

## Evaluation of Salivary Nickel Level During Orthodontic Treatment

**Authors :** Mudafara S. Bengleil, Juma M. Orfi, Iman Abdelgader

**Abstract :** Since nickel is a known toxic and carcinogenic metal, the present study was designed to evaluate the level of nickel released into the saliva of orthodontic patients. Non-stimulated saliva was collected from 18 patients attending The Orthodontic Clinic of Dental Faculty of Benghazi University. Patients were divided into two groups and level of nickel was determined by atomic absorption spectrophotometry. Nickel concentration values (mg/L) in first group prior to starting treatment was  $0.097 \pm 0.071$ . An increase in level of nickel was followed by decrease 4 and 8 weeks after applying the arch wire ( $0.208 \pm 0.112$ ) and ( $0.077 \pm 0.056$  mg/L) respectively. Nickel levels in saliva of the second group were showed minimal variation and ranged from  $0.061 \pm 0.044$ mg/L to  $0.083 \pm 0.054$  throughout period of study. It may be concluded that there could be a release of nickel from the appliance used in first group but it doesn't reach toxic level in saliva.

**Keywords :** atomic absorption spectrophotometry, nickel, orthodontic treatment, saliva, toxicity

**Conference Title :** ICS 2014 : International Conference on Stomatology

**Conference Location :** Bangkok, Thailand

**Conference Dates :** December 24-25, 2014