



Estimation of the Salivary Iron in Children with Dental Caries: A Pilot Study

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Dear Editor-in-Chief

Human saliva is a biological fluid with numerous biological functions important for the maintenance of oral and general health. Among the functions attributed to saliva are protection against bacteria, fungi and viruses, buffer activity and digestion. Whole saliva contains significant amounts of proteins, glycoproteins, enzymes, calcium, phosphate, bicarbonate (1) and trace of metals like zinc, copper and iron. With respect to the iron, it is a cofactor to salivary lactoferrin protein (LTF), a major protein with antibacterial activity (2). LTF is able to bind very strongly to two iron atoms and bicarbonate, which ensures its bacteriostatic capacity by limiting the availability of iron for bacterial cells (3).

The goal of these studies was to evaluate the iron salivary concentration in Brazilian children with or without dental caries.

The decayed, missing, and filled teeth index (DMFT) that reveal caries experienced were evaluated according to the instructions applied in epidemiological study Oral Health Brazil (4). The study sample was comprised of 92 children, born in Curitiba, South of Brazil, aged between 11 to 14 yr (mean age:12), 27 with DMFT equal a zero

(Group 1 or G1) and 65 with DMFT higher than 1.0 (mean DMFT: 4.35 ± 3.02) (Group 2 or G2). Saliva was collected from each individual using the spitting method. For the analysis of salivary iron was used colorimetric test produced by Labtest Diagnostic®. 250 uL of the saliva sample were added to 1000 uL of colorimetric reagent kit. In acidic medium, the iron is bound to salivary protein dissociates and is reduced to ferrous ion form by the action of hydroxylamine. After adding ferrozine formed a bright complex whose absorbance was measured by spectrophotometer at 560 nm.

The data were statically analyzed by the ANOVA and HSD Turkey's test using the SPSS version 17 software (Chicago, IL, USA). The level of significance was set to $P < 0.05$.

There was a decrease in salivary iron in children with dental caries. Although the samples of the standard deviation are high, there appears to be a direct relationship between salivary decrease of iron and dental caries index. Since this research is a pilot project, new studies should look for the association between salivary protein lactoferrin and quantities of salivary iron.

Table 1: Subject characteristics G1: children with DMFT = 0; G2: children with DMFT ≥ 1.0

	G1 (n = 27)	G2 (n = 65)
Mean age (yr)	12 ± 1.05	12 ± 0.9
DMFT index	0	4.35
Salivary iron (µg/dL)	90.21 ± 56.04	85.56 ± 57.67
Salivary pH	7.71 ± 0.55	7.83 ± 0.43
Stimulated Salivary flow (ml/min)	0.89 ± 0.39	1.05 ± 0.55

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