SCIENTIFIC FACTS AND DATA ON FLUORIDE AND ITS ADVERSE EFFECTS

ON

HUMAN HEALTH

AND

Compelling Reasons for Discontinuation of Fluoridation of Community Water Supply.

Presented to :

- *Water Fluoridation Committee (WFC). Region of Peel*
- *Councillors of Municipalities of various Towns*
- *Canadian Government Officials.*

By

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DRINKING WATER QUALITY STANDARD FOR FLUORIDE GLOBAL SCENARIO

1. SENEGAL (WEST AFRICA) - 0.6 ppm (mg / L) [LANCET 1988]
2. CHINA - 0.5 ppm
3. THAILAND - 0.5 ppm
4. INDIA - 1.0 ppm. MAXIMUM LIMIT WHICH BODY MAY TOLERATE; LESS THE BETTER AS F^- IS INJURIOUS TO HEALTH (BIS 2012) (HIGHEST F^- IN GEOLOGICAL CRUST) + FOOD & BEVERAGES AS ADDITION OF BLACK ROCK SALT – F^- = 157 ppm. From 1987 – till date INDIA DEFLUORIDATING WATER)
5. **US EPA - 0.7 ppm MAXIMUM CONTAMINANT LEVEL DWQ STANDARD OF US, 1962 ACT- AMENDED 52 years later in April 2015**
6. ALL EUROPEAN NATIONS STOPPED FLUORIDATION – **30 YEARS AGO DUE TO HEALTH PROBLEMS**
7. WHO GUIDELINE - 1.5 ppm F^- **desirable. (NOT STANDARD)**
8. PROBLEM NATIONS (As of 2016) :
   - **AUSTRALIA** - FLUORIDATES Drinking Water
   - **BRITAIN** - FLUORIDATES Drinking Water
   - **CANADA** - FLUORIDATES Drinking Water

WHY DRINKING WATER WAS / IS BEING FLUORIDATED ?

Reasons :
- It was thought to be preventing Dental Caries.
- How ? F^- kills the bacteria breeding in oral cavity
- Dental Caries was popularized since 1940s as F^- deficiency disorder. **[In fact, in this Universe there is no disease due to F^- deficiency]**

- Water was then fluoridated to correct the deficiency.
- Medication without consent; side effects occurred. Population in distress.
  - F^- being an electronegative element, **it was thought that** it will bind with positively charged Calcium $^{++}$ Ions and make teeth stronger.
  - It is a myth and no science
- Ample scientific evidence NOW available for prevention of Caries through promotion of Oral Hygiene & Health.
- Good nutritive diet with high calcium to have strong teeth.
- In 1940s, there was hardly any Scientific Evidence on the harmful effects of F^-; research was in primitive stages.
- Times have changed. F^- is a deadly chemical.

HEALTH PROBLEMS EMANATING FROM FLUORIDE CONSUMPTION

1. CLASSICAL
   - NON-SKELETAL FLUOROSIS (1970s)
   - DENTAL FLUOROSIS (1930s)
   - SKELETAL FLUOROSIS (1930s)

2. FLUOROSIS LINKED DISEASES : -

♦Irritable Bowel Syndrome (Earliest signs)

- Tendency to visit the Urinal / Toilet more frequently (Though not Diabetic) Polyuria / Polydipsia.
- Severe muscle weakness : unable to walk even short distances.
- Anaemia (Low Haemoglobin)
  [Anaemia in pregnancy ; Anaemia in School Children, Anaemia in General Population – not responding to IRON + FOLIC ACID Supplementation]
- Pre-term delivery, Low Birth Weight Babies, Still birth, Abortions, Intra-uterine deaths

❖ **Blood Vessel Blockage** : High BP, High Cholesterol → Angiogram → Angioplasty; Multiple Vessels blocked → Bypass Surgery

❖ **Kidney Failure** : Dialysis, Renal Transplant

❖ **Stroke**

❖ **Cancer**

♦ Earliest complaints;
❖ Later Stages

IRRITABLE BOWEL SYNDROME

REASONS

F^- is a Neurotoxin (Damages Nerve Cells / Nerves)

F^- is a Hormone Disruptor (Hormone – Life line Disruptor)

F^- is an Enzyme Inhibitor (Inactivation of Chemical Reactions)

Results in Damages to the **Gastro-intestinal** system : Both **Structural** and **Functional**

- The microvilli – the fine structural entity – " hair like " structures lining the surface – " fall off " leading to :

  1. Non- absorption of nutrients from Diet
  2. Non- absorption of orally administered Drugs
  3. No mucus production by "Goblet Cells"
  4. Cell surfaces are cracked and one **feels pain** in the Stomach
  5. No appetite for food; nausea
  6. Peristaltic movement of the Gastro-intestinal track disappears Leads to constipation.

Upon withdrawal of F^- : GI Mucosa Regenerates **within a couple of days**

- Signs of **Irritable Bowel Syndrome** due to F^-, disappears (Drugs not required)
- **Haemoglobin** Improves. Individual feels NORMAL and ACTIVE

FOR DETECTING FLUORIDE TOXICITY (POISONING) / FLUOROSIS

TWO ESSENTIAL TESTS TO BE DONE.

TEST I : Fluoride levels to be tested in :

	Normal Range
• **Blood (Serum)**	**0.02 – 0.05 ppm**
• **Urine**	**0.1 – 1.0 ppm**
• **Drinking Water**	**Less the better not to exceed 1.0 mg / L.**

TEST II : An X-Ray Radiograph

Best Option : FOREARM – X-Ray

Membrane covering bones – A soft tissue would transform into Bone-like structure. Hard – visible in X-rays ie. Ectopic Calcification.

TEST I & II RESULTS POSITIVE. Confirmation of F^- poisoning / F^- Toxicity / FLUOROSIS.

