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Investigations of Fluoride Concentration in Drinking Water Samples from Selected Villages in Eritrea

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Abstract : Fluoride is one of the few chemical contaminants in drinking water, even though; it is known as an essential chemical component in water due to its beneficial effect at a very low concentration. However, when present excessively in drinking water it has detrimental effects on human health in terms of the prevalence of dental caries, skeletal fluorosis and bone fractures. Endemic fluorosis, especially dental mottling and discoloration has been prevalent in many parts of Eritrea. However, no well-established study has been carried out to ascertain the fluoride content in the groundwater of the affected villages, except a couple of researches conducted to estimate fluoride level in drinking water of the villages around Keren and Elabered, where dental mottling and fluorosis is prevalent. According to the researches the fluoride level in the underground water was found to be higher than the maximum WHO limit of 1.5 mg/L. Butthe fluoride content of other places (villages) with endemic dental fluorosis has not been determined and documented, and therefore it is necessary to conduct this research in the affected areas to ascertain the fluoride level in the drinking water of the community and compare it with the WHO standards.
Keywords : Dental caries, Chemical contamination, Skeletal fluorosis, Dental mottling.

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