

New front burner fluoridation issues are common. In Oregon 2005 it was Salmon Runs. Fluoridation's effect on natural rivers such as the Columbia is too small to have any conceivable impact on Salmon. Since 2003 it is Chinese epidemiological IQ reports.

Here is the paper at the heart of the furor, a metanalysis of mostly Chinese papers on IQ and fluoride exposures.

Note the author's choice of words "high fluoride."

Fluoridated water and neurodevelopment has been previously studied. Here 1986 New Zealand research shows no ill effect.

New, soon to be published data from Dunedin, New Zealand shows better IQ for those who stay in the fluoridated city during critical brain development.

The Wichita Eagle quotes the authors that fluoridation voters should not consider their study.

And for good reason!!

Meta-analyses of highest quality research, randomized controlled trials, are often mistaken. This analysis combined epidemiological environmental descriptive studies - very low quality information in the author's own judgment.

ehp ENVIRONMENTAL HEALTH PERSPECTIVES
October 1, 2012

Developmental Fluoride Neurotoxicity: A Systematic Review and Meta-Analysis
Anna L. Choi,¹ Guilfan Sun,² Ying Zhang,¹
¹Department of Environmental Health, Harvard University

high fluoride exposure

Conclusions: The results support the possibility of an adverse effect of an adverse effect of high fluoride exposure on children's neurodevelopment. Future research should include detailed individual-level information on prenatal exposure, neurobehavioral performance, and covariates for adjustment.

"no association between exposure to fluoridated water and a large range of measures of child health and behaviour"

PubMed.gov
US National Library of Medicine
National Institutes of Health

N Z Med J. 1986 Jun 11;99(803):416-8.

Exposure to fluoridated public water supplies and child health and behaviour.
Shannon FT, Fergusson DM, Horwood LJ.

Abstract
The relationship between duration of exposure to fluoridated public water supplies and measures of child health and behaviour was studied for a birth cohort of Christchurch children. This study showed no association between exposure to fluoridated water and a large range of measures of child health and behaviour taken during the period from birth to seven years, even when the possible effects of family social background were taken into account statistically.

NEWS New Zealand
By Dr. Mark Connett
Online Reporter

Researcher hits back at anti-fluoride campaigners
Monday 03 Feb 2014 10:43a.m.

Fluoridation – higher IQ

A University of Otago researcher is hitting back at anti-fluoride activists, saying their studies are looking at the wrong evidence.

...
"[Dr] Connett's got a bit of a misreading of the evidence there, where he's clinging onto something which isn't really evidence-based."

Dr Broadbent has been part of a University of Otago study that has followed the health and development of Dunedin residents over the last 40 years.

"What we find is that people who were born in Dunedin and exposed to fluoride in their formative years when the brain is developing during that important time, actually have slightly higher IQs than people who leave Dunedin," he says.

<http://www.steven.co.nz/Researcher-hits-back-at-anti-fluoride-campaigners/4649423/articleID/330761/Default.aspx>

The Wichita Eagle
Kansas.com
By Dion Leffer
The Wichita Eagle
Published Tuesday, Sep. 11, 2012, at 7:55 p.m.

26°F
45°/22°
Complete Forecast

Harvard scientists: Data on fluoride, IQ not applicable in U.S.

Harvard University scientists say that Wichita voters shouldn't depend on a research study they compiled to decide whether to put fluoride in the city's drinking water to fight tooth decay.

While the studies the Harvard team reviewed did indicate that very high levels of fluoride could be linked to lower IQs among schoolchildren, the data is not particularly applicable here because it came from foreign sources where fluoride levels are multiple times higher than they are in American tap water.