Fluoride test Report of Patients to differentiate Skeletal Fluorosis *vs.* Skeletal Fluorosis with Renal Failure

	Age	Sex	Serum F^- (mg/L)	Urine F^- (mg/L)	Drinking Water F^- (mg/L)	Interosseous Membrane Calcification
Patient 1 Sk. Fluorosis	26	M	0.289 (x 5.7 times more)	13.90 (Kidneys functional)	9.770	✓
Patient 2 Sk. Fluorosis + Renal Failure	45	F	0.370 (x 7.4 times more)	0.960 Normal (Kidneys non-functional)	2.310	✓
Patient 3 Sk. Fluorosis + Renal Failure	40	M	0.290 (x 5.81 times more)	0.587 Normal (Kidneys non-functional)	Sample unavailable	✓

Normal reference range: *Serum : 0.02 – 0.05 mg/L* *Urine 0.1 – 1.0 mg/L*

The Clinicians confirmed Kidney Function Tests not normal, for patients 2 & 3

FLUOROSIS / FLUORIDE POISONING / FLUORIDE TOXICITY

HOW TO IMPROVE HEALTH

- No Drugs / Medicines
- Complete Recovery is achieved if the Disease suspected and confirmed at Early Stages, through 2 DIETARY INTERVENTIONS.

INTERVENTION I : DIET EDITING

(Withdraw F^- intake through all sources, including the use of Fluoridated toothpaste)

Urine F^- should be : 0.1 – 1.0 mg / L

INTERVENTION II : DIET COUNSELLING

(Promotion of Nutrients through diet)

- Essential Nutrients
- Vitamins
- Anti-oxidants
- Micronutrients & minerals & trace elements
  (through consumption of vegetables, fruits, dairy products)

Through :

- Fruits / Fruit Juice fresh (No carton juice) for ***Breakfast***
- **Vegetables & Fruits mixed salad with home made** dressing for ***Lunch***
- Home made soup with vegetables for ***Dinner***

TAKE AWAY MESSAGE

BENEFITS TO THE NATION :

- Economic benefit
- Hospital visits of the public reduce
- Drug purchase reduce
- Better health to prevail
- Infants & Children grow-up as intelligent citizens
- The general public enjoy life
- Earning capacity to improve
- The NATION TO PROSPER.

- ***The Scientific Information presented by Prof. (Dr.) A.K. Susheela, is from her personal research experiences in the Fluoride and Fluorosis front extending over a period of 4 decades (1974 – 2016).***

- ***All the Scientific peer reviewed Publications, Books, Chapters published since 1974 until 2016 are available in the website of the Foundation : http://www.fluorideandfluorosis.com***

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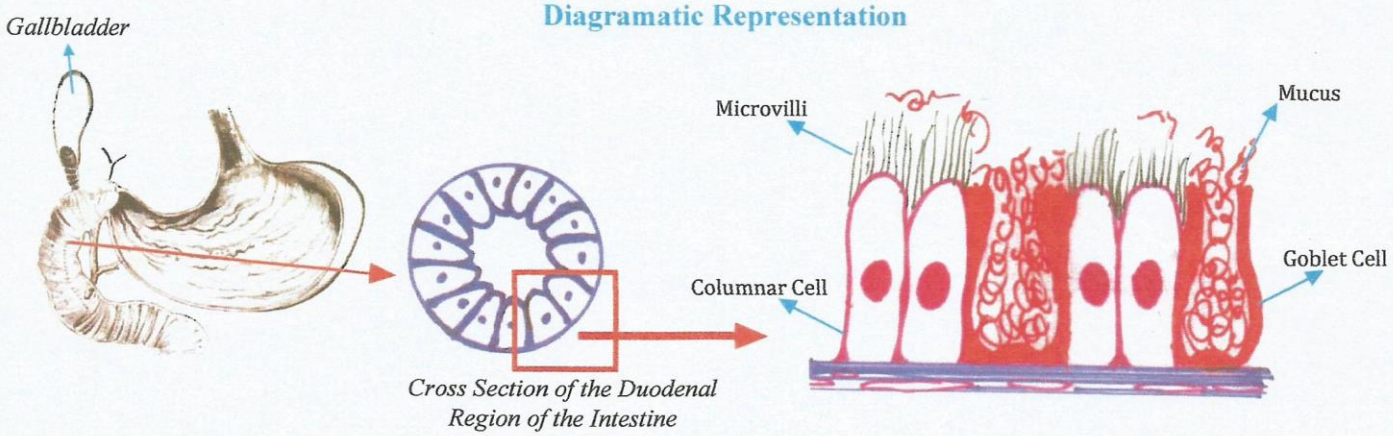
Consuming
Safe
Water
Fluoride
< 1.0 mg/l

100 % Absorption of Nutrients

NORMAL HUMAN INTESTINE

Fig 2: Scanning Electron micrograph of GI mucosa with normal columnar cells lining the Mucosa. The columnar cells are studded with microvilli besides mucus droplets produced in abundance by Globlet cells are seen. The microvilli / brush boarder is the structure responsible for absorption of nutrients. (◆microvilli studded columnar cell, ▲ mucus droplets)

