



Community Water Fluoridation

Health and Social Services and Works Committee
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Outline

- Background
- Community water fluoridation
 - ✓ Effective
 - ✓ Equitable
 - ✓ Economical
 - ✓ Safe





Background:

Why do we fluoridate?



Fluoride

- Naturally occurring mineral
- Sources of fluoride
 - ❖ Community water fluoridation (CWF)
 - ❖ Fluoridated toothpaste
 - ❖ Topically applied fluoride by dentists
- What does fluoride do?
 - ❖ Resistance to decay
 - ❖ Remineralization



History

- 1901: Colorado Springs
- 1930: National Institute of Health
- 1945: Brantford, Ontario
- 1953: Oshawa, Ontario
- 1963: Toronto, Ontario
- 2007: 45% of Canadian population have access to fluoridated water



Fluoridation Debate

- 
- 60 year history
 - Since the fluoridation started
 - Proponents: over 90 national and international organizations
 - ❖ Health Canada
 - ❖ Canadian Public Health Association
 - ❖ Canadian Dental Association
 - ❖ Canadian Medical Association
 - ❖ US Food and Drug Administration (FDA)
 - ❖ World Health Organization (WHO), etc.
 - Opponents: e.g. Fluoride Action Network

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Recent Support of Water Fluoridation



- 2010, Ontario Chief Medical Officer of Health, Dr. Arlene King
- 2011, the Council of Ontario Medical Officer of Health, Association of Local Public Health Agencies (alPHA)
- Region of Durham is alPHA member
- 2011, Chief Public Health Officer, Dr. David Butler Jones

alPHA
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Providing leadership in public health management

DRAFT NEWS RELEASE

February 17, 2011 **For Immediate Release**

Public Health Supports Fluoridation

TORONTO – The use of fluoride in drinking water is a safe, effective, and economical way to help prevent dental cavities with no scientifically proven adverse health impacts, according to Ontario public health agencies who voted overwhelmingly in support of the fluoridation of community drinking water at an Association of Local Public Health Agencies (alPHA) conference in Toronto last week. When added to water at levels recommended in Ontario and across the country, studies have determined that fluoride is

Public Health Agency of Canada Agence de la santé publique du Canada **Canada**

Home > Media Room > Chief Public Health Officer - Dr. David Butler-Jones > CPHO Statements > Water Fluoridation - September 30, 2011

A Message from the Chief Public Health Officer

Water Fluoridation

Dental disease is the number one chronic disease in North America. It affects a staggering 96% of Canadian adults, is on the rise among young Canadian children in some areas, and poor dental health increases the risk of other diseases.

Fortunately, many municipalities across the country are choosing to protect their citizens through fluoridation, the process of adjusting the level of fluoride in the water where it is too low.

Numerous scientific studies show that water fluoridation reduces tooth decay. In 2007, an expert panel of scientific researchers provided Health Canada with advice and recommendations on the current state of the science on water fluoridation. The panel's report supported the Government of Canada's position that water fluoridation is a safe and effective public health measure that significantly reduces the rate of dental decay in all segments of the Canadian population.

Canadians concerned about dental fluorosis – mild dental cosmetic effects resulting from excessive intake of fluoride – have no reason to worry. Canadian and international studies agree that water which is fluoridated at optimum levels provides important benefits and does not cause adverse health effects. In addition, children benefit most over a lifetime when they have stronger teeth and healthier gums.

The use of fluoride for the prevention of tooth decay has been endorsed by over 90 national and international professional government and health organizations. These organizations include Health Canada, the Canadian Public Health Association, the Canadian Dental Association, the Canadian Medical Association and the World Health Organization. In fact, community water fluoridation has been identified by U.S. Centers for Disease Control as one of 10 great public health achievements of the 20th century.

The Public Health Agency of Canada supports water fluoridation for our oral health. Simply put, it is a safe and cost effective public health measure which has the potential to benefit everyone, regardless of age, socioeconomic status, education, or employment.

David Butler Jones
Chief Public Health Officer of Canada

Learn more about the [Health Benefits of Fluorides](#).