Photos


The NEW ENGLAND JOURNAL of MEDICINE

SPECIAL ARTICLE
Discrepancies between Meta-Analyses and Subsequent Large Randomized, Controlled Trials
Jacques LeLorier, M.D., Ph.D., Geneviève Grégoire, M.D., Abdelatif Benhaddad, M.D., Julie Lapierre, M.D., and François Derderian, M.Sc.
N Engl J Med 1997; 337:536-542 | August 21, 1997 | DOI: 10.1056/NEJM199708213370806

CONCLUSIONS
The outcomes of the 12 large randomized, controlled trials that we studied were not predicted accurately 35 percent of the time by the meta-analyses published previously on the same topics.

35% in error

And the authors very clearly state that these papers have serious deficiencies.

Developmental Fluoride Neurotoxicity: A Systematic Review and Meta-Analysis

Anna L. Choi,¹ Guifan Sun,² Ying Zhang,³ and Philippe Grandjean^{1,4}

¹Department of Environmental Health, Harvard School of Public Health, Boston, Massachusetts,

"... each of the articles reviewed had deficiencies, in some cases rather serious ones, that limit the conclusions that can be drawn."

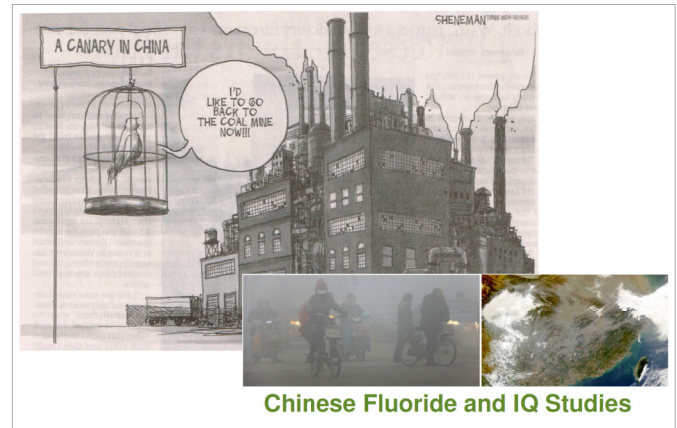
China is a polluted place.. Pollution, visible both on the ground and from space is good reason these studies should not set US public health policy.

These studies weren't necessarily even about drinking water. Well studied pollution events show exposures exponentially higher than .7 ppm water.

Known issues were specifically recognized in a few of the papers and not properly ruled out in most.

The reference comparison of "low fluoride" most often was that of fluoridation's concentration. . . .those papers straightforwardly demonstrate fluoridation's safety.

Almost none were subject to the Western peer review process



Chinese Fluoride and IQ Studies



Chinese Fluoride and IQ Studies

20% studied environmental pollution, not drinking water



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20% studied environmental pollution, not drinking water

15% were complicated by iodine and arsenic effects



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20% studied environmental pollution, not drinking water

15% were complicated by iodine and arsenic effects

80% had the "low fluoride" reference level the same as fluoridation



Chinese Fluoride and IQ Studies

20% studied environmental pollution, not drinking water

15% were complicated by iodine and arsenic effects

80% had the "low fluoride" reference level the same as fluoridation

Only one of the papers was from a peer reviewed western journal

[illegible]

ehp | ENVIRONMENTAL HEALTH PERSPECTIVES

October 1, 2012

Developmental Fluoride Neurotoxicity: A Systematic Review

Average “low” Chinese fluoride = 0.78 ppm

Optimal Fluoride Target in US = 0.7 ppm

neurodevelopment. Future research should include detailed individual-level information on prenatal exposure, neurobehavioral performance, and covariates for adjustment.

Journal of Bone and Mineral Research

JBM[®]

The American Society for Bone and Mineral Research

J Bone Miner Res. 2001 May;16(5):932-9.


Effect of long-term exposure to fluoride in drinking water on risks of bone fractures.

Li Y, et al. Center for Dental Research, Loma Linda University School of Dentistry, California 92350, USA.