Diagramatic Representation



Consuming Water With marginally Elevated Fluoride 1.2 mg/l

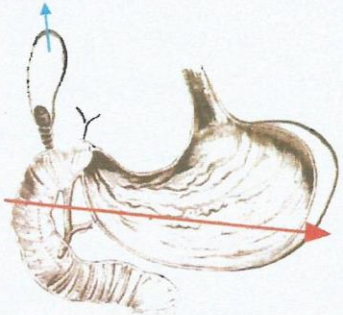
Absorption of Nutrients

20 %

DAMAGED INTESTINE

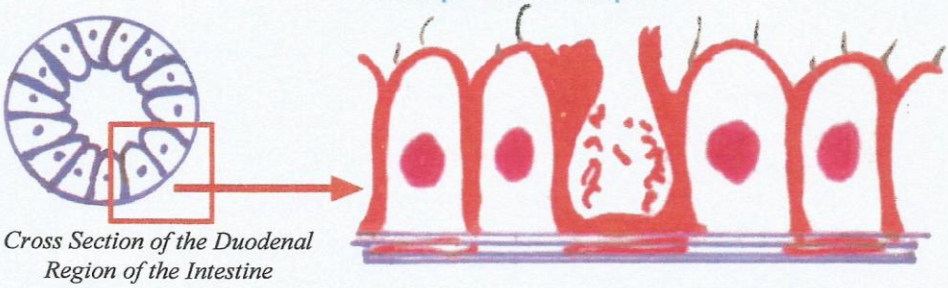
Fig.3: Note the Columnar Cell Surfaces, loss of microvilli is evident as cell surfaces are exposed with scanty microvilli or no microvilli. Mucus droplets are also reduced. The cell surfaces are bald with no microvilli at all (◆), some have scanty microvilli compared to Figure 2. No flowery appearance as microvilli are fallen off. Cell surfaces are fully exposed (O).

Gallbladder



Diagramatic Representation

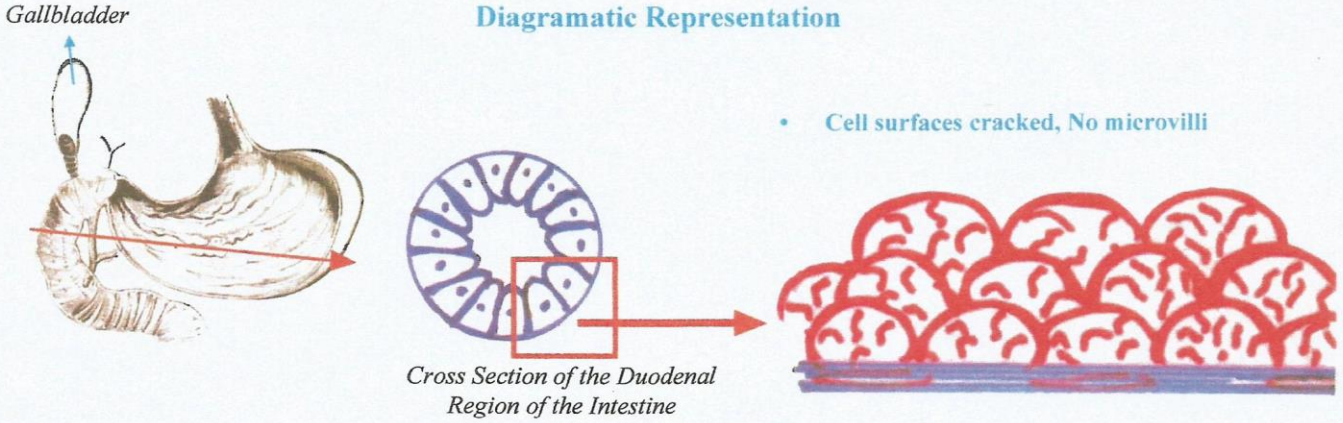
- **Microvilli for absorption of nutrients are damaged**
- **Mucus production hampered**



Cross Section of the Duodenal Region of the Intestine

Consuming Water With High Fluoride Content 3.2 mg/l

Fig.4: Note the columnar cell surfaces totally devoid of microvilli. The cell surfaces are cracked and no mucus droplets. Figures 2 & 3 are showing the devastating effects of fluoride on the GI mucosa which would prevent absorption of nutrients. However, upon withdrawal of fluoride from consumption, the mucosa would regenerate to normal within a few days, setting the Gut into normal mode of functioning enhancing absorption of nutrients.



RECTIFICATION OF ANEMIA IN PREGNANCY

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1 Background

ANEMIA : Highly Prevalent In Asia + African Nations

Anemia Prevalence In spite Of Iron (100 Mg) + Folic acid (500 µg) supplementation.

Millennium Development Goals MDG 5 & 4, could not be achieved by 2015.

MDG 5 :Reduction in Maternal Mortality Rate (MMR)
MDG 4 – Reduction in Infant Mortality Rate (IMR)

Major Factor responsible for the issue ?
Environmental Toxin i.e.
Consumption of Fluoride

2 OBJECTIVE

To correct ANEMIA in Pregnancy and improve birth weight of new born to achieve MDG 5 & 4

FLUORIDE TOXICITY
F^- Toxicity responsible for:

Anemia In Pregnancy / High Maternal Mortality Rate (MMR)

Low Birth Weight Babies / Pre-term deliveries

Disabilities in infants and children

3 Fluoride is consumed / used through :

1. Untreated ground water
2. Food and beverages
3. Consumption of Rock Salt in India; Magadi in African Nations, same volcanic origin with high F^- = 157 ppm
4. Consumption of Black / Red Tea with Lemon and / or without milk.
5. Consumption of a home made chewing gum like substance "Churans", laced with Rock salt
6. Use of Dental products with fluoride (1000 – 4000 ppm)
7. Industrial emission and inhalation of fluoride dust and fumes

4 Role of F^- in Systemic Circulation

F^- a highly toxic, corrosive chemical : Major damages caused :

- Destroys microvilli; hampers mucus production; destroys muscle fibers.
- Due to loss of microvilli, non-absorption of nutrients and Iron & Folic acid orally administered.
- Non-production of mucus, non-contractile muscle fibres in the wall of Intestine (lack of peristaltic movement) lead to Constipation

