

**Oral Health Status in Relation to Selected  
Salivary Elements among a Group of  
Gasoline Stations Workers**

**A thesis**

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## Abstract

**Background:** Gasoline constituents and its derivatives had many hazardous effects on the general health of humans. Thus, gasoline stations workers may be affected by different types of related diseases.

**Aim of the study:** This study was conducted to assess selected salivary elements and their relation with dental caries, oral hygiene status and periodontal diseases among gasoline stations workers in comparison with individuals have no regular exposure to gasoline.

**Materials and methods:** The study group consists of thirty male subjects with an age range (33-39) years who worked in different gasoline stations in different areas of Baghdad city and thirty persons that matching in age and gender and have no regular exposure to gasoline were selected as a control group. Dental caries was recorded by lesion severity through the application of D<sub>1-4</sub> MFS index of (Manji et al). Plaque index of Silness and Loe and calculus index of Ramfjord were used for recording oral hygiene status. Periodontal diseases were evaluated by using the gingival index of Loe and Silness and periodontal pocket depth of Carranza. Stimulated salivary samples were collected and chemically analyzed to determine the concentration of salivary calcium, phosphorous, iron, copper and lead ions.

**Results:** The levels of salivary calcium and phosphorous (mg/dl) were lower among the study group compared with the control group with no significant difference between them; whereas iron, copper and lead levels ( $\mu\text{g/dl}$ ) were higher among the study group compared with the control group with highly significant differences ( $P < 0.01$ ) for both copper and lead.

Caries experience (DMFS) was higher among the study group compared with the control group with significant difference ( $P < 0.05$ ) for DS and highly significant difference ( $P < 0.01$ ) for  $D_2$ . Salivary phosphorous showed significant positive correlation ( $P < 0.05$ ) with FS among the study group; salivary copper showed highly significant positive correlation ( $P < 0.01$ ) with  $D_4$  among the control group, while the other variables showed no significant relations among both groups ( $P > 0.05$ ).

The mean values of plaque, calculus and gingival indices were significantly higher ( $P < 0.01$ ) among the study group compared with the control group, the mean value of periodontal pocket depth was significantly higher ( $P < 0.05$ ) among the study group compared with the control group. A positive highly significant correlations ( $P < 0.01$ ) were recorded between oral hygiene and periodontal diseases among both groups. No significant correlations were recorded among study and control groups between oral hygiene and periodontal diseases with the salivary elements ( $P > 0.05$ ).

**Conclusions:** Selected salivary elements were found to have little effects on the oral health status of the study group. Although dental caries and periodontal diseases revealed higher percentage of occurrence. Therefore, special oral health preventive and educational programs are needed for them.