone during this time can lead to perimenopausal symptoms, such as:

- Irregular menstrual cycles
- Heavier or prolonged periods
- Mood changes
- Sleep disturbances
- Breast tenderness

The decline in progesterone is often one of the earliest hormonal changes leading into perimenopause.

Oral Changes During Menopause

In addition to its effect on the reproductive tissue, oestrogen has also been found to have receptors in bone, endothelial cells, ligaments, salivary glands, and gingival tissue. It has also been discovered that oestrogen has an effect on the keratinized gingival tissue. The reduction of oestrogen could lead to a reduction in epithelial keratinization and collagen formation in connective tissue and could therefore lead to reduced effectiveness of the oral epithelium as a barrier.[4]

Some of the oral changes observed in menopause include:

- Burning Mouth Syndrome
- Altered Taste (Dysgeusia)

- Xerostomia
- Periodontal changes

Burning Mouth Syndrome

Burning mouth syndrome (BMS) is characterised by “discomfort or pain of the mouth, with no known medical or dental cause”.[10] It typically affects the tongue, but can also involve the lips, gums, palate, or other mucosal areas. Globally, 1.73% of the population is affected.[11] The condition is more common in women, with a female to male ratio of 3:1. It is particularly common during perimenopause and post-menopausal periods and is reported to occur in up to 30% of post-menopausal women.[11] Affected patients often present with multiple oral complaints, including burning, dryness (xerostomia) and taste alteration (dysgeusia).

Primary burning mouth syndrome is diagnosed when no clinical or laboratory abnormalities are found. It is thought to be related to neuropathic mechanisms, involving altered function of taste and sensory nerves of the central or peripheral nervous system. The condition occurs most frequently in perimenopausal and postmenopausal women.

Secondary burning mouth syndrome can be caused by an underlying medical condition such as:

- Xerostomia (dry mouth).
- Other oral conditions such as candidiasis, lichen planus or geographic tongue.
- Nutritional deficiencies, such as a lack of iron, zinc, folate (vitamin B-9), thiamin (vitamin B-1), riboflavin (vitamin B-2), pyridoxine (vitamin B-6) and cobalamin (vitamin B-12).
- Dentures, especially if they are ill-fitting.
- Allergies or reactions to foods, food flavourings, other food additives, fragrances, dyes, or dental materials.
- Reflux of stomach acid.
- Certain medications, particularly high blood pressure medications.

- Oral habits, such as tongue thrusting, biting the tip of the tongue and teeth grinding.
- Endocrine disorders, such as diabetes or underactive thyroid.
- Excessive mouth irritation, which may result from overbrushing the tongue, using abrasive toothpastes, overusing mouthwashes or having too many acidic foods/drinks.
- Psychological factors, such as anxiety, depression, or stress.[12]

Treatment

The condition is benign and typically resolves spontaneously after many years.

Prescribed treatment may include Clonazepam. Topical application of clonazepam (as a mouth rinse) has shown effectiveness in reducing BMS symptoms. Some people with BMS will also take a clonazepam pill.[13]

Two over the counter medications that may help with a BMS flare up are:

- Alpha-Lipoic Acid: A supplement taken in pill form that may reduce nerve pain.[13]
- Capsaicin: Emerging studies indicate that capsaicin may offer relief for BMS symptoms. Capsaicin is believed to desensitise sensory neurons, thereby reducing pain perception.[14]

Cognitive behaviour therapy has been shown to reduce symptoms in controlled trials. In refractory cases, an approach similar to that for any chronic neuralgic pain has been reported to be helpful.[10]

Antidepressants such as Amitriptyline and Duloxetine, which modulate neurotransmitters, have been employed to manage BMS, particularly when psychological factors like anxiety or depression are present.

Patients can be advised that symptoms may be eased by:

- Drinking plenty of water.
- Sucking on crushed ice.
- Chewing sugar-free gum.
- Avoiding things that irritate the mouth - such as hot and spicy foods, mouthwashes that contain alcohol, or acidic fruits and juices.
- Avoiding tobacco and alcohol products.[14]
- Avoiding toothpastes containing Sodium Lauryl Sulphate.