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Recently Reaffirmed Decision to Fluoridate Water

- Atikokan, Ontario
- Cape Breton, Nova Scotia
- Dorval, Quebec, reintroduced fluoridation after increase in incidence of caries after fluoride was removed
- Halton, Ontario
- Hamilton, Ontario (Board of Health)
- London, Ontario (Board of Health)
- Norfolk, Ontario
- Sarnia, Ontario
- Toronto, Ontario (Board of Health)
- Tottenham, Ontario
- Peel, Ontario (Regional Council)





Durham Region: Water Fluoridation Interest



- 2008, Dr. Kyle's Memorandum to HSSC
- 2008 - 2010: 3 inquires
- 2011, e-mails and phone calls from 4 individuals to enquire about the removal of fluoride from the water supply
 - ❖ Council
 - ❖ Health Department
 - ❖ Works Department
- 2011, joint memorandum from Health and Works to the complainants
- May 4, 2011, Works Committee meeting, request of presentation
- Presentation to HSSC and Works Committee

Community Water Fluoridation

- ✓ Effective
- ✓ Equitable
- ✓ Economical
- ✓ Safe



✓ Effective

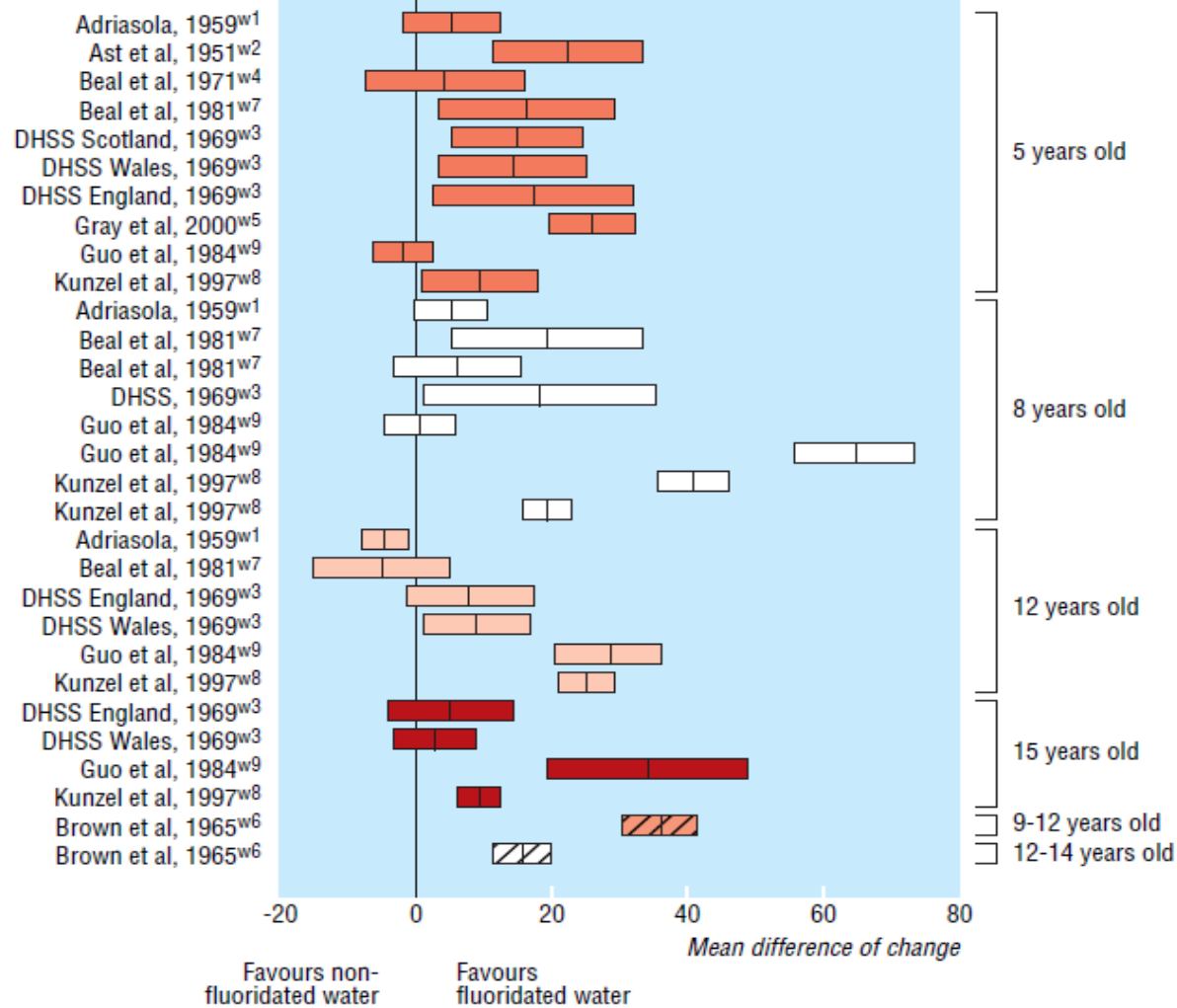


Fig 1 Change in proportion (%) of children without caries in fluoridated compared with non-fluoridated areas (mean difference and 95% confidence interval)

