

# Comparative Study Between Menopause and Productive Younger Age Group Women as Regard Oral Cavity Health

Menopause and Productive Younger age Group as Regard Oral Cavity Health

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## ABSTRACT

**Objective:** To compare the parameter above regarding dental caries, vitamin D<sub>3</sub> deficiency, and periodontal health between the two groups (menopause and productive age).

**Study Design:** Comparative study

**Place and Duration of Study:** This study was conducted at the Dental Department, Al Hikma University College, Baghdad Iraq 1<sup>st</sup> October 2024 to 31<sup>st</sup> March 2025.

**Methods:** The samples were selected by a systematic random sample who attended collecting laboratory estrogen level of 30 cases. They were divided in two groups; 15 cases in each group randomly after referring them to the laboratory clinics to measure estrogen levels in both groups.

**Results:** The productive age group have lower occurrence of dental carries and significant ( $P < 0.05$ ) difference of menopause women with production age group. There is a relationship between productive younger age and menopause women as dental caries occurrence. Vitamin D<sub>3</sub> is lower in productive age group women while represents 2 cases in menopause women show decrease in vitamin D<sub>3</sub> in eight cases. Both age groups in younger and menopause women are statistically significant with vitamin D<sub>3</sub>. The oral cavity health problems increased in menopause women in comparison with productive age. Statistically the difference was significant ( $P < 0.05$ ).

**Conclusion:** There were great differences between the two groups regarding dental caries, vitamin D<sub>3</sub> and periodontal health.

**Key Words:** Vitamin D<sub>3</sub>, Menopause women, Productive younger age, Estrogen, dental caries

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## INTRODUCTION

Estrogen level is a vital factor hormone in women especially in menopause and the productive age because this estrogen hormone plays fluctuate level during menstrual cycle in the productive age group (from 25 to 45 pg/ml;) while during menopause women the level of estrogen is significantly fall to less than 25 pg/mL. Once the woman reaches into full menopause age the estrogen level is significantly decrease and stay at low level in this transitional period. However, a decrease level of estrogen in menopause women will give her negative impact on teeth and the oral mucous membrane. During menopause period the women will feel suddenly irregular menstrual cycle and maybe cessation of menstrual period.

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This condition affects the epithelial tissue of vagina that is similar to oral cavity.<sup>1</sup> The productive age group and menopause women represent the receptor of estrogen that found out in the salivary glands and buccal cavity.<sup>2-4</sup>

## METHODS

This comparative study was carried out at Dental Department, Al Hikma University College, Baghdad Iraq from 1<sup>st</sup> October 2024 to 31<sup>st</sup> March 2025 vide letter No. 43egr/QM/Approval/Jhd734 dated 1<sup>st</sup> September 2024. The study deal with 30 women half of them are in menopause cases and the other half are productive younger age group. Through checking clinic in the dental department through choosing 15 cases in each group randomly after referring them to the laboratory clinics to measure estrogen levels in both groups. The research was as comparison between different cases of oral cavity and dental caries in menopause and younger women. All the data were collected from patients who attend the dental department for checking. The data was entered and analyzed through SPSS-25.

## RESULTS

The productive age group have lower occurrence of Dental carries, which show difference of menopause

women with production age group P-value is  $P < 0.05$ , at significant level of 95% (Table 1). There is relationship between productive younger age and menopause women as regard dental caries occurrence (Fig. 1).

**Table No. 1: The relationship between age groups and dental caries**

Age	Dental caries		Chi square	P value
	Ladies No.	2 <sup>nd</sup>		
45-55	15	12	0.731	0.69
22-26	15	7		

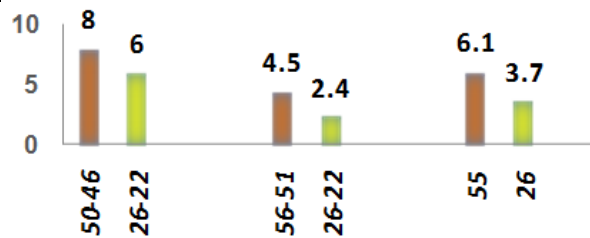
$P < 0.05$  (Significant)

**Table No. 2: Vitamin D<sub>3</sub> level is decreased in menopause women**

Vitamin D <sub>3</sub>	No.	D <sub>3</sub> deficiency	P. value
Menopause age decreased	15	8 (5.3%)	0.0001
Productive age decreased	15	3 (2%)	

