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Display Settings: AbstractProg Food Nutr Sci. 1986;10(3-4):279-314.**Skeletal fluorosis in humans: a review of recent progress in the understanding of the disease.**Krishnamachari KA.**Abstract**

Endemic skeletal fluorosis is a chronic metabolic bone and joint disease caused by ingesting large amounts of fluoride either through water or rarely from foods of endemic areas. Fluoride is a cumulative toxin which can alter accretion and resorption of bone tissue. It also affects the homeostasis of bone mineral metabolism. The total quantity of ingested fluoride is the single most important factor which determines the clinical course of the disease which is characterized by immobilization of joints of the axial skeleton and of the major joints of the extremities. A combination of osteosclerosis, osteomalacia and osteoporosis of varying degrees as well as exostosis formation characterizes the bone lesions. In a proportion of cases secondary hyperparathyroidism is observed with associated characteristic bone changes. Contrary to earlier thinking, severe crippling forms of skeletal fluorosis are seen in paediatric age group too. Increased metabolic turnover of the bone, impaired bone collagen synthesis and increased avidity for calcium are features in fluoride toxicity. Osteosclerotic picture is evident when small doses of fluoride are ingested over a long period of time during which calcium intakes are apparently normal while osteoporotic forms are common in paediatric age group and with higher body load of the element. Alterations in hormones concerned with bone mineral metabolism are seen in fluorosis. Kidney is the primary organ of excretion for fluorides. Age, sex, calcium intake in the diet, dose and duration of fluoride intake and renal efficiency in fluoride handling are the factors which influence the outcome. Serum parameters rarely help in the diagnosis. Elevated urinary fluoride and increased bone fluoride content are indicators of fluoride toxicity. Fluorosis is a preventable crippling disease. No effective therapeutic agent is available which can cure fluorosis. Industrial fluorosis is on the increase on a global basis. Bone density measurement is a tool for early diagnosis.

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