Source: BMJ 2000;321:855-9

✓ Effective

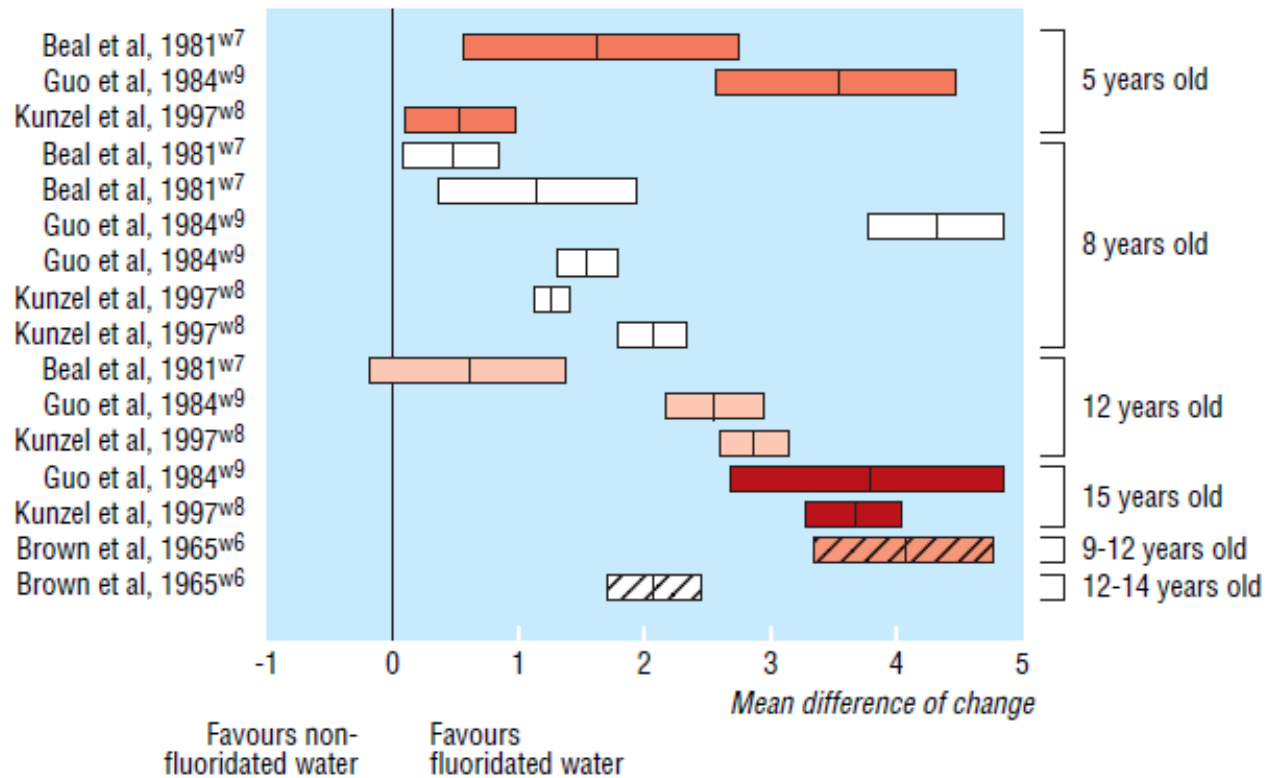


Fig 2 Change in decayed, missing, and filled teeth for primary/permanent teeth (mean difference and 95% confidence interval)

✓ Equitable



➤ Children

- ❖ 33% decay in Durham Region Children

➤ Seniors

- ❖ 49% dental caries in Durham Region seniors
- ❖ Lower insurance coverage in seniors: 47% in seniors vs 80% in 25-64 year olds

➤ Low income people

- ❖ 7.7% Durham Region families are low income
- ❖ Fluoride reaches everyone

Durham Region: Water Fluoridation

- Pickering
- Ajax
- Whitby
- Oshawa
- Brooklin
- Courtice



✓ Economical

- Fluoridation cost: part of Durham's drinking water supply system
- Annual cost: \$200,000
- ~ 40 cents per person
- US Centers for Disease Control and Prevention
 - ❖ every \$1 invested yields approximately \$38 savings in dental treatment costs

✓ Safe

➤ Regulations

- ❖ Fluoridation Act
- ❖ Safe Drinking Water Act

➤ Level of fluoridation

- ❖ Recommended concentration: 0.5 - 0.8 mg/l
- ❖ Maximum acceptable concentration: 1.5 mg/l.
- ❖ mg/l = parts per million ppm



✓ Safe

- Water supply systems in Ontario are operated and maintained by licenced operators.
- Each drinking water system has a Drinking Water Quality Management System.
- Ministry of Environment (MOE) licence under the Safe Drinking Water Act.
- Inspection by MOE drinking water Inspectors annually