*** BEST**


The graph plots the prevalence of overall fractures (%) on the y-axis (ranging from 3 to 10) against fluoride concentration in water (ppm) on the x-axis. The x-axis categories are 0.25-0.34, 0.58-0.73, 1.00-1.06, 1.45-2.19, 2.62-3.56, and 4.32-7.97. Data points are represented by black squares with vertical error bars. The prevalence decreases from 7.41% at 0.25-0.34 ppm to a minimum of 5.11% at 1.00-1.06 ppm, then increases to 7.40% at 4.32-7.97 ppm. A red asterisk and the text '* BEST' are placed above the 1.00-1.06 ppm data point. A note indicates that p < 0.05 as compared to the group of 1.00-1.06 ppm for the 0.25-0.34, 0.58-0.73, and 4.32-7.97 ppm groups.

Fluoride in Water (ppm)	Prevalence of Overall Fractures (%)
0.25-0.34	7.41*
0.58-0.73	6.40
1.00-1.06	5.11*
1.45-2.19	6.04
2.62-3.56	6.09
4.32-7.97	7.40*



CNKI JOURNAL
CHINESE JOURNAL OF CONTROL OF ENDEMIC DISEASES

Chinese Journal of Control of Endemic Diseases



中国地方病防治
第15卷 第5期
2004年10月

Qin LS, Cui SY. (1990). The influence of drinking water fluoride on pupils IQ, as measured by Rui Wen's standards. Chinese J of the Control of Endemic Diseases 5:203-204.0)

“By testing of the intellectual ability of 447 elementary school students ranging in age from 9 to 10 1/2, it was discovered that both high and low fluoride had an effect on child intelligence. Fluoride levels greater than 2.0 mg/L or less than 0.2 mg/L can disrupt intellectual development.”

Fluoride below 0.2 ppm → Lowered IQ

USA Target - 0.7 ppm → Best IQ

Fluoride above 2.0 ppm → Lowered IQ

Fluoride below 0.2 ppm → Lowered IQ
USA Target - 0.7 ppm → Best IQ
Fluoride above 2.0 ppm → Lowered IQ

Poor quality information would never be used to change best clinical practice for individual patients. It is unreasonable to propose that ecologic comparisons from a terribly polluted country composed of studies with these many flaws should set USA public health policy.

Because fluoridation opponents were incorrectly labeling the Choi and Grandjean paper “the Harvard Study” and because the meta-analysis has no importance to the scientific evaluation of fluoridation's safety, Boston based oral public health authority Dr. Myron Allukian, a graduate of the Harvard School of Public Health, requested Harvard formally consider the matter.

The deans of the Harvard Medical School, Dental School and School of Public Health (in which Grandjean hold an adjunct position) clearly stated they believe fluoridation to be safe, beneficial and practical. This is the official Harvard position.



March 22, 2013

Dr. Myron Allukian, Jr.
Immediate Past President, American Association for Community Dental Programs
Associate Clinical Professor, Harvard School of Dental Medicine
Via email: myalluk@aol.com

Dear Dr. Allukian:

As Deans of Harvard Medical School, Harvard School of Dental Medicine and the Harvard School of Public Health, we continue to support community water fluoridation as an effective and safe public health measure for people of all ages.

Numerous reputable studies over the years have consistently demonstrated that community water fluoridation is safe, effective, and practical. Fluoridation has made an enormous impact on improving the oral health of the American people.

Our country is fortunate to have over 204 million Americans living in fluoridated communities and having access to the health and economic benefits of this vital public health measure.

Sincerely,

A handwritten signature in blue ink, appearing to read "Jeffrey S. Flier".

Jeffrey S. Flier, MD
Dean of the Faculty of Medicine
Caroline Shields Walker Professor of Medicine
Harvard Medical School

A handwritten signature in blue ink, appearing to read "Bruce Donoff".

R. Bruce Donoff, DMD, MD
Dean and Walter C. Guralnick Distinguished Professor of Oral and Maxillofacial Surgery
Harvard School of Dental Medicine

A handwritten signature in blue ink, appearing to read "Julio Frenk".

