



## **Physico - Chemical Study of Some Fluorosis Affected Child Dental Caries and Their BMI Value In Rajauli Sub-Division of Nawada District of Bihar**

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### **ABSTRACT**

*Fluorosis is an endemic problem in Rajauli Sub-Division of Nawada District in Bihar, India. Nawada and Gaya district in Bihar is the worst affected areas of Fluorosis. The aim of this study was to determine whether a relationship exist between the groundwater fluoride ( $F^-$ ) concentration, dental caries in children and their Body Mass Index (BMI) values in children living in Rajauli Sub-Division of Nawada district of Bihar in India. Except for some small villages, ten villages is Rajauli Sub-Division with only groundwater source and essentially the same socio-economic living standards and nutritional conditions were surveyed. All of the children in each village in the age group of 6 to 12 were sampled for a total of about 500 children in all villages. Fluoride ( $F^-$ ) level in the village ground drinking water measured by the SPAND's method ranged from 1.5 to 4.5 mg  $L^{-1}$  while number of decayed (Dt) permanent teeth per child range between 3 to 8 and the number decayed deciduous (dt) range between 3 to 13. Over this narrow concentration range, there appeared to be significant association between the fluoride ( $F^-$ ) level in a drinking water and (Dt) and (dt) but BMI value of the children, boys and girls vary according as the concentration of  $F^-$  level in drinking water. However, the village with the highest water  $F^-$  level concentration and the lowest caries score is omitted, linear regression analysis show weak increase of the Dt and dt scores with increasing water  $F^-$  levels concentration, regardless of age, for both boys and girls in the remaining ten villages.*

**Keywords:** Nawada District, Rajauli Sub-Division, Gaya District, Dental carries, Fluoride ( $F^-$ ) level in drinking groundwater and BMI value.

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