Altered Taste (Dysgeusia)

Some women experience changes in taste perception during menopause, often describing a metallic of salty taste. This may be related to the secondary effects of a dry mouth which can be caused by falling oestrogen levels. Aging itself can also affect taste in both men and women, with 1 in 4 people having a sense of smell dysfunction, and up to 1 in 5 having a taste dysfunction.[15]

Dry Mouth During Menopause

Dry mouth, or xerostomia, is a common yet often overlooked symptom experienced by women during menopause. The condition arises primarily due to the decline in oestrogen levels, which affects the salivary glands' function, leading to reduced saliva production.

Saliva is essential for oral health, serving as a natural defence against harmful microorganisms, neutralising acids, and aiding mineralisation of tooth enamel. Therefore, a decrease in saliva production during menopause can greatly impact oral health.

Lower saliva levels may lead to challenges with speaking, eating, and swallowing, along with a heightened risk of tooth decay, mouth infections and taste changes.[15]

A systematic review and meta-analysis, published in 2025, aimed to identify the prevalence of oral manifestations in menopausal and postmenopausal women. The search was made of Pubmed, Cochrane and EBSCO databases from January 2000 and December 2023 using set keywords. The review found that combined data from multiple studies indicated that around 50% of postmenopausal experience xerostomia. Various researchers conduced surveys and interviews, which revealed differing rates of dry mouth among women during and after menopause.[16]

The review acknowledged that the differences in reported prevalence may be attributed to variations in demographic characteristics and inconsistencies in how data was gathered and analysed. Additionally, the studies reviewed were not widely representative, as many originate from a limited number of countries or even the same population groups. Therefore, more research from a broader range of regions is necessary to better understand the occurrence and nature of oral symptoms during menopause. The full systematic review can be accessed through the further reading section the end of this article.

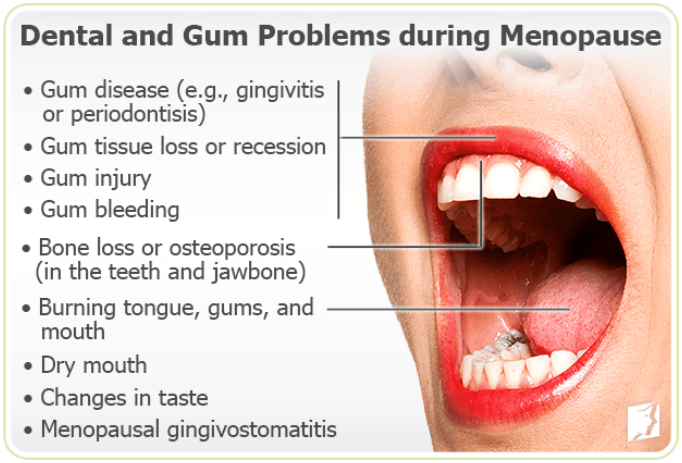
The potential for pre and postmenopausal women to experience a dry mouth has clinical implications, therefore patients should receive preventative care and advice such as:

- ✓ Individually tailored oral hygiene instruction
- ✓ Drink plenty of water

- ✓ Dietary advice to reduce the risk of caries
- ✓ Avoid certain foods which may aggravate the situation- such as hot, spicy or salty foods
- ✓ Chewing sugar free gum to stimulate saliva flow
- ✓ The use of artificial saliva and sprays
- ✓ Avoid alcohol and caffeine
- ✓ Smoking cessation advice
- ✓ Apply lip balm [17]

In some cases, Sialogogues may be prescribed.

