

***Assessment of Serum & Salivary Oxidative  
Stress Biomarkers with evaluation of Oral  
Health status in a sample of Autistic male  
children***

**A Thesis**

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**BY**

***Mayyadah Hameed Rasheed***

**(B.D.S., 1991)**

**Supervised By**

**Prof. Dr. *Raja H. Al-Jubouri***

**(B.D.S., M.Sc., Ph.D.)**

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## **Abstract**

### **Background:**

Autism is a severe neurodevelopmental disorder, presents in early childhood, characterized by severe impairments in socialization, communication and behavior. Autism is considered a multi-factorial disorder that is influenced by genetic, environmental, and immunological factors with oxidative stress as a mechanism linking these factors. Assessment of any oral manifestations; measurement of oxidative stress in saliva has to be discovered, evaluated and measured in autistics to be used as a potential diagnostic aid since saliva is an ultra-filtrate of serum and meet the demand for inexpensive, noninvasive and accessible diagnostic methodology.

### **Aim of the study:**

To assess any oral manifestations associated with autism and the value of saliva as a diagnostic tool in addition to serum, by measuring some oxidative stress markers; to provide a greater mechanistic insight into autism spectrum disorder pathology.

### **Subjects, Materials and Methods:**

Thirty one autistic children and twenty nine sex and age-matched healthy control, aged between (2-13) years were enrolled in this study. Oral health status; serum and saliva level of: Malonedialdehyde, uric acid, glutathione and superoxide dismutase measured for all participants.

## **Results:**

Current study revealed that caries prevalence and severity (although severity failed to reach statistical significant level) in autistics were lower than in unaffected children, with significant increased production of oxidative stress biomarker malonedialdehyde. While antioxidant biomarker uric acid is increased together with glutathione depletion and reduced superoxide dismutase activity.

## **Conclusions:**

The results of this study showed that Iraqi autistic children sample was more likely to be caries-free. Saliva can be used as adjunctive diagnostic aid for measurement of the oxidative stress in autism. Serum GSH and uric acid then serum and salivary Malonyldialdehyde followed by salivary glutathione and serum superoxide dismutase are the most powerful predictors of autism spectrum disorder respectively.