

**University of Baghdad
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***Assessment of cadmium levels in Blood ,hair ,saliva and
teeth in a sample of Iraqi workers and detection of dental
findings***

**A thesis
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By

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Abstract

Background

Cadmium considered one of the heavy metals, by time can be accumulate in plants ,animals and humans . This heavy metal had been discovered in 1817 by Friedrich Stromeyer, and after the industrial revolution ,cadmium spread to atmosphere , soil, plants , animals, foods , drinking water and also in seas , rivers and lakes; as a result of using chemical fertilizer and emission of organic and inorganic material to the air in addition to natural emission from volcanoes and sand winds ,cadmium become more spread and become dangerous to human organs and tissues including mouth and teeth.

Aims of the study

Using some biomarkers (blood, hair, saliva and teeth),that can be easily obtained and processed for measuring the cadmium concentration in human body in addition to know the decays ,missing and filling numbers which may result from accumulation of cadmium .

Subjects, Materials and methods

This study had been done between April – October of 2010 at Al-kufa Cement Factory in Najaf , the numbers of exposed subjects were 55 and numbers of control subjects were 44 , blood , hair ,saliva and teeth were taken as biomarkers then the numbers of decay , missing and filling teeth were calculated .

After the processing of these biomarkers (blood, hair, saliva and teeth) cadmium analyzed by using atomic absorption spectrophotometer device.

Results and discussion

The study reported that blood ,hair ,saliva and teeth are good biomarker for measuring the concentration of cadmium in addition to effect of some factors like smoking habit , residency, age and in accumulation of that heavy metal in addition to increasing of the numbers of decayed and missing teeth with increasing of cadmium in these biomarkers but without increasing in numbers of the filling teeth. Also there was significant difference in cadmium concentration between exposed and control peoples.

On there other hand there was strong coefficient correlation inside the study group between (male, smokers ,urban and elders subjects) and the numbers of dental decayed and missing teeth.

Conclusions

This study reported that there was significant increased in cadmium concentration among exposed subject if compared with control subject .Also indicated that factors like smoking habit , residency and age could led to increasing the cadmium concentration. In addition to increased the numbers of decay and missing teeth when the cadmium concentration was increased in these biomarkers.