Julio Frenk, MD, MPH, PhD
Dean of the Faculty, Harvard School of Public Health
T & G Angelopoulos Professor of Public Health and International Development,
Harvard School of Public Health and Harvard Kennedy School

Well funded committees of experts have many times Hood River, OR 97031 reviewed all of the science related to fluoridation and health concerns. Other than the Qin study, which found optimal fluoride associated with better IQ, none have identified any fluoridation effect on the developing brain.

Systematic Evidence Based Reviews



2011 Critical review of any new evidence on the hazard profile, health effects, and human exposure to fluoride and the fluoridating agents of drinking water. European Scientific Committee on Health and Environmental Risks



2008 A systematic review of the efficacy and safety of fluoridation. Department of Public Health, Scotland, UK



2007 A systematic review of the efficacy and safety of fluoridation National Health and Research Council, Australia



2006 Fluoride in Drinking Water: a scientific review of EPA's standards. National Research Council



2001 Recommendations for Using Fluoride to Prevent and Control Dental Caries in the United States. MMWR, August 17, 2001;50

2001 Task Force on Community Preventive Services, MMWR, November 30, 2001;50



2000 A Systematic Review of Public Water Fluoridation University of York (UK)



1991 Review Of Fluoride: Benefits And Risks U.S. Public Health Service

An independent review from an English Health District found no relevance to the meta-analysis and the decision for fluoridation.

Bazian. Better health at lower cost

A report for South Central Strategic Health Authority February 2009

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Independent critical appraisal of selected studies reporting an association between fluoride in drinking water and IQ

Executive summary

... In our appraisals we found that the study design and methods used by many of the researchers had **serious limitations**. The lack of a thorough consideration of confounding as a source of bias means that, from these studies alone, it is **uncertain** how far fluoride is responsible for any impairment in intellectual development seen. The amount of naturally occurring fluoride in drinking water and from other sources and the socioeconomic characteristics in the areas studied is different from the UK and so these studies **do not have direct application** to the local population of Southampton.

Grandjean, the senior author of the meta-analysis published a paper with a Harvard pediatrician on environmental toxins and brain development in The Lancet Neurology. Fluoride is a very minor element; its only literature reference is Grandjean's prior paper. This paper thus adds nothing to what has been discussed above. It contains nothing new.

THE LANCET Neurology Nothing new

Lancet Neurol 2014; 13: 330-38 Published Online February 15, 2014

Neurobehavioural effects of developmental toxicity

Philippe Grandjean, Philip J Landrigan

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29 Debes F, Buijs-Jorgensen E, Weihe P, White RF, Grandjean P. Impact of prenatal methylmercury exposure on neurobehavioural

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In an interview for The Atlantic pediatrician co-author Phillip Landrigan made clear the difference between beneficial low dose fluoride typical of the US and the high doses in China which might be harmful.

The Atlantic US fluoride dose beneficial

By James Hamblin

Interview of pediatrician author Phillip Landrigan about The Lancet Neurology article: "Neurobehavioural effects of developmental toxicity"

Landrigan said, "There's no question that, at low doses, it's beneficial."

Question - Are the exposure levels in China comparable to what we have in our drinking water and toothpaste?

"No, they're probably higher," Landrigan said. "In some places in China, there are naturally high levels of fluoride in the groundwater, which picks it up because it's water-soluble."

Question - So your advice isn't to take it out of our toothpaste?

"Not at all," Landrigan said. "I think it's very good to have in toothpaste."

The unsupported claim that fluoridation might be a cause of IQ deficits among children, proved critically important to the City Councilors in Hamilton, New Zealand.

The nearby University of Otago then published an analysis of the ongoing Dunedin Multidisciplinary Health and Development Study. These data included IQ testing and water fluoridation status for over 1000 people followed for 38 years.

The Otago researchers well controlled for factors other than fluoridation, such as parents' socioeconomic background and breast feeding. New Zealand has none of the general environmental pollution common in China. .

No loss of IQ because of fluoridation was found.

The authors concluded that the “associations between very high fluoride exposure and low IQ reported in previous studies may have been affected by confounding, particularly by urban or rural status.”