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- **F^- interferes with Thyroid hormone production (↓)**
- **Due to less of Thyroid hormones, lack stimuli on bone marrow, less number and abnormal RBCs produced.**
- **Abnormal RBCs (Echinocytes) are phagocytosed, eliminated from Blood stream Reduction in RBC leads to Low haemoglobin.**
- **F^- Destroys Gut bacteria & Vitamin B12 production reduced, essential for Hb production.**
- **Withdrawal of F^- consumption – reverses the 3 harmful effects of F^- listed above.**

6 INTESTINAL MUCOSA

Normal & upon F^- consumption:
Scanning Electron Micrographs Intestinal Mucosa – showing normal and damages inflicted

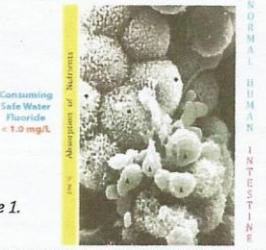
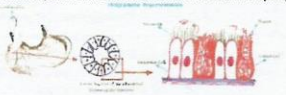


Figure 1.

Scanning Electron micrograph of GI mucosa with normal columnar cells lining the Mucosa. The columnar cells are studded with microvilli besides mucus droplets produced in abundance by Globlet cells are seen. The microvilli / brush boarder is the structure responsible for absorption of nutrients. (◆microvilli studded columnar cell, ▲ mucus droplets)



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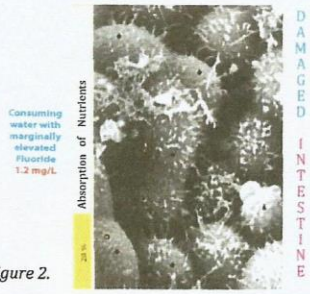
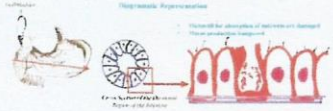


Figure 2.

Note the Columnar Cell Surfaces, loss of microvilli is evident as cell surfaces are exposed with scanty microvilli or no microvilli. Mucus droplets are also reduced. The cell surfaces are bald with no microvilli at all (◆), some have scanty microvilli compared to Figure 1. No flowery appearance as microvilli are fallen off. Cell surfaces are fully exposed (○).



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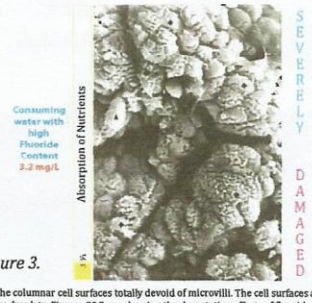
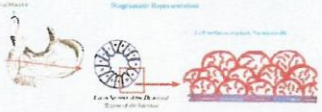


Figure 3.

Note the columnar cell surfaces totally devoid of microvilli. The cell surfaces are cracked and no mucus droplets. Figures 2&3 are showing the devastating effects of fluoride on the GI mucosa which would prevent absorption of nutrients. However, upon withdrawal of fluoride from consumption, the mucosa would regenerate to normal within a few days, setting the Gut into normal mode of functioning enhancing absorption of nutrients.



9 Interventions Practised

1. Diet Editing [For removal of F^-]

2. Diet Counselling [For enhancing nutrient intake

Withdrawal of F^- consumption – corrects damages ; Regeneration of microvilli leads to absorption of nutrients + orally administered Iron + Folic acid

To ensure :
By (1) Re-testing Urine F^- - reduced
(2) Hemoglobin content - enhanced

[UFL & Hb has inverse relationship]
MMR & IMR would stand corrected.

PTO

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Results of out-reach programme 10

Addressing Pregnant Women attending Ante-natal Clinics in Hospitals in New Delhi, India

Protocol to Follow In Antenatal Clinics.
(Anaemia control and correction of low birth weight babies)

Test 1: To Test Haemoglobin, show the result to the pregnant women. (Explain implications) – Haemoglobinometer preferred (HemoQ).

Test 2: To Test Urine Fluoride (Collect urine sample in plastic bottle; 30 ml only) - test in the laboratory using Ion Meter.

Test 3: To Test Drinking Water Fluoride. If Urine Fluoride is more than 1.0 mg/l, Drinking water collected (in plastic bottle; 30ml) and test for Fluoride in the laboratory

Test 4: Anaemic pregnant women having;
Hb < 12.0g/dl, High Urine Fluoride > 1.0 mg/l,
High Drinking water Fluoride > 1.0 mg/l

To introduce :
(1) Diet Editing : to withdraw consumption of Fluoride sources, including use of fluoridated toothpaste.
(2) Diet Counselling : to impart information on importance of consuming vegetables, fruits and dairy products Through : Breakfast / Lunch /Dinner

Test 5: During visits to ANC, to check UFL & Hb until delivery. Maximum contact 120 days

ANC – will continue to provide iron (100 mg) and Folic acid (500µg) as per hospital guidelines

Results Of Pregnant Women In Sample & Control Groups 11

Sample : 2 Interventions introduced:
(1) Diet Editing
(2) Diet Counselling; Iron + Folic Acid Supplemented

Control :
(1)No Diet Editing; Iron + Folic Acid supplemented

Table 1 : The pregnant women in sample and control groups: Reduction in urine fluoride levels during initial visit to ANC and prior to delivery

	Mean ± SD Minimum Maximum	Initial Urine fluoride level (UFL) (mg/L)	Prior to delivery Urine fluoride level (UFL) (mg/L)	Reduction in UFL (%)	p value
Sample n= 234	Mean ± SD	2.073 ± 1.089	1.502 ± 1.055*	152/234 65.0%	p value <0.01 significant
	Min - Max	1.04 – 7.29	0.254 – 7.749		
Control n= 247	Mean ± SD	1.826 1.245	1.788 ± 1.242*	121/247 (49.0%)	p value < 0.01 significant
	Min - Max	0.231 – 7.150	0.263 – 8.768		

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Table II : The pregnant women in sample and control groups: Rise in hemoglobin (g/dl) during initial visit to ANC and prior to delivery.