- Drinking Water Quality Management System: audited by Canadian General Standards Board (CGSB)
- Any health related issue: Health Department



✓ Safe

- Hydrofluorosilicic Acid is used
- Supplied by Solvay Chemicals sourced in the United States.
- All chemicals used in drinking water supply process must meet:
 - ❖ American Water Works Association (AWWA) Standard B703-06
 - ❖ American National Standards Institute (ANSI)/ National Scientific Foundation (NSF) Standard 60 and 61



✓ Safe

- All water operators are trained to safely handle all chemicals used for water treatment
- National Science Foundation (NSF) test results: fluoridation products **do not** add measurable amounts of arsenic, lead, other heavy metals or radionuclide to drinking water
- Drinking water is monitored for heavy metals
- 2010 Annual Water Quality Report



Appraising Scientific Literature

➤ Systematic Review

- ❖ Published literature retrieved
- ❖ Reviewed for quality
- ❖ Summarized by experts
- ❖ Results synthesized to draw conclusions by groups of experts
- ❖ Accepted by scientific community

➤ Selective Review

- ❖ Prove a point
- ❖ Picks and chooses articles
- ❖ No quality criteria
- ❖ Not specific



✓ Safe



- 2000, York Review
- 2001, USA Report
- 2007, Australian Report
- 2007, Quebec Report
- 2010, Health Canada Report
- 2011, European Commission, Scientific Committee on health and Environmental Risks
- 2011, Drs McLaren and McIntyre