Periodontal Health and Menopause



Research indicates that the hormonal changes associated with menopause can increase the risk of periodontal disease. Oestrogen plays a crucial role in maintaining the health of the gums and the supporting structures of the teeth. A reduction in oestrogen levels during menopause may lead to decreased keratinization of the marginal gingiva and desquamation of the gingival tissues.[18] Some women may develop menopausal gingivostomatitis, which is characterised by gingiva that appears dry, shiny, bleeds easily, and ranges in colour from abnormally pale to deep red.

Susceptibility to progressive periodontitis and osteoporosis has also been reported to increase following menopause. Osteoporosis is defined as “a disease characterised by low bone mass and structural deterioration of bone tissue, with consequent increase in bone fragility and susceptibility to fracture.”[19] Postmenopausal women are particularly susceptible to primary osteoporosis due to oestrogen deficiency. The

decline in oestrogen levels results in increased bone resorption by osteoclasts compared to bone formation by osteoblasts, ultimately leading to osteoporosis. Since oestrogen helps maintain bone density, including that of the jawbone, its decline can contribute to osteoporosis, which increases the risk of tooth loss. A weakened jawbone can also affect the stability of dentures or implants.

Periodontal disease, or periodontitis, is an inflammatory condition which, if left untreated, can progress and ultimately result in tooth loss. A systematic review and meta-analysis published in 2025 sought to identify the prevalence of oral manifestations in menopausal and postmenopausal women. In this review, periodontitis was identified as the most common oral manifestation among postmenopausal women, with a combined prevalence rate of 55%.[16]

Earlier research did not find a significant association between osteoporosis and periodontal disease; this may be because osteoporosis is considered a systemic condition while periodontal disease is localised. However, more recent studies indicate that postmenopausal women are at increased risk for both osteoporosis and periodontal disease, and that there is a relationship between osteoporosis and the onset and progression of periodontal disease.[20]

The clinician should take a full medical and case history and undertake a periodontal examination. The examination should involve recognising other risk factors for periodontal disease such as smoking and diabetes. The BSP UK S3 Clinical Practice Guidelines for the Treatment of Periodontal Diseases should be followed (this can be downloaded from the further reading at the end of this article). Treatment will involve explaining disease stage and grading; explaining risk factors and treatments available; and, providing individually tailored oral hygiene advice and treatments such as supra and sub gingival professional mechanical plaque removal (PMPR).

Hormone Replacement Therapy

Hormone replacement therapy (HRT) is the administration of oestrogen alone, or a combination of oestrogen and progesterone, to alleviate the negative symptoms associated with menopause. HRT helps to replace the hormones that the body no longer produces after menopause and is typically taken daily in the form of tablets, patches, gels, or implants. HRT has a controversial history regarding its risks and

benefits, and individual characteristics and preferences may influence decisions over its use.[21] However, the NHS website states that “the benefits of HRT usually outweigh the risks.”[22]

Some studies suggest that HRT may offer several benefits for oral health, such as improved periodontal status, increased salivary flow, and reduced risk of tooth loss and oral discomfort.[23,24,25]

Employers Legal Obligations

In 2024, the Equality and Human Rights Commission (EHRC) issued updated guidance clarifying the legal responsibilities of employers towards workers experiencing the menopause. This guidance serves to reinforce the obligations under existing equality legislation, particularly the Equality Act 2010, and aims to ensure that menopausal workers are treated fairly and with dignity in the workplace.

The EHRC guidance emphasises that menopause can constitute a protected characteristic under the Equality Act 2010, most notably in relation to sex, age, and disability discrimination. Symptoms of menopause, which may include physical and psychological effects, can impact an individual's ability to carry out their work. If the symptoms have a long term and substantial impact on a woman’s ability to carry out normal day-today activities, they may be considered to have a disability. The guidance states that employers have a legal duty to make reasonable adjustments for workers whose menopausal symptoms amount to a disability. Failure to do so may constitute unlawful discrimination.

Key obligations highlighted in the 2024 guidance include:

Reasonable Adjustments: Employers are required to consider and implement reasonable adjustments to support workers experiencing menopausal symptoms. This may involve changes to the working environment, flexible working arrangements, or adjustments to policies and procedures.