	Mean ± SD Minimum Maximum	Initial Hb (g/dl)	Prior to delivery Hb (g/dl)	Rise in Hb percentage
Sample n= 234	Mean ± SD	9.3 ± 1.3	10.8 ± 1.6 **	180/234 77.0%
	Min - Max	5.0 – 11.0	5.6 – 14.0	
Control n= 247	Mean ± SD	9.0 ± 1.4	9.7 ± 1.6**	140/247 56.7%
	Min – Max	5.1 – 11.0	5.0 – 12.6	
		** p value < 0.0001 (significant)		

Table III : The impact of interventions on the Body Mass Index (BMI) of the Pregnant Women of sample and control groups.

	Body Mass Index (BMI)	Initial	Prior to Delivery
Sample n= 234	< 18.5 (Undernourished)	22%	1%
	25.0 – 29.9 (Desirable in Pregnancy)	3%	31%
Control n= 247	< 18.5 (Undernourished)	27%	2%
	25.0 – 29.9 (Desirable in Pregnancy)	5%	14%

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Table IV: The birth weight of the babies in the sample and control groups .

	Mean ± SD Minimum Maximum	Low birth weight (< 2.5 kg)	Percentage of low birth weight babies born (<2.5 kg)	Normal birth weight (> 2.5 kg)	Percentage of normal birth weight babies born (> 2.5 kg)
Sample n= 234	Mean ± SD	2.26 ± 0.16	41/234 (17.5%)*	2.90 ± 0.28 **	193/234 82.5%
	Min - Max	1.87 – 2.48		2.5-3.89	
Control n= 247	Mean ± SD	2.08 ± 0.55	101/247 (41.0%) ***	2.75 ± 0.20**	146/247 (59.0%)
	Min – Max	1.25 – 2.48		2.5 – 3.30	
		** p value < 0.0001 (significant)			

** Intra uterine death at 40 wk = 1 No. *** 3 pre-term still births at 30,34 and 35th weeks of gestation. 2 intra uterine deaths at 38 and 40 wks of gestation.*

Anemia In Pregnancy 14

Do's

1. Check Hb, Vit B12, Urine F (<1.0 mg / L)
2. Attend to Dental problems, if any.
3. Practise highest personal hygiene.
4. Drink boiled and safe water (F<1.0 mg / L)
5. Consume Non-toxic, Nutritive diet, freshly prepared.
6. Consume fruits, vegetables and dairy products daily

Don'ts : (To avoid)

1. Street food
2. Dining out
3. Refrigerated food
4. Egg & Egg products
5. Carbonated drinks
6. Processed meat / chicken / cold cuts

Correction of Anemia + Improvement of Birth weight of Babies 15

Conclusion & Take Home Messages

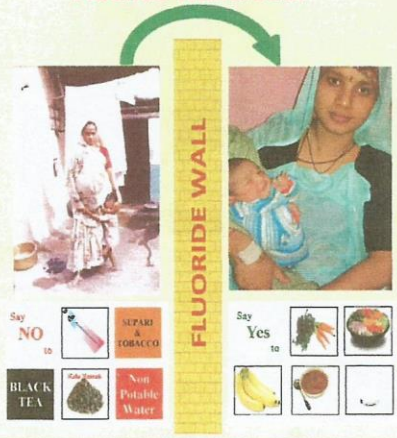
- No short-cuts for improving Hb during pregnancy and birth weight of babies.
- Provision of safe water for drinking & cooking with F^- as low as possible but not beyond 1.0 mg / L; lesser F^- the better. Urine F^- <1.0 mg / L.
- Provision of Nutritive diet; Non-toxic food with fruits, vegetables and dairy products.
- With Iron + Folic acid supplementation- a must.
- Highest personal hygiene practices to be introduced.
- Delivery in Hospitals to be encouraged
- Attend to Dental problem, if any, tartar removed, cavities filled, attend to Gingivitis (Inflammation of the gums).

MAJOR ACHIEVEMENTS 16

- Urine F^- Reduced to <1.0 mg / L = 1.0 - 0.254 mg/L = (65% pregnant women).
- Healthy Mother with Hb > 12.0 – 14.0 g/dL (77% pregnant women)
- Healthy Baby with Birth Weight > 2.5 – 3.89 Kg (82.5% babies born)

Achieved In India Only (2005 – 2010)

Improvement Upon Fluoride Withdrawal 17



Our Babies 18

ID No. 067	
Birth weight	3.5 Kg
Mother's Hb	12.0 g/dl

ID No. 174	
Birth weight	3.5 Kg
Mother's Hb	11.6 g/dl

ID No. 372	
Birth weight	3.7 Kg
Mother's Hb	12.2 g/dl

TO EMPOWER POPULATION FOR NUTRITIONAL REQUIREMENTS THROUGH DIET FOR BETTER HEALTH

A.K. SUSHEELA, N.K. MONDAL, G. RASHMI,
FLUOROSIS FOUNDATION OF IND,DELHI, INDIA : E-mail : FRnRDF@gmail.com

1. BACKGROUND INFORMATION

IN INDIA 60 – 80% SCHOOL CHILDREN : ANAEMIC

FROM :1. RURAL & URBAN
2. RICH & POOR
3. EDUCATED & UNEDUCATED

IRON & FOLIC ACID SUPPLEMENTED ACROSS THE COUNTRY BY GOVERNMENT
NO BENEFICIAL RESULTS

REASON : CONSUMPTION AND USE OF FLUORIDE

[FLUORIDE IS A NEUROTOXIN, HORMONE DISRUPTOR AND AN ENZYME INHIBITOR]

