

## **FLUORIDE LEVEL IN DRINKING WATER IN FEDERAL TERRITORY OF LABUAN, MALAYSIA**

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### **ABSTRACT**

**BACKGROUND:** Fluoride in drinking water is one of few chemicals that have been shown to cause health effect. Low concentration of fluoride in drinking water has beneficial effect on teeth. But excessive exposure to fluoride can give rise to adverse effects. About 50% of fluoride intake are excreted via kidney, thus fluoride content in urine is an indicator for exposure to fluoride. According to the National Standard for Drinking Water Quality, Malaysia, the optimum level of fluoride in drinking water should be 0.40 to 0.60 mg/L. This study aimed to determine fluoride level in drinking water in Labuan, Malaysia.

**SUBJECT AND METHODS:** This was a prevalence study, conducted in Labuan federal territory, Malaysia. Three samples of drinking water were collected in three consecutive days. A DR/2500 HACH direct reading spectrophotometer was used to analyze water samples for fluoride. The data was analyzed using SPSS 21.

**RESULTS:** Mean (SD) of fluoride level in drinking water was below the recommended range, i.e. 0.36 ( $\pm 0.13$ ) mg/L. More than half (57–63%) of drinking water samples had fluoride levels lower than the recommended range.

**CONCLUSION:** More than half of the water samples had low levels of fluoride.

**Keywords:** fluoride, drinking water, DR/2500 HACH spectrophotometer, Labuan