

**The Effect of Intelligence Quotient and  
Nutritional Status on Oral Health Condition  
and salivary elements among  
6 years old School Children in  
Baghdad/Iraq.**

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## **Abstract**

### **Background:**

The intelligence and nutritional status have an effect on the health of oral cavity.

### **Aims of the study:**

The aims of the present study were to assess the oral health condition including dental caries, gingival health condition and some salivary elements in addition to flow rate among children of the three intelligence scales who have the same age and their relation to nutritional status.

### **Materials and Methods:**

The total sample composed of 660 children aged 6 years old, 220 children in each intelligence scale. The measurement of intelligence was done using Raven's test for non-verbal intelligence. The assessment of nutritional status was performed using Body Mass Index specific for age and gender. The diagnosis and recording of dental caries was according to Manji et al (1989). Plaque index of Silness and Loe (1964) was used for plaque assessment, gingival index of Loe and Silness (1963) was used for gingival health condition.

Salivary sample were collected under standardized condition and then analyzed for estimation salivary flow rate and salivary constituents (calcium, magnesium, zinc and copper) in addition to lead concentration among the children of the three intelligence scales by using flame atomic absorption spectrophotometry (AAS).

### **Results:**

The results showed that the caries experience among children with high intelligence scale was highly significant lower than those with moderate and low intelligence scales, while in relation to nutritional status; the caries experience among well nourished children was not significantly lowered than that among malnourished children.

The plaque and gingival indices among children with high intelligence scale was reported to be highly significant lower than those with moderate and low intelligence scales, as well as among well nourished children than that among malnourished children but the highly significant was found only in gingival index.

The salivary flow rate among children with high intelligence scale was found to be highly significant higher than that among those with moderate and low intelligence scales, as well as among well nourished children than that among malnourished children.

The data analysis of the present study found that the level of salivary calcium, copper and zinc were found to be highly significant higher among the children with high intelligence scale than that among children with moderate and low intelligence scales, while the opposite picture was seen concerning magnesium and lead. The highly significant difference was seen only for lead.

Concerning nutritional status, salivary levels of calcium, copper and zinc were found to be higher among well nourished children than that among malnourished children except that concerning magnesium and lead, however; the significance was failed to be present except that concerning lead among children with moderate intelligence scale where the difference was significant.

### **Conclusion:**

The intelligence status and nutritional status affect oral health condition as the caries experience and gingival index were found to be lower among the children with high intelligence scale, in addition to many salivary constituents calcium, copper and zinc were found to be higher among them while magnesium and lead were found to be lower among them, this may explained the role of intelligence levels and nutritional status in protection of oral tissue from dental and periodontal diseased.