2. OBJECTIVES

1. TO IMPROVE DIET WITH NUTRIENTS THROUGH
   - SIMPLE
   - AFFORDABLE
   - EASY TO PRACTICE RECIPES
2. TO EMPOWER MOTHERS AND TEACHERS HOW TO VIEW DIET
3. TO INTRODUCE AMPLE FRUITS + VEGIES, DAIRY PRODUCTS THROUGH
   - JUICE FOR BREAKFAST
   - SALAD FOR LUNCH
   - SOUP FOR DINNER

3. School activities

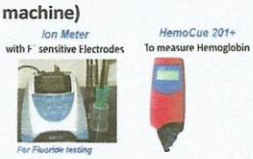
Anaemic Children explained the link with Fluoride

Bottle being given to collect Urine for testing Fluoride

School Principal Participating : Providing Blood for Hb testing

4. ESSENTIAL TESTS

1. DEWORMING ONCE A YEAR
2. TEST FOR URINE FLUORIDE
3. TEST FOR HAEMOGLOBIN (using digital portable machine)



4. TEST FOR DRINKING WATER FLUORIDE
   - REVEAL RESULTS
   - POINT OUT IMPLICATIONS
   - SUGGEST REMEDIES

	Sch. 1 Sam.	Sch. 2 Sam.	Sch. 3 Sam.	Sch. 4 Sam.	Sch. 5 Con.	Sch. 6 Con.
Baseline (Hb>12.0 g/dl	None	None	None	None	None	None
Impact : Post 1 Month ↑	20%	39%	35%	39%	9%	17%
Post 3 Month ↑	31%	41%	50%	41%	14%	21.4 %
Post 6 Month ↑	41%	57%	52.6%	51.4%	27%	-

6. BETTER HEALTH THROUGH DIET

JUICES

SALADS

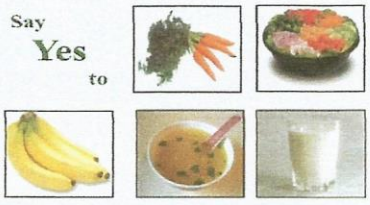
SOUPS

SNACKS

7 MAIN SPICES FOR COOKING –LUNCH/DINNER

Enrich Body with : micronutrients, Antioxidants&Vitamins through use of:

8. REMOVAL OF FLUORIDE & ADDITION OF NUTRIENTS



9. TAKEHOME MESSAGES :

- To address Anaemia, testing Hb & Urine Fluoride are necessary to identify the cause when non-responding to Iron & Folic acid supplementation
- Results to share with Parents & Teachers in the presence of their wards during Parent Teacher Meetings.
- Consume healthy snacks but no aerated drinks
- Use Fluoride-free toothpaste

The message conveyed through our Poster (PP5) during this Convention is to ELIMINATE FLUORIDE TOXIN THROUGH DIET EDITING AND PROMOTING NUTRIETS THROUGH DIET COUNSELLING TO EMPOWER POPULATION