Protection from Discrimination and Harassment: Employers must ensure that workers are not subjected to unfavourable treatment or harassment on the grounds of menopause, which may fall under sex, age, or disability discrimination.

Inclusive Policies and Training: The EHRC recommends that employers develop and implement workplace policies that specifically address menopause, and that staff, including managers, receive appropriate training to foster an inclusive and supportive environment.

Confidentiality and Sensitivity: Employers are advised to handle any disclosures regarding menopause with confidentiality and sensitivity, ensuring that workers feel comfortable seeking support without fear of stigma or adverse consequences.

The EHRC's 2024 guidance underscores the importance of proactive engagement by employers to prevent discrimination and to promote the health, wellbeing, and retention of workers experiencing menopause.

The following link is to a video that is an introduction to menopause in the workplace: Menopause and the Equality Act .

Conclusion

Menopause is a natural stage in the aging process for women. The hormonal changes associated with menopause can manifest in a wide range of symptoms, which often vary significantly among individuals. These changes may also give rise to various oral health concerns and symptoms. It is therefore essential for dental professionals to remain vigilant and informed about the potential oral manifestations related to menopause, enabling them to provide appropriate advice, support, and reassurance to affected patients.

Personal Development Plan and Reflective Learning

This CPD is linked to the following GDC Enhanced CPD Development Outcomes:

C. Maintenance and development of knowledge and skill within your field of practice.

Reflective learning is now a requirement of the GDC Enhanced Professional Development Scheme. As such, you will now be given the option to answer some reflective learning questions, before your certificate is generated. These will be:

1) What did you learn (or confirm) from the activity that was helpful or relevant to your daily work and patients?
2) Comment on any changes/updates needed in your daily work
3) How has completion of this CPD article benefitted your work as a DCP?
Examples will be provided. Please remember that you can fill this in on completion of the exam, but you can also update this at any time from your CPD log. If you take a few moments to write your reflection on completion, you will have fulfilled the Enhanced CPD requirements.

Further Reading

BSP UK Clinical Practice Guidelines for the Treatment of Periodontal Diseases

NHS: Menopause

Neelam, R. et al. (2025) Prevalence of Oral Manifestations in Menopausal and Postmenopausal Women: A systematic Review and Meta Analysis.

References

1.Suri, V and Suri, V(2014) Menopause and Oral Health. Available at: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4195183/ (accessed 19/02/2025)

2.NHS (2022) Menopause. Available at: https://www.nhs.uk/conditions/menopause/ (accessed 18/04/2025)

3.Greendale, GA., Lee, NP., Arriola ER (1999) The Lancet Available at: https://www.sciencedirect.com/science/article/abs/pii/S0140673698053525 (accessed 19/02/2025)

4.Darby, ML; Walsh, M.M (2011) Dental Hygiene Theory and Practice third edn. Elsevier. Canada

5. Pituitary Foundation (2018) Your Hormones. Available at: https://www.pituitary.org.uk/information/hormones/ (accessed 19/02/2025)

6. Hormone Health Network (2021) What is Estrogen? Available at:https://www.hormone.org/your-health-and-hormones/glands-and-hormones-a-to-z/hormones/estrogen (accessed 19/02//2025)

7. The North American Menopause Society (2025) Changes in Hormone Levels. Available at: https://www.menopause.org/for-women/sexual-health-menopause-online/changes-at-midlife/changes-in-hormone-levels (accessed19/02/2025)

8. Forth (2021) Menopause Hormones – What they are and how do they change? Available at: https://www.forthwithlife.co.uk/blog/menopause-hormones/ (accessed 19/02/2025)

9. Medicine.net (2024) What happens when estrogen levels are too high or too low? Available at: https://www.medicinenet.com/what_happens_when_estrogen_levels_are_too_high/article.htm (accessed 19/02/2025)

10.Zakrzewska, J., Buchanan, JA (2016) Burning mouth syndrome. Available at: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4704679/ (accessed 19/02/2025)