**Drinking water fluoridation in Canada:
Review and synthesis of published literature**

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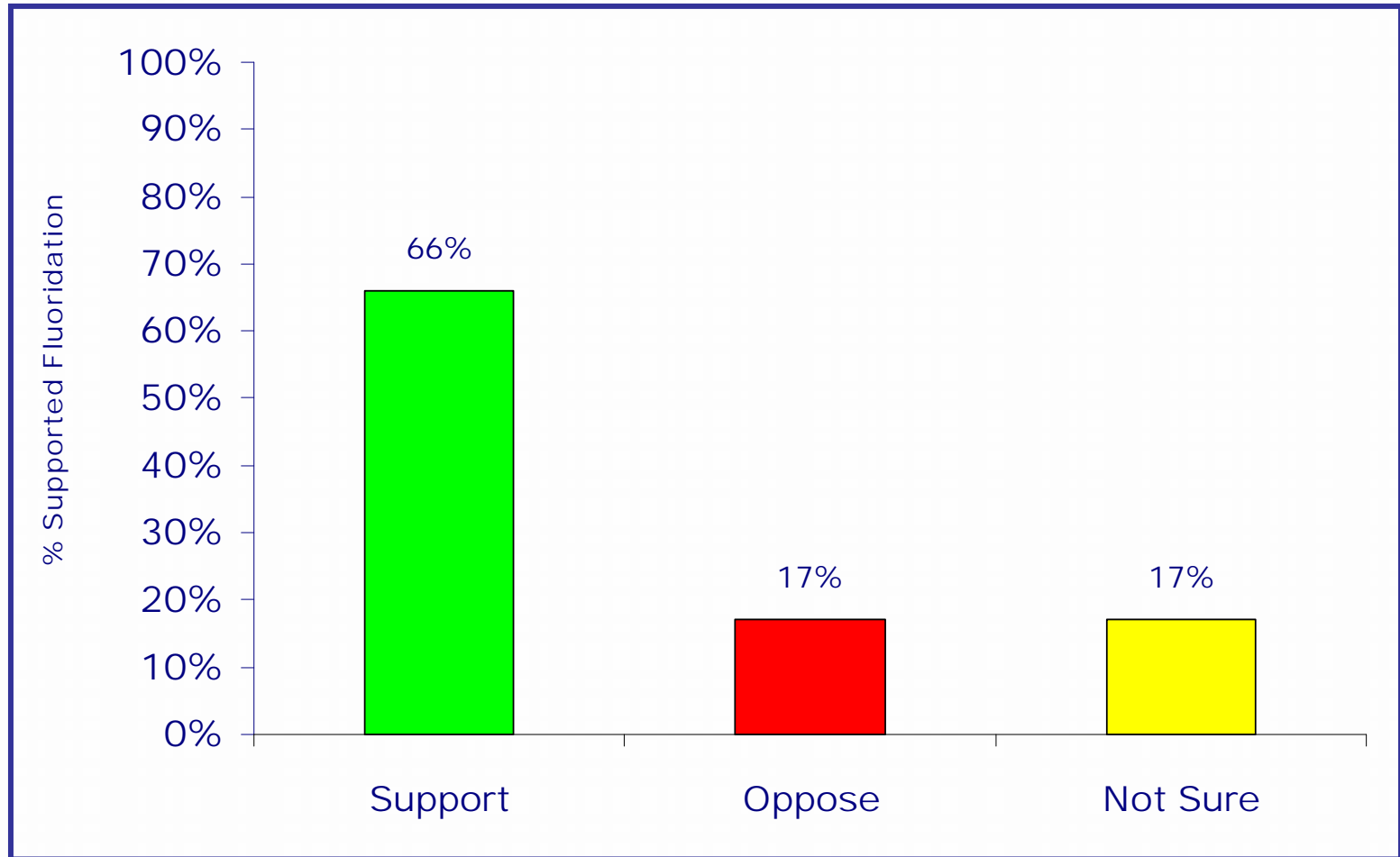
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✓ Safe

- No link between exposure to fluoride in drinking water and any adverse health effects
 - × Cancer
 - × Immune system defects
 - × Reproductive defects
 - × Developmental defects: brain or nervous system
 - × IQ deficit



Percent of Durham Region Residents Supported Fluoridation, 2009



Conclusion

- Drinking water in Durham Region: **high quality**
- Community water fluoridation
 - ✓ Effective
 - ✓ Economical
 - ✓ Equitable
 - ✓ Safe
- **Continue water fluoridation**

