

Data on ambient air quality indicates high concentration of fluoride in the air environment. About 5% of 2-h hourly mean concentrations exceeded $6.0 \mu\text{g m}^{-3}$ a level sufficient to cause significantly fluoride acculati in plant parts¹².

The cases of fluorosis in villagers, particularly in school going children in SE Udaipur appeared alarming. Children with fast growing tissues could get affected more severely and quickly. Children have also shown such symptoms as pain in the stomach, intermittent diarrhoea, chronic constipation and gas formation caused due to intake of fluoride¹³. It has been shown that excess intake of fluoride leads to the accumulation of dermaten sulphate, which demineralize the area around both in teeth and bones¹⁴. Such demineralised areas in teeth get perforated and chipped beside being discoloured¹⁵. In most of the water samples, fluoride level was found below the permissible limit. However, since fluoride is an accumulating pollutant, it could induce adverse effects in due course, if taken continuously even at very low concentration¹⁶. Furthermore, atmospheric emissions from phosphate fertilizer factory could make an additional source of fluoride intake through inhalation and oral uptake through food. The area studied is exposed to the emission from phosphate fertilizer factories. This together with fluoride in drinking water could exacerbate the prevalence of fluorosis in villages having fluoride content in water even below the permissible limit. A number of adults in these villages (aged 45-61) showing dental fluorosis, also complained severe pain in their joints. These symptoms may be indicative of skeletal fluorosis followed by dental fluorosis¹⁷. In most of these villages the socio-economic status is very poor. The villagers can hardly afford to take calcium and vitamin-C rich diet. Therefore, the present study invites attention, of both scientists and policy makers, to develop and implement suitable control measures so that fluoride related health problems of this area can be minimized. Alternative approaches such as sufficient availability of calcium and vitamin-C rich diet can provide some relief to this problem. However unlike most part of Rajasthan, fluorosis did not appear endemic to this area. And therefore, alternative approaches would be least productive unless the local inhabitants are getting relief from atmospheric fluoride input from phosphate fertilizer factories. This has relevance if Fluorosis Management Programme need to get success in India.

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ETHICAL GUIDELINES FOR BIOMEDICAL RESEARCH

The need for uniform ethical guidelines for research on human subjects is universally recognised. It has acquired a new sense of urgency as the critical issues in the area of biogenetic research involving human subjects have become acute. Apart from the mandatory *clinical trails* on new drugs, a number of *diagnostic procedures, therapeutic interventions and prevention measures* including the use of vaccines, are being introduced which involve human subjects. Further the advent of *new medical devices and radio-active materials* and therapeutic benefits of *recombinant DNA products* have added a new dimension to the ethical issues that need to be considered before evaluating these for their efficacy, utility and safety.

Any research using the human beings as subjects shall bear in

mind the following principles of : i) **essentiality**, (ii) **voluntariness**, **informed consent**, (iii) **non exploitation**, (iv) **privacy and confidentiality**, (v) **precaution and risk minimisation**, (vi) **professional competence**, (vii) **accountability & transparency**, (viii) **maximisation of public interest and distributive justice** (ix) **institutional arrangements** (x) **public domain** (xi) **totality of responsibility** and (xii) **compliance**.

Recent advances in the field of **Assisted Reproductive technologies, organ transplantation, Human genome analysis, and gene therapy** promise unquestionable benefits to mankind. At the same time, they raise many questions of law and ethics, stimulating public interest and concern.

(Source : ICMR Publication 2000)

NOBLE PRIZE IN MEDICINE

Dr. Barry J. Marshal and **Dr. Robin Warren** from Australia have won the 2005 **Nobel Prize in Physiology**; for discovering that bacteria (H. Pylori), not stress, was the main cause of ulcer (90% duodenal; 80% Gastric). The bacteria can be eradicated effectively, by a short course of antibiotics and acid secretion inhibitors.

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