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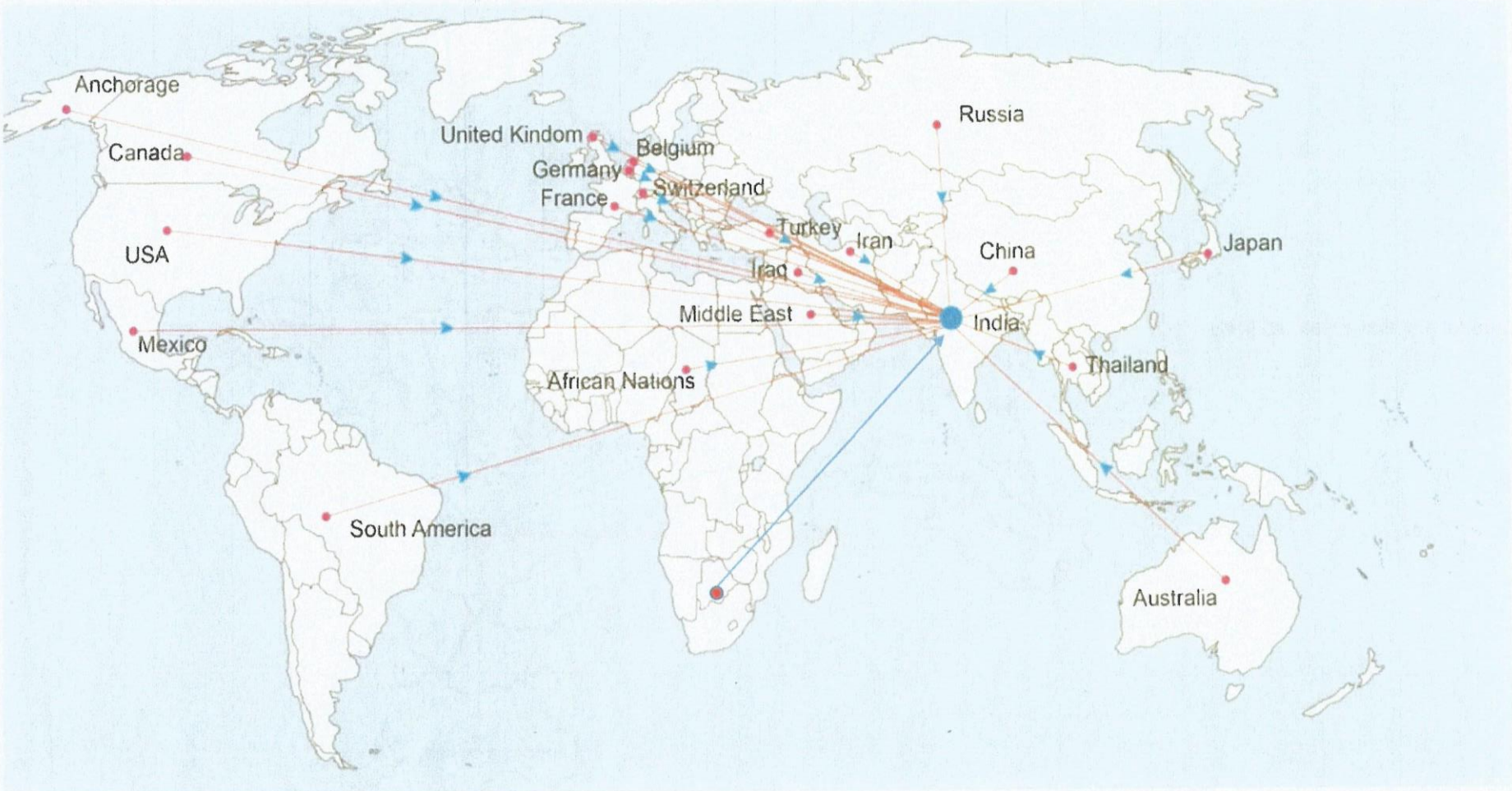
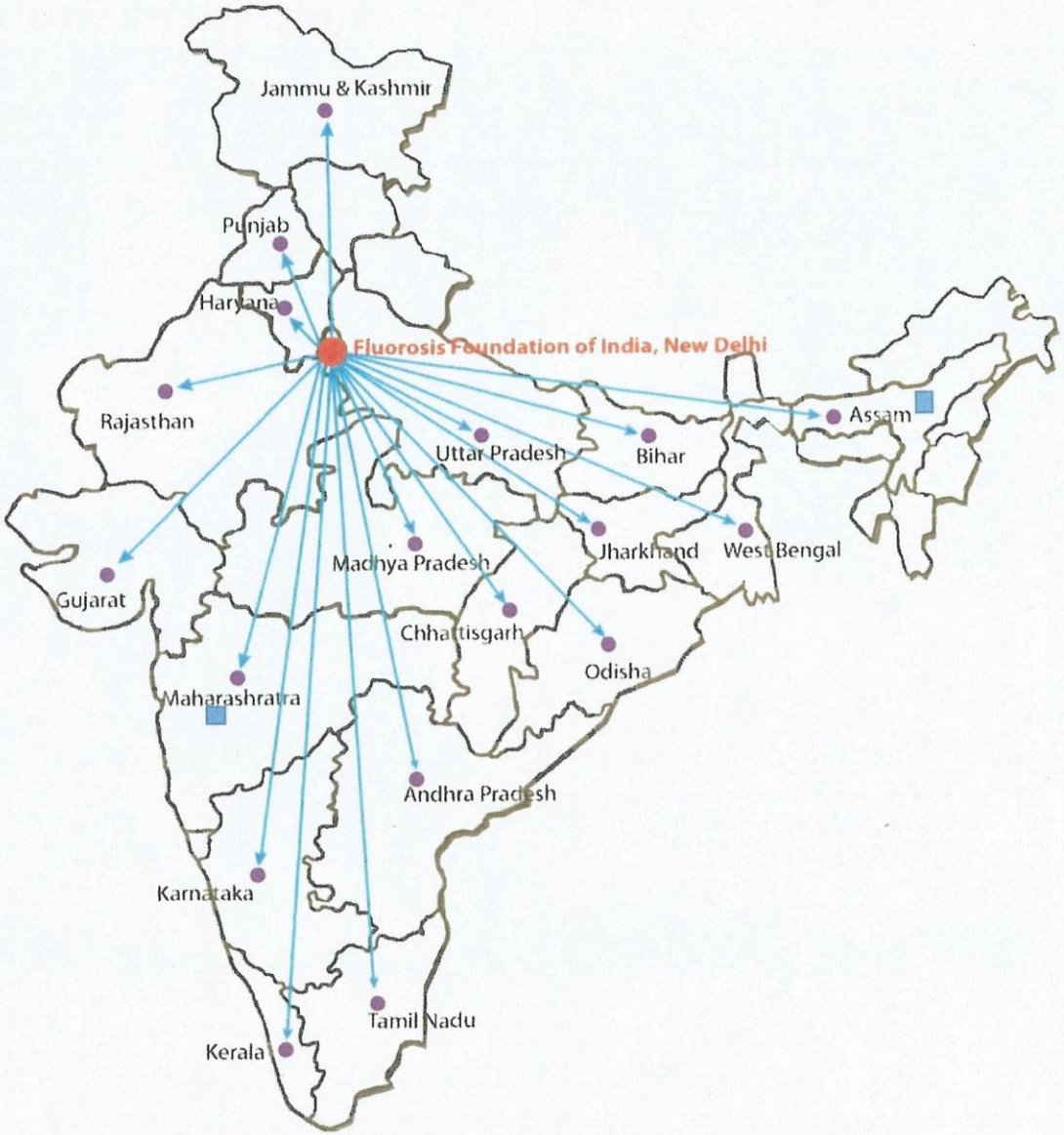


GLOBAL CONSULTATION CENTRE

REACH-OUT OF THE FOUNDATION



Field Offices- Pune & Guwahati

A STEP IN THE RIGHT DIRECTION

SUMMARY: The US Department of Health and Human Services Federal Panel on Community Water Fluoridation has made a final recommendation on community water fluoridation that replaces the relevant parts of the 1962 Drinking Water Standards. Whereas the earlier recommendation, based on the outdoor air temperature of geographic regions, involved a range of 0.7–1.2 mg F/L, the new recommendation, for community water systems that currently fluoridate or plan to do so, is for a level of 0.7 mg F/L. While this can be seen as a step in the right direction, the editorial writer considers that, based on the empirical evidence available, no fluoride should ever be added to a community water supply.

