

While we are Eradicating Polio  
another deadly disease  
is Crippling Children



**FLUOROSIS**

**A WATER CURSE**



# Fluorosis – A Deadly Water Disease



"Fluorosis is a disease caused by excessive ingestion of fluoride through water. The upper limit of optimum fluoride level in drinking water for a tropical country like India is 0.5 PPM or 0.5 Mg/L. It is the total daily intake through water and food that determines the development of fluorosis. Nearly all foods contain fluoride and the upper limit of safe total intake of fluoride from water and food per day for an adult is 5 mg."

## 1. The Problem

Endemic skeletal fluorosis is a disease caused by excessive ingestion of fluoride through water, food or both. The upper limit of optimum fluoride level in drinking water for a tropical country like India is 0.5 ppm. The upper limit of safe total intake of fluoride from food and water per day for an adult is 5 milligrams (WHO-2002).

The total daily intake through water and food determines the development of fluorosis. First ever cases of endemic skeletal fluorosis and its neurological manifestations in the world were recorded from Podili, Darsi and Kanigiri areas of Andhra Pradesh in 1937. Subsequently cases of fluorosis were recorded from Nalgonda and other areas of the Andhra Pradesh state and other parts of India. It is now estimated that 60 million people are living in these endemic areas and are at risk of contracting the disease and 2 million people are crippled because of it.

## 2. Stunning fallout

"Over 15,00,000 people are affected by Excess Fluoride in drinking water in over 1700 villages in the Districts of Nalgonda & Prakasam in the state of Andhra Pradesh, India. Over 25,000 people every year are completely disabled and crippled by this disease".







## Indian villagers crippled by fluoride

This is a story of a land where excess fluoride has turned the ground water into a slow poison, crippling at least 10,000 people and leaving hundreds of thousands every year in constant misery.

This is the story of Nalgonda, one of the poorest and most drought-prone districts of Andhra Pradesh in Southern India.

The seriousness of the problem can be measured by the fact that the groundwater has 10 to 12 parts per million (ppm) of fluoride in contrast to a maximum permitted level of just 1.5 ppm.

In the dust filled hamlets and villages hardly 100 kilometres (60 miles) from the state capital Hyderabad there are many living examples of the havoc caused by fluoride.

(By Omer Farooq – BBC correspondent)

### Shocking

People with paralyzing bone diseases, stooped backs, crooked hands and legs, deformed teeth, blindness and other handicaps are a common sight.

The most shocking and sad image of this suffering is Ramaswamy.

At 18 years of age, when other youths are full of enthusiasm for life, Ramaswamy looks to be hardly five-years-old, with a physique completely devastated by the effected of fluoride.

He is so weak that he cannot walk and weights barely 15 kilogrammes (less than 34 lbs.) He is blind and mentally challenged.

He cannot recognize his own name and he cannot even eat by himself.

"We have done all we could have done "says his father Ramalingaiah, himself a victim of fluoride in Anneparti village, Andhra Pradesh

### 'Dreadful fate'

"Now it is up to the God and government to do something to relieve our sufferings," he says with misty eyes.





# Fluorosis Facts

- Fluorosis exists in Nalgonda, Prakasam Districts and other areas of Andhra Pradesh in India
- 60 million people are living in the Endemic areas in the World
- 2 million people are crippled because of it



4 billion
annual cases of diarrhoeal illness
1.1 billion
deprived of safe drinking water
440 million
school days lost each year from water-related illness
117 million
disability adjusted life years (DALYs) lost annually
1.8 million
annual loss of lives due to diarrhoeal disease

One of United Nation's Millennium Development Goal is to "reduce by half the proportion of people without sustainable access to safe drinking water"

### 3. The Solution

#### Reverse Osmosis Plants – A Simple Solution

Reverse Osmosis Plants can be a simple and an effective solution for Fluorosis. Apart from effectively rooting out the Fluorosis problem, RO plants can work towards removal of over 150 water borne microbes which can lead to many other diseases to the population consuming untreated water.

Reverse Osmosis Plant is installed adjacent to the bore well or other raw water source in a shed with all the required filters to purify the raw water.

#### The objectives of this plant are :

- Remove Fluoride
- Remove the pathogenic organisms
- Remove color and turbidity
- Remove unpleasant and objectionable taste and odour
- Remove dissolved gases
- Remove suspended, colloidal and dissolved substances of both organic and inorganic origin
- Reduce corrosive and tuberculation properties of water which affect the pipes
- Make water fit for human consumption

The raw water is fed in the inlet of multi-media filter for removal of suspended impurities. After multimedia filter, the carbon filter will be provided to remove the odour and the color of the water. Then water is pumped in high pressure through the Reverse Osmosis block, wherein the major quantities of dissolved salts are rejected in the reject stream and pure water comes out as a separate stream. The plant also provides Ultra-Violet sterilizers to further kill any trace of bacteria or germs in the water. Purified water is supplied to the target population through cans and other containers.



Reverse Osmosis Plant  
&  
Plant House



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## Join us in Fighting Fluorosis



R I District 3150

## ROTARY CLUB OF HYDERABAD EAST

Club No. 24126



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