

Health Effects Associated with Fluoridated Water Sources - A Review of Central Asia.

ABSTRACT

Water fluoridation is a common practice in different parts of the world, mostly as a means of decontaminating water. It has been used in developed, as well as in developing countries. In recent years however, other countries have minimized, even eliminated its use due to health issues. In Central Asia, usage of fluoride is profoundly extant, thus occasioning the citizens' exposure to various health risks. An excessive level of fluoride causes various health issues, mostly on dental and skeletal fluorosis which often leads to vulnerabilities in the bones and teeth. Studies also indicate that excessive levels of fluoride have been known to contribute to poor neurological development among children, hip fractures to older adults, as well as osteosclerosis. Moreover, the review has concluded that fluoride contamination in groundwater is very high in India, Pakistan and Sri Lanka. In contrast, fluoride levels are below threshold value of 1.5 mg/L in Bangladesh. Fluorosis cases have been observed in Nepal but available data is quite unsystematic and incomplete, thus rendering them of no statistical significance. In India, districts such as Kerala, Gujrat, Bakresh (West Bengal), Khudra (Orissa), Manikaran (Hima Pradesh), Unkeher (Mahar) and Tattapani (Chattisgarh) are currently facing a high level of fluoride. In Pakistan, fluoride data of 29 major cities are reviewed and 34% of the cities show fluoride levels with mean value greater than 1.5 mg/L where Lahore and Quetta are having the maximum values of 23.60 mg/L and 24.48 mg/L, respectively. Sri Lankan dry zone is polluted with fluoride having maximum value of 8.00 mg/L. Considering these verities, health authorities urgently need to establish alternative means of water decontamination in order to prevent associated health problems.

Keyword: Fluoride, fluorosis, health effects, bones deformation, adsorption