11.Adamo, D., Spagnuolo, G (2022) Burning Mouth Syndrome: An Overview and Future Perspectives. Available at:

12. Mayo Foundation for Medical Education and Research (2023) Burning Mouth Syndrome. Available at: http://www.mayoclinic.org/diseases-conditions/burning-mouth-syndrome/symptoms-causes/dxc-20179960 (accessed 19/02/2025)

13. Very Well Health (2024) How to Manage Burning Mouth Syndrome. Available at: https://www.verywellhealth.com/burning-mouth-syndrome-8708486 (accessed 18/04/2025)

13.Yohana, W., Rafisa, A (2024) Unlocking the potential of Capaicin in oral health. Available at: https://pmc.ncbi.nlm.nih.gov/articles/PMC11375627/ (accessed 18/04/2025)

14 Oral Health Foundation (n.d) Burning Mouth Syndrome. Available at: https://www.dentalhealth.org/tell-me-about/topic/sundry/burning-mouth-syndrome (accessed 19/02/2025)

15. The Menopause Centre (2021) Menopause and changes to taste and smell. Available at: https://www.mymenopausecentre.com/symptoms/changes-to-taste-and-smell/ (accessed 14/04/2025)

15. Shrivastavia, J (2024) Menopause and Oral Health Clinical Implications and Preventive Strategies. J. Midlife Health. Available at: https://pmc.ncbi.nlm.nih.gov/articles/PMC11601932/ (accessed 25/04/2025)

16. Neelam, R. et al. (2025) Prevalence of Oral Manifestations in Menopausal and Postmenopausal Women: A systematic Review and Meta Analysis. Available at: (accessed 25/04/2025)

17. NHS Dry Mouth (2023) Available at: https://www.nhs.uk/conditions/dry-mouth/ (accessed 25/04/2025)

18. Hariri, R., Alzoubi, E. (2017) Oral manifestations of menopause. Available at: https://www.researchgate.net/profile/Emad-Eddin-Alzoubi/publication/322905507 (accessed 19/02/2025)

19. National Institute for Health and Care Excellence (2025) What are osteoporosis and osteoporotic fractures? Available at: https://cks.nice.org.uk/topics/osteoporosis-prevention-of-fragility-fractures/background-information/definition/ (accessed 04/05/2025)

20. Qi, J. et.al (2023) Association between periodontal disease and osteoporosis in postmenopausal women: A systematic review and meta-analysis. Available at: https://www.cell.com/heliyon/fulltext/S2405-8440(23)08130-6 (accessed 04/05/2025)

21. Cagnacci, A., Venier, M (2019) The Controversial History of Hormone Replacement Therapy. Available at: https://www.mdpi.com/1648-9144/55/9/602 (accessed 19/02/205)

22. NHS (2023) Benefits and risks of hormone replacement therapy. Available at: https://www.nhs.uk/medicines/hormone-replacement-therapy-hrt/benefits-and-risks-of-hormone-replacement-therapy-hrt/ (accessed 04/05/2025)

23. Wang et al (2021) Role of hormone replacement therapy in relieving oral dryness symptoms in postmenopausal women: a case control study. Available at: https://pmc.ncbi.nlm.nih.gov/articles/PMC8642912/ (accessed 04/05/2025)

24. Oral Health Foundation (2017) Hormone Replacement Therapy shown to be highly effective in reducing gum disease. Available at: https://www.dentalhealth.org/news/hormone-replacement-therapy-shown-to-be-highly-effective-in-reducing-gum-disease (accessed 04/05/2025)

25. Shrivastava (2024) Menopause and Oral Health: Clinical Implications and Preventive Strategies. Available at: https://pmc.ncbi.nlm.nih.gov/articles/PMC11601932/

26. Equality and Human Rights Commission (2024) Menopause in the workplace: Guidance for employers) Available at: https://www.equalityhumanrights.com/guidance/menopause-workplace-guidance-employers (accessed 04/05/2025)