Keywords: Recommendation for fluoride in water; Water fluoridation.

In an update to the website of the Centers for Disease Control and Prevention, dated 24 April 2015,[1] it was noted that the US Department of Health and Human Services Federal Panel on Community Water Fluoridation has made a final recommendation on community water fluoridation that replaces the relevant parts of the 1962 Drinking Water Standards.[2] Whereas the earlier recommendation, based on the outdoor air temperature of geographic regions, involved a range of 0.7–1.2 mg F/L, the new recommendation, for community water systems that currently fluoridate or plan to do so, is for an optimal fluoride concentration in drinking water of 0.7 mg/L. The US Surgeon General, Dr VH Murthy, endorsed the recommendation and urged that communities adopt it.[3]

The Panel considered comments that a level of 0.7 mg F/L might cause adverse effects involving severe dental fluorosis, bone fractures, skeletal fluorosis, carcinogenicity, IQ and other neurological effects, and endocrine disruption. They stated that, after they thoroughly reviewed the evidence related to these concerns, they did not identify compelling new information requiring them to alter their assessment.[2]

In the discussion on IQ and other neurological agents, only eight references were quoted including the findings of a recent prospective study of a birth cohort in New Zealand which did not support an association between fluoride exposure and adverse effects on IQ.[2,4] However, no comments were made on the limited power of the Broadbent et al. study because of the small size of the group with no exposure to fluoridated water, fluoride tablets or fluoridated toothpaste.[5,6] The panel also noted that a meta-analysis of IQ studies involved drinking water concentrations of up to 11.5 mg/L without noting that adverse IQ effects were found in a low-iodine group receiving just 0.88 mg F/L in their drinking water.[7] No critique was made of more recent research linking, in 7.1-year-old children drinking water containing 1.12–4.07 mg F/L, the presence of moderate or severe dental fluorosis with cognitive impairment,[8] or of an analysis, of the available empirical evidence, which found that, to protect the whole population against adverse IQ effects, the level of fluoride in drinking water should not exceed 0.1 mg/L.[9]

The Panel noted that while fewer than 1% of the population using fluoridated water in December 2010 received water with 0.7 mg/L, by the summer of 2011, just six months after the publication of the draft notice of the new level of 0.7 mg/

L, the percentage of the fluoridated-water-receiving-population receiving water with 0.7 mg/L had risen to 68%.[2]

Thus, while the recommendation of a drinking water fluoride level of 0.7 mg/L is better than the previous recommended range of 0.7–1.2 mg/L and a step in the right direction, it does not go far enough. Although the World Health Organization set, in 1984 and reaffirmed in 1993, a guideline of 1.5 mg F/L (1.5 ppm) as a "desirable" upper limit, it also allows countries to set Country Standards, their own national standards or local guidelines.[10] The limit of 1.5 mg F/L has been seen to be unsuitable in some countries and lower Country Standards have been set of 1 mg/L in India and 0.6 mg/L in Senegal, West Africa.[11] A rider to the Indian limit is that the "lesser the fluoride the better, as fluoride is injurious to health."[11]

Hopefully, another 52 years will not have to pass before the 0.7 mg/L recommendation is replaced by a new recommendation that no fluoride should ever be added to a community water supply.

Bruce Spittle, Editor-in-Chief, *Fluoride*
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REFERENCES

1 Centers for Disease Control and Prevention. Community water fluoridation. [updated 2015 Apr 24; cited 2015 May 14]. Available from: http://www.cdc.gov/fluoridation/

2 U.S. Department of Health and Human Services Federal Panel on Community Water Fluoridation. U.S. Public Health Service recommendation for fluoride concentration in drinking water for the prevention of dental caries. Public Health Rep 2015;130(4). [14 pages, E-pub ahead of print]. Available from: http://www.publichealthreports.org/fluorideguidelines.cfm

3 Murthy VH. Surgeon General's perspectives: community water fluoridation: one of CDC's "10 great public health achievements of the 20th century." Public Health Rep 2015;130(4). [3 pages, E-pub ahead of print]. Available from: http://www.publichealthreports.org/fluorideguidelines.cfm

4 Broadbent JM, Thomson WM, Ramrakha S, Moffitt TE, Zeng JX, Foster Page LA, Poulton R. Community water fluoridation and intelligence: prospective study in New Zealand Am J Public Health 2015;105(1):72-6. [abstract in Fluoride 2014;47(2);181].

5 Spittle B. Fluoride IQ, and advice on Type I and II errors [editorial]. Fluoride 2014;47(3):188-90.

6 Spittle B. Further comments on fluoride and IQ [editorial]. Fluoride 2014;47(4):279-82.

7 Choi AL, Sun GF, Zhang Y, Grandjean P. Developmental fluoride neurotoxicity: a systematic review and meta-analysis. Environ Health Perspect 2012 Oct;120(10):1362-8. [abstract in Fluoride 2012;45(3 Pt 2):311-2].

8 Choi AL, Zhang Y, Sun GF, Bellinger DC, Wang KL, Yang XJ, et al. Association of lifetime exposure to fluoride and cognitive functions in Chinese children: a pilot study. Neurotoxicol Teratol 2015;47:96-101.

9 Spittle B. Neurotoxic effects of fluoride [editorial]. Fluoride 2011;44(3):117-24.

10 WHO. Fluoride in drinking-water: background document for development of WHO Guidelines for drinking-water quality. WHO/SDE/WSH/03.04.96, English only. Geneva: WHO; 2004. Available from: http://www.who.int/water_sanitation_health/dwq/chemicals/fluoride.pdf

11 Susheela AK. A treatise on fluorosis. 3rd ed. Delhi: Fluorosis Research and Rural Development Foundation; 2007. pp. 15-6.