**Table No. 3: Relationship of age groups and periodontitis for menopause women in comparison with age group**

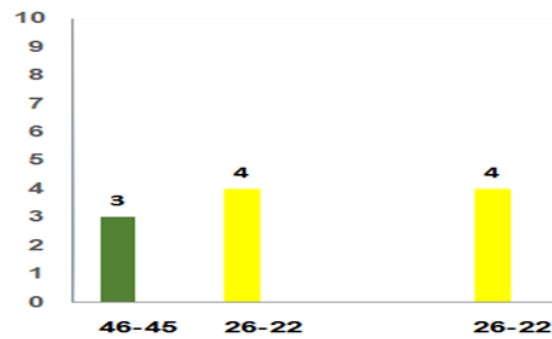
Age group	Periodontitis		P value
	+ve	-ve	
45-50	11	2	0.97
22-26	6	-	
51-55	14	1	
22-26	5	-	
56 <sup>+</sup>	10	1	
>26	8	-	



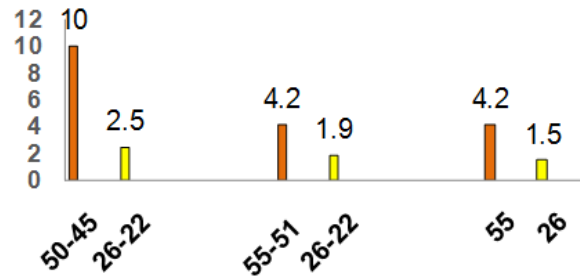
**Figure No. 1: Relationship between productive younger age and menopause women**

Vitamin D<sub>3</sub> is lower in productive age group women while represents 2 cases in menopause women show decrease in vitamin D<sub>3</sub> in eight cases. Thus statistically shows highly significant ( $P < 0.0001$ ) difference (Table 2). Both age groups in younger and menopause women are statistically significant as regard vitamin D<sub>3</sub> ( $P < 0.0001$ ) [Fig. 2].

Table 3 showed oral cavity health problems increased in menopause women in comparison with productive age. Statistically the difference was significant ( $P < 0.05$ ). Figure 3 showed increase number of periodontitis in age 50-55 years old in comparison with productive age group 22-26.



**Figure No. 2: Comparison of younger age and menopause women**



**Figure No. 3: Number of periodontitis in age groups**

## DISCUSSION

It is found that productive age in comparison with menopause women as regard oral cavity health problems, as follow due to low level of estrogen. There are more dental caries in menopause women in comparison with productive age due to the fact that estrogen level is satisfactory and normal, while in menopause women the estrogen levels is low or absent, that lead to dryness of the mouth due to decrease secretion of saliva in comparison with productive younger age group, the result is significant (Tables 1-3). The hormonal fluctuation in younger age group throughout the puberty, pregnancy and delivery period as well in menopause women, these physiological situation and major variation in estrogen and progesterone levels and their effect on oral health. This study is consistent with fluctuation between hormonal levels in both study and their periodontal health status.<sup>5-9</sup>

In the present study, vitamin D<sub>3</sub> is the same in both menopause and younger productive age group, which is statistically not significant ( $P > 0.05$ ). However vitamin D<sub>3</sub> is not significant between menopause and productive age group and P value is not significant ( $P > 0.05$ ). Meanwhile periodontitis is more prevalent in menopause women, rather than productive age group due to hypo-estrogenism in menopause women which give significant differences  $P < 0.05$ . More over dental caries are more prevalent in menopause women in comparison with productive age group due to estrogen levels difference in both group which is significant difference ( $P < 0.05$ ).<sup>10-13</sup>

Increased parathyroid hormones can cause decrease the calcium and phosphate in the bone. The result shows a

significant reduction of calcium in menopause women compared with younger age group as well as decrease estrogen level which leads to low absorption of calcium from duodenum which is the first part of small intestine compare with younger age group.<sup>14-18</sup>

## CONCLUSION

Bad oral health problems are more in menopause women in comparison with productive age group, due to the difference in both groups, including dental caries, gingivitis, periodontitis respectively.

**Recommendation:** More attention to oral hygiene in menopause women to lower incidence of dental caries and periodontal health, beside to encourage giving calcium supplements to productive age groups plus pay more attention to oral hygiene, through oral hygiene education, to promote health of their oral cavity.

### Author's Contribution:

Concept & Design or acquisition of analysis or interpretation of data:	Nafi. A. Alani, Sabreen S. Abed
Drafting or Revising Critically:	Saad G. Hussein, Mortadha S. Abed
Final Approval of version:	All the above authors
Agreement to accountable for all aspects of work:	All the above authors

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